

# Single Message System Specifications

8 November 2022



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# Contents

Summary of changes: 8 November 2022.....	23
<b>Chapter 1: Implementation planning.....</b>	<b>26</b>
Overview.....	27
Objectives of acceptance testing.....	27
Single Message System test environment.....	28
Debit Mastercard testing requirements for implementation.....	28
Online testing.....	28
Scheduling test time.....	29
Canceling test time.....	29
Processor debit switch test environment.....	29
Electronic fund transfer (EFT) Services.....	30
Acceptance testing requirements.....	30
Simulator testing requirements for new customers.....	30
Simulator testing requirements for existing customers.....	31
Testing multiple terminals.....	31
Testing unique requirements.....	31
Test card requirements.....	32
Recommended ATM screen sets.....	32
ISO 8583 (1987) Financial Transaction Request Response/0210 message format.....	33
<b>Chapter 2: Message flows.....</b>	<b>39</b>
Overview.....	41
Message processing conventions.....	41
Issuer post-on-authorization technique.....	41
Late responses.....	42
Acquirer response acknowledgement technique.....	42
Guaranteed advice delivery concept.....	43
Maximum response times.....	48
Authorization/01xx messages.....	49
Debit Mastercard preauthorization and clearing processing.....	51
Financial Transaction/02xx messages.....	52
Financial Transaction Request/0200 and Financial Transaction Request Response/0210.....	55
Financial Transaction Request/0200 and Financial Transaction Request Response/0210: partial approvals with currency conversion assessment.....	55
Financial Transaction Request/0200 and Financial Transaction Request Response/0210: Debit Mastercard partial approvals.....	57
Financial Transaction Request/0200: denied by the Single Message System.....	58

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Financial Transaction/02xx: Maestro preauthorization and completion.....	59
Financial Transaction/02xx: exception, transaction failure after Maestro preauthorization.....	60
Financial Transaction/02xx and Acquirer Reversal/04xx: exception, transaction failure after Maestro preauthorization.....	62
Financial Transaction/02xx: exception, Single Message System stand-in processing, late response from issuer.....	63
Financial Transaction/02xx: exception, Single Message System stand-in processing, no response from issuer.....	65
Financial Transaction/02xx: exception, Single Message System stand-in processing, format error from issuer.....	66
Financial Transaction/02xx: exception, Debit Mastercard stand-in processing, no response from issuer.....	68
Financial Transaction/02xx: exception, system failure during acquirer Financial Transaction Request/0200.....	69
Financial Transaction/02xx: exception, stand-in Maestro preauthorization.....	70
Financial Transaction/02xx: exception, system failure during issuer Financial Transaction Request/0200.....	72
Financial Transaction/02xx: exception, system failure during issuer Financial Transaction Request Response/0210.....	73
Financial Transaction/02xx: exception, late issuer Financial Transaction Request Response/0210.....	74
Financial Transaction/02xx: exception, Financial Transaction Request Response/0210 failure of Single Message System edits.....	76
Financial Transaction/02xx: exception, system failure during Acquirer Financial Transaction Request Response/0210.....	77
Financial Transaction/02xx: exception, time-out of Financial Transaction Request Response/0210 to acquirer.....	78
Financial Transaction/02xx: multiple completion.....	80
File Update/03xx messages.....	82
File Update Request/0302 and File Update Request Response/0312.....	83
File Update/03xx, case 1: Debit Mastercard.....	83
File Update/03xx, case 2: Maestro and Cirrus.....	84
File Update/03xx, case 3: contactless.....	86
File Update/03xx, case 4: ATM premium listing Debit Mastercard, Maestro, and Cirrus.....	87
Reversal Advice/04xx messages.....	88
Reversal Advice/04xx transaction exception processing.....	91
Acquirer reversal advice: exception, system initiated.....	91
Online exception messages.....	93
Administrative Advice/06xx messages.....	94
Administrative Advice/0620: Single Message System-initiated.....	96
Administrative Advice/06xx: processor initiated.....	97
Administrative Advice/0620: processor-initiated time-based exception.....	98

Administrative Advice/0644 for virtual private network: connected acquirers.....	98
Administrative Advice/0644 for virtual private network: connected issuers.....	100
Network Management/08xx messages.....	101
Network Management Request/0800 and Network Management Request Response/ 0810.....	102
Network Management/08xx: sign-on and sign-off.....	103
Network Management/08xx: echo test.....	104
Network Management/08xx: SAF request by processor to Single Message System.....	106
Network Management/08xx: PIN encryption key change.....	107
<b>Chapter 3: Message layouts.....</b>	<b>110</b>
Overview.....	112
Data element flow.....	112
Data element message format requirements.....	113
Summary of message type supported.....	113
Financial Transaction Request/0200.....	115
Financial Transaction Request Response/0210.....	122
Financial Transaction Advice/0220.....	127
Financial Transaction Advice/0220: Debit Mastercard stand-in.....	135
Financial/Non-Financial Transaction Advice/0220.....	138
Financial Transaction Advice Response/0230.....	145
Financial Transaction Negative Acknowledgement/0290.....	148
File Update Request/0302.....	148
File Update Request Response/0312.....	149
Acquirer Reversal Advice/0420: acquirer initiated.....	151
Acquirer Reversal Advice/0420: time-out-induced, acquirer initiated.....	155
Acquirer Reversal Advice/0420: time-out-induced, system initiated.....	159
Acquirer Reversal Advice/0420: exception, system initiated.....	162
Acquirer Reversal Advice/0420: acquirer initiated exception.....	165
Issuer Reversal Advice/0422: exception, system initiated.....	169
Issuer Reversal Advice/0422: exception, issuer initiated.....	172
Acquirer Reversal Advice Response/0430: system initiated.....	175
Acquirer Reversal Advice Response/0430: issuer initiated.....	178
Issuer Reversal Advice Response/0432: exception, acquirer initiated.....	181
Issuer Reversal Advice Response/0432: exception, system initiated.....	183
Administrative Advice/0620: Single Message System initiated.....	186
Administrative Advice/0620: processor initiated.....	187
Administrative Advice/0620: processor initiated time-based exception.....	188
Administrative Advice Response/0630: processor initiated to the Single Message System.....	189
Administrative Advice Response/0630: processor initiated to the time-based exception.....	190
Administrative Advice/0644.....	191
Network Management Request/0800: acquirer or issuer initiated.....	192

Network Management Request/0800: system initiated.....	194
Network Management Request Response/0810: acquirer or issuer initiated.....	195
Network Management Request Response/0810: system initiated.....	196
Network Management Advice/0820.....	197
<b>Chapter 4: Data element definitions.....</b>	<b>199</b>
Overview.....	216
Annotation conventions for data element attributes.....	216
Conventions for data representation.....	216
General representation.....	217
Character sets.....	218
Extended character sets.....	226
Length attributes.....	233
Field content attributes.....	233
Data element message format requirements.....	234
Message data elements.....	235
Data elements currently used by the Single Message System.....	235
Data elements not currently used by the Single Message System.....	238
Message type identifier (MTI).....	240
Transaction data classification.....	241
Primary and secondary bit maps.....	264
DE 1 (Bit Map, Secondary).....	267
DE 2 (Primary Account Number [PAN]).....	269
DE 3 (Processing Code).....	270
Subfield 1 (Cardholder Transaction Type Code).....	272
Subfield 2 (Cardholder Account Type [From]).....	273
Subfield 3 (Cardholder Account Type [To]).....	273
DE 4 (Amount, Transaction).....	277
DE 5 (Amount, Settlement).....	280
DE 6 (Amount, Cardholder Billing).....	282
DE 7 (Transmission Date and Time).....	284
DE 8 (Amount, Cardholder Billing Fee).....	287
DE 9 (Conversion Rate, Settlement).....	288
DE 10 (Conversion Rate, Cardholder Billing).....	290
DE 11 (Systems Trace Audit Number).....	291
DE 12 (Time, Local Transaction).....	294
DE 13 (Date, Local Transaction).....	296
DE 14 (Date, Expiration).....	297
DE 15 (Date, Settlement).....	298
DE 16 (Date, Conversion).....	300
DE 17 (Date, Capture).....	301
DE 18 (Merchant Type).....	302

DE 19 (Acquiring Institution Country Code).....	304
DE 20 (Primary Account Number [PAN] Country Code).....	304
DE 21 (Forwarding Institution Country Code).....	306
DE 22 (Point of Service Entry Mode).....	306
Subfield 1 (POS Terminal PAN Entry Mode).....	307
Subfield 2 (POS Terminal PIN Entry Mode).....	310
DE 23 (Card Sequence Number).....	312
DE 24 (Network International Identifier).....	315
DE 25 (Point of Service Condition Code [ISO]).....	315
DE 26 (Point of Service [POS] PIN Capture Code).....	316
DE 27 (Authorization Identification Response Length).....	317
DE 28 (Amount, Transaction Fee).....	317
DE 29 (Amount, Settlement Fee).....	320
DE 30 (Amount, Transaction Processing Fee).....	320
DE 31 (Amount, Settlement Processing Fee).....	321
DE 32 (Acquiring Institution Identification Code).....	321
DE 33 (Forwarding Institution Identification Code).....	323
DE 34 (Primary Account Number, Extended).....	325
DE 35 (Track 2 Data).....	325
Subfield 1 (Start Sentinel).....	326
Subfield 2 (Primary Account Number [PAN]).....	327
Subfield 3 (Field Separator).....	327
Subfield 4 (Expiration Date).....	327
Subfield 5 (Extended Service Code).....	328
Subfield 6 (Discretionary Data).....	328
Subfield 7 (End Sentinel).....	329
Subfield 8 (Longitudinal Redundancy Check [LRC]).....	329
DE 36 (Track 3 Data).....	331
DE 37 (Retrieval Reference Number).....	331
Subfield 1 (Transaction Date and Initiator Discretionary Data).....	333
Subfield 2 (Terminal Transaction Number).....	333
DE 38 (Authorization Identification Response).....	334
DE 39 (Response Code).....	335
DE 40 (Service Restriction Code).....	345
DE 41 (Card Acceptor Terminal Identification).....	345
DE 42 (Card Acceptor Identification Code).....	347
DE 43 (Card Acceptor Name and Location).....	348
Subfield 1 (ATM Owner Name and/or Location, or POS Merchant Name [or Payment Facilitator and Sub-Merchant Information, if applicable]).....	350
Subfield 2 (Space/surcharge-free indicator).....	352
Subfield 3 (Card Acceptor City [or sub-merchant information, if applicable]).....	352
Subfield 4 (Space).....	353

Subfield 5 (Card Acceptor State [U.S.], Province Code [Canada and Canadian territories], or Country Code [or Sub-Merchant Information, if applicable]).....	353
DE 44 (Additional Response Data).....	354
DE 45 (Track 1 Data).....	365
Subfield 1 (Start Sentinel).....	366
Subfield 2 (Format Code).....	367
Subfield 3 (Primary Account Number [PAN]).....	367
Subfield 4 (Field Separator).....	367
Subfield 5 (Cardholder Name).....	368
Subfield 6 (Field Separator).....	368
Subfield 7 (Expiration Date).....	368
Subfield 8 (Extended Service Code).....	369
Subfield 9 (Discretionary Data).....	369
Subfield 10 (End Sentinel).....	370
Subfield 11 (Longitudinal Redundancy Check [LRC]).....	370
DE 46 (Expanded Additional Amounts).....	370
DE 47 (Additional Data [National]).....	371
DE 48 (Additional Data).....	372
List of DE 48 subelements.....	375
Subelement descriptions.....	377
Subelement 09 (Virtual Card Number Data).....	377
Subfield 01 (Virtual Card Number Indicator).....	378
Subfield 02 (Virtual Card Number).....	378
Subfield 03 (Virtual Card Number Expiration Date).....	379
Subelement 11 (Key Exchange Data Block [Double-Length Keys]).....	379
Subfield 1 (Key Class ID).....	380
Subfield 2 (Key Index Number).....	380
Subfield 3 (Key Cycle Number).....	381
Subfield 4 (PIN Encryption Key [PEK]).....	381
Subfield 5 (Key Check Value).....	382
Subelement 11 (Key Exchange Data Block [Triple-Length Keys]).....	382
Subfield 1 (Key Class ID).....	383
Subfield 2 (Key Index Number).....	383
Subfield 3 (Key Cycle Number).....	384
Subfield 4 (PIN Encryption Key [PEK]).....	384
Subfield 5 (Key Check Value).....	384
Subelement 17 (Authentication Indicator).....	385
Subelement 19 (Fraud Notification Information).....	386
Subfield 1 (Fraud Notification Service Date).....	388
Subfield 2 (Fraud Notification Service Chargeback Counter).....	388
Subfield 3 (Fraud Notification Service Second Presentment Rights Indicator).....	389
Subelement 21 (Acceptance Data).....	389
Subfield 1 (mPOS Acceptance Device Type).....	390

Subfield 2 (Additional Terminal Capability Indicator).....	391
Subelement 22 (Multi-Purpose Merchant Indicator).....	392
Subfield 1 (Low-Risk Merchant Indicator).....	393
Subfield 2 (Single Tap Indicator).....	394
Subfield 3 (Response to PIN Request).....	395
Subfield 4 (Issuer PIN Request in a Single Tap Mode).....	396
Subfield 5 (Cardholder/Merchant Initiated Transactions Indicator).....	397
Subelement 23 (Payment Initiation Channel).....	398
Subfield 1 (Device Type).....	399
Subelement 25 (Mastercard Cash Program Data).....	402
Subfield 1 (Message Identifier).....	402
Subelement 26 (Wallet Program Data).....	403
Subfield 1 (Wallet Identifier).....	404
Subelement 27 (Transaction Analysis).....	406
Subfield 1 (Overview).....	407
Subfield 2 (Test Results).....	407
Subelement 28 (Cardless ATM Order ID).....	409
Subelement 29 (Additional POS Terminal Locations).....	409
Subelement 30 (Token Transaction Identifier).....	410
Subelement 32 (Mastercard Assigned ID).....	411
Subfield 1 (Mastercard Assigned ID).....	411
Subelement 33 (PAN Mapping File Information).....	412
Subfield 1 (Account Number Indicator).....	413
Subfield 2 (Account Number PAN).....	414
Subfield 3 (Expiration Date).....	414
Subfield 5 (Token Assurance Level).....	415
Subfield 6 (Token Requestor ID).....	416
Subfield 8 (Storage Technology).....	416
Subelement 34 (ATC Information).....	418
Subfield 1 (ATC Value).....	419
Subfield 2 (ATC Discrepancy Value).....	419
Subfield 3 (ATC Discrepancy Indicator).....	420
Subelement 35 (Contactless Device Request Response).....	420
Subfield 1 (Contactless Device Request Response).....	421
Subelement 37 (Additional Merchant Data).....	421
Subfield 1 (Payment Facilitator ID).....	422
Subfield 2 (Independent Sales Organization ID).....	423
Subfield 3 (Sub-Merchant ID).....	423
Subfield 4 (Merchant Country of Origin).....	424
Subelement 38 (Account Category).....	425
Subfield 1 (Account Category).....	425
Subelement 39 (Account Data Compromise Information).....	425
Positions 1–3 (reserved for future use).....	426

Positions 4–6 (reserved for future use).....	427
Positions 7–12 (Case Key Code 1).....	427
Positions 13–18 (Case Key Code 2).....	427
Positions 19–24 (Case Key Code 3).....	428
Position 25 (ADC Data Type: PAN).....	428
Position 26 (ADC Data Type: Expiration Date).....	428
Position 27 (ADC Data Type: CVC 2).....	429
Position 28 (ADC Data Type: PIN).....	429
Position 29 (ADC Data Type: Magnetic Stripe).....	430
Position 30 (ADC Data Type: Personal Information).....	430
Subelement 40 (Electronic Commerce Merchant/Cardholder Certificate Serial Number).....	431
Subfield 1 (Merchant Certificate Serial Number).....	431
Subfield 2 (Cardholder Certificate Serial Number).....	432
Subelement 41 (Electronic Commerce Certificate Qualifying Information).....	432
Subfield 1 (Reserved for future use).....	433
Subfield 2 (Reserved for future use).....	433
Subfield 3 (Reserved for future use).....	434
Subfield 4 (Reserved for future use).....	434
Subfield 5 (Reserved for future use).....	434
Subfield 6 (Reserved for future use).....	435
Subfield 7 (Reserved for future use).....	435
Subfield 8 (Reserved for future use).....	436
Subfield 9 (Reserved for future use).....	436
Subfield 10 (Reserved for future use).....	437
Subfield 11 (National ID).....	437
Subfield 12 (Reserved for future use).....	437
Subfield 13 (Reserved for future use).....	438
Subfield 14 (Reserved for future use).....	438
Subfield 15 (Reserved for future use).....	439
Subfield 16 (Reserved for future use).....	439
Subfield 17 (Reserved for future use).....	440
Subfield 18 (Reserved for future use).....	440
Subfield 19 (Reserved for future use).....	440
Subfield 20 (Reserved for future use).....	441
Subfield 21 (Reserved for future use).....	441
Subelement 42 (Electronic Commerce Indicators).....	442
Subfield 1 (Electronic Commerce Security Level Indicator [SLI] and UCAF Collection Indicator).....	444
Subfield 2 (Original Electronic Commerce Security Level Indicator and UCAF Collection Indicator).....	448
Subfield 3 (Reason for UCAF Collection Indicator Downgrade).....	449
Subelement 43 (Universal Cardholder Authentication Field [UCAF]).....	449

Subfield 1 (UCAF Data).....	450
Subelement 48 (Mobile Program Indicators).....	452
Subfield 1 (Remote Payments Program Type Identifier).....	453
Subfield 2 (Mastercard Mobile Remote Payment Transaction Type).....	454
Subfield 3 (Mobile Phone Number).....	454
Subfield 4 (Convenience Fee).....	455
Subelement 49 (Time Validation Information).....	455
Subfield 1 (Time Value).....	456
Subfield 2 (Time Discrepancy Value).....	456
Subfield 3 (Time Discrepancy Indicator).....	457
Subelement 52 (Transaction Integrity Class).....	457
Subelement 54 (Ancillary Service Charges).....	459
Subfield 1 (Ancillary Fee Code).....	460
Subfield 2 (Ancillary Fee Amount).....	461
Subelement 56 (Security Services Additional Data for Issuers).....	461
Subfield 1 (Security Services Indicator).....	463
Subfield 2 (Security Services Data).....	463
Subelement 56 (Valid Subfield 1 and Subfield 2 Value Combinations).....	463
Subelement 59 (Original Switch Serial Number).....	474
Subfield 1 (Original Switch Serial Number).....	475
Subelement 61 (POS Data, Extended Condition Codes).....	475
Subfield 1 (Partial Approval Terminal Support Indicator).....	476
Subfield 2 (Purchase Amount Only Terminal Support Indicator).....	477
Subfield 3 (Real-Time Substantiation Indicator).....	477
Subfield 4 (Reserved for Future Use).....	478
Subfield 5 (Final Authorization Indicator).....	479
Subelement 63 (Trace ID).....	479
Subelement 64 (Transit Program).....	481
Subfield 1 (Transit Transaction Type Indicator).....	482
Subfield 2 (Transportation Mode Indicator).....	483
Subelement 65 (Terminal Compliant Indicator).....	484
Subfield 1 (TLE Compliant).....	485
Subfield 2 (UKPT/DUKPT Compliant).....	485
Subelement 66 (Authentication Data).....	486
Subfield 1 (Program Protocol).....	486
Subfield 2 (Directory Server Transaction ID).....	487
Subelement 67 (MoneySend Information).....	487
Subfield 01 (Sanctions Score).....	488
Subelement 69 (Trace ID of Authorization Advice).....	489
Subfield 1 (Network Data).....	490
Subfield 2 (Date Settlement).....	491
Subelement 70 (Implied Decimal).....	491
Subfield 1 (Implied Decimal).....	492

Subelement 71 (On-behalf Service [OBS]).....	492
Subfield 1 (On-behalf Service Indicator).....	493
Subfield 2 (On-behalf Result 1).....	494
Subfield 3 (On-behalf Result 2).....	494
Valid Subfield 1 and Subfield 2 value combinations.....	494
Valid Subfield 1 and Subfield 3 value combinations.....	504
Valid Subfield 1, Subfield 2, and Subfield 3 value combinations.....	505
Subelement 72 (Issuer Chip Authentication).....	506
Subelement 74 (Additional Processing Information).....	507
Subfield 1 (Process Indicator).....	508
Subfield 2 (Processing Information).....	508
Valid Subfield 1 and Subfield 2 value combinations.....	509
Subelement 75 (Fraud Scoring Data).....	510
Subfield 1 (Assessment Score).....	511
Subfield 2 (Score Reason Code).....	512
Subfield 3 (Rules Score).....	513
Subfield 4 (Rule Reason Code 1).....	513
Subfield 5 (Rule Reason Code 2).....	514
Subelement 76 (Mastercard Electronic Transaction Indicator).....	514
Subfield 1 (Mastercard Electronic Program Participation Level).....	515
Subelement 77 (Transaction Type Identifier).....	515
Subelement 79 (Chip CVR/TVR Bit Error Results Listing).....	518
Subfield 1 (CVR or TVR Identifier).....	519
Subfield 2 (Byte ID).....	519
Subfield 3 (Bit Identifier).....	520
Subfield 4 (Value of Bit in Error).....	520
Subelement 80 (PIN Service Code).....	521
Subelement 81 (Maestro PIN-less Program Indicator).....	522
Subelement 82 (Address Verification Service Request).....	522
Subfield 1 (AVS Option Code).....	523
Subelement 83 (Address Verification Service Response).....	524
Subfield 1 (AVS Result Code).....	524
Subelement 84 (Merchant Advice Code).....	525
Subfield 1 (Merchant Advice Code).....	525
Subelement 87 (Card Validation Code Result).....	527
Subfield 1 (Code Values).....	528
Subelement 88 (Magnetic Stripe Compliance Status Indicator).....	528
Subfield 1 (Monitoring Status).....	529
Subelement 89 (Magnetic Stripe Compliance Error Indicator).....	529
Subfield 1 (Data/Code Indicators).....	529
Subelement 90 (Lodging and Auto Rental Indicator).....	530
Subfield 1 (Enrolled Program).....	531
Subelement 92 (CVC 2 Value).....	531

Subfield 1 (CVC 2 Value).....	532
Subelement 93 (Airline Ticket Number).....	532
Subfield 1 (Ticket Number).....	532
Subelement 94 (Program Participation Indicator).....	533
Subfield 1 (CVC 2 Validation Program Indicator).....	533
Subfield 2 (QPS/Contactless Chargeback Eligibility).....	534
Subfields 3–20 (Reserved for Future Use).....	534
Subelement 95 (Mastercard Promotion Code).....	535
Subfield 1 (Surcharge-Free Alliance).....	535
Subelement 98 (Mastercard Corporate Fleet Card ID/Driver Number).....	536
Subfield 1 (ID/Driver Number).....	536
Subelement 99 (Mastercard Corporate Fleet Card Vehicle Number).....	537
Subfield 1 (Vehicle Number).....	537
DE 49 (Currency Code, Transaction).....	537
DE 50 (Currency Code, Settlement).....	539
DE 51 (Currency Code, Cardholder Billing).....	541
DE 52 (Personal Identification Number [PIN] Data).....	542
DE 53 (Security Related Control Information).....	543
DE 54 (Additional Amounts).....	544
Subfield 1 (Account Type).....	550
Subfield 2 (Amount Type).....	551
Subfield 3 (Currency Code).....	552
Subfield 4 (Debit or Credit Indicator).....	552
Subfield 5 (Amount).....	553
DE 55 (Integrated Circuit Card [ICC] System-Related Data).....	553
DE 56 (Payment Account Data).....	559
Subelement 01 (Payment Account Data).....	560
Subfield 01 (Payment Account Reference [PAR]).....	560
DE 57 (Reserved for National Use).....	562
DE 58 (Authorizing Agent Institution ID).....	562
DE 59 (Reserved for National Use).....	563
DE 60 (Advice Reason Code).....	564
Subfield 1 (Advice Reason Code).....	565
Subfield 2 (Advice Reason Detail Code).....	566
Subfield 3 (Advice Reason Detail Text).....	567
Subfield 4 (Advice Reason Additional Text).....	569
Message type 0220: financial transaction advice.....	570
Message type 0220: Debit Mastercard stand-in-financial transaction advice.....	577
Message type 0220: non-financial transaction advice.....	583
Message type 0420: acquirer reversal advice.....	583
Message type 0422: issuer reversal advice.....	591
Message type 0620: administrative advice.....	596
Message type 0644: administrative advice.....	596

DE 61 (Point of Service [POS] Data).....	597
Subfield 1 (POS Terminal Attendance).....	599
Subfield 2 (Reserved for Future Use).....	599
Subfield 3 (POS Terminal Location).....	600
Subfield 4 (POS Cardholder Presence).....	600
Subfield 5 (POS Card Presence).....	601
Subfield 6 (POS Card Retention).....	602
Subfield 7 (POS Transaction Status).....	602
Subfield 8 (POS Transaction Security).....	603
Subfield 9 (Reserved for Future Use).....	604
Subfield 10 (Cardholder-Activated Terminal Level).....	604
Subfield 11 (POS Card Data Terminal Input Capability).....	605
Subfield 12 (POS Authorization Life Cycle).....	606
Subfield 13 (POS Country Code [or Sub-Merchant Information, if applicable]).....	607
Subfield 14 (POS Postal Code [or Sub-Merchant Information, if applicable]).....	607
DE 62 (Intermediate Network Facility [INF] Data).....	608
DE 63 (Network Data).....	609
Subfield 1 (Financial Network Code).....	612
Subfield 2 (Interchange Rate Indicator).....	613
Subfield 3 (Network Reference Number).....	613
Subfield 4 (Banknet Reference Number).....	614
Subfield 5 (Acquirer's Reference Number).....	615
Subfield 6 (GCMS Processing Date and Cycle Number).....	615
DE 64 (Message Authentication Code [MAC]).....	616
DE 65 (Bit Map, Extended).....	616
DE 66 (Settlement Code).....	617
DE 67 (Extended Payment Code).....	618
DE 68 (Receiving Institution Country Code).....	618
DE 69 (Settlement Institution Country Code).....	619
DE 70 (Network Management Information Code).....	619
DE 71 (Message Number).....	621
DE 72 (Message Number Last).....	621
DE 73 (Date, Action).....	622
DE 74 (Credits, Number).....	622
DE 75 (Credits, Reversal Number).....	623
DE 76 (Debits, Number).....	623
DE 77 (Debits, Reversal Number).....	624
DE 78 (Transfers, Number).....	624
DE 79 (Transfers, Reversal Number).....	625
DE 80 (Inquiries, Number).....	625
DE 81 (Authorizations, Number).....	626
DE 82 (Credits, Processing Fee Amount).....	626
DE 83 (Credits, Transaction Fee Amount).....	627

DE 84 (Debits, Processing Fee Amount).....	627
DE 85 (Debits, Transaction Fee Amount).....	628
DE 86 (Credits, Amount).....	628
DE 87 (Credits, Reversal Amount).....	629
DE 88 (Debits, Amount).....	629
DE 89 (Debits, Reversal Amount).....	630
DE 90 (Original Data Elements).....	630
Subfield 1 (Message Type Identifier).....	632
Subfield 2 (System Trace Audit Number).....	632
Subfield 3 (Transmission Date and Time).....	633
Subfield 4 (Acquiring Institution ID Code).....	633
Subfield 5 (Forwarding Institution ID Code).....	634
DE 91 (File Update Code).....	634
DE 92 (File Security Code).....	635
DE 93 (Response Indicator).....	636
DE 94 (Service Indicator).....	636
DE 95 (Replacement Amounts).....	637
Subfield 1 (Actual Amount, Transaction).....	639
Subfield 2 (Actual Amount, Settlement).....	640
Subfield 3 (Actual Amount, Cardholder Billing).....	640
Subfield 4 (Zero-filled).....	641
DE 96 (Message Security Code).....	641
DE 97 (Amount, Net Settlement).....	642
DE 98 (Payee).....	642
DE 99 (Settlement Institution Identification Code).....	643
DE 100 (Receiving Institution Identification Code).....	643
DE 101 (File Name).....	645
DE 102 (Account Identification 1).....	646
DE 103 (Account Identification 2).....	647
DE 104 (Digital Payment Data).....	648
Subelement 001 (Digital Payment Cryptogram).....	650
Subelement 002 (Estimated Amount).....	651
Subelement 003 (Remote Commerce Acceptor Identifier).....	652
Subelement 004 (Additional Digital Data).....	653
Subfield 001 (Digital Service Provider ID).....	654
DE 105 (Enhanced Identification Data).....	654
Subelement 1 (AUA Code).....	656
Subelement 2 (Sub-AUA Code).....	657
Subelement 3 (Terminal Device ID).....	657
Subelement 4 (Version).....	658
Subelement 5 (Transaction Identifier).....	659
Subelement 6 (Unique Device Code).....	659
Subelement 7 (Fingerprint Device Code).....	660

Subelement 8 (Reserved for future use).....	660
Subelement 9 (Certificate Identifier).....	661
Subelement 10 (PID Block Type).....	662
Subelement 11 (Primary Biometric Type).....	662
Subelement 12 (Product Code).....	664
Subelement 13 (Return Value).....	664
Subelement 14 (Authenticator Code).....	665
Subelement 15 (Time Stamp).....	666
Subelement 16 (Meta Information).....	667
Subelement 17 (Error Code).....	667
Subelement 18 (Internal Mastercard Use).....	668
Subelement 71 (Internal Mastercard Use).....	669
DE 106 (Private Data).....	669
Subelement 1 (Private Biometric Data).....	670
DE 107 (India On-Soil Data).....	671
Subelement 1 (Accountholder UID Number).....	672
Subelement 2 (License Key).....	673
Subelement 3 (Public IP Address).....	673
Subelement 4 (Key Identifier).....	674
Subelement 5 (HMAC Value).....	674
Subelement 6 (Encryption Key).....	675
Subelement 7 (Location Type).....	676
Subelement 8 (Location Value).....	676
DE 108 (Additional Transaction Reference Data).....	677
Subelement 01 (Receiver/Recipient Data).....	679
Subfield 01 (Receiver/Recipient First Name).....	681
Subfield 02 (Receiver/Recipient Middle Name).....	682
Subfield 03 (Receiver/Recipient Last Name).....	682
Subfield 04 (Receiver/Recipient Street Address).....	683
Subfield 05 (Receiver/Recipient City).....	684
Subfield 06 (Receiver/Recipient State/Province Code).....	684
Subfield 07 (Receiver/Recipient Country).....	685
Subfield 08 (Receiver/Recipient Postal Code).....	686
Subfield 09 (Receiver/Recipient Phone Number).....	686
Subfield 10 (Receiver/Recipient Date of Birth).....	687
Subfield 11 (Receiver/Recipient Account Number).....	687
Subfield 12 (Receiver/Recipient Identification Type).....	688
Subfield 13 (Receiver/Recipient Identification Number).....	689
Subfield 14 (Receiver/Recipient Identification Country Code).....	690
Subfield 15 (Receiver/Recipient Identification Expiration Date).....	690
Subfield 16 (Receiver/Recipient Nationality).....	691
Subfield 17 (Receiver/Recipient Country of Birth).....	691
Subfield 18 (Receiver/Recipient Account Number Type).....	692

Subelement 02 (Sender Data).....	693
Subfield 01 (Sender First Name).....	694
Subfield 02 (Sender Middle Name).....	695
Subfield 03 (Sender Last Name).....	695
Subfield 04 (Sender Street Address).....	696
Subfield 05 (Sender City).....	697
Subfield 06 (Sender State/Province Code).....	697
Subfield 07 (Sender Country).....	698
Subfield 08 (Postal Code).....	698
Subfield 09 (Sender Phone Number).....	699
Subfield 10 (Sender Date of Birth).....	699
Subfield 11 (Sender Account Number).....	700
Subfield 12 (Sender Identification Type).....	701
Subfield 13 (Sender Identification Number).....	702
Subfield 14 (Sender Identification Country Code).....	702
Subfield 15 (Sender Identification Expiration Date).....	703
Subfield 16 (Sender Nationality).....	703
Subfield 17 (Sender Country of Birth).....	704
Subfield 18 (Sender Account Number Type).....	704
Subelement 03 (Transaction Reference Data).....	705
Subfield 01 (Unique Transaction Reference).....	706
Subfield 02 (Additional Message).....	708
Subfield 03 (Funding Source).....	708
Subfield 04 (Participation ID).....	710
Subfield 05 (Transaction Purpose).....	710
Subelement 04 (Language Description).....	711
Subfield 01 (Language Identification).....	711
Subfield 02 (Language Data).....	712
Subelement 05 (Digital Account Information).....	712
Subfield 01 (Digital Account Reference Number).....	713
Subfield 02 (Mastercard Merchant Presented QR receiving account number).....	713
Subelement 06 (QR Dynamic Code Data).....	714
DE 109 (Reserved for ISO Use).....	715
DE 110 (Additional Data 2).....	716
Subelement 1 (Merchant ID).....	717
Subelement 2 (Program Registration ID).....	717
Subelement 3 (PLUS Acquirer ID).....	718
Subelement 4 (Visa International Fee Indicator).....	719
Subelement 5 (Additional Card Information).....	720
Subelement 6 (Business Service Arrangement).....	726
Subelement 7 (Settlement Service).....	729
Subelement 8 (Product ID).....	730
DE 110, Subelement 8, product identifier values.....	731

Subelement 9 (ANSI X9 TR-31 Key Block Key [128-bit Key Block Protection Key]).....	741
Subelement 9 (ANSI X9 TR-31 Key Block Key [192-bit Key Block Protection Key]).....	742
Subelement 10 (Key Check Value).....	743
DE 111 (Amount, Currency Conversion Assessment).....	743
DE 112 (Additional Data [National Use]).....	745
DE 112 (Subelement Contents).....	747
Additional Data (National Use) Subelements.....	750
Subelement 1 (Time Payment Options).....	750
Subelement 2 (Parcelas Transaction).....	752
Subelement (Credit Line Usage Fee [CLUF]).....	753
Subelement 5 (Issuing Bank Name [AKA Doing Business As {DBA}]).....	753
Subelement 6 (Financial Institution ID [FIID]).....	754
Subelement 11 (CDC Inquiry and Purchase).....	754
Subelement 12 (CDC Inquiry).....	755
Subelement 13-16 (CDC Inquiry).....	756
Subelement 18 (Post-Dated Transactions [preauthorization and completion]).....	756
Subelement 19 (Maestro Installment Transactions [preauthorization and completion]).....	757
Subelement 22 (Positive ID Transactions).....	759
Subelement 23 (Positive ID Translation/Validation error code).....	760
Subelement 24 (Time-Based Transactions).....	762
Subelement 25 (Merchant-Generated Installment Payments Transactions [preauthorization and completion]).....	762
Subelement 26 (Merchant-Generated Installment Payments: Receipt Information).....	764
Subelement 27 (ATM Credit Card Cash Advance Installments).....	764
Subelement 28 (Merchant Fraud Score Data).....	767
Subelement 29 (Brazil Merchant Tax ID).....	768
Subelement 035 (Issuer Fee Inquiry Indicator).....	769
Subelement 036 (Issuer Fee Amount).....	769
Subelement 042 (Card Acceptor Tax ID).....	770
DE 113 to DE 119 (Reserved for National Use).....	771
DE 120 (Record Data).....	772
Stand-in account file MCC102.....	773
Electronic warning bulletin file MCC103.....	775
Payment cancellation file MCC105.....	776
PAN mapping file MCC106.....	778
Application transaction counter (ATC) file MCC109.....	780
PAN-PAR (Payment Account Reference) mapping file MCC111.....	781
DE 120 Usage for Address Verification Service.....	782
DE 121 (Authorizing Agent Identification Code).....	783
DE 122 (Additional Record Data).....	784
DE 123 (Mastercard Merchant Data Services).....	785
Subelement 1 (Merchant Data Services).....	786

Subelement 2 (Original Merchant Data).....	788
Subelement 3 (Mastercard Merchant Data Cleansing Service).....	790
Subelement 4 (Merchant Data Cleansing Plus).....	792
Subelement 5 (Mastercard Merchant Data Advance).....	794
DE 124 (Member-Defined Data).....	802
Uses and formats of DE 124 ( Member-Defined Data).....	804
DE 124 subfields in a Financial Transaction Request/0200 message.....	804
Subfield 1 (Unique Reference Number).....	804
Subfield 2 (Sender/Payer Name/User ID).....	805
Subfield 3 (Sender/Payer Address).....	805
Subfield 4 (Additional Sender Information).....	806
DE 124 subfields in a Financial Transaction Request Response/0210 message.....	807
Subfield 1 (Unique Reference Number).....	807
Subfield 2 (Recipient).....	807
Subfield 3 (Recipient Address).....	808
Subfield 4 (Reserved Data).....	808
DE 124 (Member-defined data: Mastercard Send).....	809
DE 124 (Member-defined data [Argentina Domestic Use Only]).....	809
DE 124 usage for Argentina domestic use only.....	810
Subfield 1 (Billing Period).....	810
Subfield 2 (Recurrent Payment Reference Number).....	810
Subfield 3 (Card Acceptor Tax ID).....	811
Subfield 4 (Legal Corporate Name).....	811
Subfield 5 (Cardholder Identification Method).....	812
Subfield 6 (POS Invoice Number).....	812
DE 124 usage for Brazil only.....	813
Credito Direto ao Consumidor (CDC) transactions with Maestro in Financial Transaction Request/0200 message.....	813
Subfield 1 (Merchant CNPJ Number to Attend CDC [Timed-based transactions]).....	813
Subfield 2 (Not Used).....	814
Other financed transactions with Maestro in Financial Transaction Request Response/0210 message.....	814
Subfields 1–9 (Not Used).....	814
Subfield 10 (CET: Total Annual Effective Cost).....	815
Subfield 11 (CET: Total Annual Effective Cost).....	815
Subfield 12 (Not Used).....	815
Distribution transactions with Maestro in Financial Transaction Request/0200 message.....	816
Subfield 1 (Not Used).....	816
Subfield 2 (Distribution [Distributor Code]).....	816
Subfield 3 (Distribution [Distributor Code]).....	817
Subfield 4 (Distribution [Issuer Reference Code]).....	817

---

Subfield 5 (Not Used).....	817
Purchase transaction with specific credit lines in Financial Transaction Request and Response/0200 and 0210 messages.....	818
Subfields 1–4 (Not Used).....	818
Subfield 5 (Issuer and Acquirer Reference Code).....	818
Subfield 6 (Not Used).....	819
Custo Efetivo Total (CET) for ATM cash withdrawal with credit card in a Financial Transaction Request Response/0210 message.....	819
Subfields 1–12 (Not Used).....	819
Subfield 13 (CET: Total Annual Effective Cost).....	819
Subfield 14 (Not Used).....	820
Discretionary message on sales slip with Maestro in Financial Transaction Request/0200 message.....	820
Subfields 1–5 (Not Used).....	820
Subfield 6 (Discretionary Message on Sales Slip Supported).....	821
Subfield 7 (Not Used).....	821
Discretionary message on sales slip with Maestro in Financial Transaction Request Response/0210 message.....	822
Subfields 1–6 (Not Used).....	822
Subfield 7 (Discretionary Message on Sales Slip Code).....	822
Subfield 8 (Discretionary Message on Sales Slip).....	822
Subfield 9 (Not Used).....	823
Subelement 023 (PIN Length Edit Error Message Code in a Financial Transaction Request Response/0210 Message).....	823
Maestro-branded (IIAS) healthcare transactions.....	824
DE 124 (Member-Defined Data [Colombia Domestic Use Only]).....	825
Subfield 1 (Card Issuer Data).....	825
Subfield 2 (Tax [IVA]).....	825
Subfield 3 (Tax Amount Base).....	826
Subfield 4 (Retailer Data).....	826
Subfield 5 (Terminal Acquirer Data).....	826
Subfield 6 (Original Processing Code).....	827
Subfield 7 (Bill Payment/Top Up Data).....	827
Subfield 8 (Local POS Data).....	828
Subfield 9 (Local Response Codes).....	828
Subfield 10 (Original Transaction Data).....	829
Subfield 11 (Payment Indicator).....	829
Subfield 12 (Interchange Code).....	830
Subfield 13 (Interchange Fixed Amount).....	830
Subfield 14 (Interchange Percentage).....	831
Subfield 15 (Local Interchange Group).....	831
Subfield 16 (IAC Tax Amount).....	831
DE 124 (Member Defined Data [Mexico rePower Use Only]).....	832

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Subfield 4 (Reference Deposit Number).....	833
Subfield 5 (Merchant Fee).....	834
DE 124 (Member Defined Data [Uruguay Domestic Maestro POS Transactions Use Only]).....	834
Subfield 1 (Merchant Tax ID).....	834
Subfield 2 (Original Transaction Amount).....	835
Subfield 3 (Total Amount Applicable for Discount).....	835
Subfield 4 (Local Regulation Identifier).....	836
Subfield 5 (Discount Amount).....	836
Subfield 6 (Discount Cap Reached).....	837
Use of Data Element 124 by message type and card type.....	837
DE 125 (New PIN Data).....	838
DE 126 (Switch Private Data).....	839
Subfield 1 (Settlement Service Data).....	841
Subfield 2 (Single Message System Private Data 1).....	841
Subfield 3 (Cross-Border Transaction Indicator).....	842
Subfield 4 (Currency Indicator).....	842
Subfield 5 (Fraud Score).....	843
Subfield 6 (Fraud Risk Indicator).....	843
Subfield 7 (Single Message System Private Data 2).....	844
DE 127 (Processor Private Data).....	845
DE 128 (Message Authentication Code [MAC]).....	847
<b>Chapter 5: Program and service formats.....</b>	<b>849</b>
Mastercard Digital Enablement Service.....	850
Message layouts: predigitization payment network messages.....	850
Financial Transaction Request/0200: tokenization eligibility.....	850
DE 124 subfields in Financial Transaction Request/0200: tokenization eligibility.....	851
Financial Transaction Request Response/0210: tokenization eligibility.....	854
DE 124 subfields for Financial Transaction Request Response/0210: tokenization eligibility.....	855
Financial Transaction Request/0200: tokenization authorization.....	858
DE 124 subfields in Financial Transaction Request/0200: tokenization authorization.....	859
Financial Transaction Request Response/0210: tokenization authorization.....	864
DE 124 subfields in Financial Transaction Request Response/0210: tokenization authorization.....	865
Financial Transaction Request/0200: activation code notification.....	869
DE 124 subfields in Financial Transaction Request/0200: activation code notification.....	870
Financial Transaction Request Response/0210: activation code notification.....	872
Financial Transaction Request/0200: tokenization complete notification.....	872

DE 124 subfields in Financial Transaction Request/0200: tokenization complete notification.....	874
Financial Transaction Request Response/0210—Tokenization Complete Notification	875
Financial Transaction Request/0200: tokenization event notification.....	876
DE 124 subfields in Financial Transaction Request/0200: tokenization event notification.....	877
Financial Transaction Request Response/0210: tokenization event notification.....	879
Issuer File Update Request/0302: maintenance (token/PAN update).....	880
DE 120 layout for MCC106 Mastercard Digital Enablement Service (token update)	880
DE 120 layout for MCC106 Mastercard Digital Enablement Service (PAN update: deactivate/suspend/resume token).....	882
Issuer file update request response/0312: issuer token maintenance response (token/PAN update).....	883
Administrative Advice/0620: issuer token notification advice.....	883
DE 120 layout for Administrative Advice/0620: issuer token notification advice for activation code notification.....	884
DE 120 layout for Administrative Advice/0620: issuer token notification advice for tokenization complete notification.....	887
DE 120 layout for Administrative Advice/0620: issuer token notification advice for tokenization event notification.....	890
Administrative Advice Response/0630: issuer token notification advice response.....	893
 <b>Chapter 6: Communication protocols.....</b>	 895
Overview.....	896
Connecting to the Mastercard Network.....	896
Mastercard interface processor (MIP) and debit interface unit (DIU).....	896
Mastercard network.....	898
Online transaction communications.....	898
Batch file transmission.....	898
Dial back-up and data priority.....	898
Mastercard Network infrastructure.....	899
Multi-protocol label switching (MPLS).....	899
Service interruption.....	900
Service delivery points (SDP).....	900
Online communication using MIP/DIU.....	901
File transfer using VPN.....	902
VPN file transfer using TCP/IP.....	902
Mastercard Digital Enablement Service.....	902
 <b>Chapter 7: Encryption.....</b>	 904
Overview.....	905
Registration of member security officers.....	905

Key naming convention.....	905
Dynamic key encryption: working key.....	906
Static key encryption: working key.....	907
Mastercard Network PIN verification services.....	907
Single Message System key management.....	908
Master file keys.....	908
Communication keys.....	908
Working key.....	909
Single Message System security requirements.....	909
Physically secure device (PSD).....	910
PIN encryption/decryption process.....	910
Zone key management.....	912
Key exchange and PIN validation data flows.....	913
Triple DES.....	913
Double key length.....	913
Triple key length.....	914
Customer testing.....	915
Network key management responsibilities.....	915
ANSI PIN block format.....	916
PIN encryption.....	916
Sanity checks.....	920
Security provisions.....	921
PIN generation verification.....	921
ABA.....	921
Required functionality.....	923
Detection and replacement of corrupt or compromised keys.....	924
Fallback to clear text.....	925
Emergency communication key procedures.....	925
Notices.....	926

## Summary of changes: 8 November 2022

To locate these changes online, click the hyperlinks in the following table.

Description of change	Source	Where to look
To DE 104, added an encoding scheme and subelement 004 with one subfield.	<i>AN 6037 Introduction of Digital Service Provider ID</i>	<ul style="list-style-type: none"> <li>• <a href="#">DE 104 (Digital Payment Data)</a></li> <li>• <a href="#">Subelement 004 (Additional Digital Data)</a></li> <li>• <a href="#">Subfield 001 (Digital Service Provider ID)</a></li> </ul>
Added to application notes stating that Mastercard will not perform a valid values check on DE 108, subelement 03, subfield 03 within Financial Transaction Request/0200 messages.	<i>AN 6038 Mastercard Send Funding and Payment Transaction Enhancements</i>	<a href="#">Subfield 03 (Funding Source)</a>
Added to application notes stating that Mastercard will not perform a valid values check on DE 108, subelement 03, subfield 05 within Financial Transaction Request/0200 messages.	<i>AN 6038 Mastercard Send Funding and Payment Transaction Enhancements</i>	<a href="#">Subfield 05 (Transaction Purpose)</a>
Removed the "MoneySend" section from the Application notes and replaced it with a new note under the heading "Mastercard Send Funding and Payment transactions."	<i>AN 6038 Mastercard Send Funding and Payment Transaction Enhancements</i>	<a href="#">DE 124 (Member-Defined Data)</a>
Added DE 48, subelement 71 valid Subfield 1, Subfield 2, and Subfield 3 values.	<i>AN 6039 MDES Remote Commerce Enhancements</i>	<a href="#">Valid Subfield 1, Subfield 2, and Subfield 3 value combinations</a>

Description of change	Source	Where to look
Added to the Usage Notes for DE 60, subfield 2 stating that "Issuers participating in MDES: receive Financial Transaction Advice/0220 messages with reason code 141 in DE 60 (Advice Reason Code), subfield 1 (Advice Reason Code) and new value 0216 (Reject: DTVC Invalid/Expired) in DE 60, subfield 2 (Advice Detail Code) when a static or cloud token transaction is declined to the acquirer due to an invalid DTVC."	AN 6039 MDES Remote Commerce Enhancements	Subfield 2 (Advice Reason Detail Code)
Revised advice reason detail code value 0216	AN 6039 MDES Remote Commerce Enhancements	Message type 0220: financial transaction advice
Added advice reason detail code 0217	AN 6060 Revised Advice Reason Code for Cardholder Selection of Payment Channels in India	Message type 0220: financial transaction advice
Added values 24 through 30 to DE 48, subelement 84.	AN 6042 Mastercard Authorization Optimizer Enhancements	Subfield 1 (Merchant Advice Code)
Added DE 48, subelement 09 with three subfields.	AN 6047 Expanded Use of Mastercard In Control Virtual Card Numbers	<ul style="list-style-type: none"> <li>• Subelement 09 (Virtual Card Number Data)</li> <li>• Subfield 01 (Virtual Card Number Indicator)</li> <li>• Subfield 02 (Virtual Card Number)</li> <li>• Subfield 03 (Virtual Card Number Expiration Date)</li> </ul>
Revised DE 112, subelement 42 and added examples.	AN 6054 Enhancements to Card Acceptor Tax ID in Chile and Paraguay	Subelement 042 (Card Acceptor Tax ID)
Standardized terminology and made required clarifications for Mastercard Send.	Mastercard MoneySend and Funding Transactions Program Standards and Mastercard Gaming and Gambling Payments Program Standards	Throughout

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Description of change	Source	Where to look
Updated SLI definitions and other terminology and provided examples of valid combinations	Updates to <i>MDES Technical Specifications for Dual and Single Message System</i>	<ul style="list-style-type: none"> <li>Subfield 1 (Electronic Commerce Security Level Indicator [SLI] and UCAF Collection Indicator)</li> <li>Valid Subfield 1 and Subfield 3 value combinations</li> <li>Subfield 1 (Wallet Identifier)</li> </ul>
Added 9F0A, 5F34, and 9F6E as optional tags for Financial Transaction Request/0200 and Financial Transaction Advice/0220 messages.	AN 1662— <i>Updated List of Optional Tags for Chip Transactions</i>	DE 55 (Integrated Circuit Card [ICC] System-Related Data)

# Chapter 1 Implementation planning

*This section provides an overview of the project planning and review process for new and existing participants.*

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Overview.....	27
Objectives of acceptance testing.....	27
Single Message System test environment.....	28
Debit Mastercard testing requirements for implementation.....	28
Online testing.....	28
Scheduling test time.....	29
Canceling test time.....	29
Processor debit switch test environment.....	29
Electronic fund transfer (EFT) Services.....	30
Acceptance testing requirements.....	30
Simulator testing requirements for new customers.....	30
Simulator testing requirements for existing customers.....	31
Testing multiple terminals.....	31
Testing unique requirements.....	31
Test card requirements.....	32
Recommended ATM screen sets.....	32
ISO 8583 (1987) Financial Transaction Request Response/0210 message format.....	33

## Overview

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This section provides an overview of the project planning and review process for new and existing participants.

An essential component to successful implementation is the review of the project among regional Mastercard®, Maestro®, and Cirrus® staff, and all appropriate personnel within your organization. For best results, schedule this review early in the project-planning phase.

**NOTE:** Before you initiate the planning process, Mastercard strongly encourages you to contact your Mastercard Regional Office to identify the requirements related to a particular project.

This process should occur during the review meeting.

1. Mastercard will answer all general questions regarding the Mastercard Network or this implementation guide.
2. Mastercard and your organization will establish a detailed project plan to identify due dates and responsibilities and to ensure that all parties agree on the process components.
3. Mastercard and your organization will review and answer detailed technical questions or operational guidelines and establish specific timeframes for testing.
4. Mastercard and your organization will schedule additional review sessions, as necessary. These additional review sessions will guarantee consistent, clear communication regarding the status of the implementation project, and generate a timely response to issues that may arise.

## Objectives of acceptance testing

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System testing of all Single Message System processors is an integral part of the implementation plan. Mastercard Network, as the provider of routing, message translation, and settlement services, tests all processors' system environments before implementation to ensure the overall integrity of the Single Message System environment.

For test scripts supporting both online and offline testing refer to the Testing Reference Information Center on Mastercard Connect™.

**NOTE:** Throughout this manual, references to "online" mean that an acquirer or issuer is directly connected to a Mastercard MIP or DIU, and such references are not intended to imply that the acquirer or issuer is connected through any web-based means.

These scripts will assist each processor in complying with the standard processing requirements of the Single Message System. Using these scripts makes it possible to test all conditions expected in the Single Message System production environment. Mastercard will review the completed acceptance tests, including receipt of test transactions and the documented results of each test transaction, to ensure that the processor meets all processor testing requirements.

**NOTE:** Mastercard will not allow any processor to connect to the Mastercard Network unless that processor has completed the minimum requirements for acceptance testing.

Mastercard provides processor testing as a continuing service of the Mastercard Network. To test each processor's online interface, each processor must accept acquirer and issuer processor functionality. All processors can use the test facilities to re-test their internal system changes by scheduling convenient times with their Customer Implementation Services Project manager.

## Single Message System test environment

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The Single Message System maintains a test platform separate from the production system. This test environment enables processors to perform transaction processing with parameters and timeframes that mirror the production system.

Settlement cut-over is included in cycle testing so processors can complete batch processing and balance back to the Mastercard Network before going live to production.

## Debit Mastercard testing requirements for implementation

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For further information on test requirements for implementation, contact your Mastercard Regional Office or the Customer Implementation Services Specialist assigned to your project.

## Online testing

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Customers use the Mastercard Network Test Facility to complete the testing process. After completing the initial testing with the simulator, customers should have resolved any message format and procedural issues.

### Background

The testing process ensures that online testing with a Customer Implementation Services Specialist focuses on the message routing and processing aspects of testing and testing the customer interface to the Mastercard Network. Online testing also creates settlement reports and files, allowing customers to test file transfer and processing.

### Requirements for new customers

All new customers that will have a direct connection to the Mastercard Network must complete online testing with the Single Message System Test Facility.

Required online testing includes the following:

- Financial functionality for customer-supported products and services
- Validation of processing settlement reports and files

- Reject Reason Code Mapping
- Administrative Messages

**WARNING:** During acceptance testing, customers must not make changes to their hardware or software environments. Any changes made by customers will require customers to begin the testing process again.

### Requirements for existing customers

Existing customers can conduct testing with the Mastercard Network Test Facility at any time. They can use the test facility to conduct authorization testing for Single Message System release changes or to test any changes to their authorization interfaces with the Mastercard Network.

Customers also can use the Mastercard Network Test Facility to test Single Message System release changes and other file transmissions between customers and Mastercard.

## Scheduling test time

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To schedule test time, contact your Mastercard regional office or the Customer Implementation Services project manager assigned to your project.

**NOTE:** Simulator testing is required before online testing can occur. For further information on testing procedures, scheduling, canceling, or pricing, please contact your Customer Implementation Services project manager assigned to your project.

## Canceling test time

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To cancel scheduled test time, contact your Mastercard regional office or the Customer Implementation Services Specialist assigned to your project.

## Processor debit switch test environment

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Mastercard highly recommends that processors establish a separate test platform for online testing with the Mastercard Network.

This platform should consist of

- one of each terminal type supported in the production environment and one host processor
- a host processor capable of communicating directly with the Mastercard Network using separate telecommunication lines and modems

**NOTE:** The Mastercard Network can provide separate ports on a customer Mastercard Interface Processor (MIP) and maintain dial-up modems for testing. All processors must coordinate dial-up testing with Mastercard.

- terminals and host that have the same functionality as the production system and the capability to simulate production routing and authorization processes, and
- full batch processing functionality to test reconciliation, settlement, and reporting functions.

To ensure compliance with any applicable government regulations, Mastercard recommends verification of transaction activity (up to and including a customer's statement).

## **Electronic fund transfer (EFT) Services**

As a provider of electronic fund transfer (EFT) services, all processors must successfully meet and complete all test requirements before going live in the Single Message System production system.

## **Acceptance testing requirements**

Each processor is required to complete acceptance testing successfully as an acquirer processor, an issuer processor, or both. A processor can process transactions only on the production system for which they have completed acceptance testing.

Testing cannot begin on a Friday because the acceptance process requires two consecutive error-free days of testing. If a processor fails any portion of the testing process, the entire testing process must begin again.

The processor must test only those transaction types supported by both the processor and the Single Message System, before the processor can participate in the Single Message System production environment.

## **Simulator testing requirements for new customers**

New customers can use the simulator to test their systems for compliance with the processing requirements of the Mastercard Network.

All new customers that will have a direct connection to the Mastercard Network must purchase the most current Mastercard Network Test Simulator—Debit software.

Mastercard requires customers to perform simulator testing before conducting online testing. New customers must use the most current simulator to run predetermined scripts to test their issuing and acquiring host systems.

Customers also must submit simulator trace files to a Customer Implementation Services Specialist for review. If the trace files are error-free and meet testing requirements, Mastercard Customer Implementation Services staff will confirm the successful completion of simulator testing and arrange for customers to conduct online testing.

## **New processor test scripts**

Processors connecting to the Mastercard Network for the first time are required to complete all applicable acceptance test scripts. Customers can obtain these scripts during the project planning phase. Mastercard makes every attempt to test the full variety of conditions that will

occur in an operations environment to minimize production problems when the processor begins production processing. Each script requires the processor to accommodate specific conditions.

For test scripts supporting both online and offline testing refer to the Testing Reference Information Center on Mastercard Connect™.

Personnel assigned to perform acceptance testing should carefully review the appropriate test plan to ensure that all identified conditions can be produced during any given test day.

Conditions that cannot be accommodated in a timely manner during the testing process must be brought to the attention of the Mastercard Regional Office and the Customer Implementation Services Specialist.

The Customer Implementation Services Specialist will determine if the problem identified by the processor makes it unable to satisfy all acceptance testing requirements. The Specialist will document any variances. Significant variances from the approved test plan will be allowed only if the Mastercard Regional Office and the Customer Implementation Services representative approve.

**NOTE:** To initiate all scheduled test sessions, customers must contact their Mastercard Regional Office and the Customer Implementation Services representative. Therefore, customers must ensure that their testing personnel have the necessary facilities and authority to dial out from their Test Data Center.

### **Simulator testing requirements for existing customers**

Existing customers already should have the Single Message System Financial Simulator software package. Mastercard strongly encourages customers to use the simulator for all optional Single Message System release testing before conducting any online testing.

Mastercard may require simulator testing for certain Single Message System releases.

Mastercard must verify simulator testing for all customer-initiated system changes that may affect the customer's interface to the Mastercard Network. Also, any existing customers that implement new products or services must complete appropriate simulator testing before performing any online testing.

### **Testing multiple terminals**

If multiple terminals are available, the processor should perform test transactions simultaneously on multiple terminals to emulate a production environment.

### **Testing unique requirements**

Testing of all applicable transaction processing scenarios for a specific processor may require the addition, modification, or deletion of test cases.

All additions and deletions of test cases must be coordinated with your Mastercard Regional Office or your Customer Implementation Services Specialist. Your Mastercard contact will generate custom acceptance test scripts for all processors that have unique requirements.

For test scripts supporting both online and offline testing refer to the Testing Reference Information Center on Mastercard Connect™.

## Test card requirements

The following describes specific issuer and acquirer processor test card requirements.

### Issuer processor testing

The processor must create a series of test card Track 2 data and PINs to test and analyze multiple test case scenarios (both valid and invalid). Each processor must supply the Single Message System with a series of test card Track 2 layouts with PINs, for a single financial institution for which it performs issuer processing services.

**NOTE: Processors must block test card information from being used in the production system.**

Issuer processors should complete the *Issuer Test Cards for Dual Message Operations—CIS Format* (Form 777 e) to provide the required Track 2 data to the Mastercard Network.

Use the following rules to determine the data requirements for a particular card:

- Processors that do not support balance inquiry (BI) transactions should not provide data for any cards whose identifier begins with **BI**.
- Processors should not provide test data for cards related to unsupported account types. For example, processors that do not support the savings account type are not required to provide data for any test cards whose identifier begins with **SAV**.
- Processors must provide test PINs in the PIN column for each test card required for acceptance testing.

**NOTE: All of the "VALID" cards relate to all account types, and processors must always provide Track 2 data and PINs for these cards.**

### Acquirer processor testing

For acquirer processing systems, Mastercard will provide Track 2 information. During the project planning phase, specific information will be available. To obtain this testing information, processors should contact their Mastercard Regional Office or their Customer Implementation Services Specialist.

## Recommended ATM screen sets

At an ATM terminal, when a transaction is declined, the appropriate use of issuer-generated response codes is critical to communicate accurately to the cardholder the reason for the denial.

Misrepresentation or a lack of information for cardholders increases their frustration and affects use. This also affects processor performance because multiple declines can occur when the cardholder does not receive meaningful feedback. Issuers should use the mapping of recommended screen messages as shown in the following table.

## ISO 8583 (1987) Financial Transaction Request Response/0210 message format

It is the acquirer's responsibility to describe clearly to the cardholder the intent of the action taken by the issuer. Acquirers should use this information to ensure that they are interpreting the response codes accurately.

Response Codes are in data element (DE) 39 of the ISO 8583 (1987) Financial Transaction Request/0200 message format. The table below provides a partial listing of valid response codes for the Financial Transaction Request/0200 message format used by the Single Message System. It also lists definitions, expected acquirer actions, and examples of recommended English-language screen messages. Contact your Mastercard Regional Office for examples of screen messages in other languages.

For a complete listing of response codes, refer to DE 39 in Chapter 4, [Data element definitions](#) of this document.

**Table 1: ISO 8583 (1987) Financial Transaction Request/0200 format: Financial Transaction Request Response/0210 messages response code mapping**

Code	Response code definitions	Issuer usage	Acquirer action	Recommended ATM screen message
00	Approved or completed successfully	Transaction request approved	Approve	
04	Capture card	Transaction request declined  The acquirer should retain the card. No reason is provided for this action.	Capture	<ul style="list-style-type: none"> <li>• Your card has been retained. Please contact your card issuer.</li> </ul> <p>Or,</p> <ul style="list-style-type: none"> <li>• Your card issuer has declined your request and has instructed me to retain your card. Please contact your card issuer.</li> </ul>
12	Invalid transaction	Transaction request declined  The transaction request is not supported or is not valid for the bank identification number (BIN). Card issuers or Intermediate Network Facilities (INFs) should use response code 57.	Decline	<ul style="list-style-type: none"> <li>• I am sorry you have selected an invalid transaction. Do you want to try another transaction?</li> </ul> <p>Or,</p> <ul style="list-style-type: none"> <li>• I am sorry you have selected an invalid transaction. Please try a different transaction type.</li> </ul>

<b>Code</b>	<b>Response code definitions</b>	<b>Issuer usage</b>	<b>Acquirer action</b>	<b>Recommended ATM screen message</b>
13	Invalid amount	<p>Transaction request declined</p> <p>The requested amount is below the minimum limit set by the issuer for the type of transaction requested.</p>	Decline	<ul style="list-style-type: none"> <li>You have selected an invalid amount. Please select amount in multiples of _____</li> </ul> <p>Or,</p> <ul style="list-style-type: none"> <li>Your card issuer has declined your request because the amount requested is invalid. Please try a greater amount.</li> </ul>
14	Invalid card number	<p>Transaction request declined</p> <p>The presented card number is not valid on the issuer's file.</p>	Decline	<ul style="list-style-type: none"> <li>I am sorry I am unable to process your request. Please contact your card issuer.</li> </ul> <p>Or,</p> <ul style="list-style-type: none"> <li>Your request is declined because your card issuer did not recognize your card number.</li> </ul>
15	Invalid issuer	<p>Transaction request declined</p> <p>The transaction request contains a BIN that is unsupported. This response code is valid for Single Message System usage only.</p>	Decline	<ul style="list-style-type: none"> <li>I am sorry I am unable to process your request. Please contact your card issuer.</li> </ul> <p>Or,</p> <ul style="list-style-type: none"> <li>Your transaction request is declined because your card is not supported at this location.</li> </ul>
30	Format error	Transaction request declined improper format	Decline	I am sorry I am unable to process your request. Please contact your card issuer.
41	Lost card	<p>Transaction request declined</p> <p>The acquirer should retain the card. This is a reported lost card.</p>	Capture	<ul style="list-style-type: none"> <li>Your card has been retained. Please contact your card issuer.</li> </ul> <p>Or,</p> <ul style="list-style-type: none"> <li>Your card issuer has declined your request and has instructed me to retain your card because it has been reported lost. Please contact your card issuer.</li> </ul>

<b>Code</b>	<b>Response code definitions</b>	<b>Issuer usage</b>	<b>Acquirer action</b>	<b>Recommended ATM screen message</b>
43	Stolen card	<p>Transaction request declined</p> <p>The acquirer should retain the card. This is a reported stolen card.</p>	Capture	<ul style="list-style-type: none"> <li>Your card has been retained. Please contact your card issuer.</li> </ul> <p>Or,</p> <ul style="list-style-type: none"> <li>Your card issuer has declined your request and has instructed me to retain your card because it has been reported stolen. Please contact your card issuer.</li> </ul>
51	Insufficient funds/ over credit limit	<p>Transaction request declined</p> <p>The request will result in an over credit limit or insufficient funds condition.</p>	Decline	<ul style="list-style-type: none"> <li>I am unable to process for insufficient funds. Please contact your card issuer.</li> </ul> <p>Or,</p> <ul style="list-style-type: none"> <li>Your request is declined due to insufficient funds. Please contact your card issuer.</li> </ul>
54	Expired card	<p>Transaction request declined</p> <p>The card number presented is expired.</p>	Decline	Your request is declined because your card has expired. Please contact your card issuer.
55	Invalid PIN	<p>Transaction request declined</p> <p>The cardholder-entered PIN is incorrect.</p>	Decline	<ul style="list-style-type: none"> <li>You have entered your PIN incorrectly. Do you want to try again?</li> </ul> <p>Or,</p> <ul style="list-style-type: none"> <li>Your request is declined because the PIN you entered is incorrect.</li> </ul>
57	Transaction not permitted to issuer/ cardholder	<p>Transaction request declined</p> <p>The card issuer or INF declines the transaction request because it is not supported or is not permitted for the card number presented. Single Message System generates response code 12 when a transaction is declined for invalid transaction selection.</p>	Decline	<ul style="list-style-type: none"> <li>I am sorry you have selected an invalid transaction. Do you want to try another transaction?</li> </ul> <p>Or,</p> <ul style="list-style-type: none"> <li>Your request is declined because it is not supported. Please try a different transaction type.</li> </ul>

<b>Code</b>	<b>Response code definitions</b>	<b>Issuer usage</b>	<b>Acquirer action</b>	<b>Recommended ATM screen message</b>
61	Exceeds withdrawal amount limit	Transaction request declined  The withdrawal amount is in excess of daily defined maximums.	Decline	<ul style="list-style-type: none"> <li>You have exceeded the withdrawal limit. Do you want to select another amount?</li> </ul> Or, <ul style="list-style-type: none"> <li>You have exceeded the daily withdrawal limit. Please contact your card issuer.</li> </ul>
62	Restricted card	Transaction request declined  The card number has been restricted for the type of use requested.	Decline	<ul style="list-style-type: none"> <li>I am sorry I am unable to process your request. Please contact your card issuer.</li> </ul> Or, <ul style="list-style-type: none"> <li>Your request has been declined by your card issuer because your card has been restricted. Please contact your card issuer.</li> </ul>
70	Invalid transaction; Contact Card Issuer	Transaction request declined	Decline	I am sorry. I am unable to process your request. Please contact your card issuer.
71	PIN Not Changed	Transaction request declined  PIN change failed.	Decline	I am sorry I am unable to process your request. Please contact your card issuer.
75	Allowable number of PIN tries exceeded	Transaction request declined  The cardholder has incorrectly entered the PIN in excess of the allowable number of tries established by the issuer.	Decline	You have exceeded the amount of times you can enter your PIN. Please contact your card issuer.

<b>Code</b>	<b>Response code definitions</b>	<b>Issuer usage</b>	<b>Acquirer action</b>	<b>Recommended ATM screen message</b>
78	Invalid or nonexistent account specified (general)	<p>Transaction request declined</p> <p>The from (debit) or to (credit) account specified in the transaction is non-existent or is not associated with the card number presented.</p> <p>Issuers should use this response code to decline a transfer request because of a nonexistent or invalid account.</p>	Decline	Your request is declined because the account selected is invalid.
80	System not available	<p>Transaction request declined</p> <p>The issuer system is not available. INF can generate this response code when the issuer systems are down, or when it cannot complete a transaction request because the issuer's applications or files are not available.</p>	Decline	<ul style="list-style-type: none"> <li>• I am sorry I am unable to process your request. Please contact your card issuer.</li> </ul> <p>Or,</p> <ul style="list-style-type: none"> <li>• Your request is declined because your card issuer's systems are not available. Please try again later.</li> </ul>
89	Unacceptable PIN	<p>Transaction request declined</p> <p>Unacceptable PIN – Retry.</p>	Decline	I am sorry. The PIN you have selected is unacceptable. Please try again.
91	Destination processor (customer processor system [CPS] or INF) not available	<p>Transaction request declined</p> <p>The destination processor is not available. The Single Message System generates this response code when it cannot deliver a transaction request because the destination processor does not have an online connection to The Mastercard Network</p>	Decline	<ul style="list-style-type: none"> <li>• I am sorry I am unable to process your request. Please contact your card issuer.</li> </ul> <p>Or,</p> <ul style="list-style-type: none"> <li>• Your request is declined because your card issuer's systems are not available. Please try again later.</li> </ul>

<b>Code</b>	<b>Response code definitions</b>	<b>Issuer usage</b>	<b>Acquirer action</b>	<b>Recommended ATM screen message</b>
92	Unable to route transaction	Transaction request declined  Insufficient information for routing	Decline	I am sorry I am unable to process your request. Please contact your card issuer.
96	System error	Transaction request declined  A system failure has occurred or the files required for the authorization are not available.	Decline	I am sorry I am unable to process your request. Please contact your card issuer.

Refer to the Testing Reference Information Center on Mastercard Connect™ for additional testing information and guidelines.

## Chapter 2 Message flows

*This section provides definitions of all message types used by the Single Message System.*

Overview.....	41
Message processing conventions.....	41
Issuer post-on-authorization technique.....	41
Late responses.....	42
Acquirer response acknowledgement technique.....	42
Guaranteed advice delivery concept.....	43
Maximum response times.....	48
Authorization/01xx messages.....	49
Debit Mastercard preauthorization and clearing processing.....	51
Financial Transaction/02xx messages.....	52
Financial Transaction Request/0200 and Financial Transaction Request Response/0210.....	55
Financial Transaction Request/0200 and Financial Transaction Request Response/0210: partial approvals with currency conversion assessment.....	55
Financial Transaction Request/0200 and Financial Transaction Request Response/0210: Debit Mastercard partial approvals.....	57
Financial Transaction Request/0200: denied by the Single Message System.....	58
Financial Transaction/02xx: Maestro preauthorization and completion.....	59
Financial Transaction/02xx: exception, transaction failure after Maestro preauthorization.....	60
Financial Transaction/02xx and Acquirer Reversal/04xx: exception, transaction failure after Maestro preauthorization.....	62
Financial Transaction/02xx: exception, Single Message System stand-in processing, late response from issuer.....	63
Financial Transaction/02xx: exception, Single Message System stand-in processing, no response from issuer.....	65
Financial Transaction/02xx: exception, Single Message System stand-in processing, format error from issuer.....	66
Financial Transaction/02xx: exception, Debit Mastercard stand-in processing, no response from issuer.....	68
Financial Transaction/02xx: exception, system failure during acquirer Financial Transaction Request/0200.....	69
Financial Transaction/02xx: exception, stand-in Maestro preauthorization.....	70
Financial Transaction/02xx: exception, system failure during issuer Financial Transaction Request/0200.....	72
Financial Transaction/02xx: exception, system failure during issuer Financial Transaction Request Response/0210.....	73

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Financial Transaction/02xx: exception, late issuer Financial Transaction Request Response/0210.....	74
Financial Transaction/02xx: exception, Financial Transaction Request Response/0210 failure of Single Message System edits.....	76
Financial Transaction/02xx: exception, system failure during Acquirer Financial Transaction Request Response/0210.....	77
Financial Transaction/02xx: exception, time-out of Financial Transaction Request Response/0210 to acquirer.....	78
Financial Transaction/02xx: multiple completion.....	80
File Update/03xx messages.....	82
File Update Request/0302 and File Update Request Response/0312.....	83
File Update/03xx, case 1: Debit Mastercard.....	83
File Update/03xx, case 2: Maestro and Cirrus.....	84
File Update/03xx, case 3: contactless.....	86
File Update/03xx, case 4: ATM premium listing Debit Mastercard, Maestro, and Cirrus.....	87
Reversal Advice/04xx messages.....	88
Reversal Advice/04xx transaction exception processing.....	91
Acquirer reversal advice: exception, system initiated.....	91
Online exception messages.....	93
Administrative Advice/06xx messages.....	94
Administrative Advice/0620: Single Message System-initiated.....	96
Administrative Advice/06xx: processor initiated.....	97
Administrative Advice/0620: processor-initiated time-based exception.....	98
Administrative Advice/0644 for virtual private network: connected acquirers.....	98
Administrative Advice/0644 for virtual private network: connected issuers.....	100
Network Management/08xx messages.....	101
Network Management Request/0800 and Network Management Request Response/0810.....	102
Network Management/08xx: sign-on and sign-off.....	103
Network Management/08xx: echo test.....	104
Network Management/08xx: SAF request by processor to Single Message System.....	106
Network Management/08xx: PIN encryption key change.....	107

## Overview

This section of *Single Message System Specifications* provides definitions of all ISO 8583–1987 message types used by the Single Message System. Also included are transaction flow diagrams that illustrate both standard and exception (such as error condition) message processing requirements at the online application programming level.

This section also discusses the basic transaction processing techniques employed by the Mastercard Network in its implementation of the ISO 8583–1987 message standard. It provides processors with a general overview of the underlying logic for all transaction flow scenarios.

## Message processing conventions

The ISO 8583–1987 online interface uses several basic processing conventions that are implemented uniformly for all financial products. Review these conventions thoroughly before the development of an ISO 8583–1987 interface, as they provide the foundation from which all transaction flow logic is derived.

Some of the most important ISO 8583–1987 message processing concepts include the:

- issuer post-on-authorization concept
- acquirer response acknowledgement concept, and
- guaranteed advice delivery concept.

### Issuer post-on-authorization technique

ISO 8583–1987 online application message processing uses the "post-on-authorization" technique for handling issuer processing system transaction processing for both Authorization/01xx messages and Financial Transaction/02xx messages.

This technique ensures Mastercard Network integrity and minimizes resource use.

**NOTE:** As defined within the ISO 8583–1987 specification, the term "post-on-authorization" does not refer to the actual posting of cardholder accounts for billing purposes. "Post-on-authorization" refers only to the technique used to maintain accurate settlement reconciliation totals between the Single Message System and any attached issuer or acquirer processing systems. The issuer's cardholder account billing subsystem(s) handles the actual posting of cardholder accounts for billing purposes. The online processing procedures described in this document do not include the issuer billing function.

The issuer post-on-authorization procedure does not require the use of Completion Confirmation or Completion Response messages for processing of Authorization Request/0100 messages or Financial Transaction Request/0200 messages at the issuer processing system. This makes it significantly more efficient than the alternative technique known as "post-on-completion." "Post-on-completion" is often used in other EFT environments. It requires Completion Confirmation and Completion Response messages to be transmitted between the acquirer and issuer.

Upon receipt of a Financial Transaction Request Response/0210 message from an issuer, Single Message System assumes the transaction approval will affect the cardholder's account and handles any subsequent exception and reversal situations accordingly. The Single Message System does not return a Financial Transaction Confirmation message back to the issuer. The issuer always assumes that the acquirer normally completed the transaction, unless otherwise advised with an Acquirer Reversal Advice/0420 message from the Single Message System or the acquirer processing system.

**NOTE:** The acquirer may use a Financial Transaction Advice/0220 with a zero transaction amount or Acquirer Reversal Advice/0420 message for full reversals to advise of an incomplete transaction on a Financial Transaction/02xx Maestro® Preauthorization request.

### Late responses

If the Single Message System receives a late response from the issuer to an interactive request message (such as a late Financial Transaction Request Response/0210 message), the Single Message System will have timed-out the issuer processing system.

For financial transactions, the Single Message System responds to the late message, (the issuer processing system Financial Transaction Request Response/0210 message), with an Acquirer Reversal Advice/0420 message. This indicates to the issuer that the Single Message System identified the Financial Transaction Request Response/0210 message as a late response and any financial impact to the cardholder's account must be reversed.

An issuer will receive an Acquirer Reversal Advice/0420 message if the Single Message System timed-out the issuer message and invoked Stand-In processing (if applicable), or if the Single Message System sent a denial to the acquirer. The issuer processing system must always reverse any previous update to the cardholder's account. The issuer may receive one or more advice messages (for example, Financial Transaction Advice/0220 message or Acquirer Reversal Advice/0420 message, as appropriate) to indicate the specific action taken and the completion status of the transaction.

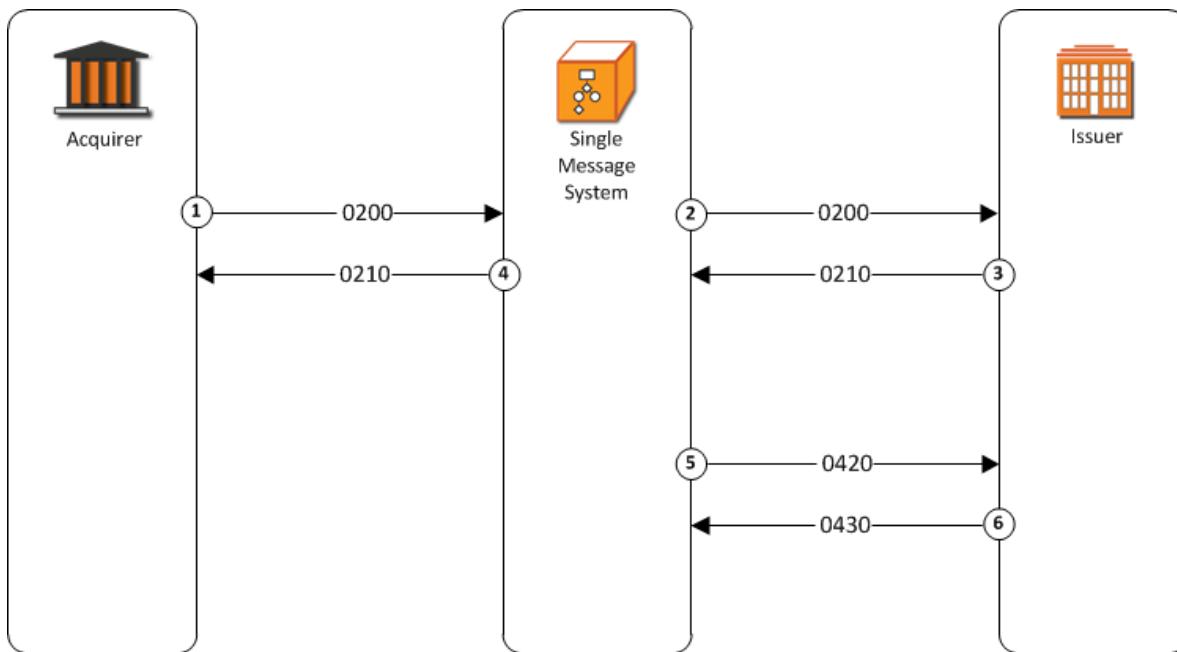
If the issuer has not selected Stand-In processing options, the Single Message System automatically transmits a Financial Transaction Request Response/0210 message to the acquirer with a negative (transaction denied) response code.

### Acquirer response acknowledgement technique

The ISO 8583–1987 online interface optionally supports a positive response acknowledgement technique to help ensure that acquirer processing systems acknowledge receipt of Financial Transaction Request Response/0210 messages at the online application level.

Simple acknowledgement of interactive Financial Transaction messages at the telecommunications protocol level may not provide necessary network integrity for transactions that may be "in progress" when an acquirer processing system fails. Consequently, transaction flows for Financial Transaction/02xx messages may include the option for the acquirer to acknowledge receipt of Financial Transaction Request Response/0210 messages from the Single Message System.

The following figure illustrates the acquirer response acknowledgement concept optionally supported for Financial Transaction/02xx messages.



1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System.
2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer.
3. The issuer generates a Financial Transaction Request Response/0210 message and sends it to the Single Message System.
4. The Single Message System forwards the Financial Transaction Request Response/0210 message to the acquirer.
5. The Single Message System sends an Acquirer Reversal Advice/0420 message to the issuer.
6. The issuer responds with an Acquirer Reversal Advice Response/0430 message to the Single Message System.

### **Guaranteed advice delivery concept**

The ISO 8583–1987 online specification, as implemented on the Mastercard Network, employs a guaranteed advice message delivery concept for all advice messages transmitted through the Single Message System.

When an advice message is forwarded from any processor (acquirer or issuer) to the Single Message System, the guaranteed advice message delivery facility provides message routing capabilities that allow the Single Message System to

- secure the advice message for future delivery

- respond to the originator of the advice message with an advice response to indicate that the advice message has been received and secured by the Single Message System, and
- forward the advice message to the appropriate receiving entity.

If the Mastercard Network cannot deliver an advice message immediately (for example, due to a system or communication failure at the receiving destination) the Single Message System will store the message using an integrated store-and-forward (SAF) processing facility. The SAF process automatically delivers the message to its proper destination when communication with the endpoint destination has been restored. Thus, the delivery of all advice messages routed through the Mastercard Network is **guaranteed**.

Recipients of an advice message must acknowledge receipt with an appropriate Advice Response message. When the Mastercard Network has received the appropriate Advice Response message, the Mastercard Network considers advice delivery to be complete and removes the advice message from any pending SAF processing queues.

The Single Message System processes ISO 8583-1987 advice messages using the guaranteed advice delivery technique.

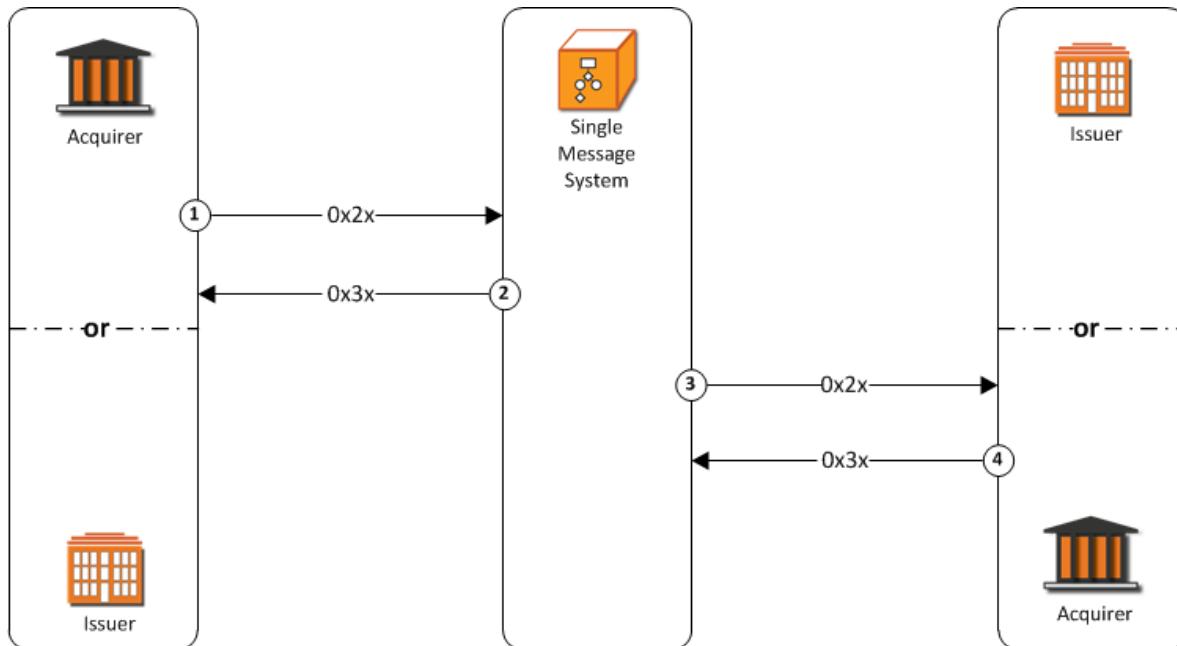
These advice messages and their response messages are as follows:

- Financial Transaction Advice/0220
- Financial Transaction Advice/0220—Debit Mastercard Stand-In
- Financial Transaction Advice Response/0230
- Acquirer Reversal Advice/0420
- Acquirer Reversal Advice Response/0430
- Issuer Reversal Advice/0422
- Issuer Reversal Advice Response/0432

**NOTE:** Other ISO 8583 transaction messages have a message type designation of "advice" but are not delivered by the Mastercard Network from one processor to another. The description of these other advice message types—0620 and 0820—and their flows are found in the detailed message flow descriptions later in this section.

The following figure illustrates the standard transaction flow requirements applicable to advice messages originated by customer processing systems connected to the Mastercard Network.

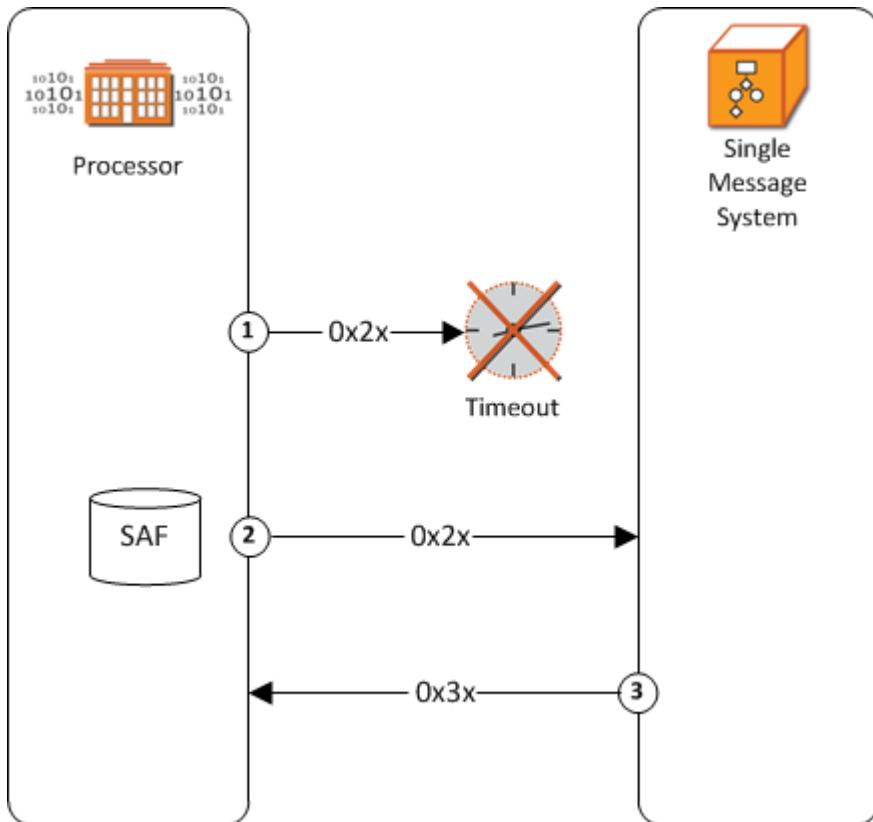
**Figure 1: Guaranteed advice delivery**



1. The acquirer or issuer processor forwards an Advice/0x2x message to the Single Message System.
2. The Single Message System returns an Advice Response/0x3x message after it has received the original advice message.
3. The Single Message System generates a corresponding Advice/0x2x message to the receiving processor.
4. The receiving processor returns an Advice Response/0x3x message as positive acknowledgement of receipt after it has received the advice message.

The following figure illustrates the exception condition transaction flow scenarios for advice messages with acknowledgements.

**Figure 2: Exception, advice delivery from processor following time-out**



1. An issuer or acquirer generates an Advice/0x2x message. If it cannot be transmitted within the processor's configured time-out values, it should be stored by an appropriate store-and-forward (SAF) facility at the customer processing system. The Advice/0x2x message will be transmitted later when communication has been reestablished with the Mastercard Network.
2. When communication is reestablished, the customer processing system forwards the Advice/0x2x message from the SAF facility to the Single Message System.
3. The Single Message System returns an Advice Response/0x3x message after it has received the advice message.

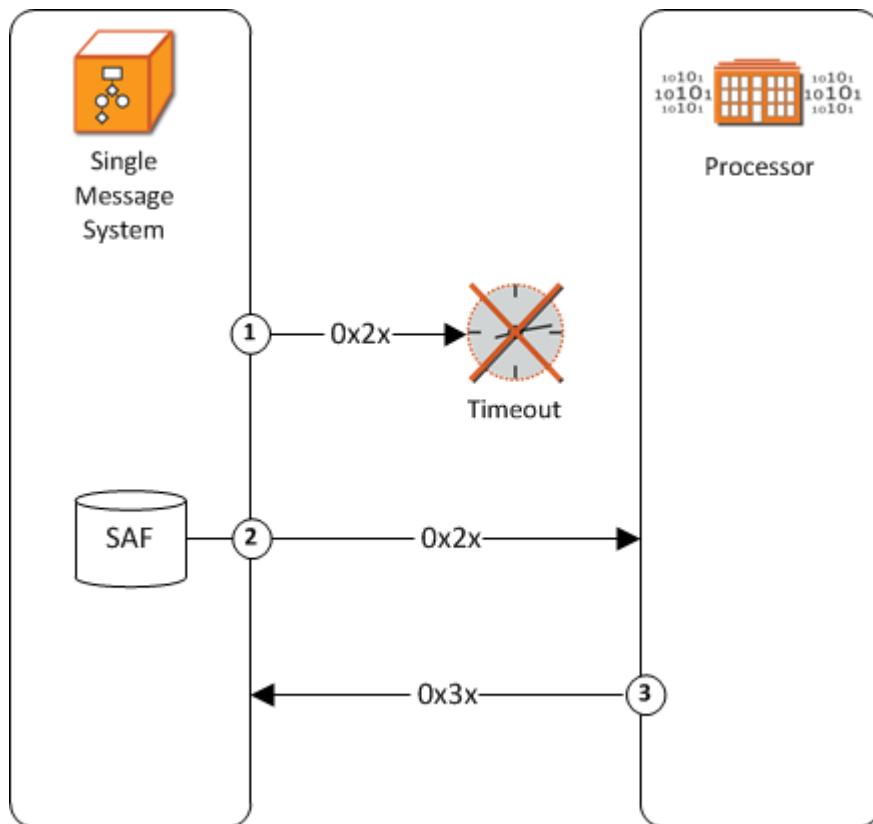
The figure above does not illustrate the only scenario for advice messages. The Single Message System can initiate and send some types of advice messages to an individual processor. An individual processor can initiate and send advice messages to the Mastercard Network, and Mastercard will forward these messages to another processor. However, Mastercard will not forward some types of advice messages initiated by an individual processor to another processor.

The following figure illustrates an "Exception, Advice Delivery from the Mastercard Network Following a Time-out" transaction message flow description that applies to processing during a given settlement period.

If an advice message arrives at the Mastercard Network following the settlement day of the original transaction, reconciliation should be accomplished using one of the following methods:

- Single Message Transaction Manager (refer to the *Single Message Transaction Manager User Guide* for more information)
- Exception item processing (refer to Chapter 3 and Chapter 4 for more information)

**Figure 3: Exception, advice delivery from the Mastercard Network following a time-out**



1. The Single Message System attempts to deliver the Advice/0x2x message to the intended destination. If it cannot be delivered, it is stored at the Single Message System SAF facility for later delivery.
2. The Single Message System forwards the Advice/0x2x message from the SAF facility to the receiving destination when communication has been reestablished with the receiving processor.
3. The receiving processor returns an Advice Response/0x3x message after it has received the advice message.

The "Exception, Advice Delivery from Mastercard following a Time-out" transaction message flow does not illustrate the only scenario for advice messages. The Single Message System can initiate and send some types of advice messages to an individual processor. An individual processor can initiate and send some types of advice messages to the Single Message System, and these messages will be forwarded to another processor. However, some types of advice

messages initiated by an individual processor will not be forwarded to another processor by Mastercard.

The "Exception, Advice Delivery from Mastercard following time-out" transaction message description applies to processing during a given settlement period.

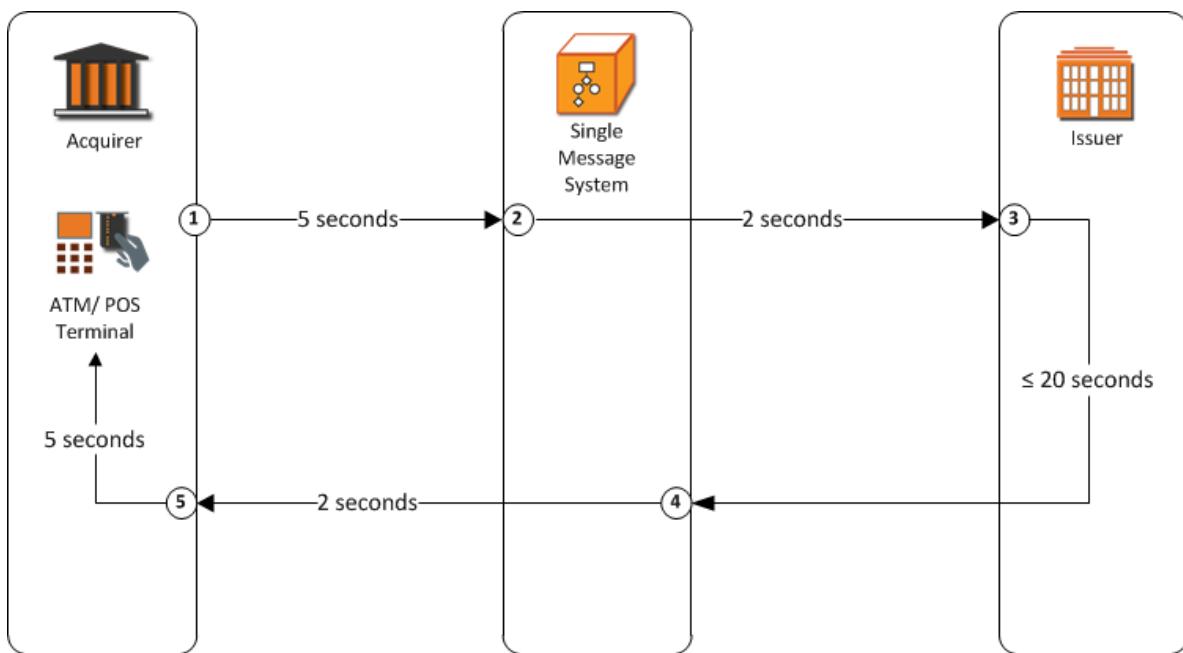
If an advice message arrives at Mastercard following the settlement day of the original transaction, reconciliation should be accomplished using one of the following methods:

- Single Message Transaction Manager (refer to the *Single Message Transaction Manager User Guide* for more information)
- Exception item processing (refer to the *Single Message System Programs and Services* manual for more information)

## Maximum response times

The following figure illustrates the maximum response time(s) available to each processor.

Once a cardholder initiates a transaction, the Single Message System expects the following time intervals in processing a transaction.



1. The acquirer processor delivers a Financial Transaction Request/0200 ATM or point of service (POS) message to the Single Message System within five seconds.
2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer processor within two seconds.
3. The issuer processor generates a Financial Transaction Request Response/0210 message to the Single Message System.

Response is required within the following time intervals:

- Maestro® ATM (20 seconds)

- Maestro® POS (10 seconds)
- Cirrus® (20 seconds)
- Debit Mastercard® (7–9 seconds)

**NOTE:**

Debit Mastercard issuers must respond within 7 seconds for transactions acquired in Brazil, Canada, Netherlands, United States, and the United Kingdom.

Debit Mastercard issuers must respond within 9 seconds for transactions acquired in all other countries.

4. The Single Message System forwards the Financial Transaction Request Response/0210 message to the acquirer processor within two seconds.
5. The acquirer processor returns a Financial Transaction Request Response/0210 message to the ATM or POS device within five seconds.

The following additional maximum response times apply to other message types processed by the Single Message System:

- 0430 responses to 0420 adjustment advices (30 seconds)
- 0432 responses to 0422 adjustment advices (30 seconds)
- 0810 responses to 0800 network management requests (30 seconds)

Mastercard requires acquirers to configure their terminals to wait (without timing out) for a Financial Transaction Request Response/0210 message for a minimum of 30 seconds after submitting a Financial Transaction Request/0200 message. **Mastercard recommends a minimum terminal time-out of forty-five (45) seconds.**

## Authorization/01xx messages

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An issuer processing system (IPS) that is not planning on adding acquirer capabilities may choose to have all its transactions processed as credit card "cash advances" using Authorization Request/0100 and Authorization Response/0110 messages.

**NOTE: This message series is only available for Mastercard credit card issuer-only processors.**

Authorization/01xx messages do not contain sufficient information to post to a cardholder's account at the IPS. Processors post through receipt of a Global Clearing Management System (GCMS) batch file at the end of the business day.

IPS processors using the Authorization/01xx messages have the option of electing Stand-In PIN verification using the Single Message System and Stand-In processing authorizations through Mastercard Central Site (available only if PIN verification has been selected). Refer to the *Single Message System Programs and Services* manual for further discussion of this option.

The network will handle any subsequent exception and reversal situations through the GCMS for Mastercard credit card issuer-only processors.

**NOTE:** Authorization/01xx messages may support balance inquiry transactions.

### **Passing account information in processing code**

The "bridging path" is the Mastercard process to pass account information in DE 3 (Processing Code), subfield 2 (Cardholder Account Type [From]), and subfield 3 (Cardholder Account Type [To]) on transactions acquired on the Dual Message System (Authorization) and bridged to the Single Message System.

This process is used for the following types of transactions:

- Debit Mastercard transactions for issuers connected to the Single Message System
- Maestro cards acquired in the Europe region and issued outside of the Europe region

Currently, Mastercard will begin passing the information when value 10 (Savings Account) or 20 (Checking Account) is received in DE 3, subfield 2 or subfield 3. Otherwise, Mastercard will pass value 00 (No account specified).

Although this change does not affect the specifications of any fields or messages on either system, issuers must be able to support these values in the following messages:

- Financial Transaction Request/0200
- Financial Transaction Advice/0220

### **Dual system processing of an ATM withdrawal failure**

For an ATM withdrawal transaction acquired from the Single Message for a Dual Message issuer, the Single Message System generates a First Presentment/1240 message to GCMS. Should the withdrawal fail for any reason, another First Presentment/1240 message is generated with the reversal.

For ATM balance inquiry transactions acquired from the Single Message for a Dual Message issuer, the Single Message System generates a Miscellaneous Fee Records (1740)-Optional record to collect interchange as a dollar amount that is not provided in DE 4 (Amount, Transaction).

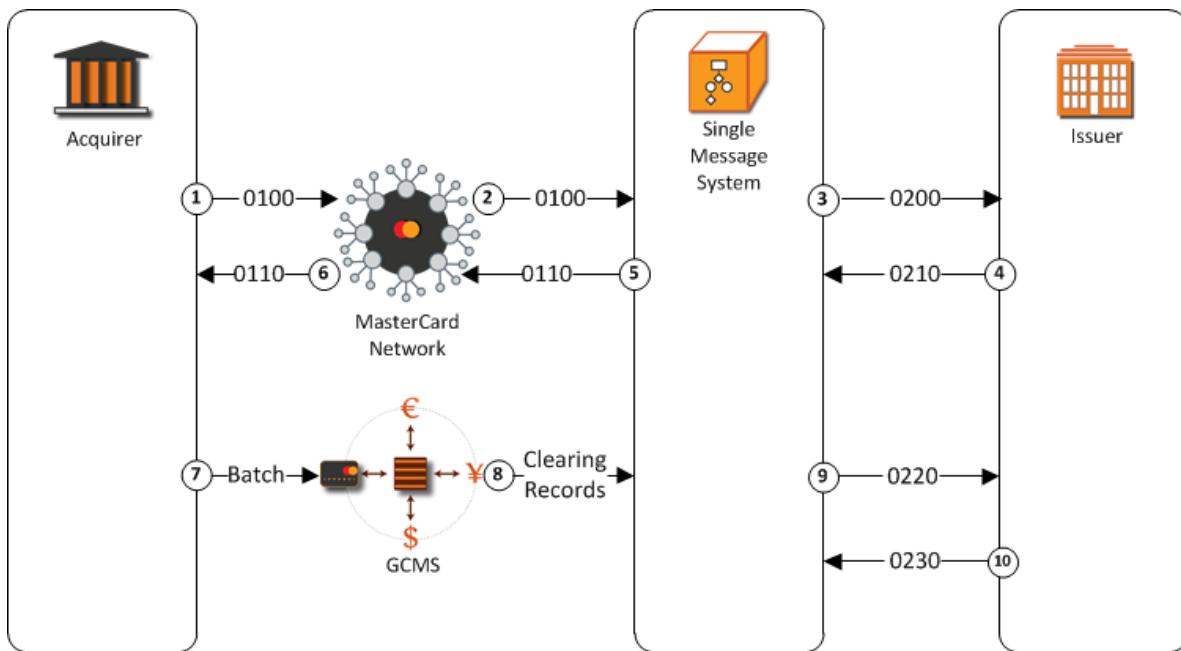
**NOTE:** When the above transaction is reversed due to an ATM withdrawal failure, a reversal message will be generated for the original First Presentment/1240 message. GCMS will deduct the non-financial fee from the reversal message and will not generate a Miscellaneous Fee/1740 non-financial fee message. Refer to the Interchange Manual (Region-specific) for information about non-financial fee amounts and rates.

Refer to the *Customer Interface Specification* manual for information about Authorization/01xx messages used by the Authorization System.

## Debit Mastercard preauthorization and clearing processing

This figure illustrates the standard message flow for a Debit Mastercard® preauthorization and clearing transaction when the Debit Mastercard issuer is connected to the Mastercard Network.

**NOTE:** A transaction using Debit Mastercard is designed to work like a credit card transaction where the completion occurs following a subsequent-day batch clearing process that is initiated from the acquirer.



1. The acquirer sends the Authorization Request/0100 message to the Mastercard Network.
2. The Dual Message System forwards the Authorization Request/0100 message to the Single Message System.
3. The Single Message System converts the Authorization Request/0100 message to a Financial Transaction Request/0200 message and forwards it to the issuer. DE 61 (Point of service [POS] Data), subfield 7 (POS Transaction Status Indicator), will contain the value 4 (Preauthorization Request) indicating that this is a preauthorization request.
4. The issuer responds with a Financial Transaction Request Response/0210 message to the Single Message System.
5. The Single Message System converts the Financial Transaction Request Response/0210 message to an Authorization Request Response/0110 message and sends it to the Mastercard Network.
6. The Mastercard Network forwards the Authorization Request Response/0110 message to the acquirer.
7. The acquirer processing system batches the clearing records and sends them to GCMS at Mastercard. This typically occurs within 3 days of the preauthorization.
8. GCMS groups all clearing records bound for the Mastercard Network and transmits them to the Single Message System.

9. The Single Message System converts each detail record into a Financial Transaction Advice/0220 clearing message and forwards it to the issuer.
10. The issuer responds with a Financial Transaction Advice Response/0230 message to the Single Message System.

**NOTE:** The Financial Transaction Request/0200 message must contain the value 4 in subfield 7 of DE 61 for Debit Mastercard preauthorization transactions. The Financial Transaction Advice/0220 message will contain the value 0 in subfield 7 of DE 61 for a Debit Mastercard preauthorization completion.

## Financial Transaction/02xx messages

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The term "financial transaction" applies when there is sufficient data contained within the individual transaction message to provide actual posting of accounts at the issuer processing system (IPS).

Financial Transaction/02xx messages are used for

- financial transaction requests
- financial transaction request responses
- financial transaction advices, and
- financial transaction advice responses.

The Single Message System processes all Financial Transaction/02xx messages assuming that upon successful completion no subsequent information is required to perform actual cardholder account posting and cardholder billing.

**NOTE:** Chip card transactions at an ATM must be authorized online with a PIN. Financial Transaction Advice/0220 messages from an acquirer for offline chip card transactions at an ATM will be declined with a DE 39 (Response Code) value of 12 (Invalid Transaction).

The following information lists the definitions of all ISO 8583–1987 Financial Transaction/02xx messages supported for the Mastercard Network.

**Table 2: Financial Transaction Request/0200 Message**

Type	Interactive
Routing	From an acquirer to the Mastercard Network
	From the Mastercard Network to an issuer
Purpose	Requests approval of a transaction that, if approved, will permit the application of the transaction financial data to the cardholder's account for issuing a bill or statement.
Response	A Financial Transaction Request Response/0210 message is required.

**Table 3: Financial Transaction Request Response/0210 Message**

Type	Interactive
Routing	From an issuer to the Mastercard Network  From the Mastercard Network to an acquirer
Purpose	Must be sent in response to a Financial Transaction Request/0200 message. It carries the response information required to service (such as approve or deny) the request.
Response	The Single Message System will provide an Acquirer Reversal Advice/0420 message to an issuer when the issuer processing system responds with a late Financial Transaction Response/0210 message to a Financial Transaction Request/0200 message.

**Table 4: Financial Transaction Advice/0220 Message**

Type	Non-interactive
Routing	From an acquirer to the Mastercard Network  From the Mastercard Network to an issuer
Purpose	The Single Message System forwards a Financial Transaction Advice/0220 message to an affected issuer when: <ul style="list-style-type: none"> <li>• An authorization of a Maestro or Cirrus transaction request occurs during Stand-In processing</li> <li>• A Debit Mastercard force post transaction message is received from an acquirer</li> <li>• A Maestro preauthorization completion message is received from an acquirer</li> <li>• A correction is processed to reverse Maestro or Cirrus representment adjustments (valid for Mastercard initiated adjustments only)</li> </ul>
Response	A Financial Transaction Advice Response/0230 message <b>is required</b> .

**Table 5: Financial Transaction Advice/0220—Debit Mastercard Stand-In Message**

Type	Non-interactive
Routing	From the Mastercard Network to an issuer

Purpose	The Single Message System forwards a Financial Transaction Advice/0220—Debit Mastercard Stand-In message to an affected issuer when:  <b>An authorization of a Debit Mastercard transaction request occurs during Stand-In processing.</b>
Response	A Financial Transaction Advice Response/0230 message <b>is required</b> .

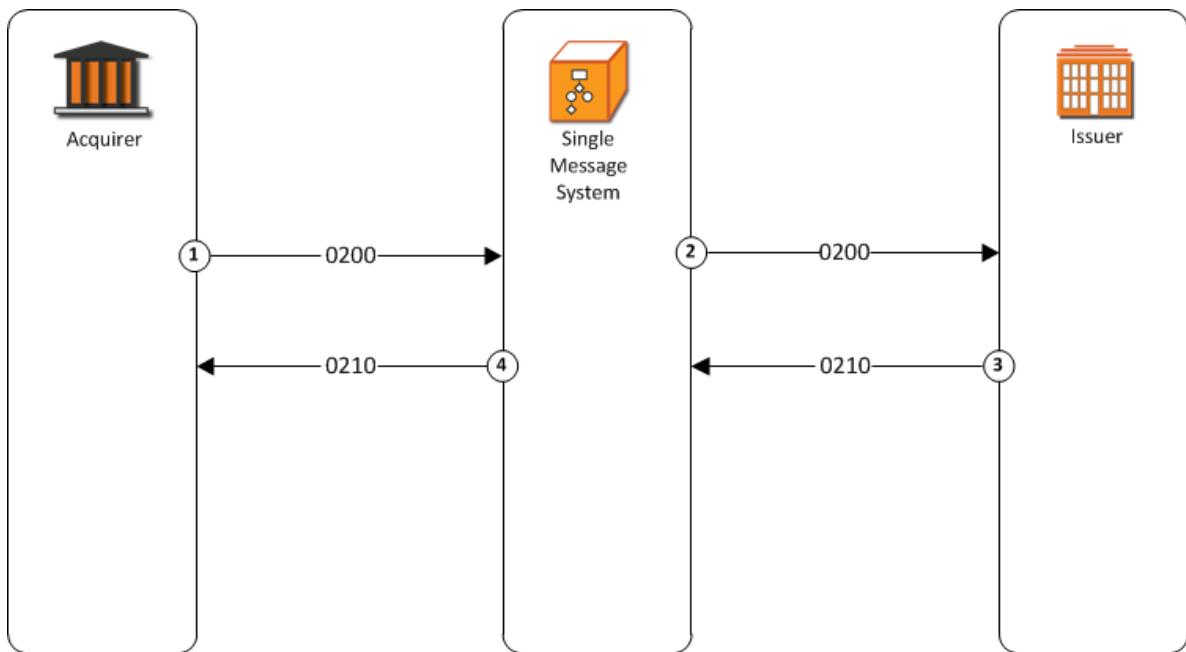
**Table 6: Financial Transaction Advice Response/0230 Message**

Type	Non-interactive
Routing	From the Mastercard Network to an acquirer  From an issuer to the Mastercard Network
Purpose	Must be sent in response to a Financial Transaction Advice/0220 message. Indicates positive receipt of a Financial Transaction Advice/0220 message.
Response	None

The transaction flows provided throughout the remainder of this section define all of the ISO 8583-1987 transaction message flows on the Mastercard Network. These flows sometimes depict a time-out or late response situation.

## Financial Transaction Request/0200 and Financial Transaction Request Response/0210

The following figure illustrates the standard message flow for interactive financial transaction processing.

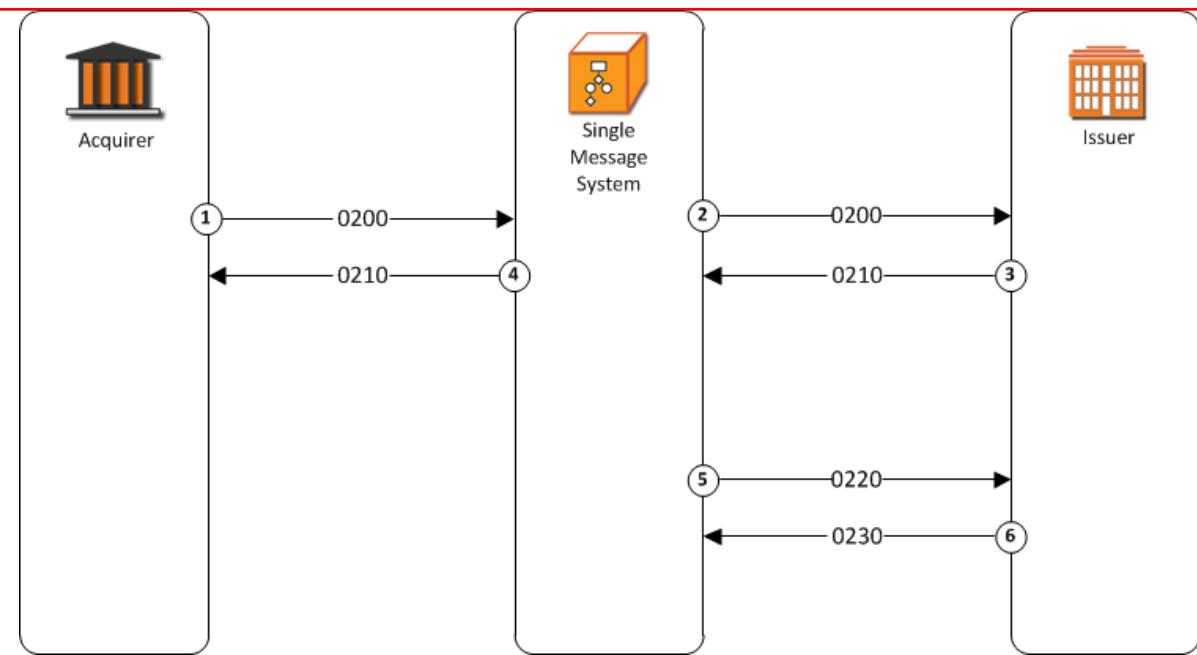


1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System.
2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer.
3. The issuer generates a Financial Transaction Request Response/0210 message and sends it to the Single Message System.
4. The Single Message System forwards the Financial Transaction Request Response/0210 message to the acquirer.

## Financial Transaction Request/0200 and Financial Transaction Request Response/0210: partial approvals with currency conversion assessment

The following figure illustrates the standard message flow for a financial transaction where partial approval processing occurs.

**NOTE:** This scenario is valid only when DE 111 (Amount, Currency Conversion Assessment) is present, and the acquirer and issuer currency is different. It is not valid for all partial approval transactions.



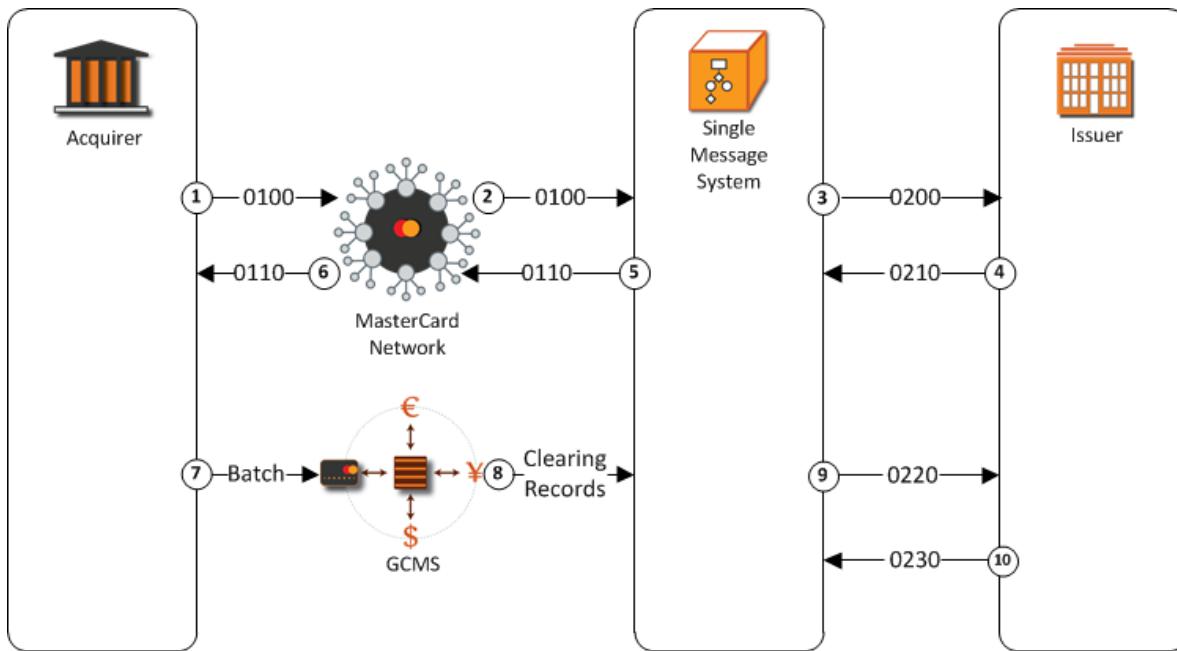
1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System.
2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer.
3. The issuer generates a Financial Transaction Request Response/0210 message and sends it to the Single Message System.
4. The Single Message System forwards the Financial Transaction Request Response/0210 message to the acquirer.
5. If a Maestro issuer provides a partial approval response (DE 39 = 10) to a financial transaction request message, and currency conversion assessment was applied to the original request message, the Single Message System recalculates the settlement and the currency conversion amounts based on the partial approval amount. The Single Message System sends the revised information to the issuer in a Financial Transaction Advice (System-initiated)/0220 message.

**NOTE:** If the Currency Conversion Assessment is recalculated and the Currency Conversion Assessment amount is zero, then the Financial Transaction Advice (System-initiated)/0220 message is not sent.

6. The issuer sends a Financial Transaction Advice Response/0230 message.

## Financial Transaction Request/0200 and Financial Transaction Request Response/0210: Debit Mastercard partial approvals

This figure illustrates the message flow for a Debit Mastercard financial transaction when partial approval processing occurs.

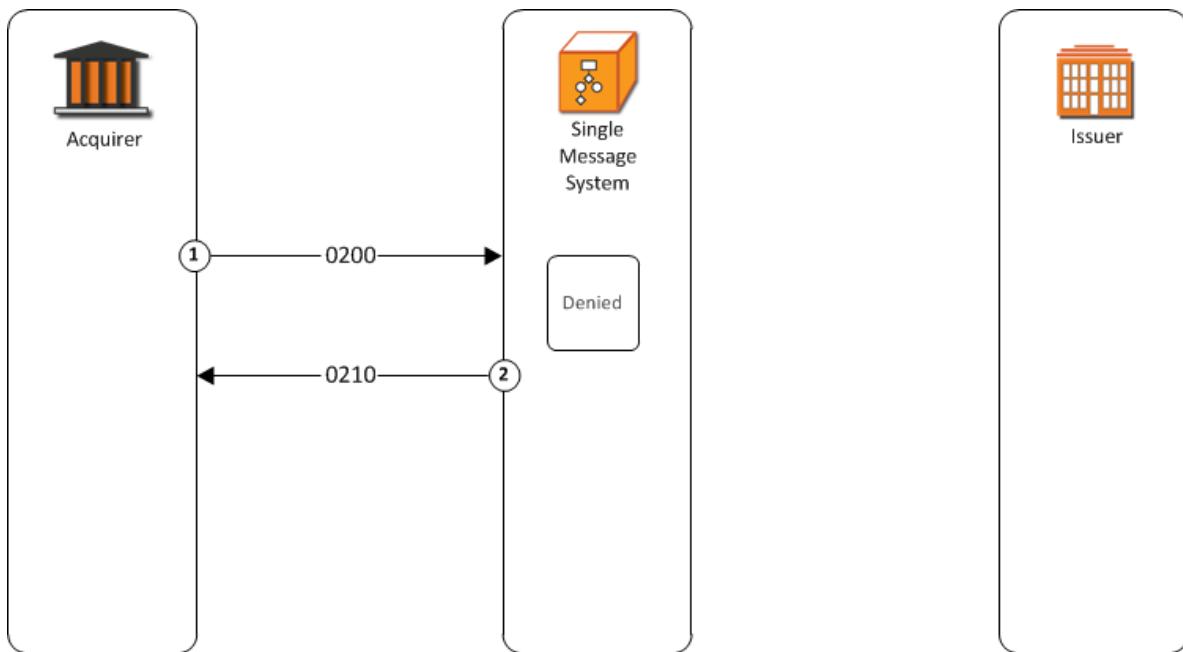


1. The acquirer sends the Authorization Request/0100 for a Debit Mastercard transaction to the Mastercard Network. The acquirer identifies the merchant terminal's ability to receive a partial approval response by populating DE 48 (Additional Data), subelement 61 (POS Data, Extended Condition Codes), subfield 1 (Partial Approval Terminal Support Indicator), value 1 (Merchant terminal can accept partial approvals).
2. The Mastercard Network forwards the Authorization Request/0100 message to the Single Message System including DE 6 (Amount, Cardholder Billing).
3. The Single Message System converts the Authorization Request/0100 message to a Financial Transaction Request/0200 message and forwards to the issuer.
4. The issuer determines the cardholder does not have enough funds in the account to cover the implied amount. The issuer responds with a Financial Transaction Request Response/0210 containing DE 39 (Response Code), value 10 (Transaction request approved for the partial approval amount) with a partial approval amount in DE 6 (Amount, Cardholder Billing).
5. The Single Message System converts the Financial Transaction Request Response/0210 message to an Authorization Request Response/0110 message and sends to the Mastercard Network adding DE 54 (Additional Amounts), subfield 2 (Amount Type), value 57 (Original Amount), and subfield 5 (Amount).
6. The Mastercard Network forwards the Authorization Request Response/0110 message to the acquirer.

7. The acquirer forwards the Authorization Response to the merchant and generates a 1240 record and forwards to GCMS with the actual transaction amount in DE 4 (Amount, Transaction).
8. GCMS forwards the 1240 to the Single Message System with DE 4 (Amount, Transaction) and DE 6 (Amount, Cardholder Billing).
9. The Single Message System generates a Financial Transaction Advice/0220 force post message to the issuer based on information from the 1240 and forwards the Financial Transaction Advice/0220 to the issuer with DE 4 (Amount, Transaction) and DE 6 (Amount, Cardholder Billing).
10. The issuer responds with a Financial Advice Response/0230 to the Single Message System and posts the transaction to the cardholder's account.

### Financial Transaction Request/0200: denied by the Single Message System

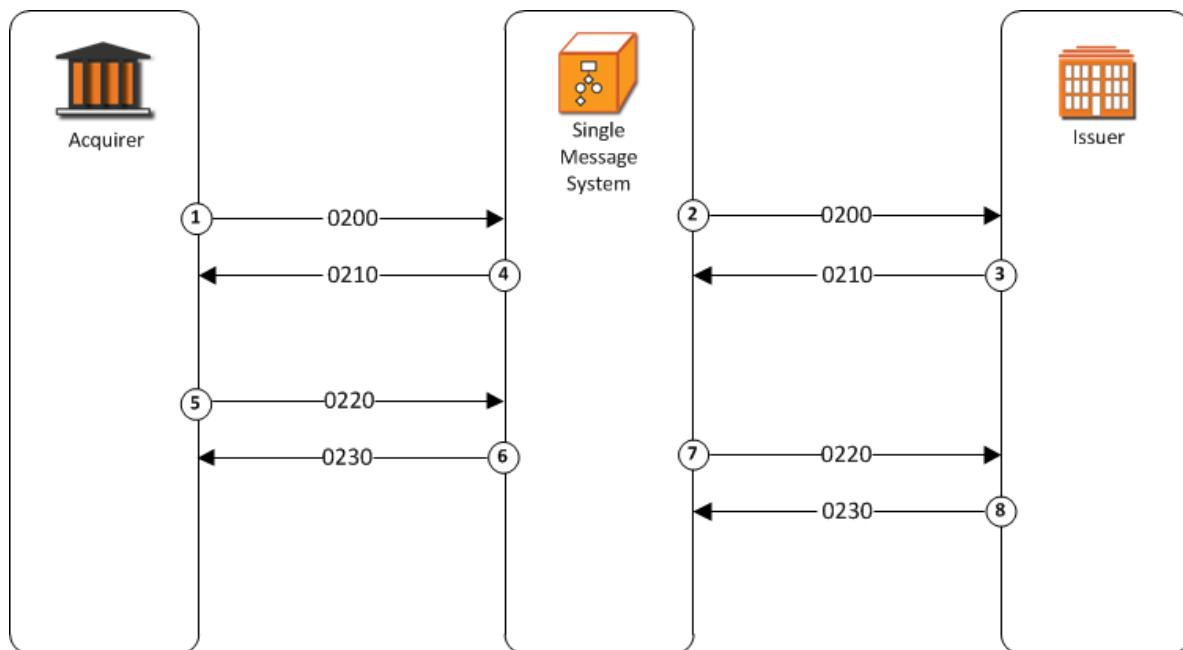
This figure illustrates the standard message flow for a declined Financial Transaction Request/0200 message.



1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System.
2. The Single Message System generates a Financial Transaction Request Response/0210 message to the acquirer, indicating a request denial. The 0210 message contains a Response Code (DE 39) that indicates the reason the message was declined.

## Financial Transaction/02xx: Maestro preauthorization and completion

This figure illustrates a POS preauthorization and completion transaction.



1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System. DE 61 (Point of service Data), subfield 7, (POS Transaction Status Indicator), will contain the value 4 (Preauthorization Request) indicating that this is a preauthorization request. DE 4 (Amount, Transaction) will contain either the acquirer's standard predetermined requested amount or the cardholder's requested amount.
2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer.
3. If approved, the issuer puts a conditional hold on the cardholder's account and returns a Financial Transaction Request Response/0210 message to the Single Message System.
4. The Single Message System returns the Financial Transaction Request Response/0210 message to the acquirer.
5. Within 20 minutes of the original Financial Transaction Request/0200 message, the acquirer must send a Financial Transaction Advice/0220 completion message to the Single Message System. This completion message must be provided with the actual completed amount of the transaction to be posted to the cardholder's account. This completed amount must be provided in DE 95 (Replacement Amounts). DE 61 (Point of service Data), subfield 7 (POS Transaction Status Indicator) and DE 4 (Amount, Transaction) will contain the same values as in the original Financial Transaction Request/0200 message.
6. The Single Message System responds with a Financial Transaction Advice Response/0230 message.
7. The Single Message System forwards the Financial Transaction Advice/0220 message to the issuer.

8. The issuer responds with a Financial Transaction Advice/0230 message.

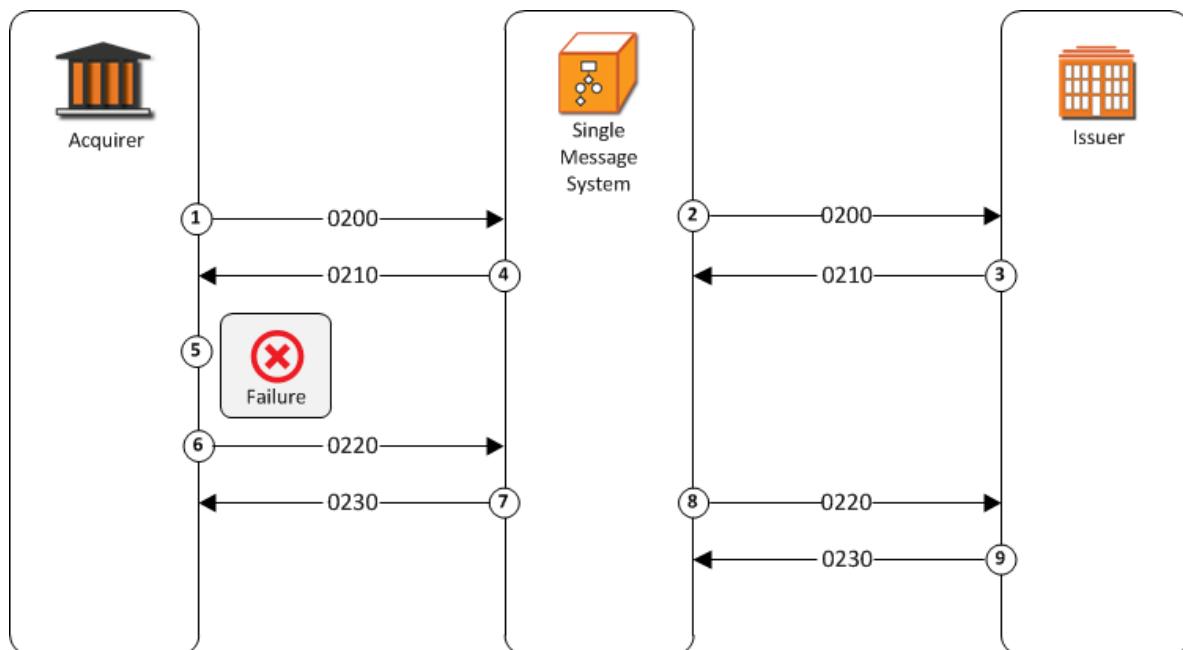
**NOTE:** If the Single Message System does not receive a Financial Transaction Advice/0220 message from the acquirer, The Single Message System assumes the transaction was not completed and no further message processing occurs.

**NOTE:** The Single Message System treats the Maestro preauthorization and completion cycle as a single transaction. This is unlike the Debit Mastercard preauthorization and completion cycle, which is treated as two separate transactions. This difference is because the Maestro processing cycle is completed within 20 minutes on the same settlement day, while the Debit Mastercard completion message is typically processed within 5 calendar days of the preauthorization message.

**NOTE:** The Financial Transaction Request/0200 message must contain the value 4 in subfield 7 of DE 61 for Maestro preauthorization transactions. The Financial Transaction Advice/0220 message will contain the value 4 in subfield 7 of DE 61 for a Maestro preauthorization completion.

### Financial Transaction/02xx: exception, transaction failure after Maestro preauthorization

This figure illustrates exception condition processing for a transaction that did not complete for an amount greater than zero and occurs after the acquirer receives a Financial Transaction/02xx Maestro Preauthorization response.

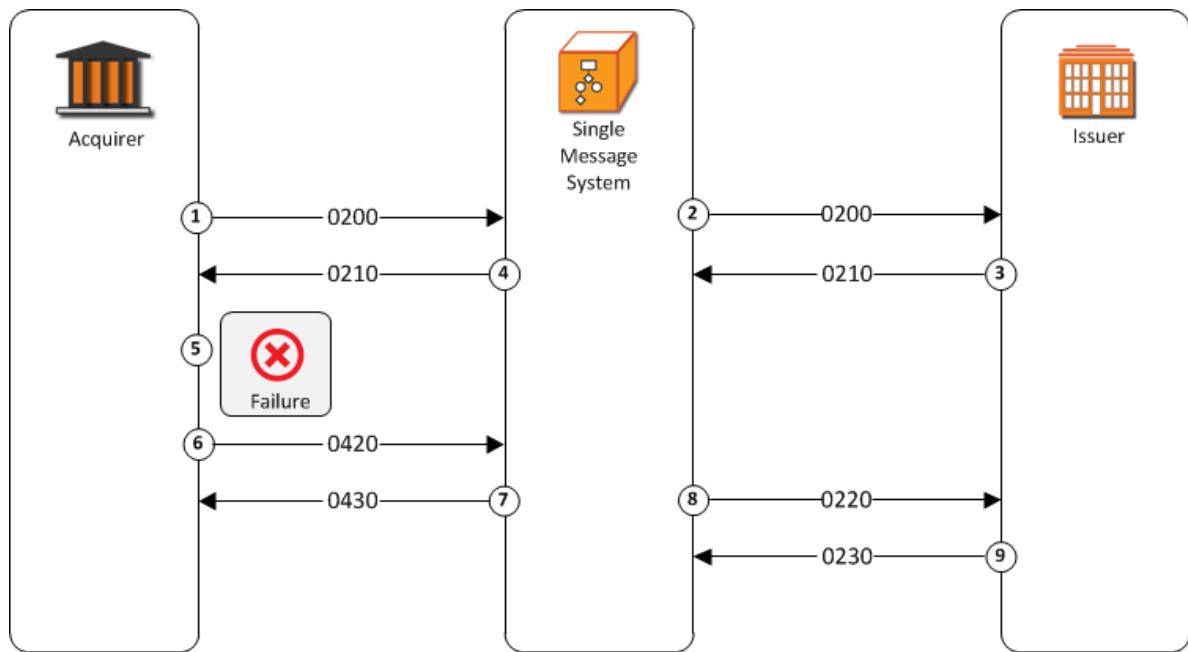


1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System. DE 61 (Point of Service [POS] Data), subfield 7 (POS Transaction Status Indicator), will contain the value 4 indicating that this is a preauthorization request. DE 4 (Amount, Transaction) will contain either the acquirer's standard predetermined requested amount or the cardholder's requested amount.

2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer.
3. If approved, the issuer puts a conditional hold on the cardholder's account and returns a Financial Transaction Request Response/0210 message to the Single Message System.
4. The Single Message System returns the Financial Transaction Request Response/0210 message to the acquirer.
5. The transaction does not complete for an amount greater than zero after preauthorization. The point of failure can occur at the merchant's or acquirer's end.
6. Within 20 minutes of the original Financial Transaction Request/0200 message, the acquirer must send a Financial Transaction Advice/0220 completion message to the Single Message System. This completion message must be provided with a zero completion amount in DE 95 (Replacement Amounts) indicating there was a failure with the transaction. DE 61, subfield 7 and DE 4 will contain the same value as in the original Financial Transaction Request/0200 message. DE 60, subfield 1 (Advice Reason Code), with a value of 290, 291, or 293 should also be included in the financial advice message.
7. The Single Message System responds with a Financial Transaction Advice Response/0230 message containing DE 39 with a value of 00.
8. The Single Message System forwards the issuer a Financial Transaction Advice/0220 message containing DE 95, subfield 1 with all zeros and DE 60 (Advice Reason Code), subfield 1 (Advice Reason Code) echoing the original value provided by the acquirer.
9. The issuer responds with a Financial Transaction Advice Response/0230 message and will release the conditional hold put on the account with the Financial Transaction Request/0200 message.

## Financial Transaction/02xx and Acquirer Reversal/04xx: exception, transaction failure after Maestro preauthorization

This figure illustrates exception condition processing for a transaction that did not complete for an amount greater than zero and occurs after the acquirer receives a Financial Transaction/02xx Maestro Preauthorization response.



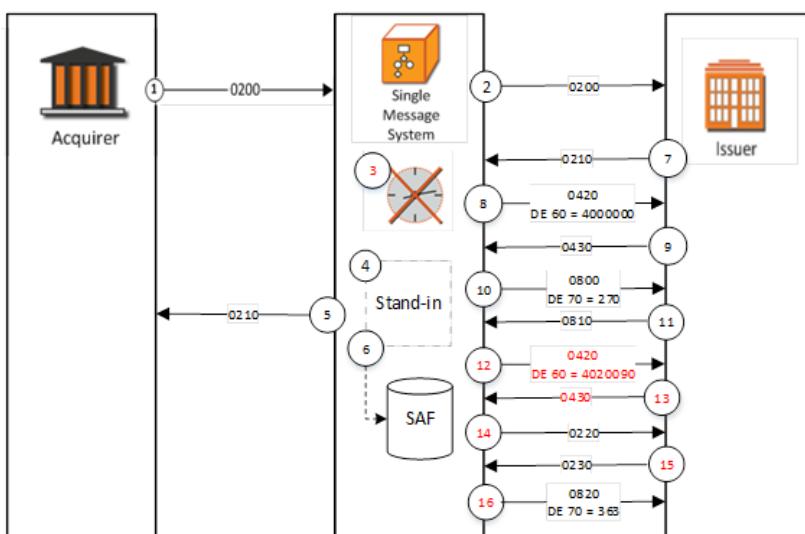
1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System. DE 61, subfield 7 will contain the value 4 indicating that this is a preauthorization request. DE 4 will contain either the acquirer's standard predetermined requested amount or the cardholder's requested amount.
2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer.
3. If approved, the issuer puts a conditional hold on the cardholder's account and returns a Financial Transaction Request Response/0210 message to the Single Message System.
4. The Single Message System returns the Financial Transaction Request Response/0210 message to the acquirer.
5. The transaction does not complete for an amount greater than zero after preauthorization. The point of failure can occur at the merchant or acquirer end.
6. The acquirer sends an Acquirer Reversal Advice/0420 message to the Single Message System. This message must be provided with a zero amount in DE 95, subfield 1, indicating that the preauthorization did not successfully complete for an amount greater than zero.

**NOTE:** A Financial Transaction Advice/0220 message is the recommended message to communicate that a Maestro preauthorization did not successfully complete for an amount greater than zero.

7. The Single Message System responds with an Acquirer Reversal Advice Response/0430 message containing DE 39 with a value of 00.
8. The Single Message System processes internally as a Financial Transaction Advice/0220 message containing DE 95, subfield 1 with all zeros and DE 60, subfield 1, with a value of 290 (APS approved transaction; preauthorized by issuer) and forwards to the issuer.
9. The issuer responds with a Financial Transaction Advice Response/0230 message and will release the conditional hold put on the account with the Financial Transaction Request/0200 message.

### **Financial Transaction/02xx: exception, Single Message System stand-in processing, late response from issuer**

The following figure illustrates exception condition processing for a late issuer Financial Transaction Request Response/0210 message. This example assumes that the issuer subscribes to the Single Message System Stand-In processing service.



1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System.
2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer.
3. The Single Message System detects a time-out condition on the Financial Transaction Request Response/0210 message that is expected from the issuer. Then, Single Message System creates an Acquirer Reversal Advice/0420 message that contains DE 60 (Advice Reason Code) with the value 40200090 (Network Advice: IPS timeout) indicating that no Financial Transaction Request Response/0210 message was received. This message is placed in the SAF file for later delivery to the issuer.
4. If the issuer processor is configured for Stand-In processing, the Single Message System creates an internal financial request message and sends it to Stand-In processing for authorization. The Stand-In processing service validates the request and formulates an internal response message.

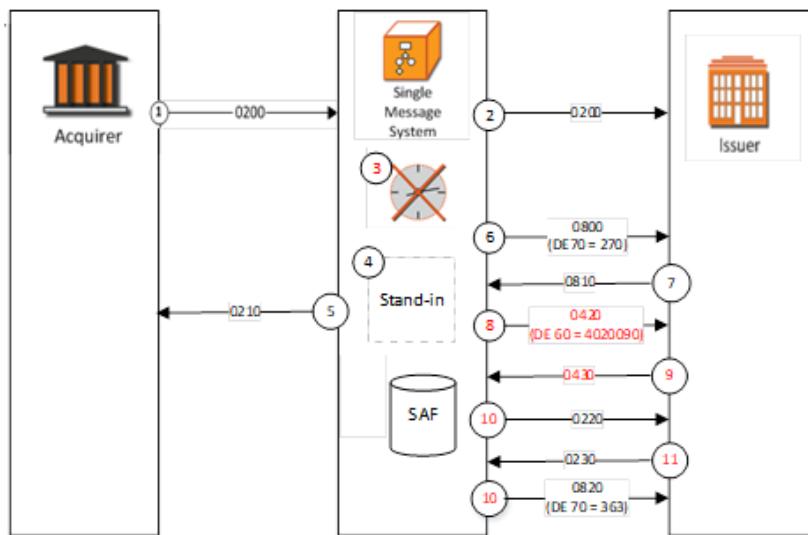
- 
5. The Single Message System uses the internal response to create a Financial Transaction Request Response/0210 message and sends it to the acquirer.
  6. The Single Message System creates a Financial Transaction Advice/0220 message and places it in the SAF file on the Mastercard Network for later delivery to the issuer.
  7. The Single Message System receives an unsolicited (late) Financial Transaction Request Response/0210 message from the issuer.
  8. The Single Message System responds with an Acquirer Reversal Advice/0420 message containing DE 60 (Advice Reason Code) with the value 4000000 (Late response from issuer). This indicates to the issuer that the Financial Transaction Request Response/0210 message is late and was rejected. The issuer must accept that the Single Message System or the acquirer will take appropriate action, and should immediately reverse any impact to the cardholder's account file.

**NOTE:** If the late Financial Transaction Request Response/0210 message has a response code indicating a request denial, the Mastercard Network will not take action (the Acquirer Reversal Advice/0420 message is not sent).

9. The issuer responds with an Acquirer Reversal Advice Response/0430 message to the Single Message System.
10. The Single Message System initiates a Network Management Request/0800 "echo test" message from the configured production sites at regular intervals to verify or establish communication with the issuer.
11. The issuer responds with a Network Management Request Response/0810 message.
12. When communication is established, The Single Message System sends an Acquirer Reversal Advice/0420 message that contains DE 60 (Advice Reason Code) with the value 4020090 (Network Advice: IPS timeout).
13. The issuer responds with an Acquirer Reversal Advice Response/0430 message to the Single Message System.
14. The Single Message System sends a Financial Transaction Advice/0220 message with DE 38 (Authorization Identification Response) containing a six-digit switch serial number to the issuer from the SAF facility.
15. The issuer responds with a Financial Transaction Advice Response/0230 message.
16. Any remaining messages stored in the SAF file for the issuer will also be sent by the Mastercard Network. When completed, the Mastercard Network will send a Network Management Advice/0820 message to indicate the SAF facility has reached an end-of-file (EOF) condition.

## Financial Transaction/02xx: exception, Single Message System stand-in processing, no response from issuer

The following figure illustrates Single Message System Stand-In processing procedures when the issuer cannot complete the transaction. This example assumes that the issuer has subscribed to Stand-In processing service.



1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System.
2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer.
3. The Single Message System detects a time-out condition on the Financial Transaction Request Response/0210 message that is expected from the issuer. Then, Single Message System creates an Acquirer Reversal Advice/0420 message that contains DE 60 (Advice Reason Code) with the value 4020090 (Network Advice: IPS timeout) indicating that no Financial Transaction Request Response/0210 message was received. This message is placed in the SAF file for later delivery to the issuer.
4. If the issuer processor is configured for Stand-In processing, the Single Message System creates an internal financial request message and sends it to Stand-In processing for authorization. The Stand-In processing service validates the request and formulates an internal response message.
5. The Single Message System uses the internal response to create a Financial Transaction Request Response/0210 message, and sends it to the acquirer. The Single Message System can receive another Financial Transaction Request/0200 message for the issuer. If the issuer processing system is still not online, the Single Message System repeats stages 4 and 5 above, as additional Financial Transaction Request/0200 messages arrive at the Single Message System destined for this issuer .
6. The Single Message System initiates a Network Management Request/0800 "echo test" message from the configured production sites at regular intervals to verify or establish communication with the issuer.

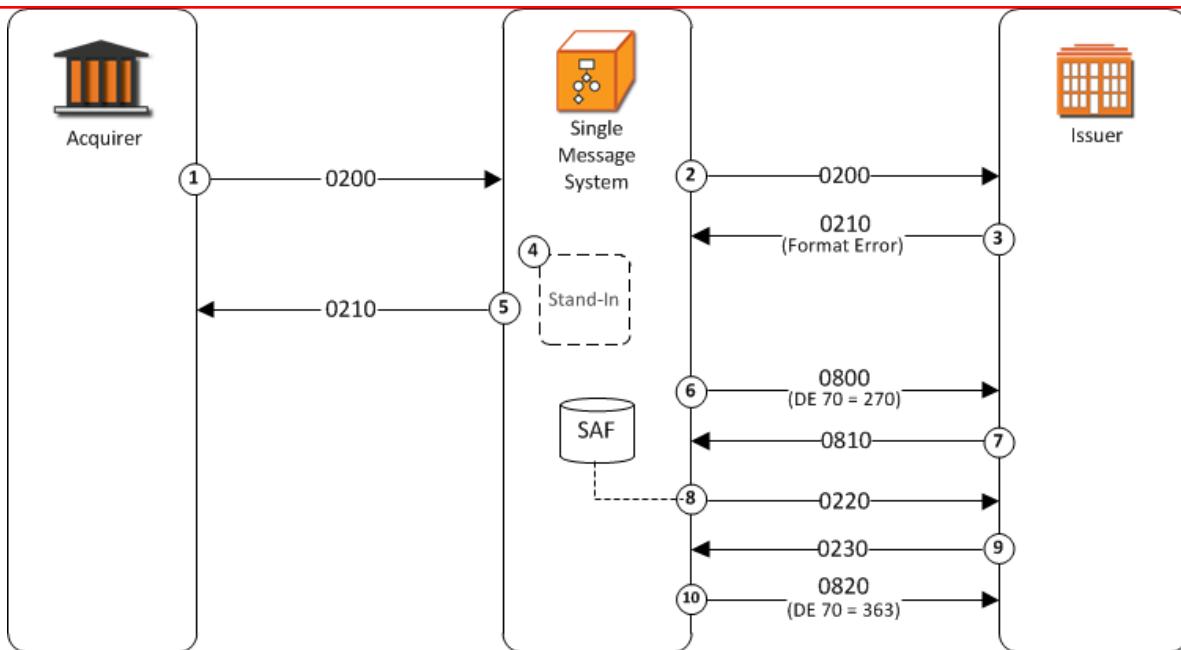
- 
7. The issuer responds with a Network Management Request Response/0810 message.
  8. When communication is established, The Single Message System sends an Acquirer Reversal Advice/0420 message that contains DE 60 (Advice Reason Code) with the value 4020090 (Network Advice: IPS timeout).
  9. The issuer responds with an Acquirer Reversal Advice Response/0430 message to the Single Message System.
  10. The Single Message System sends a Financial Transaction Advice/0220 message with DE 38 (Authorization Identification Response) containing a six-digit switch serial number to the issuer from the SAF facility.
  11. The issuer responds with a Financial Transaction Advice Response/0230 message.
  12. Any remaining messages stored in the SAF file for the issuer will also be sent by the Mastercard Network. When completed, the Mastercard Network will send a Network Management Advice/0820 message to indicate the SAF facility has reached an end-of-file (EOF) condition.

### **Financial Transaction/02xx: exception, Single Message System stand-in processing, format error from issuer**

This figure illustrates Single Message System Stand-In processing procedures when a format error is detected on incoming Financial Transaction Request Response/0210 messages.

If the issuer returns a Financial Transaction Request Response/0210 message, Mastercard evaluates the authorization response to determine if the transaction can be parsed and if DE 39 (Response Code) can be read. If DE 39 can be read and the issuer has approved the transaction, inclusive of the following response codes, this message flow is used (the request is sent to Stand-In processing):

- 00 Approved or completed successfully
- 10 Partial Approval
- 87 Purchase Amount Only, No Cash Back Allowed
- 91 Authorization Platform or issuer system inoperative
- 92 Unable to route transaction
- 96 System error (inclusive of Response Codes)

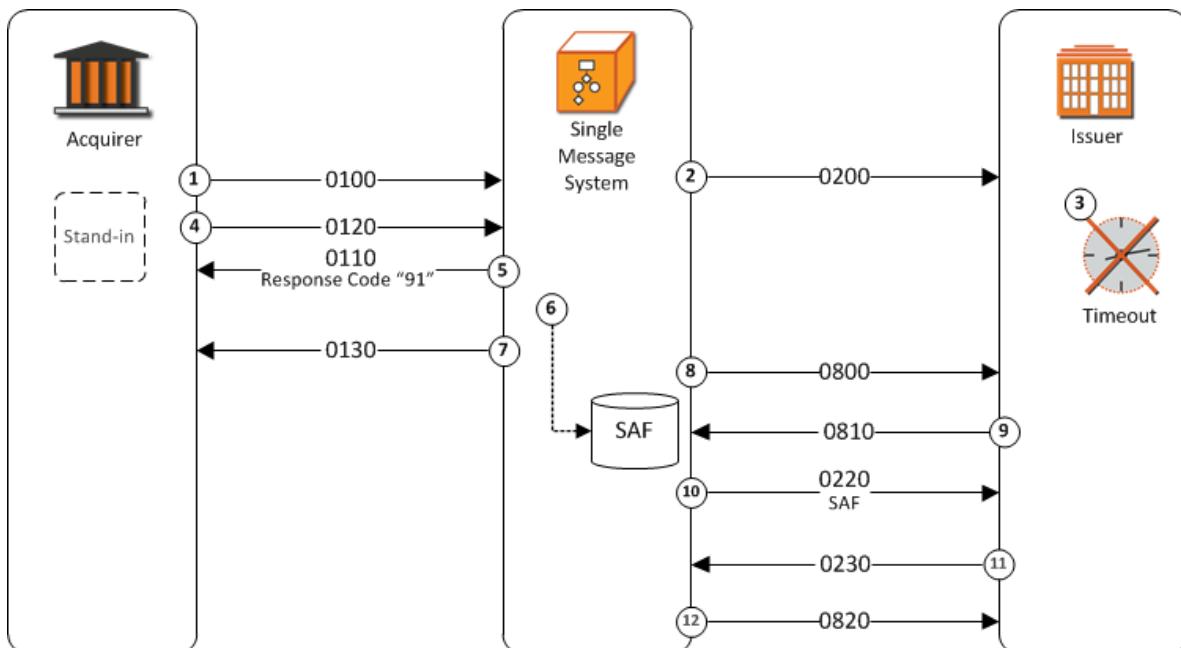


1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System.
2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer.
3. The Single Message System detects a format error on the Financial Transaction Request Response/0210 message that is received from the issuer.
4. If the issuer processor is configured for Stand-In processing, the Single Message System creates an internal financial request message and sends it to Stand-In processing for authorization. The Stand-In processing service validates the request and formulates an internal response message.
5. The Single Message System uses the internal response to create a Financial Transaction Request Response/0210 message, and sends it to the acquirer. The Single Message System can receive another Financial Transaction Request/0200 message for the issuer. If the Financial Transaction Request Response/0210 message from the issuer contains a format error, the Single Message System repeats stages **4** and **5** above, as additional Financial Transaction Request/0200 messages arrive at the Single Message System destined for this issuer.
6. The Single Message System initiates a Network Management Request/0800 "echo test" message from the configured production sites at regular intervals to verify or establish communication with the issuer.
7. The issuer responds with a Network Management Request Response/0810 message.
8. The Single Message System sends a Financial Transaction Advice/0220 message with DE 38 (Authorization Identification Response) that contains a six-digit switch serial number to the issuer from the store-and-forward (SAF) facility.
9. The issuer responds with a Financial Transaction Advice Response/0230 message.

10. Any remaining messages stored in the SAF file for the issuer also will be sent by the Single Message System to the issuer. When completed, the Single Message System will send a Network Management Advice/0820 message to indicate the SAF facility has reached an end-of-file (EOF) condition.

### **Financial Transaction/02xx: exception, Debit Mastercard stand-in processing, no response from issuer**

This figure illustrates Single Message System Stand-In processing procedures when the Debit Mastercard issuer cannot complete the transaction.

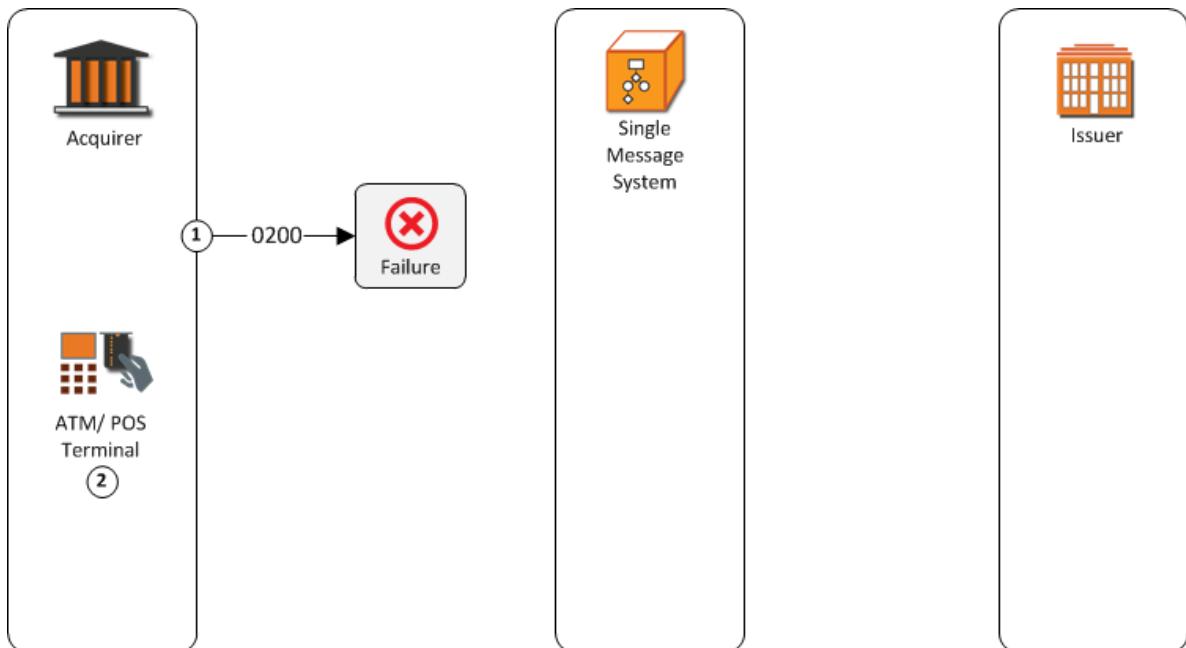


1. The acquirer initiates an Authorization Request/0100 message to the Single Message System.
2. The Single Message System sends a Financial Transaction Request/0200 message to the Debit Mastercard issuer.
3. The Authorization System detects a time-out condition from the Single Message System since the issuer has not responded.
4. The Authorization System stands in for ALL issuers, and sends an Authorization Advice/0120 to the Single Message System.
5. The Single Message System detects a time-out condition on the Financial Transaction Request Response/0210 message that is expected from the issuer. The Single Message System returns a Authorization Request Response/0110 message back to the Authorization System for the original transaction with a response code 91
6. From the Authorization Advice/0120 message received from the Authorization System, the issuer can receive a record of the Financial Transaction Advice/0220—Debit Mastercard Stand-In or a Financial Transaction Request/0200 message which is placed in the SAF file on the Single Message System for later delivery to the Debit Mastercard issuer. Issuers have

- the option of receiving the Financial Transaction Request/0200 message; issuers must contact Mastercard to request this option.
7. The Single Message System responds to the Authorization Advice/0120 from the Authorization System with an Authorization Advice Response/0130 message.
  8. The Single Message System initiates a Network Management Request/0800 "echo test" message from the configured production sites at regular intervals to verify or establish communication with the issuer.
  9. The Debit Mastercard issuer responds with a Network Management Request Response/0810 message.
  10. The Single Message System sends a Store-and-Forward (SAF) Financial Transaction Advice/0220 message with DE 38 (Authorization Identification Response) that includes a six-digit switch serial number to the Debit Mastercard issuer.
  11. The Debit Mastercard issuer responds with a Financial Transaction Advice Response/0230 message.
  12. Any remaining messages stored in the SAF file for the Debit Mastercard issuer also will be sent by the Single Message System to the Debit Mastercard issuer. When completed, the Single Message System will send a Network Management Advice/0820 message to indicate the SAF facility has reached an end-of-file (EOF) condition.

### **Financial Transaction/02xx: exception, system failure during acquirer Financial Transaction Request/0200**

The following figure illustrates exception condition processing for a system or communication failure during the transmission of an acquirer Financial Transaction Request/0200 message.

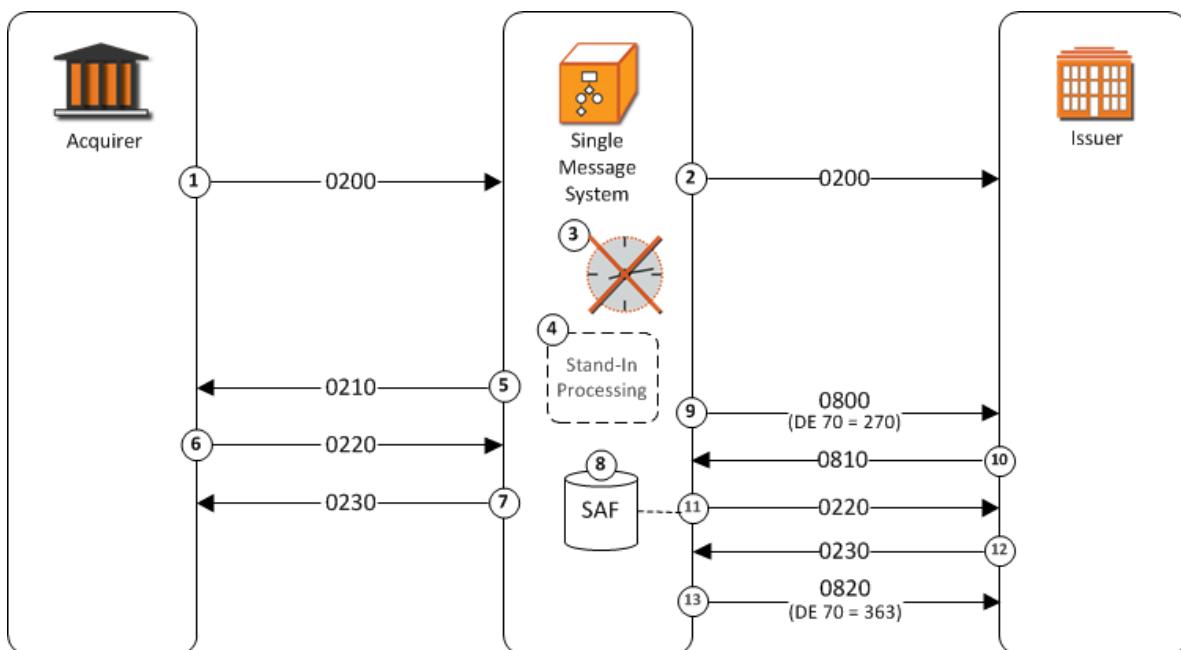


1. The acquirer initiates a Financial Transaction Request/0200 message, but it cannot be delivered to the Single Message System because of system failure.

2. The acquirer processing system is unable to transmit the Financial Transaction Request/0200 message to the Single Message System but must complete the transaction at the point of service. The Single Message System requires that the acquirer deny the transaction request at the point of service. Processing terminates.

### **Financial Transaction/02xx: exception, stand-in Maestro preauthorization**

This figure illustrates a Maestro Preauthorization transaction if a completion transaction is received by the acquirer.



1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System. DE 61 (Point of service [POS] Data), subfield 7 (POS Transaction Status Indicator), will contain the value 4 (preauthorization request) that indicates this is a preauthorization request. DE 4 (Amount, Transaction) will contain either the acquirer's standard predetermined requested amount or cardholder's requested amount.
2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer.
3. The Single Message System detects a time-out condition on the Financial Transaction Request Response/0210 message that is received from the issuer.
4. If the issuer processor is configured for Stand-In processing with the Mastercard Network, the Single Message System creates an internal financial request message and sends it to Stand-In processing for authorization. The Stand-In processing service validates the request and formulates an internal response message.
5. The Single Message System uses the internal response to create a Financial Transaction Request Response/0210 message, and sends it to the acquirer.  
The Single Message System can receive another Financial Transaction Request/0200 message for the issuer.

If the issuer processing system is still not online, the Single Message System repeats stages **4** and **5** above, as additional Financial Transaction Request/0200 messages arrive at the Mastercard Network destined for this issuer.

6. Within 20 minutes of the original Financial Transaction Request/0200 message, the acquirer must send a Financial Transaction Advice/0220 completion message to the Single Message System. This completion message must be provided with the actual completed amount of the transaction to be posted to the cardholder's account.  
This completed amount **must** be provided in DE 95 (Replacement Amounts). DE 61 (Point of service [POS] Data), subfield 7 (POS Transaction Status Indicator) and DE 4 (Amount, Transaction) will contain the same values as in the original Financial Transaction Request/0200 message.
7. The Single Message System responds with a Financial Transaction Advice Response/0230 message.
8. If the acquirer's Financial Transaction Advice/0220 completion message has passed all Single Message System edits, it is placed in the SAF file for later delivery to this issuer.

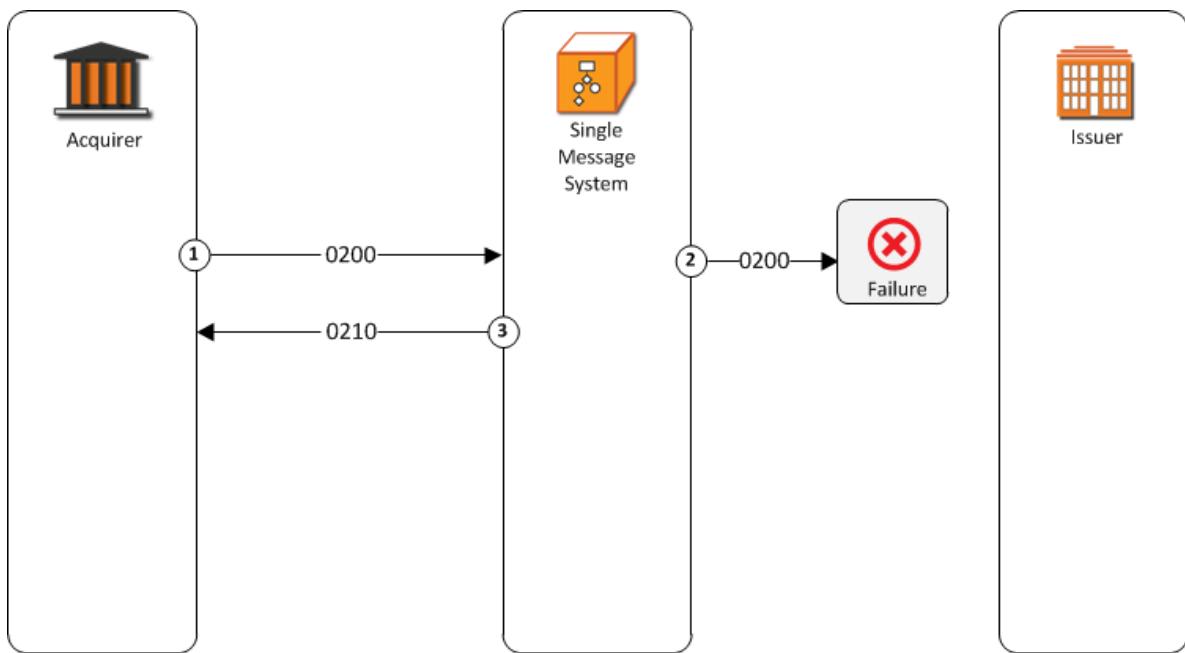
**NOTE:** If the acquirer fails to send the Financial Transaction Advice/0220 completion message, it is not placed in the SAF file, and the issuer will not receive an online completion for the transaction.

9. The Single Message System initiates a Network Management Request/0800 "echo test" message from the configured production sites at regular intervals to verify or establish communication with the issuer.
10. The issuer responds with a Network Management Request Response/0810 message.
11. The Single Message System sends a Financial Transaction Advice/0220 message with DE 38 (Authorization Identification Response) that contains a generated six-digit serial number to the issuer from the SAF facility.
12. The issuer responds with a Financial Transaction Advice Response/0230 message.
13. Any remaining messages stored in the SAF file for the issuer also will be sent by the Single Message System to the issuer. When completed, the Single Message System will send a Network Management Advice/0820 message to indicate the SAF facility has reached an end-of-file (EOF) condition.

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**Financial Transaction/02xx: exception, system failure during issuer Financial Transaction Request/0200**

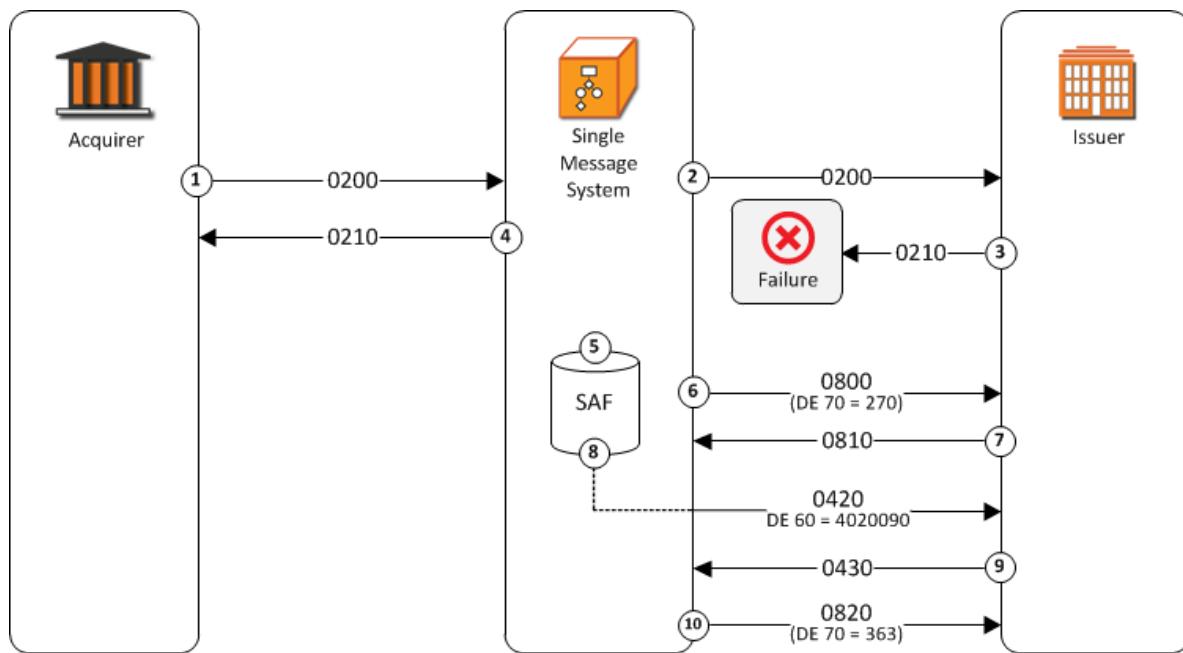
The following figure illustrates exception procedures for a system or communication failure condition during the transmission of a Financial Transaction Request/0200 message.



1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System.
2. The Single Message System attempts to forward the Financial Transaction Request/0200 message to the issuer but is unable to complete the message transmission due to a communication link failure or other problem at the issuer processing system.
3. The Single Message System will generate a Financial Transaction Request Response/0210 message to the acquirer, indicating a request denial.

## Financial Transaction/02xx: exception, system failure during issuer Financial Transaction Request Response/0210

This figure illustrates exception condition processing for a system or communication failure during the transmission of an issuer Financial Transaction Request Response/0210 message.

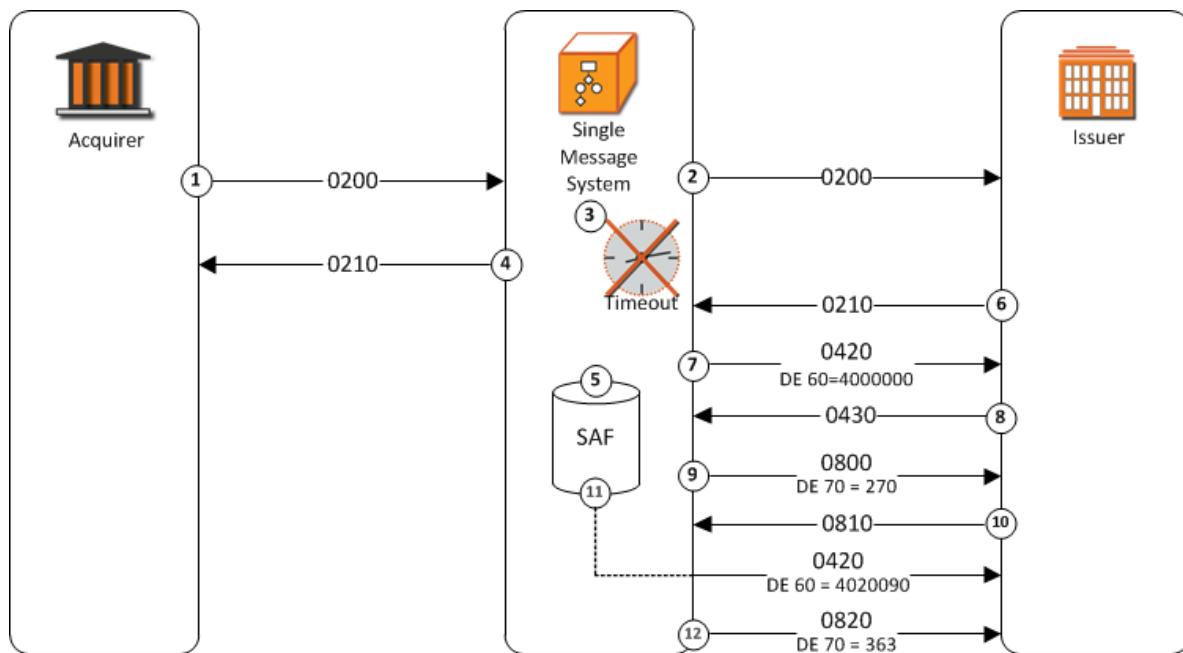


1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System.
2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer.
3. The issuer cannot return the Financial Transaction Request Response/0210 message because of a communication failure between the issuer processing system and the Single Message System. The issuer must assume that the Single Message System or the acquirer will take appropriate action and should immediately reverse the impact to the cardholder's account file if the request was approved.
4. The Single Message System detects a time-out condition because of the issuer processing system failure on the Financial Transaction Request Response/0210 message. The Single Message System generates a Financial Transaction Request Response/0210 message to the acquirer, indicating a request denial.
5. The Single Message System creates an Acquirer Reversal Advice/0420 message that contains DE 60 (Advice Reason Code) with the value 4020090 (Network Advice: IPS time-out error not acceptable from acquirer) indicating that no Financial Transaction Request Response/0210 message was received. This message is placed in the SAF file for later delivery to the issuer.
6. The Single Message System initiates a Network Management Request/0800 "echo test" message from the configured production sites at regular intervals to verify or establish communication with the issuer.

7. The issuer responds with a Network Management Request Response/0810 message.
8. The Single Message System sends an Acquirer Reversal Advice/0420 message that contains DE 60 (Advice Reason Code) with the value 4020090 (Network Advice: IPS time-out error not acceptable from acquirer).
9. The issuer responds with an Acquirer Reversal Advice Response/0430 message to the Single Message System.
10. The Single Message System sends a Network Management Advice/0820 message to indicate the SAF facility has reached an end-of-file (EOF) condition.

### **Financial Transaction/02xx: exception, late issuer Financial Transaction Request Response/0210**

This figure illustrates exception condition processing for a late Issuer Financial Transaction Request Response/0210 message.



1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System.
2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer.
3. The Single Message System detects a time-out condition on the Financial Transaction Request Response/0210 message that is received from the issuer.
4. The Single Message System then generates a Financial Transaction Request Response/0210 message to the acquirer, indicating a request denial.
5. The Single Message System also creates an Acquirer Reversal Advice/0420 message containing DE 60 (Advice Reason Code) with the value 4020090 (Network Advice: IPS time-out error not acceptable from acquirer) indicating no Financial Transaction Request

Response/0210 message was received. This message is placed in the SAF file for later delivery to the issuer.

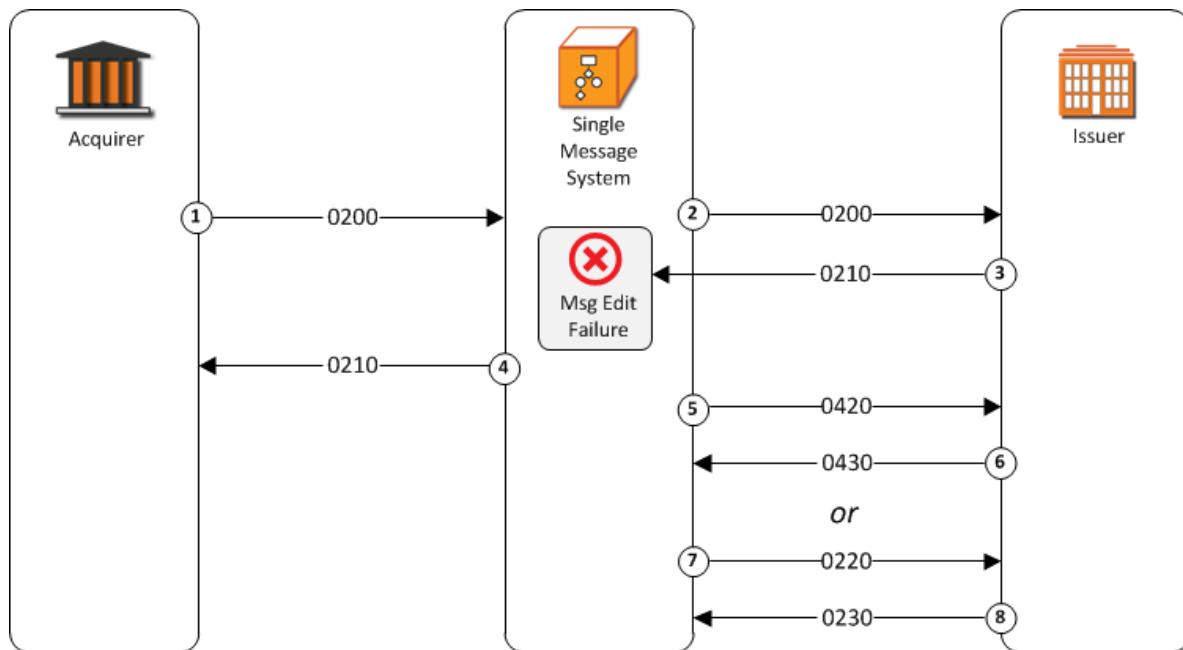
6. The Single Message System receives an unsolicited (late) Financial Transaction Response/0210 message from the issuer.
7. If the late Financial Transaction Request Response/0210 message indicates an approval from the issuer, the Single Message System responds with an Acquirer Reversal Advice/0420 message containing DE 60 with the value 4000000 (Late response from issuer). This indicates to the issuer that this Financial Transaction Request Response/0210 message is late and rejected. The issuer must assume or the acquirer will take appropriate action at this point and should immediately reverse any impact to the cardholder's account file. This stage also applies to approved transfer transactions.

**NOTE:** If the late Financial Transaction Request Response/0210 message has a response code indicating a request denial, then the Single Message System will not take action (the Acquirer Reversal Advice/0420 message is not sent).

8. The issuer responds with an Acquirer Reversal Advice Response/0430 message to the Single Message System.
9. The Single Message System initiates a Network Management Request/0800 "echo test" message from the configured production sites at regular intervals to verify or establish communication with the issuer.
10. The issuer responds with a Network Management Request Response/0810 message.
11. The Single Message System sends the Acquirer Reversal Advice/0420 message containing DE 60 (Advice Reason Code) with the value 4020090 (Network Advice: IPS time-out error not acceptable from acquirer) from the SAF file to the issuer. Any remaining messages stored in the SAF file for the issuer also will be sent by to the issuer.
12. The Single Message System sends a Network Management Advice/0820 message to indicate the SAF facility has reached an end-of-file (EOF) condition.

## Financial Transaction/02xx: exception, Financial Transaction Request Response/0210 failure of Single Message System edits

This figure illustrates exception procedures when the Single Message System processes the Financial Transaction Request Response/0210 message from the issuer, and the message does not pass Single Message System edits.



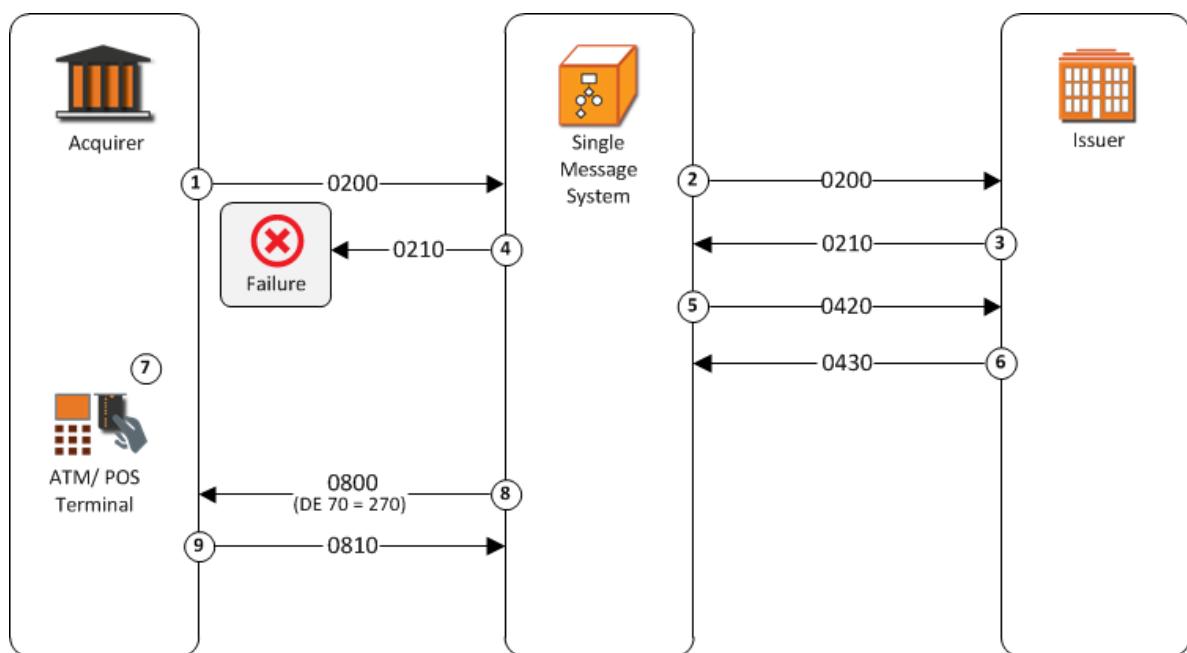
1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System.
2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer.
3. The issuer responds with a Financial Transaction Request Response/0210 message and sends it to the Single Message System. The message does not pass one of several required Single Message System edits.
4. The Single Message System then generates a Financial Transaction Request Response/0210 message to the acquirer, indicating a request denial.
5. If the issuer's Financial Transaction Request Response/0210 message fails System edits, then the Single Message System generates an Acquirer Reversal Advice/0420 message containing DE 60 (Advice Reason Code) with the value 4540000 (Network Advice: invalid data) and sends it to the issuer.
6. The issuer responds by returning a Financial Transaction Advice Response/0430 message to the Single Message System.
7. If the transaction is a Maestro preauthorization, and DE 39 (Response Code) contains the value of 00 (Approved or completed successfully), the Single Message System sends a Financial Transaction Advice/0220 message to the issuer where DE 60 (Advice Reason Code) contains the value 4540000 (Network Advice: invalid data).

8. The issuer receives a Financial Transaction Advice/0220 message from the Single Message System where DE 60 (Advice Reason Code) contains the value 4540000 (Network Advice: invalid data) and responds with a Financial Transaction Advice Response/0230 message.

**NOTE:** If the Single Message System cannot parse the Financial Transaction Request Response/0210 message, the Single Message System generates an Administrative Advice/0620 and sends it to the issuer. Please refer to the Administrative Advice/0620—Single Message System Initiated message layout for more information.

### Financial Transaction/02xx: exception, system failure during Acquirer Financial Transaction Request Response/0210

This figure illustrates exception procedures for a system or communication failure condition encountered during the transmission of a Financial Transaction Request Response/0210 message.



1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System.
2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer.
3. The issuer responds with a Financial Transaction Request Response/0210 message and sends it to the Single Message System.
4. The Single Message System attempts to forward the Financial Transaction Request Response/0210 message to the acquirer, but cannot successfully complete the transmission due to a communication failure between the Single Message System and the acquirer processing system.

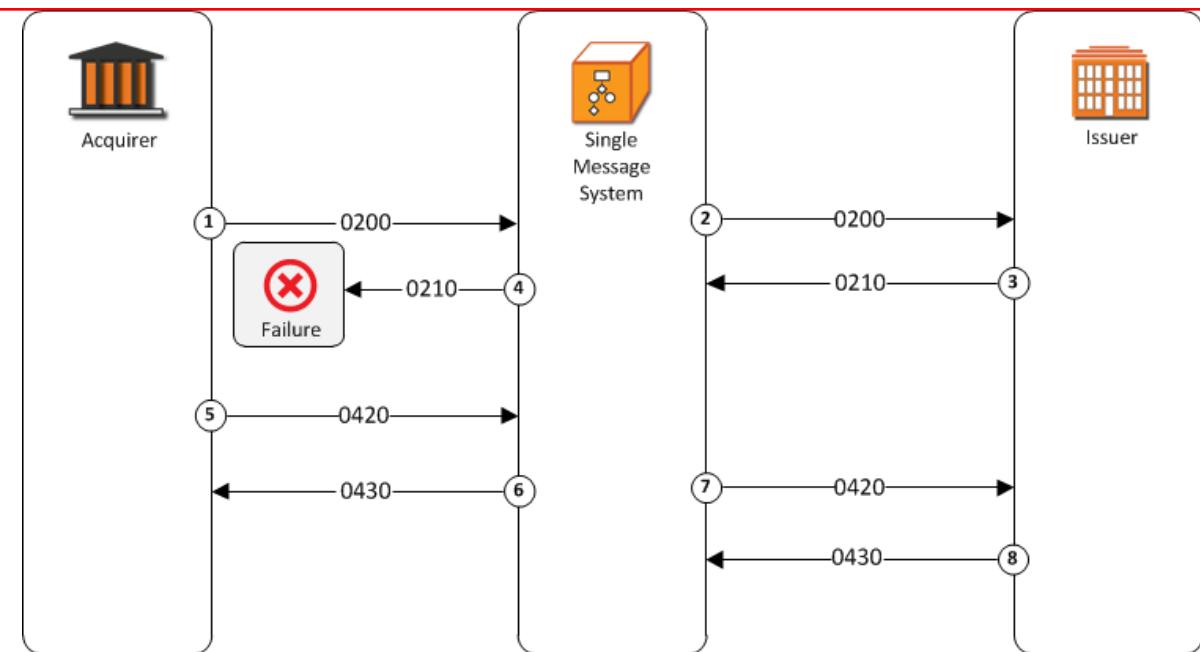
- 
5. The Single Message System determines that the issuer's Financial Transaction Request Response/0210 message is undeliverable and, only if the response indicates a request approval, immediately generates an Acquirer Reversal Advice/0420 message to the issuer.
  6. If the issuer receives an Acquirer Reversal Advice/0420 message from the Single Message System, the issuer responds with a Reversal Advice Response/0430 message to the Single Message System.
  7. If the acquirer processing system is operational, it will detect a time-out condition on the Financial Transaction Request Response/0210 message that it is expecting from the Single Message System. When the time-out occurs, the Single Message System requires that the acquirer deny the transaction request at the point of service. Processing terminates.
  8. The Single Message System initiates a Network Management Request/0800 "echo test" message from the configured production sites at regular intervals to verify or establish communication with the issuer.
  9. The acquirer responds with a Network Management Request Response/0810 message.

### **Financial Transaction/02xx: exception, time-out of Financial Transaction Request Response/0210 to acquirer**

This figure illustrates exception procedures for a message delivery failure condition encountered on the acquiring side when a Financial Transaction Request Response/0210 message sent to the acquirer by the Single Message System is not received by the acquirer application.

In this situation, the acquirer's time-out limit (typically in the range of 30–45 seconds) has been exceeded for receiving the Financial Transaction Request Response/0210 message. The acquirer may respond to the time-out by sending a Time-out-Induced Reversal/0420 message to the Single Message System. Refer to Chapter 3 for the description and message format.

This Time-out-Induced Reversal/0420 message will not include DE 15 (Date, Settlement) or DE 63 (Network Data). Further, DE 39 (Response Code), DE 60 (Advice Reason Code), and DE 95 (Replacement Amounts) will have specific requirements as Chapter 3 shows in the message format table and usage notes within the data element descriptions section later in this manual.



1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System.
2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer.
3. The issuer generates a Financial Transaction Request Response/0210 message and sends it to the Single Message System.
4. The Single Message System forwards the Financial Transaction Request Response/0210 message to the acquirer, but the message fails at the acquirer application interface. It fails such that the Single Message System is not aware of a delivery problem.
5. The acquirer times out on receipt of the Financial Transaction Request Response/0210 message. The acquirer sends a Time-out-Induced Reversal/0420 message, also known as an unsolicited message reversal, to the Single Message System. This reversal is distinct from a normal acquirer-generated reversal in the following manner:
  - DE 15 (Date, Settlement) is not present in the message from the acquirer
  - DE 63 (Network Data) is not present in the message from the acquirer
  - DE 39 (Response Code) contains the value 00
  - DE 60 (Advice Reason Code) contains the value 4500018
  - DE 95 (Replacement Amounts) contains all zeros

**NOTE:** The acquirer should permit no more than five (5) failures of this type before concluding its communication is not reaching the Single Message System, and attempting to recover the connection. The acquirer periodically may send Network Management Request/0800 "echo test" messages to the Single Message System to test its connection and/or it may attempt delivery of the corresponding Time-out Induced Reversal/0420 message later.

6. The Single Message System responds with an Acquirer Reversal Advice Response/0430 message.

**NOTE:** Reversal advice processing is complete when the acquirer receives the Acquirer Reversal Advice Response/0430 message, regardless of the DE 39 (Response Code) value contained in the response message. If DE 39 in the response message contains a value other than 00 (approved or completed successfully), or DE 39 contains the value 30 (Format Error), the Single Message System will deny the acquirer's reversal message. In this case, the acquirer should not re-transmit the reversal advice to the Single Message System. The acquirer must clear its timer for the Acquirer Reversal Advice/0420 message, and consider processing complete.

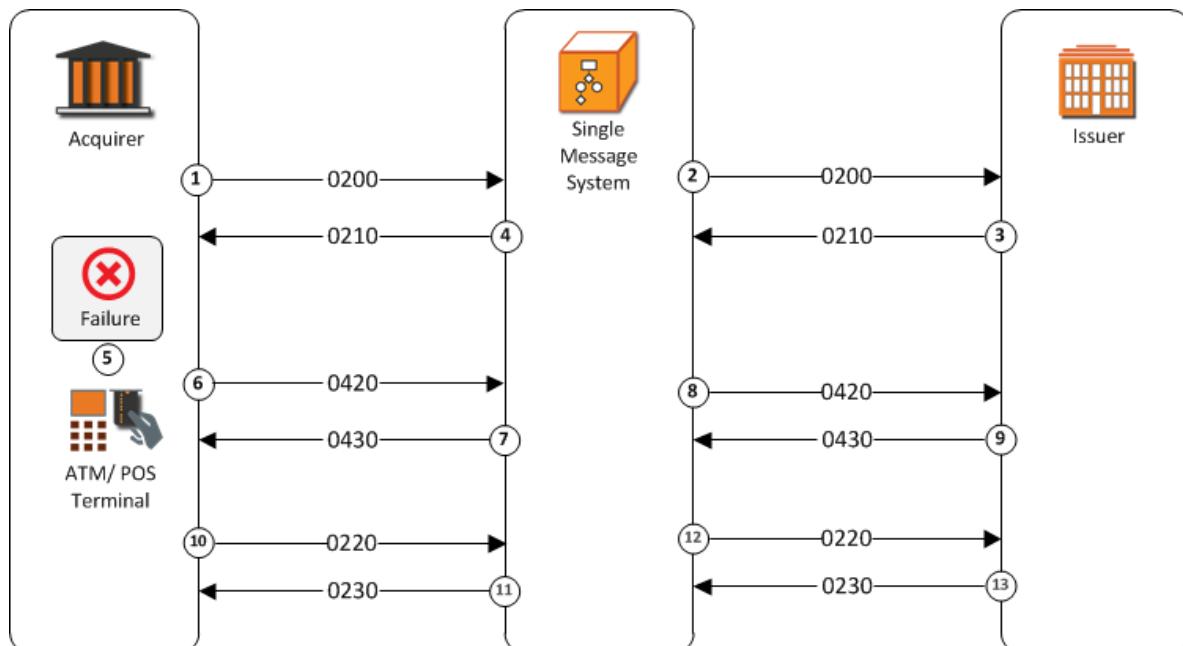
7. If the Financial Transaction Request Response/0210 message received at stage 3 indicates an approval, the Single Message System generates a standard Acquirer Reversal Advice/0420 message and sends it to the issuer.
8. The issuer responds with an Acquirer Reversal Advice Response/0430 message.

**NOTE:** The acquirer should set a 120-second timer on the Time-out-Induced Reversal/0420 message. If an Acquirer Reversal Advice Response/0430 message is not received within 120 seconds, then the acquirer should place the Time-out-Induced Reversal/0420 message into its store-and-forward facility for later delivery to the Single Message System.

**NOTE:** When sending SAF messages, the acquirer should wait for the Single Message System response to each message before sending the next SAF record. This method of transmission is known as single-threaded mode.

### Financial Transaction/02xx: multiple completion

The following figure illustrates exception procedures when the acquirer is not able to complete the cardholder's ATM transaction. This situation may develop due to a terminal failure that results in partial or non-dispense of cash, communication failure within the acquirer's own network, or cardholder cancellation of the transaction before receiving a response.



1. The acquirer initiates a Financial Transaction Request/0200 message to the Single Message System.
2. The Single Message System forwards the Financial Transaction Request/0200 message to the issuer.
3. The issuer generates a Financial Transaction Request Response/0210 message and sends it to the Single Message System.
4. The Single Message System forwards the Financial Transaction Request Response/0210 message to the acquirer.
5. The acquirer determines the transaction cannot be successfully completed.
6. The acquirer generates a Financial Transaction Reversal Advice/0420 message and sends it to the Single Message System. The reversal amount may be for the entire amount of the original transaction or for some partial amount (in the event of an ATM partial dispense).
7. The Single Message System responds with an Acquirer Reversal Advice Response/0430 message.
8. The Single Message System forwards the Acquirer Reversal Advice/0420 message to the issuer.
9. The issuer responds with an Acquirer Reversal Advice Response/0430 message. The issuer uses the information in the Acquirer Reversal Advice/0420 message to correctly update the cardholder's account file.
10. An acquirer can send a second reversal for an ATM transaction in a Financial Transaction Advice/0220 message. This second reversal is sent after an Acquirer Reversal Advice/0420 full reversal. The Financial Transaction Advice/0220 message is sent when money has been dispensed.
11. The Single Message System responds with a Financial Transaction Advice Response/0230 message.
12. The Single Message System forwards the Financial Transaction Advice/0220 message to the issuer.
13. The issuer responds with a Financial Transaction Advice Response/0230 message.

**NOTE:** Error condition processing for Reversal Advice/04xx messages is not illustrated. If a reversal advice message does not transmit successfully, it should be re-transmitted. Issuing and acquiring processors must assume the responsibility for identifying any message as a possible "duplicate" transaction.

**NOTE:** Acquirer Reversal Advice/0420 and Acquirer Reversal Advice Response/0430 messages are used in conjunction with Financial Transaction/02xx messages when transaction flow exception (error) situations are encountered during financial transaction processing. For specific exception conditions, the Single Message System may directly generate Acquirer Reversal Advice/0420 messages. Refer to the Financial Transaction/02xx message flow schematics to determine proper use of Acquirer Reversal Advice/0420 and Acquirer Reversal Advice Response/0430 messages in these exception-processing situations.

## File Update/03xx messages

Issuers may use file update messages to update individual account files such as "hot card" files or system parameter files defined within the Mastercard Account Management System (AMS) or Single Message System Stand-In processing.

Mastercard uses these account files to control the operation of standard and optional features that customers may select when they participate in Mastercard programs.

**Table 7: File Update Request/0302**

Type	Interactive
Routing	<p>Directly from an issuer or through Single Message Transaction Manager to the Mastercard AMS. For Single Message System Stand-In processing, routing is to the Single Message System. Messages will be routed to both systems if the issuer participates in both services.</p> <p>In cases where the file update request is routed to both AMS and Stand-In, The Single Message System must receive an approved response from both systems in order to send an approved response to the issuer. If either system does not provide this response, the Single Message System will return a File Update Request Response/0312 message to the issuer containing a declined/failed response in DE 39 (Response Code).</p>
Purpose	Requests update of a file, typically a file used to minimize fraudulent usage of, or give preferential treatment to, the financial transaction cards provided by the issuer to its account holders or other customers.
Response	A File Update Request Response/0312 is <b>required</b> .

**Table 8: File Update Request Response/0312**

Type	Interactive
Routing	From the Mastercard AMS via the Single Message System to the issuer. For Single Message System Stand-In processing, routing is from the Single Message System to the issuer.
Purpose	Carries response information to the File Update Request/0312.
Response	None

The transaction message flows provided throughout the remainder of this section define all of the ISO 8583-1987 transaction flow procedures implemented on the Mastercard Network. These flows sometimes depict a time-out or late response situation.

## File Update Request/0302 and File Update Request Response/0312

The following tables illustrate the message flow for file update messages. Issuers use file update messages to maintain fraudulent card-use (also known as hot card) or Premium databases that are available for users at the Mastercard Network and at the AMS.

Three file update services are available:

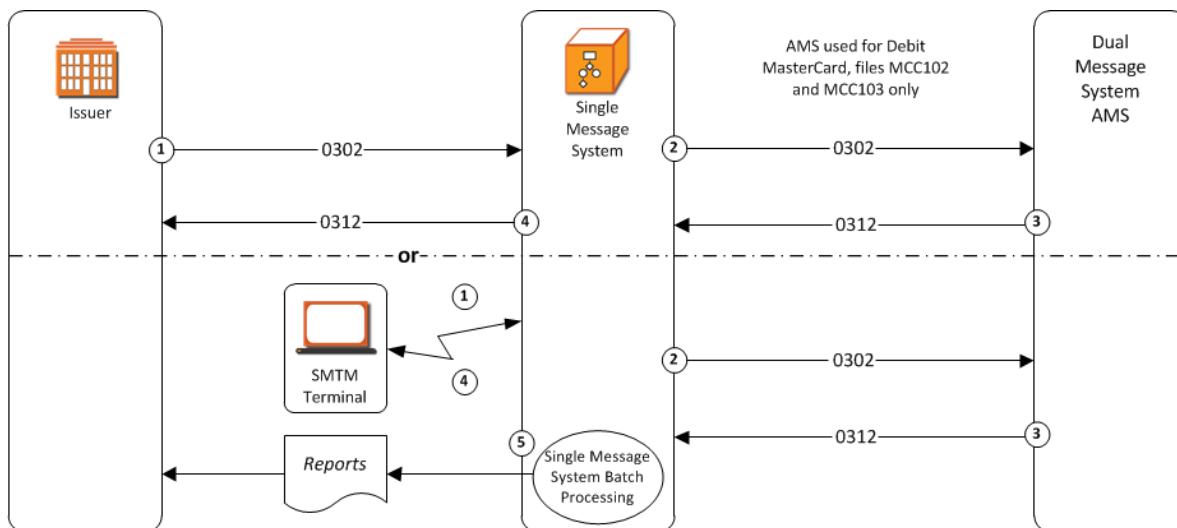
- File Update/3xx, Case 1: For Debit Mastercard accounts which require access to AMS through use of MCC102 (Account File) and MCC103 (Account Management File) updates.
- File Update/3xx, Case 2: For Maestro and Cirrus accounts that use the MCCNEG (Single Message System Stand-In Negative File) updates.
- File Update/3xx, Case 3: For Contactless accounts that use MCC106 (MDES PAN Mapping Service), and MCC109 (ATC File) updates.

### File Update/03xx, case 1: Debit Mastercard

In File Update/3xx, Case 1, the files being updated are the MCC102 and MCC103 files, which are maintained through the AMS.

These updates apply to Debit Mastercard cards only. For Debit Mastercard issuers participating in Single Message System Stand-In service, accepted AMS updates would also be updated in the MCCNEG File.

The example shown in the following figure shows two separate flows: one originating from the issuer's online transaction processing (OLTP) system and the other from the Single Message Transaction Manager terminal by the issuer or issuer's authorized personnel.



1. Issuers send File Update Request/0302 messages from their OLTP systems or from their Single Message Transaction Manager terminal. When issuers send file updates from their OLTP system, the File Update Request/0302 message is sent to the Mastercard Network online interface. When issuers send file updates from a Single Message Transaction Manager terminal, the file update request information is in an internal message format (IMF), but contains the same essential data as the File Update Request/0302 message.

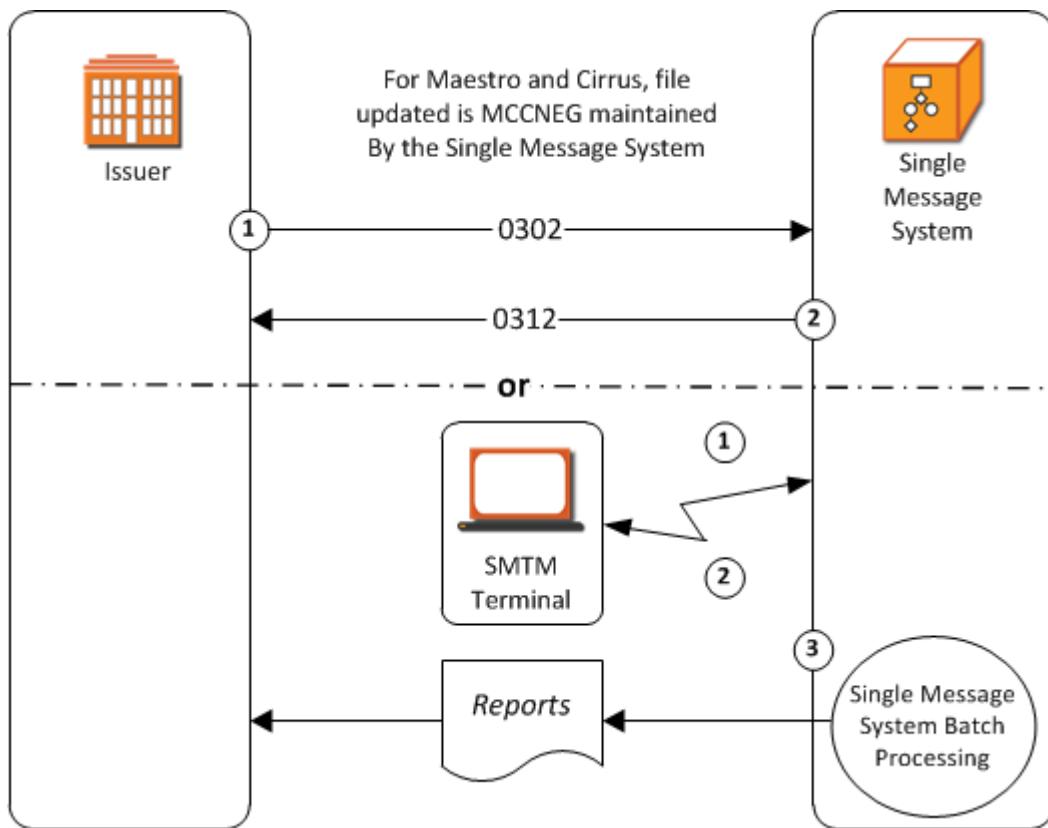
2. The Single Message System receives the File Update Request/0302 message through its file update processing facility, which passes the File Update Request/0302 message to the AMS.
3. The AMS responds to the File Update Request/0302 message with a File Update Request Response/0312 message.
4. The Single Message System returns the response to the issuer. For the OLTP connection, the issuer will receive a File Update Request Response/0312 message. For the Single Message Transaction Manager connection, the issuer will obtain a screen image update reflecting the response. (Single Message System sends an IMF message, which contains the File Update Request Response/0312 data to the terminal.)
5. Before sending the response to the issuer, the update processing facility logs the completed transaction data. From this update log file, the Mastercard Network batch processing facility generates update reports and makes them available to the issuer. These reports indicate to the issuer all the file updates that have been processed both through OLTP and Single Message Transaction Manager.

#### **File Update/03xx, case 2: Maestro and Cirrus**

The File Update/03xx, Case 2 transaction flow illustrates the file update process for the Cirrus and Maestro negative card files, which are maintained on behalf of the issuer by the Mastercard Network.

In File Update/03xx, Case 2—Maestro and Cirrus, the issuer is updating the negative file that contains card numbers that should not be accepted. The Single Message System maintains and reads for Stand-In authorization of financial requests. The name of this file is MCCNEG. These updates apply to Maestro and Cirrus cards only.

The following figure illustrates two separate flow paths: one originating from the issuer's online transaction processing (OLTP) system and the other from the Single Message Transaction Manager terminal by the issuer or issuer's authorized personnel.

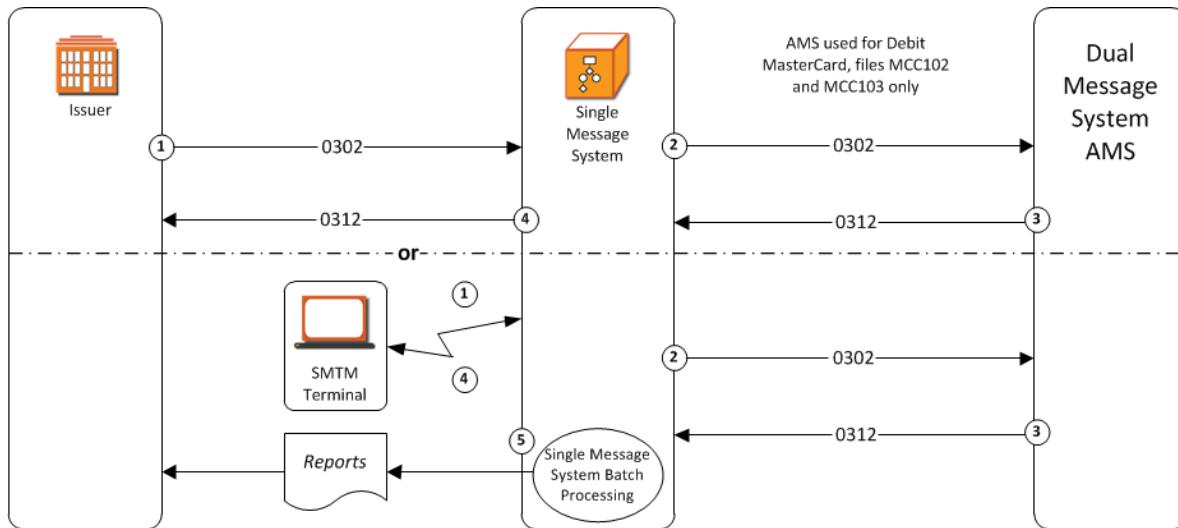


1. From the OLTP system, the File Update Request/0302 message is sent to the Single Message System. From the Single Message Transaction Manager terminal, the file update request information is in an internal message format (IMF), but contains the same essential data as the File Update Request/0302 message.
2. The Single Message System receives the File Update Request/0302 message through its file update processing facility, which updates the MCCNEG file. Then the Single Message System returns a response to the issuer. For the OLTP connection, the issuer receives a File Update Request Response/0312 message. For the Single Message Transaction Manager connection, the issuer will obtain a screen image update reflecting the response. The Single Message System sends an IMF message, which contains the File Update Request Response/0312 data, to the terminal.
3. Before sending the response to the issuer, the update processing facility logs the completed transaction data. From this update log file, Mastercard Network batch processing facility generates update reports and makes them available to the issuer. These reports indicate to the issuer all the file updates that have been processed both through OLTP and Single Message Transaction Manager.

### File Update/03xx, case 3: contactless

In File Update/3xx, Case 3, the files being updated are the MCC106 and MCC109 files, which are maintained through the AMS. These updates apply to Mastercard® contactless accounts only.

The example shown in the following figure shows two separate flows: one originating from the issuer's online transaction processing (OLTP) system and the other from the Single Message Transaction Manager terminal by the issuer or issuer's authorized personnel.



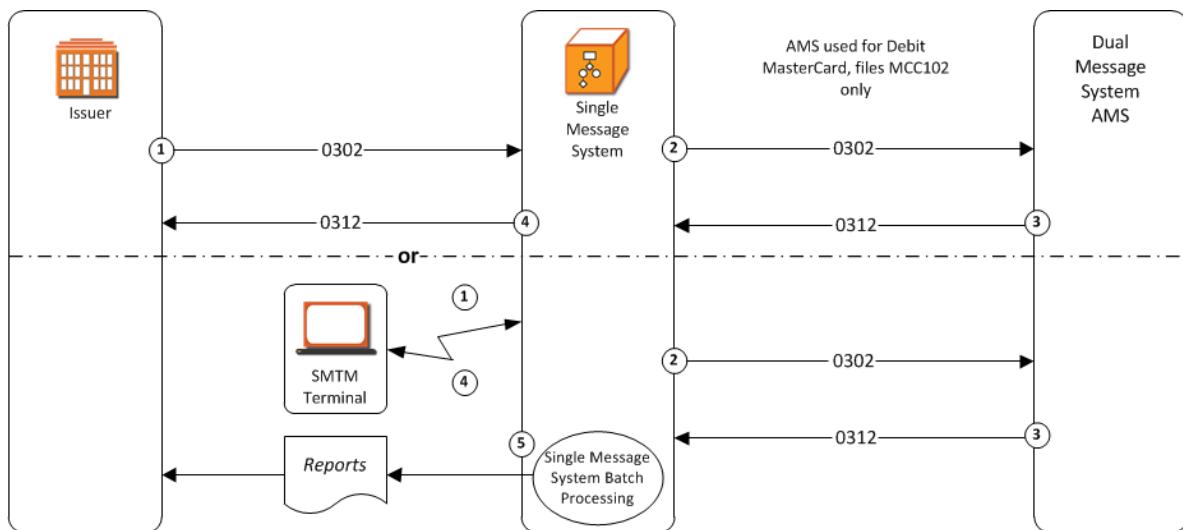
1. Issuers send File Update Request/0302 messages from their OLTP systems or from their Single Message Transaction Manager terminal. When issuers send file updates from their OLTP system, the File Update Request/0302 message is sent to the Mastercard Network online interface. When issuers send file updates from a Single Message Transaction Manager terminal, the file update request information is in an internal message format (IMF), but contains the same essential data as the File Update Request/0302 message.
2. The Single Message System receives the File Update Request/0302 message through its file update processing facility, which passes the File Update Request/0302 message to the AMS.
3. The AMS responds to the File Update Request/0302 message with a File Update Request Response/0312 message.
4. The Single Message System returns the response to the issuer. For the OLTP connection, the issuer will receive a File Update Request Response/0312 message. For the Single Message Transaction Manager connection, the issuer will obtain a screen image update reflecting the response. (The Single Message System sends an IMF message, which contains the File Update Request Response/0312 data to the terminal.)
5. Before sending the response to the issuer, the update processing facility logs the completed transaction data. From this update log file, the Mastercard Network batch processing facility generates update reports and makes them available to the issuer. These reports indicate to the issuer all the file updates that have been processed both through OLTP and Single Message Transaction Manager.

### File Update/03xx, case 4: ATM premium listing Debit Mastercard, Maestro, and Cirrus

In File Update/3xx, Case 4, the files being updated are the MCC102, which are maintained through the AMS.

These updates apply to Debit Mastercard, Maestro and Cirrus cards. For issuers participating in Single Message System Stand-In service, accepted AMS updates would also be updated in the MCCEXC File.

The example shown in the following figure shows two separate flows: one originating from the issuer's online transaction processing (OLTP) system and the other from the Single Message Transaction Manager terminal, the Mastercard Account File Maintenance screen, by the issuer or issuer's authorized personnel.



1. Issuers send File Update Request/0302 messages from their OLTP systems or from their Single Message Transaction Manager terminal. When issuers send file updates from their OLTP system, the File Update Request/0302 message is sent to the Mastercard Network online interface. When issuers send file updates from a Single Message Transaction Manager terminal for the Mastercard Account File Maintenance screen, the file update request information is in an internal message format (IMF), but contains the same essential data as the File Update Request/0302 message.
2. The Single Message System receives the File Update Request/0302 message through its file update processing facility, which passes the File Update Request/0302 message to the AMS.
3. The AMS responds to the File Update Request/0302 message with a File Update Request Response/0312 message.
4. The Single Message System returns the response to the issuer. For the OLTP connection, the issuer will receive a File Update Request Response/0312 message. For the Single Message Transaction Manager connection, the issuer will obtain a screen image update reflecting the response. (Single Message System sends an IMF message, which contains the File Update Request Response/0312 data to the terminal.)

5. Before sending the response to the issuer, the update processing facility logs the completed transaction data. From this update log file, the Mastercard Network batch processing facility generates update reports and makes them available to the issuer. These reports indicate to the issuer all the file updates that have been processed both through OLTP and Single Message Transaction Manager.

## Reversal Advice/04xx messages

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Reversal advice/04xx messages reverse the impact of a previous Authorization/01xx or Financial Transaction/02xx message.

The ISO 8583–1987 online specification employs only “non-interactive” reversal advice messages. These messages come under the general category of “Advice” messages; therefore, they are subject to the guaranteed advice delivery procedures that are standard for all Advice messages.

If, for any reason, these messages cannot be immediately delivered to their intended destination, the Single Message System automatically assumes responsibility for storing and forwarding them to the proper destination when communication has been reestablished with the appropriate destination processor.

The reversal advice message and its response can be designated Acquirer (0420/0430 sequence) or Issuer (0422/0432 sequence), and the Single Message System enables several usages within these categories.

**Table 9: Acquirer Reversal Advice/0420 message**

Type	Non-interactive
Routing	From an acquirer to the Single Message System
	From the Single Message System to an issuer

Purpose	<p>Reverses (partially or wholly) an earlier Authorization/01xx or Financial Transaction/02xx message. The acquirer processing system usually generates this message upon detection of a malfunction at the point-of-interaction (POI).</p> <p>The Single Message System sends this message to an issuer upon receipt of a reversal or upon receipt of an adjustment from the acquirer.</p> <p>For settlement purposes, this message contains "force-post" information. Thus, the reversal will be processed regardless of message receipt acknowledgement.</p> <p>The Acquirer Reversal Advice/0420 message has five uses:</p> <ul style="list-style-type: none"> <li>• Standard reversal advice: most commonly used to correct or cancel the amount dispensed or authorized from the original terminal request.</li> <li>• Time-out-induced reversal advice—acquirer (before settlement): available to acquirers when the Financial Transaction Request Response/0210 does not arrive back to the acquirer in the required time.</li> <li>• Time-out-induced reversal advice—issuer: available to inform issuers that the Single Message System did not receive a Financial Transaction Response/0210 from the issuer in the required time interval (time-out condition) or that there were failed edit checks.</li> <li>• Acquirer reversal advice—exception, system initiated (after settlement): Authorized representatives of an acquirer, an issuer, or Mastercard use Single Message Transaction Manager to submit an adjustment, chargeback, or representment, which the Single Message System passes on to the issuer in the form of a Acquirer Reversal Advice/0420 message.</li> <li>• Online exception: the following apply: <ul style="list-style-type: none"> <li>– After settlement—available to acquirers to submit adjustments and representments after the settlement day of the original transaction. This abbreviated Acquirer Reversal Advice/0420 message may be submitted to the Single Message System through the acquirer's online processing facility, which the Single Message System will pass to the issuer as an Acquirer Reversal Advice/0420 message.</li> <li>– For Payment Transactions, identified by DE 3 (Processing Code), subfield 1 (Cardholder Transaction Type Code) value 28, the Single Message System will support same-day reversals in online exceptions.</li> </ul> </li> </ul>
Response	An Acquirer Reversal Advice Response/0430 message is required.

**Table 10: Acquirer Reversal Advice Response/0430 message**

Type	Non-interactive
Routing	<p>From an issuer to the Single Message System.</p> <p>From the Single Message System to an acquirer.</p>
Purpose	Must be sent in response to an Acquirer Reversal Advice/0420 message to acknowledge positive receipt of that message.

Response	None
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**Table 11: Issuer Reversal Advice/0422 message**

Type	Non-interactive
Routing	<p>From an issuer to the Single Message System (for a subsequent day Single Message Transaction Manager adjustment or issuer online adjustment).</p> <p>From the Single Message System to an acquirer.</p>
Purpose	<p>Reverses (partially or wholly) an earlier transaction.</p> <p>The Single Message System generates this message upon notice of an adjustment, chargeback, or representment for the acquirer.</p> <p>For settlement purposes, this message contains "force-post" information. Thus, the reversal will be processed regardless of message receipt acknowledgement.</p> <p>The ISO 8583 Issuer Reversal Advice/0422 message has two uses:</p> <ul style="list-style-type: none"> <li>• Issuer reversal advice—exception, system initiated (after settlement): Authorized representatives of an acquirer, an issuer, or Mastercard use Single Message Transaction Manager to submit an adjustment, chargeback, or representment, which the Single Message System passes on to the acquirer in the form of a Issuer Reversal Advice/0422 message.</li> <li>• Online exception: the following apply: <ul style="list-style-type: none"> <li>– After settlement—available to issuers to submit chargebacks after the settlement day of the original transaction. This abbreviated Issuer Reversal Advice/0422 message may be submitted to the Single Message System through the issuer's online processing facility, which the Single Message System will pass to the acquirer as an Issuer Reversal Advice/0422 message.</li> <li>– For Payment Transactions, identified by DE 3 (Processing Code), subfield 1 (Cardholder Transaction Type Code) value 28, the Single Message System will support same-day reversals in online exceptions.</li> </ul> </li> </ul>
Response	An Issuer Reversal Advice Response/0432 message is required.

**Table 12: Issuer Reversal Advice Response/0432 message**

Type	Non-interactive
Routing	<p>From the Single Message System to an issuer</p> <p>From the acquirer to the Single Message System</p>
Purpose	Must be sent in response to an Issuer Reversal Advice/0422 message, to acknowledge positive receipt of that message.

Response	None
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## **Reversal Advice/04xx transaction exception processing**

Mastercard provides customers access to certain functions and data within the application in two ways.

- Single Message Transaction Manager: An authorized customer representative (or authorized representative of Mastercard) can use Single Message Transaction Manager to adjust a previous transaction by initiating an exception message. These exceptions are performed following the settlement day of the original transaction.
- Online interface: Processors can access the Single Message System transaction exception facility by sending appropriate online Reversal Advice/042x exception messages to the Single Message System. The functionality is known as online exception processing. Online exceptions are available to the processors on a day following the settlement day.

**NOTE:** For Payment Transactions, identified by DE 3 (Processing Code), subfield 1 (Cardholder Transaction Type Code) value 28, the Single Message System will support same-day reversals in online exceptions.

Each method initiates one of the following types of exception message:

- Chargeback: An issuer-generated reversal advice message that informs an acquirer that a previously completed charge to the cardholder's account is not valid, and that the acquirer will be "charged back" that amount. A chargeback results in a credit to the issuer and a debit to the acquirer.
- Adjustment: An acquirer-generated reversal advice message that corrects the amount settled in a previously completed transaction. An adjustment may result in either a debit or a credit to the issuer.
- Representment: An acquirer-generated reversal advice message that informs an issuer a previous chargeback from the issuer is not valid, and the transaction is being "represented" for settlement. A representment results in a debit to the issuer and a credit to the acquirer.

Each of the above forms of a transaction exception-item processing message is represented in an Acquirer Reversal Advice/0420 exception message or an Issuer Reversal Advice/0422 message.

**NOTE:** The names of the message types at this point still use "reversal" to indicate the change being made.

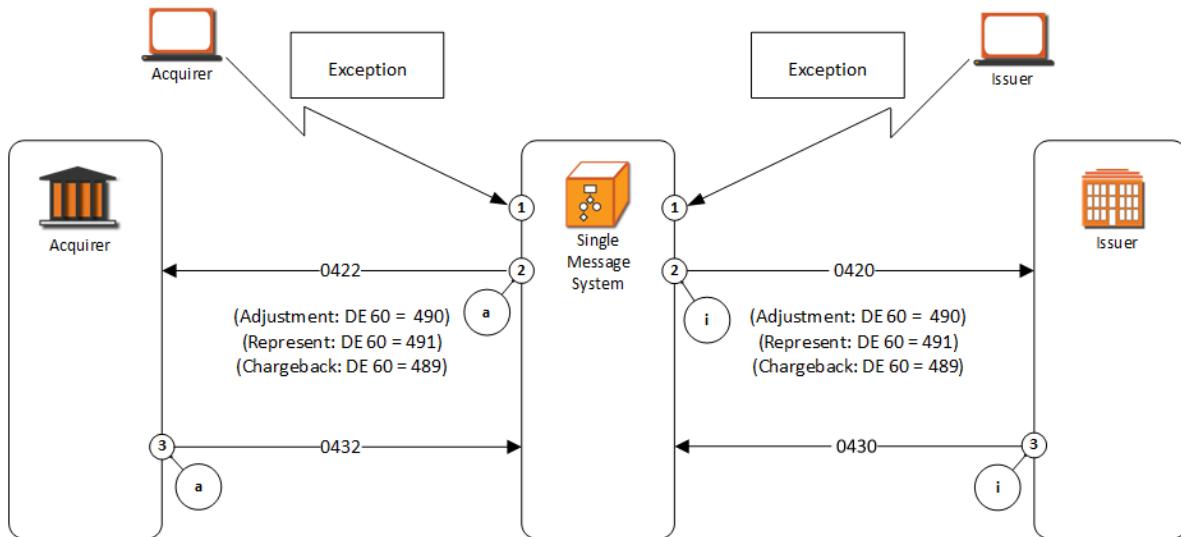
The following figure illustrates this processing.

### **Acquirer reversal advice: exception, system initiated**

These messages are Single Message System-generated because the external ISO 8583 message is produced by the Adjustment Manager process within the Single Message System

application. The messages are the result of an initial request made through the Single Message Transaction Manager terminal.

The following figure illustrates this processing.



1. Authorized representatives of an acquirer, an issuer, or Mastercard use Single Message Transaction Manager to create one of the following exception items:
  - Chargeback (originates from issuer)
  - Adjustment (from acquirer)
  - Representment (from acquirer)
2. After the Single Message System generates a chargeback, adjustment, or representment, it forwards these messages to the issuer and the acquirer processors. The acquirer always receives an Issuer Reversal Advice/0422 (designated in the graphic by 2a); the issuer always receives an Acquirer Reversal Advice/0420 (designated in the graphic by 2i). Both the Acquirer Reversal Advice/0420 and Issuer Reversal Advice/0422 messages contain DE 90 (Original Data Elements) with the same data elements as the original transaction in order to identify the financial transaction impacted by the reversal advice.
  - Chargeback: DE 60 = 489nnnn
  - Reversal: DE 60 = 490nnnn
  - Representment: DE 60 = 491nnnn
3. In all cases, the acquirer's processing system must acknowledge the Issuer Reversal Advice/0422 message with an Issuer Reversal Advice Response/0432 message (designated in the graphic by 3a). Similarly, the issuer's processing system must acknowledge receipt of the Acquirer Reversal Advice/0420 message with an Acquirer Reversal Advice Response/0430 message (designated in the graphic by 3i). All reversal advices contain settlement amount and transaction fee data that affect the Single Message System reconciliation and settlement.

## Online exception messages

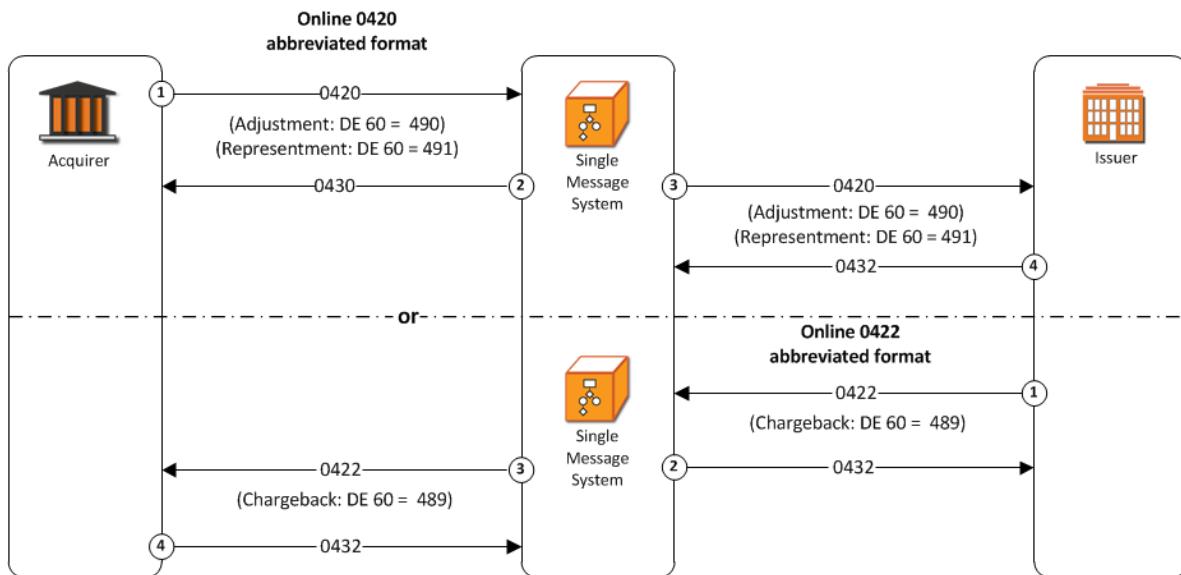
The exception in these circumstances may be an abbreviated set of the normal 0420/0422 reversal advice messages.

The following data elements are required:

- DE 2 (Primary Account Number [PAN])
- DE 7 (Transmission Date and Time)
- DE 11 (Systems Trace Audit Number)
- DE 15 (Date, Settlement)
- DE 60 (Advice Reason Code)
- DE 63 (Network Data)
- DE 95 (Replacement Amounts)

Online exceptions are available to the processors on a day following the settlement day. The following figure illustrates the basic flow for online exception messages. All Reversal Advice messages contain settlement amount and transaction fee data that are included with Mastercard Network reconciliation and settlement totals.

**Figure 4: Online exception processing**



**NOTE:**

The Acquirer Reversal Advice/0420—Acquirer Initiated Exception message (shown above) depicts the acceptable abbreviated format sent after the settlement day.

The abbreviated format of the 0420 message is not accepted on the day of the original Financial Transaction Request/0200 message. The standard Acquirer Reversal Advice/0420—Acquirer Initiated message must be sent.

Refer to the Message Layouts section later in this manual for samples of message layouts.

**NOTE:** For Payment Transactions, identified by DE 3 (Processing Code), subfield 1 (Cardholder Transaction Type Code) value 28, the Single Message System will support same-day reversals in online exceptions.

1. The processor initiates an online exception message:
  - Chargeback/0422 (issuer)
  - Adjustment/0420 (acquirer)
  - Representment/0420 (acquirer)
2. The Single Message System responds with the appropriate Reversal Advice Response/043x message; 0430 to an acquirer, 0432 to an issuer.
3. If the Single Message System receives a valid adjustment or a representment from the acquirer, the Single Message System creates an Acquirer Reversal Advice/0420—Exception message to the issuer. If the Single Message System receives a valid chargeback from the issuer, the Single Message System creates an Issuer Reversal Advice/0422 message to the acquirer. The following advice DE 60 (Reason Codes) apply:
  - Chargeback: DE 60 = 489nnnn
  - Adjustment: DE 60 = 490nnnn
  - Representment: DE 60 = 491nnnn
4. Issuing processors reply to the Acquirer Reversal Advice/0420 message with an Acquirer Reversal Advice Response/0430 message. Acquiring processors reply to the Issuer Reversal Advice/0422 message with an Issuer Reversal Advice Response/0432 message.

**NOTE:** Refer to the *Single Message Transaction Manager User Guide* for specific information about the procedures for processing chargebacks, adjustments, and representments.

**NOTE:** To use the Mastercard Network online exception facility, the processor's online interface application must format and send the appropriate 042x or 043x advice message to the Mastercard Network online interface. Refer to the Message Layouts section in this manual for the definition of these reversal—exception message records.

**NOTE:** All Acquirer Reversal Advice/0420 messages received by the Single Message System will be forwarded to the issuer with a new switch serial number in DE 63 (Network Data). The customer may choose to receive the original switch serial number in DE 48 (Additional Data), subelement 59 (Original Switch Serial Number).

## Administrative Advice/06xx messages

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The Administrative Advice/06xx messages may be used between any two parties (processors) connected to the Mastercard Network.

The originator routes the messages to a destination; no distinction is made as to whether or not the originator or destination is an issuer or an acquirer.

The ISO 8583-1987 online specification employs only "non-interactive" administrative advices. These messages fall under the general category of "advice" messages; therefore, they are subject to the guaranteed advice delivery procedures that are standard for all advice messages. If for any reason the intended destination does not immediately receive these messages, the Mastercard Network will automatically assume responsibility of storing and forwarding them to the proper destination when network delivery-point communication has been reestablished.

The Single Message System uses Administrative Advice/06xx messages to return indecipherable messages to a message originator with an appropriate error condition code that indicates the point at which Single Message System terminated message parsing or message processing. The types of messages returned in an Administrative Advice/0620 message would either have improperly coded Message Type Indicator (MTI) fields or improperly coded bit maps.

**NOTE:** In all cases, the advice reason code within the Administrative Advice/0620 message determines the specific reason for the advice message.

**Table 13: Administrative Advice/0620 message**

Type	Non-interactive
Routing	Between Mastercard Network and a card payment system, or between any two processors participating on the Mastercard Network.
Purpose	To transmit administrative or informational messages for various reasons, as indicated in the Advice Reason Code of the message.
Response	An Administrative Advice Response/0630 message is required.

**Table 14: Administrative Advice Response/0630 message**

Type	Non-interactive
Routing	From the receiver to the originator of the related Administrative Advice.
Purpose	Must be sent in response to an Administrative Advice/0620 message to acknowledge receipt of that message.
Response	None

**Table 15: Administrative Advice/0644 message**

Type	Non-interactive
Routing	Between the debit virtual private network (VPN) or the Mastercard Network and a processor connected to the Mastercard Network.
Purpose	To return undelivered messages to the message originator with an appropriate error condition code.

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Response	None
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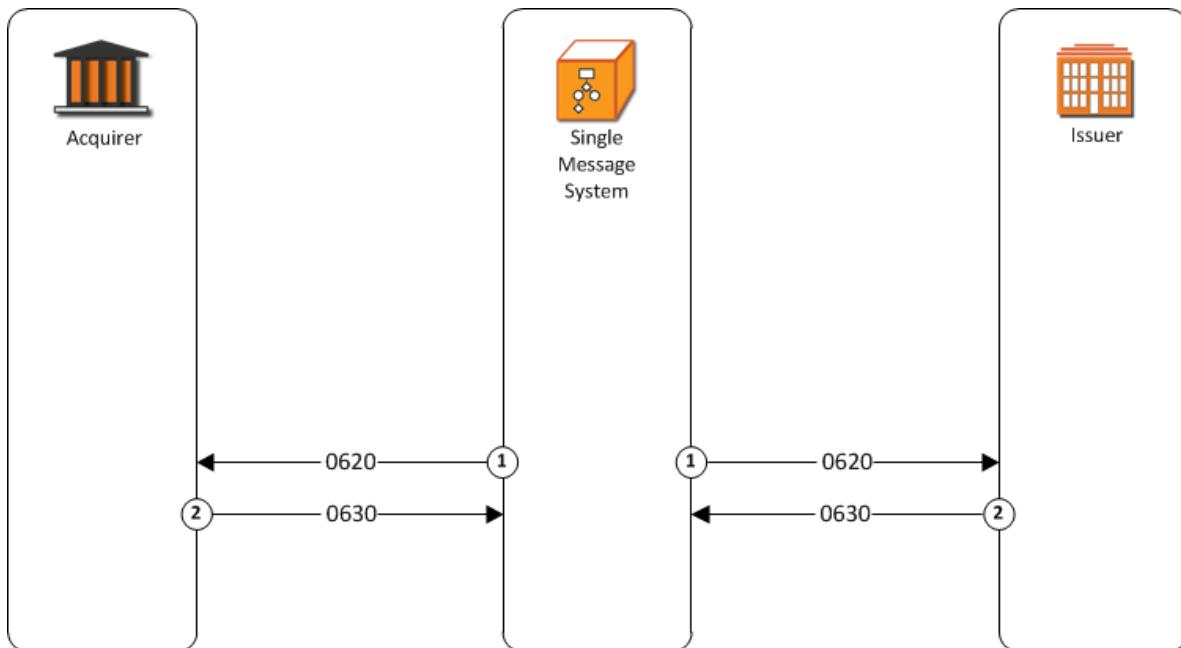
The transaction flows provided throughout the remainder of this section define all of the ISO 8583–1987 transaction flow procedures implemented on the Mastercard Network. These flows sometimes depict a "time-out" or late response situation.

### **Administrative Advice/0620: Single Message System-initiated**

The Single Message System uses an Administrative Advice/0620 message to reject invalid messages received from the processor.

When the processor sends an unrecognizable or incorrectly formatted message to the Single Message System, the Mastercard Network interface process responds by generating an Administrative Advice/0620 message to reject the invalid message.

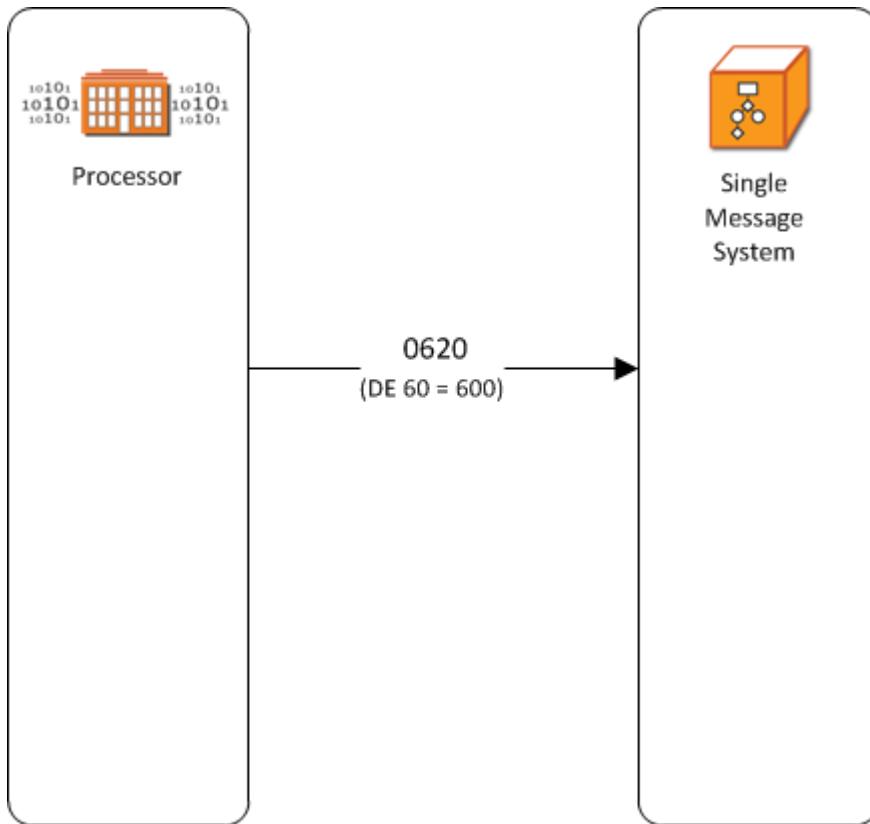
The following figure illustrates the message flow for Administrative Advice/06xx messages initiated by the Single Message System.



1. The Single Message System sends an Administrative Advice/0620 message to a processor.
2. The processor responds with an Administrative Advice Response/0630 message.

## Administrative Advice/06xx: processor initiated

This figure illustrates the message flow for Administrative Advice/06xx messages initiated by the processor to the Single Message System.

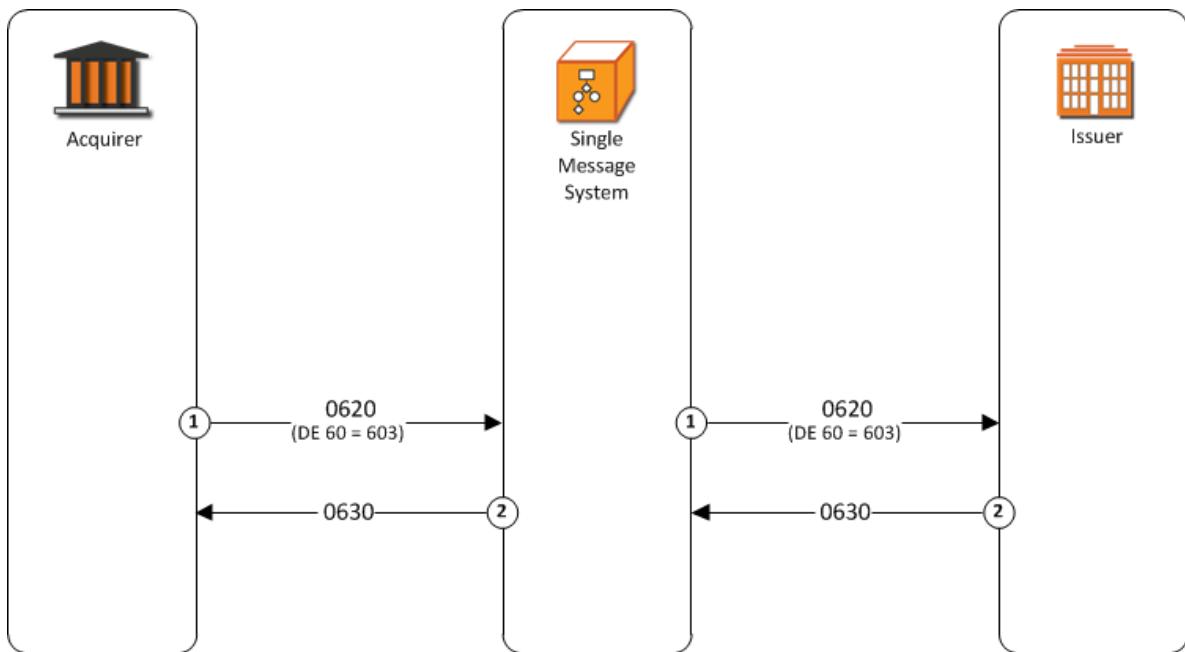


The acquirer processing system or the issuer processing system originates the Administrative Advice/0620 message to a processor. The Administrative Advice/0620 message contains DE 60 (Advice Reason Code), subfield 1 (Advice Reason Code) with the value 600 (Message unreadable/ indecipherable/contains invalid data).

**NOTE:** The Single Message System will not respond to this Administrative Advice/0620 message with an Administrative Advice Response/0630 message.

## Administrative Advice/0620: processor-initiated time-based exception

This figure illustrates the message flow for Administrative Advice/06xx messages initiated by the processor to the issuer.

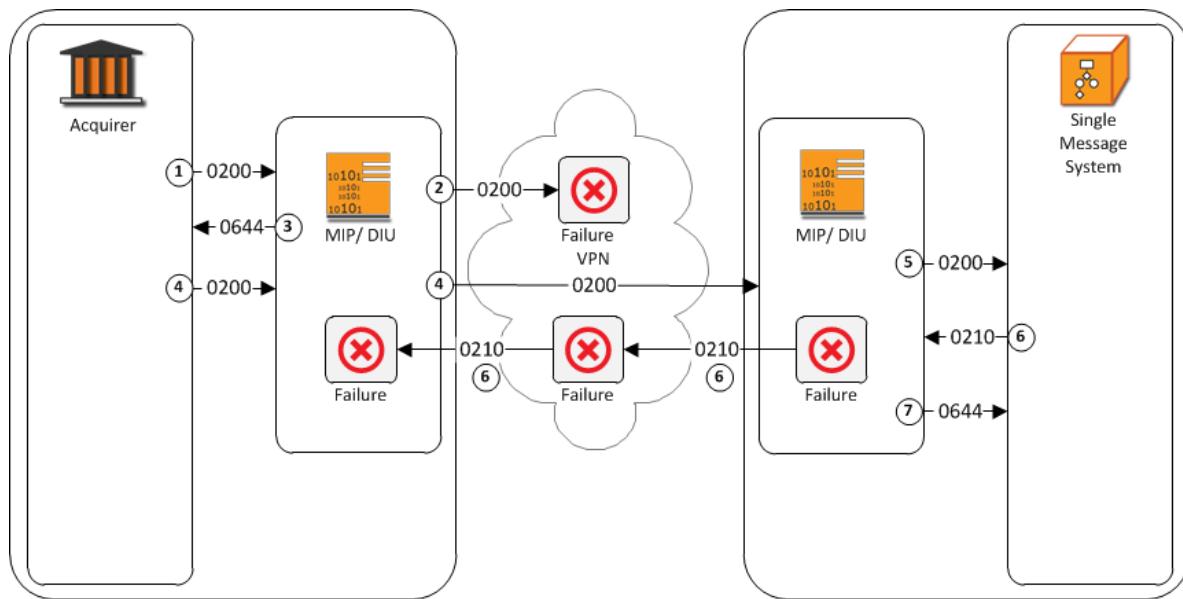


1. The acquirer processor originates the Administrative Advice/0620 message to a processor. The Brazil Time-Based Exception contains DE 60 (Advice Reason Code), subfield 1 (Advice Reason Code) with the value 603 (Message unreadable/indecipherable/contains invalid data).
2. The issuer responds to the Administrative Advice Response/0630 message that contains the same value in DE 60 as was received in the Administrative Advice/0620 message.

## Administrative Advice/0644 for virtual private network: connected acquirers

Processing between the Mastercard Network and an acquirer connected through the virtual private network (VPN) is the same as for an issuer connected through the VPN. Acquirers and

issuers may be connected through either the debit virtual private network or the Mastercard Network.



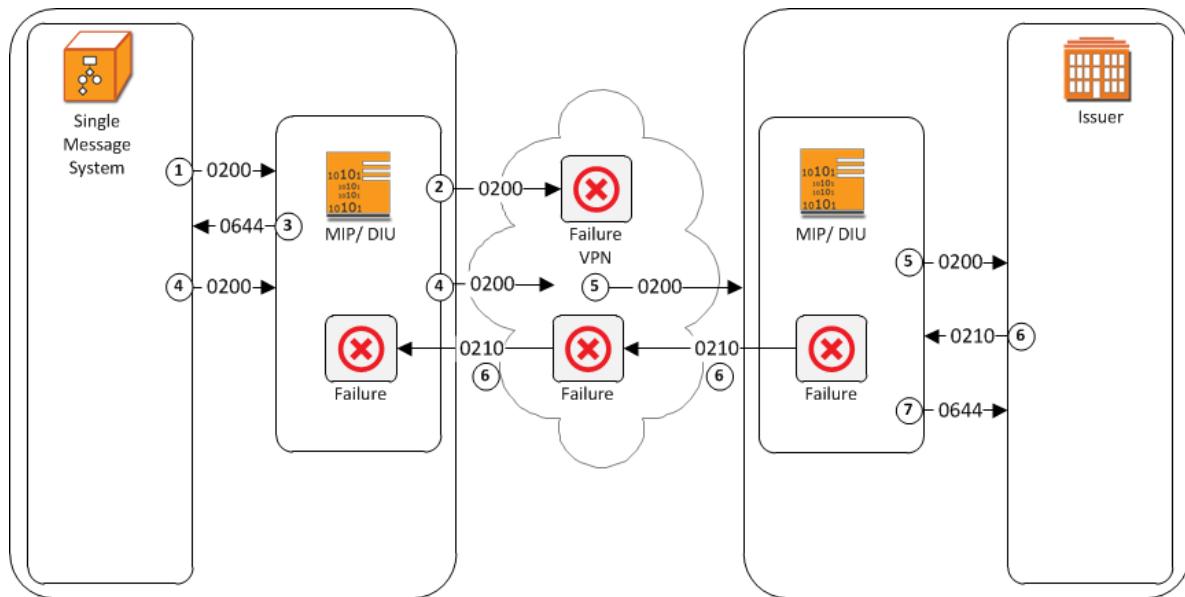
1. The acquirer sends a Financial Transaction Request/0200 message to the debit port on the Mastercard Interface Processor (MIP) or to the Debit Interface Unit (DIU).
2. The acquirer's MIP or DIU is unable to deliver the Financial Transaction Request/0200 message to the VPN.
3. The acquirer's MIP or DIU generates an Administrative Advice/0644 message to the acquirer. The value contained in DE 60 (Advice Reason Code) indicates the reason for the failure.  
Or,
4. The acquirer sends a Financial Transaction Request/0200 message to the debit port on the MIP or the DIU, which forwards the message to the VPN.
5. The VPN forwards the Financial Transaction Request/0200 message to the Single Message System MIP. These MIPs are found at the site(s) of the Single Message System application and are known as "Central Site MIPs," which forward the message to the Single Message System.
6. If the Financial Transaction Request Response/0210 message indicates an approval and the Central Site MIP cannot deliver it,<sup>a</sup> then:
7. The Central Site MIP generates an Administrative Advice/0644 message to the Single Message System. The value contained in DE 60 (Advice Reason Code) indicates the reason for the failure.

<sup>a</sup> This can occur because of a failure at the Central Site VPN interface or at the VPN acquirer interface. Typically, the failure would be that the MIP does not have confirmation that the remote MIP delivered the 0210 to the acquirer host.

**NOTE:** The Administrative Advice/0644—VPN Acquirer transaction message flow shows the internal details of the Administrative Advice/0644 message processing. Following the perceived failure of delivery of the Financial Transaction Response/0210 message by the Single Message System, the Single Message System continues to resolve the failure in accordance with normal exception processing.

### Administrative Advice/0644 for virtual private network: connected issuers

Processing between the Mastercard Network and an issuer connected through the VPN is the same as for an acquirer connected through the VPN.



1. The Single Message System sends a Financial Transaction Request/0200 message to Mastercard Network MIP—these MIPs located at the site(s) of the Single Message System application are often referred to as Central Site MIPs.
2. The Central Site MIP is unable to deliver the Financial Transaction Request/0200 message to the VPN.
3. The Central Site MIP generates an Administrative Advice/0644 message to the Single Message System. The value contained in DE 60 (Advice Reason Code) indicates the reason for the failure.  
Or,
4. The Single Message System sends a Financial Transaction Request/0200 message to the Central Site MIP that forwards the message to the VPN.
5. The VPN forwards the Financial Transaction Request/0200 message to the issuer. The issuer receives the transaction through the debit port on the MIP or the DIU.
6. If the Financial Transaction Response/0210 message indicates an approval and the issuer MIP or DIU cannot deliver the Financial Transaction Response/0210 message to the VPN (for example, the issuer MIP or DIU times out), or because of a failure at the Mastercard Network interface to the VPN, then:

7. The issuer MIP or DIU generates an Administrative Advice/0644 message to the issuer. The value contained in DE 60 (Advice Reason Code) indicates the reason for the failure.

**NOTE:** The Administrative Advice/0644—VPN Issuer transaction message flow shows the internal details of the Administrative Advice/0644 message processing. Following the failure of reception of the Financial Transaction Response/0210 message from the issuer by the Mastercard Network, the Mastercard Network continues to resolve the failure in accordance with normal exception processing.

## Network Management/08xx messages

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Single Message System, acquirer processing systems, issuer processing systems, or intermediate network facilities use the network management messages to coordinate network events and tasks and to communicate network status conditions.

Typical uses of Network Management/08xx messages include

- sign-on/sign-off from the Single Message System
- inquire on card payment systems or Single Message System status
- perform encryption key management tasks
- perform communication echo tests
- advise of store-and-forward (SAF) end-of-file (EOF) condition, and
- SAF request.

Within each Network Management Request/0800 message and Network Management Response/0810 message is a DE 70 (Network Management Information Code) used to determine the specific purpose or function of each Network Management message. Refer to Chapter 4 for detailed information on the Network Management codes used within Network Management/08xx messages.

The Mastercard Network routes all Network Management/08xx messages from an originator to a destination; no distinction is made as to whether the originator or destination is an issuer or acquirer.

The following information defines all Network Management/08xx messages supported by the Mastercard Network.

**Table 16: Network Management Request/0800 message**

Type	Interactive
Routing	Between the Mastercard Network and any other party (such as card payment system, acquirer processing system, issuer processing system, or intermediate network facility) communicating directly with the Mastercard Network. Either party may originate the message.

Purpose	To control the interchange network by communicating or coordinating system condition or system security. The Network Management Information Code, a mandatory data element within all Network Management/08xx messages, determines the specific Network Management/08xx messages functions.
Response	A Network Management Request Response/0810 message is required.

**Table 17: Network Management Request Response/0810 message**

Type	Interactive
Routing	From destination to originator of the related Network Management Request/0800 message.
Purpose	Must be sent in response to a Network Management Request/0800 message to acknowledge receipt of that message.
Response	None

**Table 18: Network Management Advice/0820 message**

Type	Non-interactive
Routing	From the Mastercard Network to any other party (such as, card payment system, acquirer processing system, issuer processing system, or intermediate network facility) communicating directly with the Mastercard Network. This message originates from the Mastercard Network only.
Purpose	To provide advisory information to processors connected to the Mastercard Network.
Response	None

The transaction flows provided throughout the remainder of this section define all of the ISO 8583–1987 transaction flow procedures implemented on the Mastercard Network. These flows sometimes depict a "time-out" or late response situation.

## **Network Management Request/0800 and Network Management Request Response/0810**

The Single Message system uses Network Management/08xx messages to provide control mechanisms between the Mastercard Network and a processor for performing these actions:

- Signing on and signing off by the processor to and from the Mastercard Network
- Establishing that communications exist between a processor and the Mastercard Network
- Initiating and concluding sessions for delivery of SAF messages
- Changing a PIN encryption key

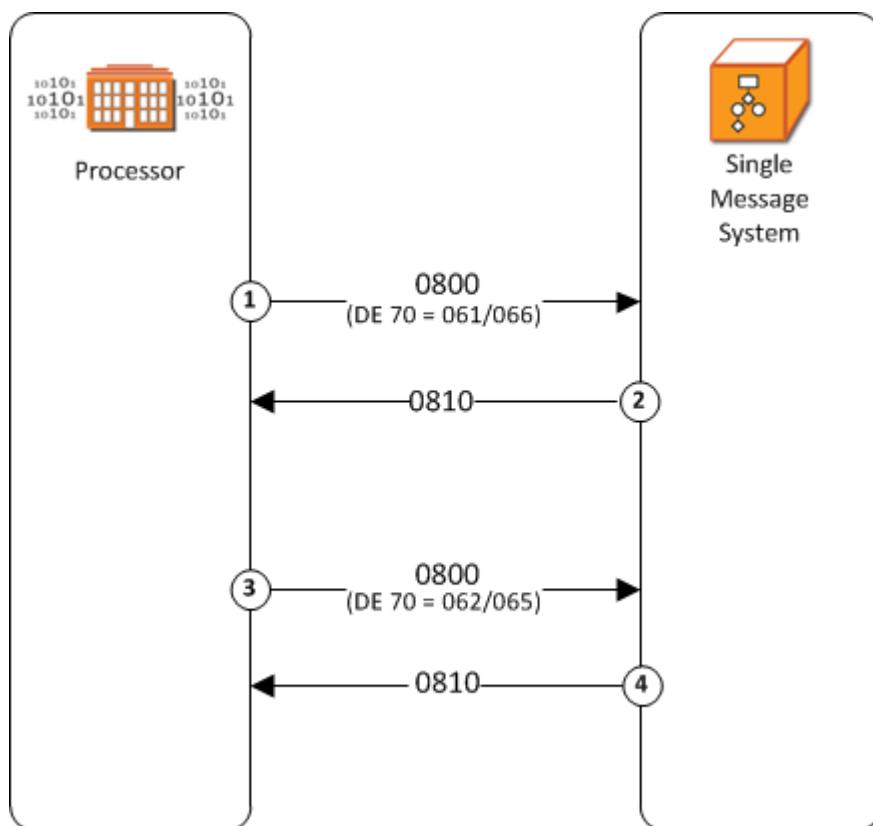
Three types of Network Management/08xx messages exist:

- Network Management Request/0800: The initiating message that identifies the purpose of the message.
- Network Management Request Response/0810: The response to the Network Management Request/0800, which indicates whether the request was received and approved.
- Network Management Advice/0820: A concluding message in some 08xx message processes, which either indicates the end of a store-and-forward file delivery cycle from the Single Message System, or confirms a PIN encryption key update from the Single Message System to the processor.

The value in DE 70 (Network Management Information Code) of the initial Network Management Request/0800 message distinguishes the function of the 08xx message process. The following descriptions show how the type of network management process is related to the value in DE 70.

### **Network Management/08xx: sign-on and sign-off**

This figure illustrates the processor sign-on to the Mastercard Network and sign-off from Mastercard Network.



1. The acquirer processing system or the issuer processing system originates the Network Management Request/0800 message for signing-on to the Mastercard Network. For a sign-on message, DE 70 (Network Management Information Code) contains one of the following values:

- 061 (General sign-on by processor to the Mastercard Network)
  - 066 (Issuer sign-on, directing the Mastercard Network to cease Stand-In processing for the issuer)
2. The Single Message System responds to the sign-on request with a Network Management Request Response/0810 message, which contains the same value in DE 70 as was received in the Network Management Request/0800 message.
  3. The acquirer processing system or the issuer processing system originates the Network Management Request/0800 message for signing off the Mastercard Network. For a sign-off message, DE 70 contains one of the following values:
    - 062 (General sign-off by processor off the Mastercard Network)
    - 065 (Issuer sign-off, directing the Mastercard Network to begin Stand-In processing for the issuer)
  4. The Single Message System responds to the sign-off request with a Network Management Request Response/0810 message, which contains the same value in DE 70 as was received in the Network Management Request/0800 message.

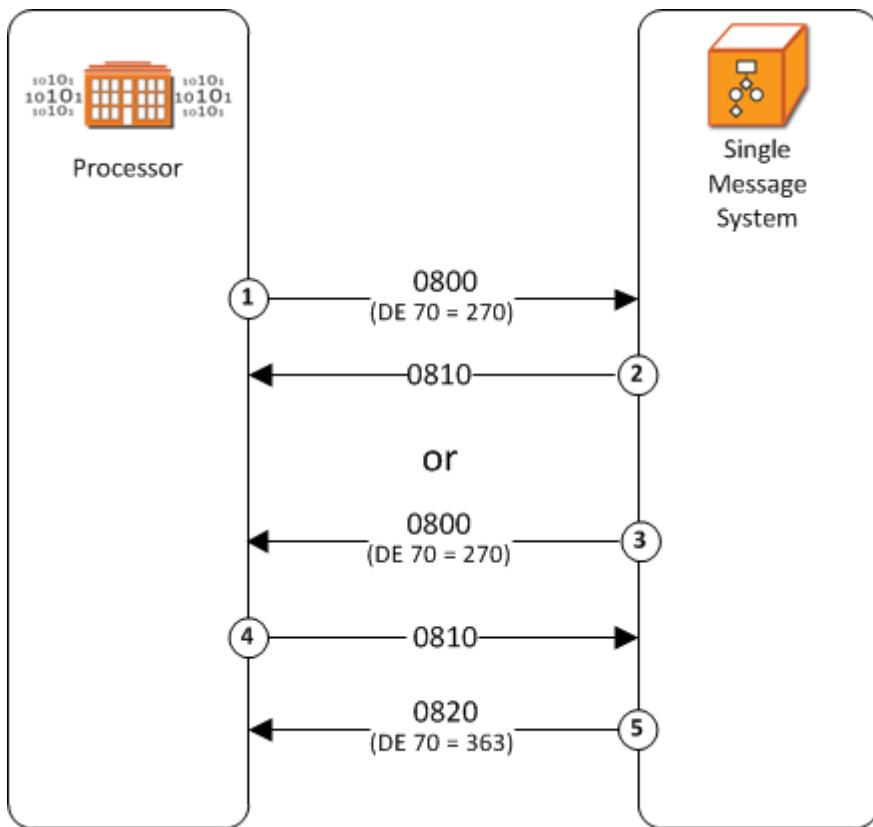
The Network Management Advice/0820 message is not used in any sign-on or sign-off process.

**WARNING:** The error condition message flow for Network Management/08xx messages is not illustrated. Unsuccessful Network Management Request/0800 message transmissions should be retransmitted.

## Network Management/08xx: echo test

The processor can initiate an echo test from a configured production site to the Mastercard Network, and the Mastercard Network can initiate an echo test to the processor. The echo test

is a means of establishing whether a processor or the Mastercard Network is connected and available for processing messages.



#### From the processor to the Mastercard Network

1. The acquirer processing system or the issuer processing system initiates a Network Management Request/0800 message where DE 70 (Network Management Information Code) contains the value 270 (Echo Test) and sends it to the Mastercard Network.
2. The Mastercard Network responds to the echo test request with a Network Management Request Response/0810 message, which contains the same value in DE 70 as that received from the processor in the Network Management Request/0800 message. Receipt of the Network Management Request Response/0810 message by the processor indicates the Mastercard Network is operating and can process message traffic.

#### From the Mastercard Network to the processor

3. The Mastercard Network initiates the Network Management Request/0800 message where DE 70 (Network Management Information Code) contains the value 270 (Echo Test) and sends it to the processor.
4. The processor responds to the echo test request with a Network Management Request Response/0810 message, which contains the same value in DE 70 as that received from the Mastercard Network in the Network Management Request/0800 message. Receipt of the Network Management Request Response/0810 message by the processor indicates the processor is operating and can process message traffic.

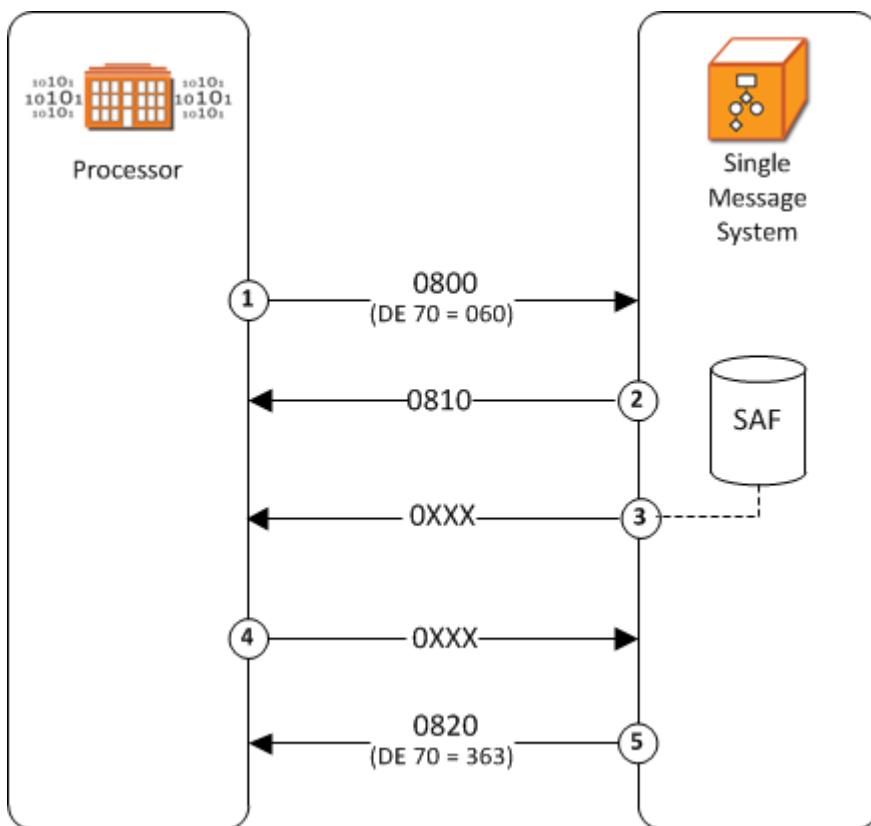
After sending the Network Management Request Response/0810 message to Mastercard Network, the processor must send whatever messages exist for the Single Message System in the processor's SAF file.

5. The Single Message System sends to the processor a Network Management Advice/0820 message with DE 70 (Network Management Information Code) containing the value 363 (EOF encountered for SAF traffic. SAF complete).

**NOTE:** Using the echo test Mastercard requests the processor to send any SAF messages the processor has for the Mastercard Network. The Mastercard Network will send the appropriate response to each request. When the processor sends these messages, the processor does not have to end the session by delivering a Network Management Advice/0820 message.

Network Management/08xx: SAF request by processor to Single Message System

This figure illustrates a processor requesting that Single Message System deliver the SAF file for the processor.



1. The acquirer processing system or the issuer processing system initiates the Network Management Request/0800 message containing DE 70 (Network Management Information Code) with the value 060 (Processor-initiated SAF session request) requesting delivery of messages from the Single Message System SAF file for the processor.

2. The Single Message System responds to the SAF request with a Network Management Request Response/0810 message, which contains the same value in DE 70 as that received in the Network Management Request/0800 message.
3. If the Single Message System has any messages for the processor in the SAF file, the Single Message System delivers these messages.
4. The processor responds to each advice, individually, with the appropriate message.
  - The Single Message System continues to send SAF messages to the processor until no messages for the processor remain.
  - Store-and-forward messages to an acquirer processing system may include any of the following message types:
    - Issuer Reversal Advice/0422
    - Administrative Advice/0620
  - Store-and-forward messages to an issuer processing system may include any of the following message types:
    - Financial Transaction Advice/0220
    - Acquirer Reversal Advice/0420
    - Administrative Advice/0620
5. The Single Message System sends to the processor a Network Management Advice/0820 message with DE 70 (Network Management Information Code) containing the value 363 (EOF encountered for SAF traffic. SAF complete).

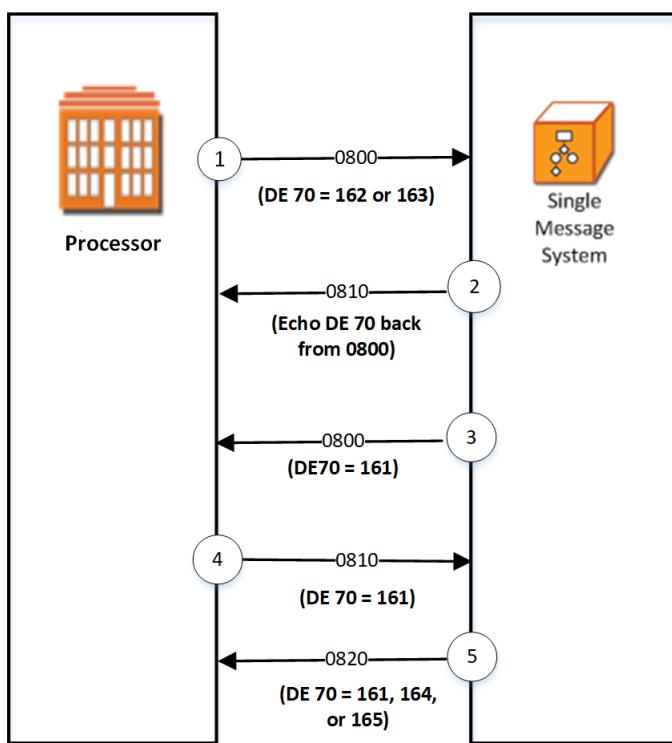
**NOTE:** The processor can also receive its SAF messages from the Single Message System by sending an echo test (DE 70 = 270) to the Single Message System as illustrated in the Network Management/08xx—Echo Test transaction message flow.

### **Network Management/08xx: PIN encryption key change**

Every 12 hours the Mastercard Network changes the PIN encryption key that is used between the Mastercard Network and the processor. This key is also referred to as the "working key."

Previously, only Mastercard could initiate a PIN Encryption Key Request/0800 message and processors would have to contact the Mastercard Network application-monitoring group to request the generation of a new PIN encryption key outside of the normal schedule.

Processors can initiate the key change process by sending a Network Management Request/0800 message to the Single Message System where DE 70 contains the value 162 for X9.17 or 163 for TR31. This is an optional feature shown in the following figure with dotted lines as stages 1 and 2. When the Single Message System receives the Network Management Request/0800 message to initiate key change, the Single Message System responds with a Network Management Request Response/0810 message, then immediately starts the normal key change sequence (stages 3 through 5 below) as shown in the following diagram.



1. If the processor wants to initiate the key change sequence, the processor sends a Network Management Request/0800 where DE 70 (Network Management Information Code) contains the value 162 (Initiate Encryption Key Change [by processor]) or 163 (Solicitation for Encryption Key Change [by processor]).
2. The Single Message System responds with a Network Management Response/0810 with the same value in DE 70.
3. The Single Message System originates a Network Management Request/0800 message to change the PIN encryption key (this is sometimes referred to as the "working key"). The 0800 request contains the following data:
  - DE 70 = 161 (PIN Encryption Key Change Request)
  - For X9.17 - DE 48, subelement 11 (Key Exchange Data Block) contains the Single Message System Key Exchange Data Block, including the length prefix (indicating whether this is a double or triple-length DES key), key cycle number, the actual PIN encryption key, and a key check value.
  - For TR31 - DE 110, subelement 09 contains the Single Message Key Block
  - For TR 31 - DE 110, subelement 10 contains the Single Message System Key Block Key Check Value
4. The processor responds with a Network Management Request Response/0810 message, which contains the following data:
  - DE 39 = 00 if the response is an approval (if there is a problem then DE 39 contains **96** indicating a denial).
  - DE 70 = 161 (PIN Encryption Key Change Response)

- DE 48, subelement 11 may be returned at processor's discretion, or some portion of the subelement, but it is not required.
  - DE 110, subelement 09 (not recommended) or 10 (recommended) may be returned at the processor's discretion, but is not required.
5. The Single Message System completes the sequence by sending a Network Management Advice/0820 message to the processor, indicating confirmation of the working key change. This message contains the following data:
- For X9.17 - DE 70 = 161 (PIN Encryption Key Change Confirmation)
  - For TR31 - DE 70 = 164 (Encryption Key Exchange Confirmation of success) or 165 (Encryption Key Exchange Advice of Failure)
  - For X9.17 - DE 48, subelement 11 contains the first characters of the original Subelement 11 up to the beginning of the actual key.

**NOTE:** If the Network Management Request Response/0810 message indicated a denial, or the key exchange failed to complete at Mastercard, then the Network Management Advice/0820 message will not contain DE 48 and DE 70.

- For TR31 and DE 70 = 164 - DE 110, subelement 10 contains the key check value

**NOTE:** If the Network Management Request Response/0810 message indicated a denial, or the key exchange failed to complete at Mastercard, then the Network Management Advice/0820 message will have DE 70 = 165 and will not contain DE 110, subelement 10.

## Chapter 3 Message layouts

This section describes all required, conditional, optional, or Single Message System–provided data element layouts for all messages the Mastercard Network supports.

Overview.....	112
Data element flow.....	112
Data element message format requirements.....	113
Summary of message type supported.....	113
Financial Transaction Request/0200.....	115
Financial Transaction Request Response/0210.....	122
Financial Transaction Advice/0220.....	127
Financial Transaction Advice/0220: Debit Mastercard stand-in.....	135
Financial/Non-Financial Transaction Advice/0220.....	138
Financial Transaction Advice Response/0230.....	145
Financial Transaction Negative Acknowledgement/0290.....	148
File Update Request/0302.....	148
File Update Request Response/0312.....	149
Acquirer Reversal Advice/0420: acquirer initiated.....	151
Acquirer Reversal Advice/0420: time-out-induced, acquirer initiated.....	155
Acquirer Reversal Advice/0420: time-out-induced, system initiated.....	159
Acquirer Reversal Advice/0420: exception, system initiated.....	162
Acquirer Reversal Advice/0420: acquirer initiated exception.....	165
Issuer Reversal Advice/0422: exception, system initiated.....	169
Issuer Reversal Advice/0422: exception, issuer initiated.....	172
Acquirer Reversal Advice Response/0430: system initiated.....	175
Acquirer Reversal Advice Response/0430: issuer initiated.....	178
Issuer Reversal Advice Response/0432: exception, acquirer initiated.....	181
Issuer Reversal Advice Response/0432: exception, system initiated.....	183
Administrative Advice/0620: Single Message System initiated.....	186
Administrative Advice/0620: processor initiated.....	187
Administrative Advice/0620: processor initiated time-based exception.....	188
Administrative Advice Response/0630: processor initiated to the Single Message System.....	189
Administrative Advice Response/0630: processor initiated to the time-based exception.....	190
Administrative Advice/0644.....	191
Network Management Request/0800: acquirer or issuer initiated.....	192
Network Management Request/0800: system initiated.....	194
Network Management Request Response/0810: acquirer or issuer initiated.....	195

Network Management Request Response/0810: system initiated.....	196
Network Management Advice/0820.....	197

## Overview

This section describes all ISO 8583–1987 message formats employed by the Single Message System.

The Single Message System supports all of the following ISO 8583–1987 messages. The message format specification charts on the following pages identify all of the required, conditional, optional, or network-generated data elements employed within each individual message.

## Data element flow

Several entities may insert or modify the data elements in a Single Message System message as it flows from the message origin to the Mastercard Network and from the Single Message System to the message destination. These entities typically include the issuer or acquirer at the origin, the Single Message System, and the issuer or acquirer at the destination.

In the message format layouts, the following three columns provide information to the originator, Single Message System, and destination related to the data element requirements:

Entity	Description
Org	<b>Originator requirements:</b> The message originator must satisfy this data element's requirements before sending the message. A Financial Transaction Request/0200 from an acquirer is an example of an originator message.
Sys	<b>Single Message System requirements:</b> The Single Message System may insert, correct, modify, or echo this data element while, for example, routing a message from the origin to the destination. The Single Message System may overwrite the data element and thereby destroy any previous content.
Dst	<b>Destination requirements:</b> The message destination must expect this data element (read it) and accept this data element (process it) if the originator requirements are satisfied.  For example: In a Financial Transaction Request/0200 message the ORG would be the acquirer and the destination (DST) is the issuer. However, in a Financial Transaction Request Response/0210 message the ORG would be the issuer and the destination (DST) is the acquirer.

## Data element message format requirements

These notations describe the requirements for each data element. These notations appear in the originator (Org), Single Message System (Sys), and destination (Dst) entities.

The originator or destination can only use the codes in the following table:

Usage Code	Description
M	<b>Mandatory</b> The data element is required in the message.
C	<b>Conditional</b> The data element is required in the message if the conditions described in the accompanying text are applicable.
O	<b>Optional</b> The data element is not required but may be included in the message at the message initiator's option.
•	<b>Not required or not applicable</b> The data element is not required or not applicable.

Only the Mastercard Network can use the following codes:

Usage Code	Description
X	<b>Interaction</b> The data element will be accepted, inserted, or overwritten by the Single Message System. Any modification is determined by specific programs and services.
P	<b>Pass-through</b> The data element is forwarded by the Mastercard Network to the destination (unmodified).

## Summary of message type supported

The Single Message System supports the following ISO 8583-1987 message types.

**Table 19: Authorization/01xx messages**

MTI	Description
0100	The Mastercard Network communicates with Dual Message customers through Authorization/01xx messages and with Single Message System customers through Financial Transaction/02xx messages.

**Table 20: Financial Transaction/02xx messages**

<b>MTI</b>	<b>Description</b>
0200	Financial Transaction Request
0210	Financial Transaction Request Response
0220	Financial Transaction Advice
0230	Financial Transaction Advice Response

**Table 21: File Update/03xx messages**

<b>MTI</b>	<b>Description</b>
0302	File Update Request
0312	File Update Request Response

**Table 22: Reversal Advice/04xx messages**

<b>MTI</b>	<b>Description</b>
0420	Acquirer Reversal Advice
0422	Issuer Reversal Advice
0430	Acquirer Reversal Advice Response
0432	Issuer Reversal Advice Response

The word reversal is often used generically to mean any change or exception made to an original transaction, and the name of the 042x message type, such as, "Reversal Advice," suggests this generic meaning is the appropriate usage.

However, a 042x Reversal Advice message can contain

- an acquirer-generated reversal due to a terminal error or to cancel a financial request at the terminal.
- a system-initiated advice message sent to alert the issuer when a Financial Transaction Request Response/0210 message cannot be delivered to an acquirer.
- a system-generated advice message sent to alert the issuer when a Financial Transaction Request Response/0210 message contains a format error.
- an acquirer-generated adjustment to the original request, made on a subsequent day using one of the Single Message System adjustment processes.

- 
- an issuer-generated chargeback made using one of the Single Message System adjustment processes.
  - an acquirer-generated representment made using one of the Single Message System adjustment processes.

The common understanding is that a reversal (as a specific kind of transaction exception request) occurs from the acquirer closely following the original transaction, and an adjustment is a non-automatic exception made on a subsequent day by a processor using one of the Single Message System adjustment processes.

**Table 23: Administrative Advice/06xx Messages**

<b>MTI</b>	<b>Description</b>
0620	Administrative Advice
0630	Administrative Advice Response
0644	Administrative Advice <sup>a</sup>

**Table 24: Network Management/08xx messages**

<b>MTI</b>	<b>Description</b>
0800	Network Management Request
0810	Network Management Request Response
0820	Network Management Advice

**NOTE:** For additional information on the data elements listed in this section refer to the Data Elements Definitions chapter later in this manual, for specific criteria and requirements about each data element.

## Financial Transaction Request/0200

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This is the message layout for the Financial Transaction Request/0200 message.

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<sup>a</sup> Debit Pass-through only for customers connected to the Mastercard Network.

<sup>a</sup> The processor may elect to receive batch settlement in one of the Mastercard supported settlement currencies, and receive DE 5 (Amount, Settlement) and DE 50 (Currency Code, Settlement) reflected in U.S. dollars.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	M	P	M	Value must be 0200.
-	Bit Map, Primary	M	P	M	Mandatory for all messages.
1	Bit Map, Secondary	C	P	C	Required only if any of DE 65 through DE 128 are present in the message.
2	Primary Account Number	M	P	M	Contains a cardholder's Primary Account Number (PAN).
3	Processing Code	M	P	M	Indicates type of transaction and the affected cardholder To or From Account Type.
4	Amount, Transaction	M	P	M	Transaction amount in the currency of the acquirer's card acceptor. DE 49 (Currency Code, Transaction) also must be present in conjunction with this data element to identify the currency of the transaction.
5	Amount, Settlement	.	X	M	Transaction amount in the currency of DE 50 (Issuer Currency Code, Settlement). <sup>a</sup> DE 5 may include Currency Conversion Assessment. When DE 5 is present, DE 9, DE 16, and DE 50 also must be present in the message.
6	Amount, Cardholder Billing	.	X	M	Amount billed to the cardholder in the currency of the cardholder account DE 51 (Currency Code, Cardholder Billing) exclusive of cardholder billing fees and Currency Conversion Assessment.  When DE 6 is present, DE 10, DE 16, and DE 51 also must be present in the message.
7	Transmission Date and Time	M	X	M	Date and time in Universal Time (UTC) that the originator initiates the message. Upon receipt, the Single Message System updates this data element with its time stamp.
9	Conversion Rate, Settlement	.	X	M	Factor used in the conversion from transaction to settlement amount. DE 4 (Amount, Transaction) is multiplied by DE 9 to determine DE 5 (Amount, Settlement).

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
10	Conversion Rate, Cardholder Billing	.	X	M	Factor used in the conversion from transaction to cardholder billing amount. DE 4 (Amount, Transaction) is multiplied by DE 10 to determine DE 6 (Amount, Cardholder Billing).
11	System Trace Audit Number	M	P	M	Contents of this data element must be unique for each transaction initiated by a message originator on any single UTC date.
12	Time, Local Transaction	C	P	C	Local time of the transaction at the point-of-service as printed on all cardholder receipts and statements.
13	Date, Local Transaction	C	P	C	Local date of the transaction at the point-of-service as printed on all cardholder receipts and statements.
14	Date, Expiration	C	X	O	May be present in a Debit Mastercard manually keyed authorization request.
15	Date, Settlement	.	X	M	The acquirer does not include this data element, the Single Message System provides it to the issuer.
16	Date, Conversion	.	X	M	Contains the effective date of any currency conversion performed for this transaction.
18	Merchant Type (MCC)	M	P	M	Must be present on all transactions and reflect the business product or service provided.
22	Point-of-Service Entry Mode	M	X	M	Indicates the method used to enter the transaction into the interchange.
23	Card Sequence Number	C	.	C	Must be present for all transactions, which include DE 55 (ICC system related data) and where the ICC provides the application PAN sequence number (ID 5F34) to the terminal.
26	Point-of-Service PIN Capture Code	C	P	C	Required only if PIN data is present and the terminal PIN capture capability is <b>other than</b> 12 characters.
28	Amount, Transaction Fee	C	P	C	Must contain ATM access or convenience fee, if applied.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
32	Acquiring Institution Identification Code	M	P	M	Must contain an acquirer's identification number. Acquirer's Federal Reserve Routing and Transit number or a Mastercard assigned pseudo number.
33	Forwarding Institution Identification Code	M	P	M	Must contain the processor ID number of the CPS forwarding this message to the Mastercard Network.
35	Track 2 Data	C	X	C	<p>Information encoded on Track 2 of the magnetic stripe.</p> <p>In Integrated Circuit Card (ICC) transactions where subfield 1 of DE 22 (POS Entry Mode) is 05 or 07, this data element contains "Track 2 Equivalent data" (DE 55) which is read from the ICC card.</p> <p>DE 35 is mandatory in ICC transactions and proximity transactions (where DE 22, subfield 1 is 05, 07, 80, or 91).</p> <p>DE 35 will be present in the issuer-bound request message only when valid data is present in the request message from the acquirer.</p>
37	Retrieval Reference Number	C	P	C	<p>Acquirer may use this as a document retrieval access key. If present, the system must send it back to the acquirer in any subsequent chargeback.</p> <p>DE 37 is mandatory in ICC transactions and proximity transactions (where DE 22, subfield 1 is 05, 07, 80, or 91).</p>
41	Card Acceptor Terminal Identification	C	P	C	Terminal or merchant number. If present, the customer must return it in any subsequent response.
42	Card Acceptor Identification Code	C	X	C	<p>Must contain a merchant name for Maestro® POS and Debit Mastercard POS transactions.</p> <p>ATM acquirers have the option to use DE 42 to identify the name of the ATM owner or to identify the ATM Identification Number.</p> <p>Provided by the Single Message System in those instances where DE 42 is not provided by the acquirer.</p>

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
43	Card Acceptor Name and Location	M	P	M	<p>Mandatory for all transactions. Provides location data.</p> <p>May also include the name of the entity that owns the ATM if the acquirer chose not to provide the name in DE 42.</p> <p>See the Data Elements Definitions chapter for more detail about DE 43.</p>
45	Track I Data	C	P	C	May be present in Debit Mastercard Authorization Request.
48	Additional Data	C	X	C	<p>Contains a variety of subelements depending on the card and purpose of the request. Refer to the detailed description in Chapter 4, Data Element Definitions.</p> <p>Transaction Category Code will always be included for non-ATM transactions and conditionally included for ATM transactions if other subelements are present.</p>
49	Currency Code, Transaction	M	P	M	Identifies the currency of the transaction, such as the currency used at the point-of-interaction.
50	Currency Code, Settlement	.	X	M	Identifies the currency of DE 5 (Amount, Settlement).
51	Currency Code, Cardholder Billing	.	X	M	Identifies the currency of the cardholder billing amount in DE 6 (Amount, Cardholder Billing) and the Currency Conversion Assessment amount in DE 111 (Amount, Currency Conversion Assessment).
52	Personal Identification Number (PIN) Data	C	P	C	<p>Used to contain encrypted PIN information. PIN is required for ATM transactions and for most Maestro POS transactions.</p> <p><b>For chip transactions,</b> if PIN is validated offline, then DE 52 is not required.</p> <p>Refer to <i>Maestro Global Rules</i> manual for details.</p>
54	Additional Amounts	C	X	C	<p>Contains occurrences for each amount type provided in acquirer's currency and in issuer's currency.</p> <p>The Single Message System may perform currency conversions on this data.</p>

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
55	Integrated Circuit Card (ICC) System-Related Data	C	P	C	Must be present in ICC or proximity M/Chip full grade transactions (refer to the M/Chip Requirements document for additional information).
56	Payment Account Data	.	X	C	When Mastercard is the BIN Controller (as defined by EMVCo.), DE 56 will be present and contain the PAR value when one is associated with the PAN.
58	Authorizing Agent Institution ID	.	X	C	Provided by the Single Message System for customers using the Enhanced Issuer Identification (EII) service. Contains the issuing processor's financial institution routing and transit number.
61	POS Data	M	P	M	Describes the conditions present at the point-of-interaction at the time the originator initiates the transaction.
62	INF Data	O	P	C	If used, may contain INF network information for use in any future online retrieval request, chargeback transaction, or both. When present in a request message, the destination must return it in the subsequent response message.
63	Network Data	.	X	M	Contains the financial network code and the switch serial number for the transaction. For Debit Mastercard transactions, the Banknet reference number is also included.
100	Receiving Institution Identification Code	.	X	C	Only present if the processor participates in Enhanced Issuer Identification (EII) service. Contains the issuer processor number.
104	Digital Payment Data	C	X	C	Contains applicable subelement data.
105	Enhanced Identification Data	M	X	C	Contains the data required to support the external authentication of the Unique Identification Number (UID).  DE 105 is mandatory for India only.
106	Private Data	M	X	C	Contains the biometric data for India UID transactions.  DE 106 is mandatory for India only.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
107	India On-Soil Data	M	X	•	<p>Contains unique on-soil data for India UID transactions.</p> <p>DE 107 is mandatory for India only.</p>
108	Additional Transaction Reference Data	C	•	C	<p>Mandatory for originating institution to submit DE 108 in Mastercard Send Transactions (Funding Transactions, MoneySend Payment Transactions, and Gaming and Gambling Payments Transactions).</p> <p>Mandatory for originating institution to submit DE 108 on all Mastercard Merchant Presented QR Payment and Funding Transactions.</p> <p>Optional on Mastercard Merchant Presented QR Refund Payment Transactions.</p>
110	Additional Data - 2	C	P	C	Contains a variety of subelements depending on the card and purpose of the request. Refer to the detailed description in <a href="#">Data element definitions</a> .
111	Amount, Currency Conversion Assessment	•	X	C	Contains the amount reflecting the Currency Conversion Assessment adjustment. This amount is expressed in DE 51 (Currency, Cardholder Billing). When present in the message, this amount is reflected in DE 5 (Amount, Settlement).
112	Additional Data (National Use)	C	P	C	Reserved for national organizations to define data unique to specific networks or specific programs and services.
120	Record Data	C	P	C	May contain billing address data for Debit Mastercard Address Verification Service (AVS) request.
124	Member-defined Data	C	P	C	The Single Message System enables processors to pass data to each other in this data element.
125	New PIN Data	C	X	C	New PIN data for PIN change transactions.
126	Switch Private Data	•	X	M	Will contain settlement service and cross-border indicators, along with Single Message System symbolic network information.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
127	Private Data	O	X	.	Available for private use by the message originator. The data does not pass through the Single Message System. The Single Message System returns this data to the message originator (with contents intact) in any subsequent response message.

## Financial Transaction Request Response/0210

This is the message layout for the Financial Transaction Request Response/0210 message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	M	P	M	Value must be 0210.
-	Bit Map, Primary	M	P	M	Mandatory for all messages.
1	Bit, Map Secondary	C	P	C	Required only if any of DE 65 through DE 128 are present in the message.
2	Primary Account Number (PAN)	M	P	M	Must contain the same value from the original request message.
3	Processing Code	M	P	M	May contain the same value from the original request message.  Refer to detailed description in <a href="#">Data Element Definitions</a> .
4	Amount, Transaction	M	P	M	Must contain the same value from the original request message.
5	Amount, Settlement	C	X	M	<b>Issuer 0210 message:</b> Must contain the same value from the original request message (if present) <b>and</b> the destination approved the transaction.  <b>Acquirer 0210 message:</b> DE 4 (Amount, Transaction) converted to the acquirer's DE 50 (Currency, Settlement).
6	Amount, Cardholder Billing	C	P	.	<b>Issuer 0210 message:</b> Will be present in request response messages for partial approvals.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
7	Transmission Date and Time	M	X	M	With limited exceptions, contains the same value from the original request message.
9	Conversion Rate, Settlement	C	X	M	<b>Issuer 0210 message:</b> Must contain the same value from the original request message (if present) <b>and</b> the destination approved the transaction.  <b>Acquirer 0210 message:</b> The factor used in the conversion from DE 4 (Amount, Transaction) to DE 5 (Amount, Settlement).
11	System Trace Audit Number	M	P	M	Must contain the same value from the original request message.
12	Time, Local Transaction	M	P	M	Must contain the same value from the original request message.
13	Date, Local Transaction	M	P	M	Must contain the same value from the original request message.
15	Date, Settlement	M	P	M	Must contain the same value from the original request message.
16	Date, Conversion	C	P	M	Must contain the same value from the original request message, (if present) <b>and</b> the destination approved the transaction.
20	Primary Account Number (PAN) Country Code	O	X	C	Only present if the processor participates in Enhanced Issuer Identification (EII) service.
28	Amount, Transaction Fee	C	P	C	Must contain the same value from the original request message (if present).
32	Acquiring Institution Identification Code	M	P	M	Must contain the same value from the original request message.
33	Forwarding Institution Identification Code	M	P	M	Must contain the same value from the original request message.
37	Retrieval Reference Number	C	P	C	Must contain the same value from the original request message, (if present).
38	Authorization Identification Response	C	X	M	May contain an Authorization ID code generated by an IPS.
39	Response Code	M	P	M	Response Code for this message.
41	Card Acceptor Terminal	M	P	M	Must contain the same value from the original request message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
44	Additional Response Data	C	X	C	Refer to detailed description in <a href="#">Data Element Definitions</a> .
48	Additional Data	C	P	C	Some subelements are returned with the same value as in original request message. Refer to detailed description in <a href="#">Data Element Definitions</a> .
49	Currency Code, Transaction	M	P	M	Must contain the same value from the original request message.
50	Currency Code, Settlement	C	P	M	Required if DE 5 is present.  <b>Issuer 0210 message:</b> Contains the currency code for issuer settlement in DE 5 (Amount, Settlement). Must contain the same value from the original request (if present) <b>and</b> the destination approved the transaction.  <b>Acquirer 0210 message:</b> Single Message System provided data element. Contains the currency code for the acquirer settlement in DE 5.
51	Currency Code, Cardholder Billing	C	P	C	Required if DE 6 is present. Identifies the currency of the cardholder billing amount in DE 6 (Amount, Cardholder Billing).
54	Additional Amounts	C	X	C	Contains occurrences for each amount type provided in acquirer's currency and issuer's currency.  For more information refer to DE 54 in the Data Element Definitions chapter.
55	Integrated Circuit Card (ICC) System-related Data	C	P	C	Present if the Integrated Circuit Card (ICC) System-related Data was included in the original request and issuer data is to be returned to the ICC (otherwise not present).  May be present for Chip Card transactions and must <b>not</b> contain the same value from the original request message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
56	Payment Account Data	C	X	C	When Mastercard is the BIN Controller (as defined by EMVCo.), the issuer is not required to provide DE 56 in the response message. If a PAR value is associated with the PAN, Mastercard will insert DE 56 containing the PAR value in the response message before forwarding the message to the acquirer. When the issuer is the BIN Controller and has associated a PAR value with the PAN, the issuer must include DE 56 containing the PAR value in the response message.
62	INF Data	C	P	C	Must contain the same value from the original request message, (if present).
63	Network Data	M	P	M	Must contain the same value (provided by Single Message System) in the original request message.  This value must be retained throughout the life cycle of the transaction.
100	Receiving Institution Identification Code	C	X	C	Only present if the processor participates in Enhanced Issuer Identification (EII) service. Must contain the same value from the original request message. (if present).
102	Account Identification-1	C	P	C	May contain the actual "FROM" account number.  If provided, must be numeric and cannot contain all zeros.  If non-numeric data is received in DE 102 from an issuer, then DE 102 will not be included in the request response message.
103	Account Identification-2	C	P	C	May contain the actual "TO" account number.  If provided, must be numeric and cannot contain all zeros.  If non-numeric data is received in DE 103 from an issuer, then DE 103 will not be included in the request response message.
105	Enhanced Identification Data	.	X	C	Contains the response data from the external authentication of the Unique Identification Number (UID).

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
108	Additional Transaction Reference Data	C	.	C	<p>Mandatory for originating institution to submit DE 108 in Mastercard Send Transactions (Funding Transactions, MoneySend Payment Transactions, and Gaming and Gambling Payments Transactions).</p> <p>Mandatory for originating institution to submit DE 108 on all Mastercard Merchant Presented QR Payment and Funding Transactions.</p> <p>Optional on Mastercard Merchant Presented QR Refund Payment Transactions.</p>
110	Additional Data-2	C	X	C	Allow Issuers the ability to modify the Product ID field in DE110 subelement 8 (Product ID) in a 0210 response messages ONLY if the participation flag on the 80-byte Financial Institution Table file is Y. The product code information returned in the 0210 message will not be forwarded to the acquirer.
112	Additional Data (National Use)	C	P	C	Reserved for national organizations to define data unique to specific networks or specific programs and services.
120	Record Data	C	P	C	Must contain the same value from the original request message (if present).
124	Member-Defined Data	C	P	C	The Mastercard Network enables processors to pass data to each other in this data element.
126	Switch Private Data	M	P	M	Must contain the same value from the original request message.
127	Private Data	O	X	C	Available for private use by the message originator. The data does not pass through the Single Message System. The Single Message System returns this data to the message originator (with contents intact) in any subsequent response message.

## Financial Transaction Advice/0220

This is the message layout for the Financial Transaction Advice/0220 message.

**NOTE:** This is a financial message used for back-out overrides, Maestro preauthorization completions, Stand-In transactions, Offline Cardholder Authentication transactions, and Debit Mastercard clearing. For Debit Mastercard transactions, values in the data elements on a Financial Transaction Advice/0220 message may vary from the original authorization message as it is processed as a separate transaction.

**NOTE:** Offline Cardholder Authentication messages have no settlement impact.

DE ID	Data element name	Org	Sys	Dst	Comments
-	Message Type Identifier (MTI)	M	P	M	Value must be 0220.
-	Bit Map, Primary	M	P	M	Mandatory for all messages.
1	Bit Map, Secondary	C	P	C	Required only if any of DE 65 through DE 128 are present in the message.
2	Primary Account Number (PAN)	M	P	M	Must contain the same value from the original (PAN) request message.
3	Processing Code	M	P	M	Must contain the same value from the original request message.
4	Amount, Transaction	M	P	M	Must contain the same value from the original request message or the new partial approval amount from the request response message.  For offline approved Cardholder Authentication transactions, the amount must be zero.
	Amount, Settlement	C	X	M	<b>Issuer 0220 message:</b> Contains the same value from the original request message or the new partial approval amount from the request response message.  <b>Acquirer 0220 message:</b> If provided, must contain the same value from the request response message.
6	Amount, Cardholder Billing	.	X	M	Contains the same value from the original request message or the new partial approval amount from the request response message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
7	Transmission Date and Time	M	X	M	Date and time, in Universal Time (UTC) that the originator initiates the message. Upon receipt, the Single Message System updates this data element with its time stamp.
9	Conversion Rate, Settlement	C	X	M	<p><b>Issuer 0220 message:</b> Must contain the same value from the original request message.</p> <p><b>Acquirer 0220 message:</b> If provided, must contain the same value from the request response message.</p>
10	Conversion Rate, Cardholder Billing	.	X	M	Contains the same value from the original request message.
11	System Trace Audit Number	M	X	M	Contents of this data element must be unique for each transaction initiated by a message originator on any single UTC date.
12	Time, Local Transaction	M	P	M	Must contain the same value from the original request message.
13	Date, Local Transaction	M	P	M	Must contain the same value from the original request message.
14	Date, Expiration	C	P	C	Must contain the same value from the original request message (if present).
15	Date, Settlement	M	P	M	<p><b>Issuer 0220 message:</b> Must contain the same value from the original request message.</p> <p><b>Acquirer 0220 message:</b> Must contain the same value from the request response message.</p> <p><b>For offline chip completion and offline Cardholder Authentication messages,</b> this data element is not required from the Acquirer, but will be inserted by the Single Message System.</p>
16	Date, Conversion	C	X	M	<p><b>Issuer 0220 message:</b> Must contain the same value from the original request message (if present).</p> <p><b>Acquirer 0220 message:</b> If provided, must contain the same value from the request response message.</p>

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
18	Merchant Type (MCC)	M	P	C	Must contain the same value as the original request message.
22	Point-of-Service Entry Mode	M	X	M	<p>Must contain the same value from the original request message.</p> <p><b>For chip transactions,</b> the Single Message System will modify this value when an Acquirer has not completed chip testing certification.</p> <p><b>For offline chip completion and offline Cardholder Authentication messages,</b> this is a mandatory data element that should be included by the Acquirer and contain a value of 05 or 07.</p>
23	Card Sequence Number	C	.	C	<p>Present only for ICC Full Grade transactions, where DE 55 was included in the original request message. If so, DE 55 will carry the same information as in the original request message.</p> <p><b>For offline chip completion messages,</b> this is a mandatory data element that should be included by the Acquirer.</p> <p><b>For offline Cardholder Authentication messages,</b> acquirers should provide values for account ranges registered for Type 1 and Type 2 Authentication Indicator (Person Present).</p>
26	Point-of-Service PIN Capture Code	C	P	C	Must contain the same value from the original request message (if present).
28	Amount, Transaction Fee	C	P	C	Must contain the same value from the original request message (if present).
32	Acquiring Institution Identification Code	M	P	M	Must contain the same value from the original request message.
33	Forwarding Institution Identification Code	M	P	M	Must contain the same value from the original request message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
35	Track 2 Data	C	X	C	<p>DE 35 will be present in the Issuer bound "Chip Clearing" 0220 messages for "Chip Clearing" Financial Transaction Advice/0220 messages, if present in the 0220 message from the Acquirer.</p> <p>DE 35 is not present in the 0220 messages for Maestro non-preauthorization, Maestro Issuer bound preauthorization completion, or Cirrus transactions.</p> <p><b>NOTE: Maestro Issuers may request to receive DE 35 in Financial Transaction Advice/0220 completion (Maestro 0220 Preauthorization) messages. However, DE 35 will be present only when supplied by the Acquirer in the Financial Transaction Advice/0220 completion (Maestro 0220 Preauthorization) message.</b></p>
37	Retrieval Reference Number	C	P	C	If present, will contain the same value from the original request message. DE 37 is not forwarded in Debit Mastercard force post messages.
38	Authorization Identification Response	C	P	C	Must contain the same value from the original request response message (if present).
39	Response Code	M	P	M	<p>Must contain the same value from the original request response message.</p> <p><b>For offline chip completion messages,</b> this is a mandatory data element that should be included by the Acquirer and contain a value of 00.</p>
41	Card Acceptor Terminal Identification	M	P	M	Must contain the same value from the original request message.
42	Card Acceptor Identification Code	C	X	C	<p>Must contain the same value as the original request message (if present).</p> <p>Provided by the Single Message System in those instances where DE 42 is not provided by the Acquirer.</p>
43	Card Acceptor Name and Location	M	P	M	Must contain the same value from the original request message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
44	Additional Response Data	C	X	C	Must contain the same value from the original request response message (if present)
48	Additional Data	O	X	C	Conditionally required, based on individual program or service agreement between the Mastercard and the Issuer.  Transaction Category Code will always be included for non-ATM transactions and conditionally included for ATM transactions if other subelements are present.  Refer to Chapter 4, Data Element Definitions for additional information.
49	Currency Code, Transaction	M	P	M	Must contain the same value from the original request message.
50	Currency Code, Settlement	C	P	M	<b>Issuer 0220 message:</b> Must contain the same value from the original request message (if present).  <b>Acquirer 0220 message:</b> If provided, must contain the same value from the request response message.
51	Currency Code, Cardholder Billing	.	X	M	Contains the same value from the original request message.
54	Additional Amounts	C	P	C	Must contain the same value from the original request message (if present).
55	Integrated Circuit Card (ICC) System-Related Data	C	P	C	Must contain the same value from the original request message (if present).  <b>For offline chip completion and offline Cardholder Authentication messages,</b> this is a mandatory data element to be included by the Acquirer.
56	Payment Account Data	.	X	C	When Mastercard is the BIN Controller, the PAR value is inserted when available.
58	Authorizing Agent Institution ID	.	X	C	Contains the same value from the original request message (if present).
60	Advice Reason Code	M	P	M	The Advice Reason Code (ARC) indicates the specific purpose of this advice message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
61	POS Data	C	P	C	<p>Must contain the same value from the original request message, except for Debit Mastercard force post messages.</p> <p><b>For offline approved Cardholder Authentication transactions,</b> must be present and subfield 7 (POS Transaction Status Indicator) must be 8 (Account Status Inquiry Service).</p>
62	INF Data	C	P	C	Must contain the same value from the original request message (if present).
63	Network Data	M	X	M	<p>Provided by the Mastercard Network when the originating message is routed through the Single Message System.</p> <p><b>For offline chip completion and offline Cardholder Authentication messages,</b> this data element is not required from the Acquirer, but will be inserted by the Single Message System.</p> <p><b>NOTE:</b> Refer to DE 63, Network Data, subfield 3, Network Reference Number, in the Data Element Definitions section, for additional information about the values populated in the Financial Transaction Advice/0220.</p>
90	Original Data Elements	M	P	M	<p>Mandatory for all Financial Transaction Advice/0220 Advices. Subfields within this data element may be used to identify the original referenced transaction.</p> <p><b>For offline chip completion messages,</b> this data element is not required from the Acquirer, but will be inserted by the Single Message System.</p> <p><b>For offline Cardholder Authentication messages,</b> this data element is not required.</p>

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<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
95	Replacement Amounts	C	X	M	<p>Required for partial completions only and must contain the new completed amount. DE 95 contains four subfields listed below: Subfield 1 is provided by the Acquirer, while the Single Message System provides subfields 2–4.</p> <p>For more information about the applicable subfields for this data element see Data Element Definition.</p> <p><b>NOTE: This data element is not applicable for Debit Mastercard Force Post messages.</b></p>
<b>Subfield ID and Name</b>					
1 = Actual Amount, Transaction					
2 = Actual Amount, Settlement					
3 = Actual Amount, Cardholder Billing					
4 = Filler					
100	Receiving Institution Identification Code	.	X	C	Contains the same value from the original request message.
102	Account Identification-1	C	P	C	Must contain the same value from the original response message (if present).
103	Account Identification-2	C	P	C	Must contain the same value from the original response message (if present).
108	Additional Transaction Reference Data	.	C	C	<p>Must be the same value as in the original Authorization Request/0200 message, if present in Mastercard Send Transactions (Funding Transactions, MoneySend Payment Transactions, and Gaming and Gambling Payments Transactions).</p> <p>Optional for Mastercard Merchant Presented QR Transactions</p>

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<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
110	Additional Data-2	C	X	C	Contains a variety of subelements depending on the card and purpose of the request. Refer to the detailed description in <a href="#">Data Element Definitions</a> .
111	Amount, Currency Conversion Assessment	.	X	C	Contains the amount reflecting the Currency Conversion Assessment adjustment.
112	Additional Data (National Use)	C	P	C	Reserved for national organizations to define data unique to specific networks or specific programs and services.
124	Member-Defined Data	C	P	C	The Mastercard Network enables processors to pass data to each other in this data element.
126	Switch Private Data	.	X	M	Will contain settlement service and cross-border indicators, along with Mastercard symbolic network information.
127	Private Data	O	X	C	<p>Available for private use by the message originator. The data does not pass through the Single Message System.</p> <p>DE 127 can be included in this Financial Transaction Advice/0220 message for multiple completions.</p> <p>For the Acquirer, the contents of DE 127 can be the same as the original used in the request message and request response message, or the Acquirer can choose to include new data in DE 127 for this Financial Transaction Advice/0220 message.</p> <p>For the Issuer, DE 127 can be included in this Financial Transaction Advice/0220 message. If the Issuer included private data in DE 127 from the original Financial Transaction Request Response/0210 message, the same value will be included in this Financial Transaction Advice/0220 message.</p>

#### **Optional Issuer Financial Transaction Advice/0220 Service for Partial Approvals**

Issuers may choose to receive a Financial Transaction Advice/0220—System-initiated message when the settlement amount has changed on a partial approval. This service will be particularly useful when the issuer responds with a partial approval and the transaction currency and

settlement currency are the same but the cardholder billing currency is different for a partial approval when the cardholder billing amount is populated. In this situation, Mastercard then adjusts the transaction and settlement amounts in DE 4 (Amount, Transaction) and DE 5 (Amount, Settlement). Issuers can request to receive this message for partial approval transactions by contacting their Global Customer Service representative.

If the issuer has opted in for the service, Mastercard will send a Financial Transaction Advice 0220—System-initiated message to the issuer when the settlement amount has changed due to a partial approval.

## **Financial Transaction Advice/0220: Debit Mastercard stand-in**

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This is the message layout for the Financial Transaction Advice/0220—Debit Mastercard Stand-In message.

**NOTE:** This is a Non-Financial Preauthorization advice for dual-message-flow and is non-settled.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	M	P	M	Value must be 0220.
-	Bit Map, Primary	M	P	M	Mandatory for all messages.
1	Bit Map, Secondary	C	P	C	Required only if any of DE 65 through DE 128 are present in the message.
2	Primary Account Number	M	P	M	Must contain the same value from the original request message.
3	Processing Code	M	P	M	Must contain the same value from the original request message.
4	Amount, Transaction	M	P	M	Must contain the same value from the original request message.
5	Amount, Settlement	C	P	C	Must contain the same value from the original request message.
6	Amount, Cardholder Billing	M	P	M	Must contain the same value from the original request message.
7	Transmission Date and Time	M	X	M	Date and time, in Universal Time (UTC) that the originator initiates the message. Upon receipt, the Single Message System updates this data element with its time stamp.
9	Conversion Rate, Settlement	C	P	C	Must contain the same value from the original request message (if present).

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
10	Conversion Rate, Cardholder Billing	M	P	M	Must contain the same value from the original request message.
11	System Trace Audit Number	M	X	M	Contents of this data element must be unique for each transaction initiated by a message originator on any single UTC date.
12	Time, Local Transaction	C	P	C	Must contain the same value from the original request message, (if present).
13	Date, Local Transaction	C	P	C	Must contain the same value from the original request message, (if present).
14	Date, Expiration	C	P	C	Must contain the same value from the original request message (if present).
15	Date, Settlement	M	P	M	Must contain the same value from the original request message.
16	Date, Conversion	M	P	M	Must contain the same value from the original request message.
18	Merchant Type (MCC)	M	P	M	Must contain the same value from the original request message.
22	Point-of-Service Entry Mode	M	P	M	Must contain the same value from the original request message.
23	Card Sequence Number	C	.	C	Must contain the same value from the original request message (if present).
26	Point-of-Service PIN Capture Code	C	P	C	Must contain the same value from the original request message (if present).
32	Acquiring Institution Identification Code	M	P	M	Must contain the same value from the original request message.
33	Forwarding Institution Identification Code	C	P	C	Must contain the same value from the original request message (if present).
35	Track 2 Data	C	P	C	Must contain the same value from the original request message (if present).
37	Retrieval Reference Number	C	P	C	Must contain the same value from the original request message, (if present).
38	Authorization Identification Response	C	P	C	Must contain the same value from the original request response message (if present).

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
39	Response Code	M	P	M	Must contain the same value from the original request response message.
41	Card Acceptor Terminal Identification	C	P	C	Must contain the same value from the original request message, (if present).
42	Card Acceptor Identification Code	C	P	C	Must contain the same value from the original request message, (if present).
43	Card Acceptor Name and Location	C	P	C	Must contain the same value from the original request message, (if present).
45	Track 1 Data	C	P	C	Must contain the same value from the original request message (if present).
48	Additional Data	M	X	C	Conditionally required, based on individual program or service agreement between the Mastercard Network and the issuer.
49	Currency Code, Transaction	M	P	M	Must contain the same value from the original request message.
50	Currency Code, Settlement	C	P	C	Must contain the same value from the original request message (if present).
51	Currency Code, Cardholder Billing	M	X	M	Must contain the same value from the original request message.
54	Additional Amounts	C	P	C	Must contain the same value from the original request message, (if present).
55	Integrated Circuit Card (ICC) System-Related Data	C	P	C	Must contain the same value from the original request message (if present).
56	Payment Account Data	.	X	C	When Mastercard is the BIN Controller, the PAR value is inserted when available.
58	Authorizing Agent Institution ID	.	X	C	Must contain the same value from the original request message, (if present).
60	Advice Reason Code	M	P	M	Specifies the reason for this advice message.
61	POS Data	M	P	M	Must contain a value of 5 (Debit Mastercard Stand-In) for subfield 7 (POS Transaction Status Indicator).
62	INF Data	C	P	C	Must contain the same value from the original request message (if present).
63	Network Data	M	X	M	Must contain the same value from the original request message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
90	Original Data Elements	.	P	M	Subfields 1, 2, and 3 will contain the same value from the original request message. Subfields 4 and 5 are provided by the Single Message System.
100	Receiving Institution Identification Code	.	X	C	Must contain the same value from the original request message, (if present).
108	Additional Transaction Reference Data	.	C	C	Conditional for all Mastercard Send Transactions (Funding Transactions, MoneySend Payment Transactions, and Gaming and Gambling Payments Transactions). Conditional for Mastercard Merchant Presented QR.
110	Additional Data - 2	.	X	C	Contains a variety of subelements depending on the card and purpose of the request.
123	Mastercard Merchant Data Services	.	X	C	Used to transmit various types of merchant information to issuers.
124	Member-defined Data	C	P	C	Must contain the same value from the original request message, (if present).
126	Switch Private Data	.	X	C	Contains settlement service and cross-border indicators, along with Single Message System symbolic network information.

## Financial/Non-Financial Transaction Advice/0220

This is the message layout for the Financial/Non-Financial Transaction Advice/0220 message.

**NOTE:** This is a financial message that is used for back-out overrides, Maestro preauthorization completions, Stand-In transactions, and Debit Mastercard clearing. For Debit Mastercard transactions, values in the data elements on a Financial Transaction Advice/0220 message may vary from the original authorization message as it is processed as a separate transaction. The layout is identical for Financial and for Non-financial transactions.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	M	P	M	Value must be 0220.
-	Bit Map, Primary	M	P	M	Mandatory for all messages.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
1	Bit Map, Secondary	C	P	C	Required only if any of DE 65 through DE 128 are present in the message.
2	Primary Account Number (PAN)	M	P	M	Must contain the same value from the original (PAN) request message.
3	Processing Code	M	P	M	Must contain the same value from the original request message.
4	Amount, Transaction	M	P	M	Must contain the same value from the original request message or the new partial approval amount from the request response message.
5	Amount, Settlement	C	X	M	<p><b>Issuer 0220 message:</b> Contains the same value from the original request message or the new partial approval amount from the request response message.</p> <p><b>Acquirer 0220 message:</b> If provided, must contain the same value from the request response message.</p>
6	Amount, Cardholder Billing	.	X	M	Contains the same value from the original request message or the new partial approval amount from the request response message.
7	Transmission Date and Time	M	X	M	Date and time, in Universal Time (UTC) that the originator initiates the message. Upon receipt, the Single Message System updates this data element with its time stamp.
9	Conversion Rate, Settlement	C	X	M	<p><b>Issuer 0220 message:</b> Must contain the same value from the original request message.</p> <p><b>Acquirer 0220 message:</b> If provided, must contain the same value from the request response message.</p>
10	Conversion Rate, Cardholder Billing	.	X	M	Contains the same value from the original request message.
11	System Trace Audit Number	M	X	M	Contents of this data element must be unique for each transaction initiated by a message originator on any single UTC date.
12	Time, Local Transaction	M	P	M	Must contain the same value from the original request message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
13	Date, Local Transaction	M	P	M	Must contain the same value from the original request message.
14	Date, Expiration	C	P	C	Must contain the same value from the original request message (if present).
15	Date, Settlement	M	P	M	<p><b>Issuer 0220 message:</b> Must contain the same value from the original request message.</p> <p><b>Acquirer 0220 message:</b> Must contain the same value from the request response message.</p> <p><b>For offline chip completion messages,</b> this data element is not required from the Acquirer, but will be inserted by the Single Message System.</p>
16	Date, Conversion	C	X	M	<p><b>Issuer 0220 message:</b> Must contain the same value from the original request message (if present).</p> <p><b>Acquirer 0220 message:</b> If provided, must contain the same value from the request response message.</p>
18	Merchant Type (MCC)	M	P	C	Must contain the same value as the original request message.
22	Point-of-Service Entry Mode	M	X	M	<p>Must contain the same value from the original request message.</p> <p><b>For chip transactions,</b> the Single Message System will modify this value when an Acquirer has not completed chip testing certification.</p> <p><b>For offline chip completion messages,</b> this is a mandatory data element that should be included by the Acquirer and contain a value of 05 or 07.</p>
23	Card Sequence Number	C	P	C	<p>Present only for ICC Full Grade transactions, where DE 55 was included in the original request message. If so, DE 55 will carry the same information as in the original request message.</p> <p><b>For offline chip completion messages,</b> this is a mandatory data element that should be included by the Acquirer.</p>

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
26	Point-of-Service PIN Capture Code	C	P	C	Must contain the same value from the original request message (if present).
28	Amount, Transaction Fee	C	P	C	Must contain the same value from the original request message (if present).
32	Acquiring Institution Identification Code	M	P	M	Must contain the same value from the original request message.
33	Forwarding Institution Identification Code	M	P	M	Must contain the same value from the original request message.
35	Track 2 Data	C	X	C	<p>DE 35 will be present in the Issuer bound "Chip Clearing" 0220 messages for "Chip Clearing" Financial Transaction Advice/0220 messages, if present in the 0220 message from the Acquirer.</p> <p>DE 35 is not present in the 0220 messages for Maestro non-preauthorization, Maestro Issuer bound preauthorization completion, or Cirrus transactions.</p> <p><b>NOTE: Maestro Issuers may request to receive DE 35 in Financial Transaction Advice/0220 completion (Maestro 0220 Preauthorization) messages. However, DE 35 will be present only when supplied by the Acquirer in the Financial Transaction Advice/0220 completion (Maestro 0220 Preauthorization) message.</b></p>
37	Retrieval Reference Number	C	P	C	If present, will contain the same value from the original request message. DE 37 is not forwarded in Debit Mastercard force post messages.
38	Authorization Identification Response	C	P	C	Must contain the same value from the original request response message (if present).
39	Response Code	M	P	M	<p>Must contain the same value from the original request response message.</p> <p><b>For offline chip completion messages,</b> this is a mandatory data element that should be included by the Acquirer and contain a value of 00.</p>

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
41	Card Acceptor Terminal Identification	M	P	M	Must contain the same value from the original request message.
42	Card Acceptor Identification Code	C	X	C	Must contain the same value as the original request message (if present).  Provided by the Single Message System in those instances where DE 42 is not provided by the Acquirer.
43	Card Acceptor Name and Location	M	P	M	Must contain the same value from the original request message.
44	Additional Response Data	C	X	C	Must contain the same value from the original request response message (if present).
48	Additional Data	O	X	C	Conditionally required, based on individual program or service agreement between the Mastercard and the Issuer.  Transaction Category Code will always be included for non-ATM transactions and conditionally included for ATM transactions if other subelements are present.  Refer to Chapter 4, Data Element Definitions for additional information.
49	Currency Code, Transaction	M	P	M	Must contain the same value from the original request message.
50	Currency Code, Settlement	C	P	M	<b>Issuer 0220 message:</b> Must contain the same value from the original request message (if present).  <b>Acquirer 0220 message:</b> If provided, must contain the same value from the request response message.
51	Currency Code, Cardholder Billing	.	X	M	Contains the same value from the original request message.
54	Additional Amounts	C	P	C	Must contain the same value from the original request message (if present).
55	Integrated Circuit Card (ICC) System-Related Data	C	P	C	Must contain the same value from the original request message (if present).  <b>For offline chip completion messages,</b> this is a mandatory data element to be included by the Acquirer.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
56	Payment Account Data	.	X	C	<p>Financial Transaction Advice/0220</p> <p>Regardless of the party that serves as the BIN Controller, DE 56 is populated with the PAR value from the original Financial Transaction Request Response/0210 message, when PAR was present.</p>
		.	X	C	Non-Financial Transaction Advice/0220
					When Mastercard is the BIN Controller, the PAR value is inserted when available.
58	Authorizing Agent Institution ID	.	X	C	Contains the same value from the original request message (if present).
60	Advice Reason Code	M	P	M	The Advice Reason Code (ARC) indicates the specific purpose of this advice message.
61	POS Data	C	P	C	Must contain the same value from the original request message, except for Debit Mastercard force post messages.
62	INF Data	C	P	C	Must contain the same value from the original request message (if present).
63	Network Data	M	X	M	<p>Provided by the Mastercard Network when the originating message is routed through the Single Message System.</p> <p><b>For offline chip completion messages,</b> this data element is not required from the Acquirer, but will be inserted by the Single Message System.</p> <p><b>NOTE:</b> Refer to DE 63, Network Data, subfield 3, Network Reference Number, in the Data Element Definitions section, for additional information about the values populated in the Financial Transaction Advice/0220.</p>
90	Original Data Elements	M	P	M	<p>Mandatory for all Financial Transaction Advice/0220 Advices. Subfields within this data element may be used to identify the original referenced transaction.</p> <p><b>For offline chip completion messages,</b> this data element is not required from the Acquirer, but will be inserted by the Single Message System.</p>

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
95	Replacement Amounts	C	X	M	<p>Required for partial completions only and must contain the new completed amount. DE 95 contains four subfields listed below: Subfield 1 is provided by the Acquirer, while the Single Message System provides subfields 2–4.</p> <p>For more information about the applicable subfields for this data element see Data Element Definition.</p> <p><b>NOTE: This data element is not applicable for Debit Mastercard Force Post messages.</b></p>
<b>Subfield</b>					
1 = Actual Amount, Transaction					
2 = Actual Amount, Settlement					
3 = Actual Amount, Cardholder Billing					
4 = Filler					
100	Receiving Institution Identification Code	.	X	C	Contains the same value from the original request message.
102	Account Identification-1	C	P	C	Must contain the same value from the original response message (if present).
103	Account Identification-2	C	P	C	Must contain the same value from the original response message (if present).
108	Additional Transaction Reference Data	.	C	C	Conditional for all Mastercard Send Transactions (Funding Transactions, MoneySend Payment Transactions, and Gaming and Gambling Payments Transactions). Conditional for Mastercard Merchant Presented QR.
110	Additional Data-2	C	X	C	Contains a variety of subelements depending on the card and purpose of the request. Refer to the detailed description in <a href="#">Data Element Definitions</a> .

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
111	Amount, Currency Conversion Assessment	.	X	C	Contains the amount reflecting the Currency Conversion Assessment adjustment.
112	Additional Data (National Use)	C	P	C	Reserved for national organizations to define data unique to specific networks or specific programs and services.
124	Member-Defined Data	C	P	C	The Mastercard Network enables processors to pass data to each other in this data element.
126	Switch Private Data	.	X	M	Will contain settlement service and cross-border indicators, along with Mastercard symbolic network information.
127	Private Data	O	X	C	<p>Available for private use by the message originator. The data does not pass through the Single Message System.</p> <p>DE 127 can be included in this Financial Transaction Advice/0220 message for multiple completions.</p> <p>For the Acquirer, the contents of DE 127 can be the same as the original used in the request message and request response message, or the Acquirer can choose to include new data in DE 127 for this Financial Transaction Advice/0220 message.</p> <p>For the Issuer, DE 127 can be included in this Financial Transaction Advice/0220 message. If the Issuer included private data in DE 127 from the original Financial Transaction Request Response/0210 message, the same value will be included in this Financial Transaction Advice/0220 message.</p>

## Financial Transaction Advice Response/0230

This is the message layout for the Financial Transaction Advice Response/0230 message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	M	P	M	Value must be 0230.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Bit Map, Primary	M	P	M	Mandatory for all messages.
1	Bit Map, Secondary	C	P	C	Required only if any data elements in the range DE 65 through DE 128 are present.
2	Primary Account Number (PAN)	M	P	M	Must contain the same value from the original advice message.
3	Processing Code	M	P	M	Must contain the same value from the original advice message.
4	Amount, Transaction	M	P	M	Must contain the same value from the original advice message.
5	Amount, Settlement	C	P	M	Must contain the same value from the original advice message (if present).
7	Transmission Date and Time	M	X	M	With limited exceptions, will contain the same value from the original advice message.
9	Conversion Rate, Settlement	C	P	M	Must contain the same value from the original advice message (if present).
11	System Trace Audit Number	M	P	M	Must contain the same value from the original advice message.
12	Time, Local Transaction	M	P	M	Must contain the same value from the original advice message.
13	Date, Local Transaction	M	P	M	Must contain the same value from the original advice message.
15	Date, Settlement	M	P	M	Must contain the same value from the original advice message.
16	Date, Conversion	C	P	M	Must contain the same value from the original advice message (if present).
20	Primary Account Number (PAN) Country Code	.	X	C	Only present if the processor participates in Enhanced Issuer Identification (EII) service.
28	Amount, Transaction Fee	C	P	C	Must contain the same value from the original advice message (if present).
32	Acquiring Institution Identification Code	M	P	M	Must contain the same value from the original advice message.
33	Forwarding Institution Identification Code	M	P	M	Must contain the same value from the original advice message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
37	Retrieval Reference Number	C	P	C	Must contain the same value from the original advice message (if present).
39	Response Code	M	P	M	Response code for this message.
41	Card Acceptor Terminal Identification	M	P	M	Must contain the same value from the original advice message.
44	Additional Response Data	C	X	C	Indicates the data element where the field edit error occurred.
49	Currency Code, Transaction	M	P	M	Must contain the same value from the original advice message.
50	Currency Code, Settlement	C	P	M	Must contain the same value from the original advice message (if present).
54	Additional Amounts	C	P	C	May contain account balances for Maestro® and Cirrus® transactions.
56	Payment Account Data	.	X	C	Regardless of the party that serves as the BIN Controller, DE 56 is populated with the PAR value from the original Financial Transaction Request Response/0210 message, when PAR was present.
62	INF Data	C	P	C	Must contain the same value from the original advice message (if present).
63	Network Data	M	X	M	Must contain the same value from the original advice message.  The issuer echoes the Adjustment Switch Serial Number back to the Single Message System in DE 63, subfield 3.
95	Replacement Amounts	C	X	.	Required from issuer in response to the Single Message System when present in the original advice message.
	Subfield 1	C	P	M	Must contain the same subfield 1 value from the original advice message.
	Subfields 2-4	.	X	M	System initiated response to acquirer.
100	Receiving Institution Identification Code	C	X	C	Only present if the processor participates in Enhanced Issuer Identification (EII) service.
112	Additional Data (National Use)	C	P	C	Must contain the same value from the original advice message.

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<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
126	Switch Private Data	M	P	M	Must contain the same value from the original advice message.
127	Private Data	O	X	C	<p>Available for private use by the message originator. The data does not pass through the Single Message System.</p> <p>If the acquirer includes DE 127 in the advice message that value is returned in this advice response message.</p> <p>If the acquirer did not include DE 127 in the advice message, and included it in the original request message, that value is included in this advice response message.</p>

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## Financial Transaction Negative Acknowledgement/0290

As of 30 March 2010, all host systems must be configured to receive the Acquirer Reversal Advice/0420 message in place of the Financial Transaction Negative Acknowledgement/0290 message.

**NOTE:** Failure to prepare host systems to accept the Acquirer Reversal Advice/0420 message for a negative acknowledgement advice will affect transaction processing.

## File Update Request/0302

This is the message layout for the File Update Request/0302 message.

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<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI) <sup>a</sup>	M	P	M	Value must be 0302.
-	Bit Map, Primary	M	P	M	Mandatory.
1	Bit Map, Secondary	M	P	M	Mandatory.
2	Primary Account Number (PAN)	M	P	M	Contains the primary account number to be listed by the issuer.

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<sup>a</sup> File update messages may originate from the issuer's online transaction processing system or the issuer's authorized representative via Single Message Transaction Manager.

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<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
7	Transmission Date and Time	M	P	M	The transmission date and time expressed in Universal Time (UTC).
11	System Trace Audit Number	M	P	M	Contents of this data element must be unique for each transaction initiated by a message originator on any single UTC date.
33	Forwarding Institution Identification Code	M	P	M	Contains the Mastercard customer ID number that identifies the entity submitting this file update action request.
91	File Update Code	M	P	M	File function code that describes appropriate action: add, change, delete, or inquire.
96	Message Security Code	C	P	C	File update password or security code that can be required to enable the file update.
101	File Name	M	P	M	Name of the file to be updated. Refer to <a href="#">Data element definitions</a> description of DE 101 for file names, descriptions, and permissible updates.
120	Record Data	M	P	M	Contains the specific file update detail record data. Refer to <a href="#">Data element definitions</a> , DE 120 for a detailed description.
127	Private Data	O	X	.	Available for private use by the message originator. The data does not pass through the Single Message System. The Single Message System returns this data to the request message originator (with contents intact) in any subsequent response message.

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## File Update Request Response/0312

This is the message layout for the File Update Request Response/0312 message.

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<sup>a</sup> File update response messages originate at the Mastercard Account Management System or, in the case of Mastercard Stand-In, from the Single Message System. The responses are ultimately returned to the issuer.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI) <sup>a</sup>	M	P	M	Value must be 0312.
-	Bit Map, Primary	M	P	M	Mandatory.
1	Bit Map, Secondary	M	P	M	Mandatory.
2	Primary Account Number (PAN)	M	P	M	Must contain the same value from the original request message.
7	Transmission Date and Time	M	P	M	Must contain the same value from the original request message.
11	System Trace Audit Number	M	P	M	Must contain the same value from the original request message.
33	Forwarding Institution Identification Code	M	P	M	Must contain the same value from the original request message.
39	Response Code	M	P	M	Indicates whether the file update was successful. Refer to <a href="#">Data element definitions</a> for a description of valid values for DE 39.
44	Additional Response Data	C	X	C	Provides additional information in the event of a format error. Refer to <a href="#">Data element definitions</a> for a description of valid values for DE 44.
63	Network Data	M	P	M	Must contain the same value from the original File Update Request/0302 message.
91	File Update Code	M	P	M	Must contain the same value from the original request message.
96	Message Security Code	C	P	C	Must contain the same value from the original request message, (if present).
101	File Name	M	P	M	Must contain the same value from the original request message.
120	Record Data	M	P	M	Must contain the same value from the original request message.
122	Additional Record Data	C	P	C	A free-form field used to return additional data as a result of a file inquiry. Refer to <a href="#">Data element definitions</a> , DE 122 for a detailed record description and valid values.

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<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
126	Switch Private Data	.	X	M	Contains Single Message System symbolic network information.
127	Private Data	O	X	C	Available for private use by the message originator. The data does not pass through the Single Message System. The Single Message System returns this data to the request message originator (with contents intact) in any subsequent response message.

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## Acquirer Reversal Advice/0420: acquirer initiated

This is the message layout for the Acquirer Reversal Advice/0420—Acquirer Initiated message.

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<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	M	P	M	Value must be 0420.
-	Bit Map, Primary	M	P	M	Mandatory.
1	Bit Map, Secondary	M	P	M	Mandatory.
2	Primary Account Number (PAN)	M	P	M	Must contain the same value from the original request message.
3	Processing Code	M	P	M	Contains the same value from the original request message.
4	Amount, Transaction	M	P	M	Must contain the same value from the original request message or the partial approval amount from the request response message.
5	Amount, Settlement	.	X	M	Contains the same value from the original request message or partial approval amount from the request response message.
6	Amount, Cardholder Billing	.	X	M	Contains the same value from the original request message or partial approval amount from the request response message.

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<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
7	Transmission Date and Time	M	X	M	Date and time, in Universal Time (UTC) that the originator initiates the message. Upon receipt, the Single Message System updates this data element with its time stamp.
9	Conversion Rate, Settlement	.	X	M	Contains the same value from the original request message.
10	Conversion Rate, Cardholder Billing	.	X	M	Contains the same value from the original request message.
11	System Trace Audit Number	M	P	M	Contents of this data element must be unique for each transaction initiated by a message originator on any single UTC date.
12	Time, Local Transaction	M	P	M	Contains the same value from the original request message.
13	Date, Local Transaction	M	P	M	Contains the same value from the original request message.
15	Date, Settlement	M	X	M	Must contain the same value from the original request response message.
16	Date, Conversion	.	X	M	Contains the same value from the original request message.
18	Merchant Type	.	X	O	Contains the same value from the original request message (if present).
23	Card Sequence Number	C	.	C	Contains the same value from the original request message (if present).
28	Amount, Transaction Fee	C	P	C	Must contain the same value from the original request message (if present).
32	Acquiring Institution Identification Code	M	P	M	Must contain the same value from the original request message.
33	Forwarding Institution Identification Code	M	P	M	Must contain the same value from the original request message.
37	Retrieval Reference Number	C	P	C	Must contain the same value from the original request message if present).
38	Authorization ID Response	C	P	C	Must contain the same value from the original request message if present).
39	Response Code	M	P	M	Must contain the same value from the original request response message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
41	Card Acceptor Terminal Identification	M	P	M	Must contain the same value from the original request message.
42	Card Acceptor Identification Code	.	X	O	Contains the same value from the original request message (if present).
43	Card Acceptor Name/Location	.	X	O	Must contain the same value from the original request message.
48	Additional Data	O	X	C	<p>Conditionally required, based on individual program or service agreement between Mastercard and the issuer. The Mastercard Network sends subelement 59 if the issuer elects to receive the original Switch Serial Number.</p> <p>Transaction Category Code will always be included for non-ATM transactions and conditionally included for ATM transactions if other subelements are present.</p> <p>Refer to <a href="#">Data element definitions</a> for additional information.</p>
49	Currency Code, Transaction	M	P	M	Must contain the same value from the original request message.
50	Currency Code, Settlement	.	X	M	Contains the same value from the original request message.
51	Currency Code, Cardholder Billing	.	X	M	Contains the same value from the original request message.
54	Additional Amounts	C	P	C	May contain cash back information.
56	Payment Account Data	.	X	C	Regardless of the BIN Controller, DE 56 is populated with the PAR value from the original Financial Transaction Request Response/0210 message, when PAR was present.
58	Authorizing Agent Institution ID	.	X	C	Contains the same value from the original request message.
60	Advice Reason Code	M	P	M	<p>Indicates the specific reason for this Reversal message.</p> <p>Refer to <a href="#">Data element definitions</a> for additional information.</p>

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
61	Point of Service (POS) Data	.	X	O	Contains the same value from the original request message (if present).
62	INF Data	C	P	C	Must contain the same value from the original request message (if present).
63	Network Data	M	X	M	For the acquirer, DE 63 must contain the same value from the original request response message.  For the issuer, a Single Message System-generated Adjustment Switch Serial Number may be included in DE 63, subfield 3.
90	Original Data Elements	M	P	M	Subfields within this data element may be used to identify the original reversed transaction.
95	Replacement Amounts	M	X	M	Actual amount of the transaction. Contains all zeros for full reversals.
	Subfield 1	M	X	M	Must contain the same subfield 1 value from the original request advice message.
	Subfields 2–4	.	X	M	System initiated response to acquirer.
100	Receiving Institution Identification Code	.	X	C	Contains the same value from the original request message (if present).
108	Additional Transaction Reference Data	O	.	C	Optional for Mastercard Send Transactions (Funding Transactions, MoneySend Payment Transactions, and Gaming and Gambling Payments Transactions) and Mastercard Merchant Presented QR Transactions
110	Additional Data-2	C	P	C	Must contain the same value from the original request message (if present).
111	Amount, Currency Conversion Assessment	.	X	C	Contains the amount reflecting the Currency Conversion Assessment adjustment.
112	Additional Data (National Use)	.	X	C	Customers in Brazil that participate in Merchant Generated Installment Payments will receive DE 112, when the original request message contains DE 112, subelement 1 (Transaction Type) with a value of <b>70</b> (Merchant Generated Installment Transaction).

DE ID	Data element name	Org	Sys	Dst	Comments
124	Member-defined Data	O	P	C	Must contain the same value from the original request message (if present).
126	Switch Private Data	.	X	M	Contains settlement service and cross-border indicators along with Mastercard symbolic network information.
127	Private Data	O	X	C	Available for private use by the message originator. Does not pass through the Single Message System.  If the issuer included DE 127 in the original request response message, that value is included in this reversal advice message.

### Application Notes

When a U.S. region Mastercard or Debit Mastercard (including prepaid) issuer receives a Reversal Advice/0420 message, the issuer will be required to match the reversal to a previous Financial Transaction Request/0200 or Financial Transaction Advice/0220 Debit Mastercard force post message and release any applicable hold placed on cardholder funds within 60 minutes.

## Acquirer Reversal Advice/0420: time-out-induced, acquirer initiated

This is the message layout for the Acquirer Reversal Advice/0420—Time-out-induced, Acquirer Initiated message.

**NOTE:** For an Acquirer Reversal Advice/0420—Exception, Time-out-of Financial Transaction Request Response/0210 to Acquirer message, also known as an unsolicited message reversal, all of the data elements and usages are the same as for the Acquirer Reversal Advice/0420—Time-out induced, Acquirer Initiated message except for DE 15 (Settlement Date) and DE 63 (Network Data. This data will be entered by the Single Message System.

DE ID	Data element name	Org	Sys	Dst	Comments
-	Message Type Identifier (MTI)	M	P	M	Value must be 0420.
-	Bit Map, Primary	M	P	M	Mandatory.
1	Bit Map, Secondary	M	P	M	Mandatory.
2	Primary Account Number (PAN)	M	P	M	Must contain the same value from the original request message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
3	Processing Code	M	P	M	Must contain the same value from the original request message.
4	Amount, Transaction	M	P	M	Must contain the same value from the original request message.
5	Amount, Settlement	.	X	M	Contains the same value from the original request message.
6	Amount, Cardholder Billing	.	X	M	Contains the same value from the original request message.
7	Transmission Date and Time	M	X	M	Date and time, in Universal Time (UTC) that the originator initiates the message. Upon receipt, the Single Message System updates this data element with its time stamp.
9	Conversion Rate, Settlement	.	X	M	Contains the same value from the original request message.
10	Conversion Rate, Cardholder Billing	.	X	M	Contains the same value from the original request message.
11	System Trace Audit Number	M	P	M	Contents of this data element must be unique for each transaction initiated by a message originator on any single UTC date.
12	Time, Local Transaction	M	P	M	Must contain the same value from the original request message.
13	Date, Local Transaction	M	P	M	Must contain the same value from the original request message.
15	Date, Settlement	.	X	M	The Single Message System provides this data element.
16	Date, Conversion	.	X	M	Contains the same value from the original request message.
18	Merchant Type	.	X	O	Contains the same value from the original request message (if present).
23	Card Sequence Number	C	.	C	Contains the same value from the original request message (if present).
28	Amount, Transaction Fee	C	P	C	Must contain the same value from the original request message (if present).
32	Acquiring Institution Identification Code	M	P	M	Must contain the same value from the original request message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
33	Forwarding Institution Identification Code	M	P	M	Must contain the same value from the original request message.
37	Retrieval Reference Number	C	P	C	Must contain the same value from the original request message (if present).
38	Authorization ID Response	C	P	C	Contains the same value from the original request response message.
39	Response Code	M	P	M	Contains the code 00 for the Time-out-induced Reversal message.
41	Card Acceptor Terminal Identification	M	P	M	Must contain the same value from the original request message.
42	Card Acceptor Identification Code	.	X	O	Contains the same value from the original request message.
43	Card Acceptor Name/ Location	.	X	O	Contains the same value from the original request message.
48	Additional Data	.	X	C	Conditionally required, based on individual program or service agreement between Mastercard and the issuer.  Refer to <a href="#">Data element definitions</a> for additional information.
49	Currency Code, Transaction	M	P	M	Must contain the same value from the original request message.
50	Currency Code, Settlement	.	X	M	Contains the same value from the original request message.
51	Currency Code, Cardholder Billing	.	X	M	Contains the same value from the original request message.
54	Additional Amounts	C	P	C	May contain cash back information.
56	Payment Account Data	.	X	C	Regardless of the party that serves as the BIN Controller, DE 56 is populated with the PAR value from the original Financial Transaction Request Response/0210 message, when PAR was present.
58	Authorizing Agent Institution ID	.	X	C	Contains the same value from the original request message, (if present).
60	Advice Reason Code	M	P	M	Contains the value 4500018 for the Time-out-Induced Reversal message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
61	Point of Service (POS) Data	.	X	O	Contains the same value from the original request message (if present).
62	INF Data	C	P	C	Must contain the same value from the original request message (if present).
63	Network Data	.	X	M	For the issuer, a Single Message System-generated Adjustment Switch Serial Number may be included in DE 63, subfield 3.
<b>NOTE: For an Acquirer Reversal Advice/0420—Exception, Time-out-of Financial Transaction Request Response/0210 to Acquirer message, DE 63 (Network Data) has the following usage.</b>					
		.	X	M	The Single Message System provides this data element.
90	Original Data Elements	M	P	M	Subfields within this data element may be used to identify the original reversed transaction.
95	Replacement Amounts	M	X	M	Contains all zeros for the Time-out-induced Reversal message.
100	Receiving Institution Identification Code	.	X	C	Contains the same value from the original request message, (if present).
110	Additional Data-2	C	P	C	Must contain the same value from the original request message.
111	Amount, Currency Conversion Assessment	.	X	C	Contains the same value from the original request message, (if present).
112	Additional Data (National Use)	.	X	C	Customers in Brazil that participate in Merchant Generated Installment Payments will receive DE 112, when the original request message contains DE 112, subelement 1 with a value of <b>70</b> .
124	Member-defined data	O	P	C	Must contain the same value from the original request message, (if present).
126	Switch Private Data	.	X	M	Contains settlement service and cross-border indicators along with Mastercard symbolic network information.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
127	Private Data	O	X	.	Available for private use by the message originator. Does not pass through the Single Message System.

## Acquirer Reversal Advice/0420: time-out-induced, system initiated

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This is the message layout for the Acquirer Reversal Advice/0420—Time-out-Induced, System Initiated message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	.	X	M	Value must be 0420.
-	Bit Map, Primary	.	X	M	Mandatory.
1	Bit Map, Secondary	.	X	M	Mandatory.
2	Primary Account Number (PAN)	.	X	M	Must contain the same value from the original request message.
3	Processing Code	.	X	M	Must contain the same value from the original request message.
4	Amount, Transaction	.	X	M	Must contain the same value from the original request message.
5	Amount, Settlement	.	X	M	Must contain the same value from the original request message.
6	Amount, Cardholder Billing	.	X	M	Must contain the same value from the original request message.
7	Transmission Date and Time	.	X	M	Date and time, in Universal Time (UTC) that the originator initiates the message. Upon receipt, the Single Message System updates this data element with its time stamp.
9	Conversion Rate, Settlement	.	X	M	Must contain the same value from the original request message.
10	Conversion Rate, Cardholder Billing	.	X	M	Must contain the same value from the original request message.
11	System Trace Audit Number	.	X	M	Must contain the same value as the original request message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
12	Time, Local Transaction	.	X	M	Must contain the same value from the original request message.
13	Date, Local Transaction	.	X	M	Must contain the same value from the original request message.
15	Date, Settlement	.	X	M	Must contain the same value from the original request message.
16	Date, Conversion	.	X	M	Must contain the same value from the original request message.
18	Merchant Type	.	X	O	Contains the same value from the original request message (if present).
23	Card Sequence Number	C	.	C	Contains the same value from the original request message (if present).
28	Amount, Transaction Fee	.	X	C	Must contain the same value from the original request message (if present).
32	Acquiring Institution Identification Code	.	X	M	Must contain the same value from the original request message.
33	Forwarding Institution Identification Code	.	X	M	Must contain the same value from the original request message.
37	Retrieval Reference Number	.	X	C	Must contain the same value from the original request message (if present).
38	Authorization ID Response	.	X	C	Must contain the same value from the original request response message, (if present).
39	Response Code	.	X	M	Contains the code 00 for the Time-out-Induced Reversal message.
41	Card Acceptor Terminal Identification	.	X	M	Must contain the same value from the original request message.
42	Card Acceptor Identification Code	.	X	O	Must contain the same value from the original request message, (if present).
43	Card Acceptor Name/ Location	.	X	O	Must contain the same value from the original financial message.
49	Currency Code, Transaction	.	X	M	Must contain the same value from the original request message.
50	Currency Code, Settlement	.	X	M	Must contain the same value from the original request message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
51	Currency Code, Cardholder Billing	.	X	M	Must contain the same value from the original request message.
54	Additional Amounts	.	X	C	Must contain the same value from the original request message, (if present).  For Healthcare Eligibility Inquiry transactions, the reversal advice message generated by the Single Message System will not contain DE 54.
58	Authorizing Agent Institution ID	.	X	C	Must contain the same value from the original request message, (if present).
60	Advice Reason Code	.	X	M	Has the value 4010080 for the Time-out-Induced Reversal message.
61	Point of Service (POS) Data	.	X	O	Contains the same value from the original request message (if present).
62	INF Data	.	X	C	Must contain the same value from the original request message (if present).
63	Network Data	.	X	M	Provided by the Single Message System in the message to the issuer.
90	Original Data Elements	.	X	M	Subfields within this data element may be used to identify the original reversed transaction.
95	Replacement Amounts	.	X	M	Contains all zeros for the Time-out-Induced reversal message.
100	Receiving Institution Identification Code	.	X	C	Must contain the same value from the original request message, (if present).
110	Additional Data-2	.	X	C	Must contain the same value from the original request message, (if present).
111	Amount, Currency Conversion Assessment	.	X	C	Must contain the same value from the original request message, (if present).
112	Additional Data (National Use)	.	X	C	Must contain the same value from the original request message, (if present).
126	Switch Private Data	.	X	M	Must contain the same value from the original request message.

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<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
127	Private Data	.	X	.	Available for private use by the message originator. Does not pass through the Single Message System.

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## Acquirer Reversal Advice/0420: exception, system initiated

This is the message layout for the Acquirer Reversal Advice/0420—Exception, System Initiated message.

**NOTE:** The Acquirer Reversal Advice/0420—NICS Exception, System Initiated is renamed Acquirer Reversal Advice/0420—Exception, System Initiated.

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<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	.	X	M	Value must be 0420.
-	Bit Map, Primary	.	X	M	Mandatory.
1	Bit Map, Secondary	.	X	M	Mandatory.
2	Primary Account Number (PAN)	.	X	M	Must contain the same value from the original request message. <sup>a</sup>
3	Processing Code	.	X	M	Must contain the same value from the original request message. <sup>a</sup>
4	Amount, Transaction <sup>c</sup>	.	X	M	Must contain the same value from the original request message.
5	Amount, Settlement <sup>c</sup>	.	X	M	Must contain the same value from the original request message. <sup>b</sup>
6	Amount, Cardholder Billing <sup>c</sup>	.	X	M	Must contain the same value from the original request message. <sup>b</sup>

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<sup>a</sup> The system includes this DE data (from the previous message).

<sup>b</sup> The Single Message System applies the conversion rate in effect for the date the adjustment is processed. The exchange rate applied to the adjustment may vary from the one applied to the original transaction.

<sup>c</sup> If more than one exception is created, the amounts in data elements 4, 5, and 6 will change to the new completed amount from the first exception. After the first exception, the values in these data elements will be different from the original amount.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
7	Transmission Date and Time	.	X	M	The system initiates the date and time, in UTC format for this message.
9	Conversion Rate, Settlement	.	X	M	Factor used in the conversion from transaction to settlement amount. DE 4 (Amount, Transaction) is multiplied by DE 9 to determine DE 5 (Amount, Settlement).
10	Conversion Rate, Cardholder Billing	.	X	M	Factor used in the conversion from transaction to cardholder billing amount. DE 4 (Amount, Transaction) is multiplied by DE 10 to determine DE 6 (Amount, Cardholder Billing).
11	System Trace Audit Number	.	X	M	Contents of this data element must be unique for each transaction initiated by a message originator on any single UTC date.
12	Time, Local Transaction	.	X	M	Must contain the same value from the original request message. <sup>a</sup>
13	Date, Local Transaction	.	X	M	Must contain the same value from the original request message. <sup>a</sup>
15	Date, Settlement	.	X	M	The Single Message System provides this data element.
16	Date, Conversion	.	X	M	Contains the effective date of currency conversion performed for this transaction.
18	Merchant Type	.	X	O	Contains the same value from the original request message (if present).
23	Card Sequence Number	C	.	C	Contains the same value from the original request message (if present).
32	Acquiring Institution Identification Code	.	X	M	Must contain the same value from the original request message. <sup>a</sup>
33	Forwarding Institution Identification Code	.	X	M	Must contain the same value from the original request message. <sup>a</sup>
37	Retrieval Reference Number	.	X	C	Must contain the same value from the original request message, (if present). <sup>a</sup>
39	Response Code	.	X	M	Must contain the same value from the original request message. <sup>a</sup>
41	Card Acceptor Terminal Identification	.	X	M	Must contain same value from the original request message. <sup>a</sup>

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
42	Card Acceptor Identification Code	.	X	O	Must contain the same value from the original request message, (if present).
43	Card Acceptor Name/ Location	.	X	O	Must contain the same value from the original request message.
48	Additional Data	.	X	C	Conditionally required, based on individual program or service agreement between Mastercard and the issuer. The Single Message System sends subelement 59 if the issuer elects to receive the original Switch Serial Number.  Refer to <a href="#">Data element definitions</a> for additional information.
49	Currency Code, Transaction	.	X	M	Must contain the same value from the original request message. <sup>a</sup>
50	Currency Code, Settlement	.	X	M	Must contain the same value from the original request message.
51	Currency Code, Cardholder Billing	.	X	M	Must contain the same value from the original request message.
54	Additional Amounts	.	X	C	May contain cash back information.
56	Payment Account Data	.	X	C	Regardless of the party that serves as the BIN Controller, DE 56 is populated with the PAR value from the original Financial Transaction Request Response/0210 message, when PAR was present.
58	Authorizing Agent Institution ID	.	X	C	Must contain the same value from the original request message, (if present).
60	Advice Reason Code	.	X	M	Indicates the specific reason for this reversal message.  Refer to <a href="#">Data element definitions</a> for additional information.
61	Point of Service (POS) Data	.	X	O	Contains the same value from the original request message (if present).
62	INF Data	.	X	C	Must contain the same value from the original request message, (if present). <sup>a</sup>

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
63	Network Data	.	X	M	For both acquirer and issuer, a Single Message system-generated adjustment. Switch Serial number may be included in DE 63, subfield 3.
90	Original Data Elements	.	X	M	Subfields within this data element may be used to identify the original reversed transaction. <sup>a</sup>
95	Replacement Amounts	.	X	M	Actual completed amount of the transaction. Contains all zeros for full reversals.
100	Receiving Institution Identification Code	.	X	C	Must contain the same value from the original request message, (if present).
111	Amount, Currency Conversion Assessment	.	X	C	Contains the amount reflecting the Currency Conversion Assessment adjustment.
112	Additional Data (National Use)	.	X	C	Contains the same value from the original request message, (if present).
126	Switch Private Data	.	X	M	Contains settlement service and cross-border indicators along with Mastercard symbolic network information.
127	Private Data	.	X	C	Available for private use by the message originator. Does not pass through The Single Message System. <sup>a</sup>  If the issuer included DE 127 in the original request response message, that value is included in this reversal advice message.

## Acquirer Reversal Advice/0420: acquirer initiated exception

This is the message layout for the Acquirer Reversal Advice/0420—Acquirer Initiated Exception message.

<sup>a</sup> The system includes this DE data (from the previous message).

<sup>b</sup> The Single Message System applies the conversion rate in effect for the date the adjustment is processed. The exchange rate applied to the adjustment may vary from the one applied to the original transaction.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	M	P	M	Value must be 0420.
-	Bit Map, Primary	M	P	M	Mandatory.
1	Bit Map, Secondary	M	P	M	Mandatory.
2	Primary Account Number (PAN)	M	P	M	Must contain the same value from the original request message.
3	Processing Code	O	X	M	Must contain the same value from the original request message.
4	Amount, Transaction <sup>c</sup>	O	X	M	Must contain the same value from the original request message.
5	Amount, Settlement <sup>c</sup>	.	X	M	Must contain the same value from the original request message.
6	Amount, Cardholder Billing <sup>c</sup>	.	X	M	Must contain the same value from the original request message.
7	Transmission Date and Time	M	X	M	Date and time, in Universal Time (UTC) that the originator initiates the message. Upon receipt, the Single Message System updates this data element with its time stamp.
9	Conversion Rate, Settlement	.	X	M	Factor used in the conversion from transaction to settlement amount. DE 4 (Amount, Transaction) is multiplied by DE 9 to determine DE 5 (Amount, Settlement).
10	Conversion Rate, Cardholder Billing	.	X	M	Factor used in the conversion from transaction to cardholder billing amount. DE 4 (Amount, Transaction) is multiplied by DE 10 to determine DE 6 (Amount, Cardholder Billing).
11	System Trace Audit Number	M	P	M	Contents of this data element must be unique for each transaction initiated by a message originator on any single UTC date.
12	Time, Local Transaction	O	X	M	Must contain the same value from the original request message.

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<sup>c</sup> If more than one exception is created, the amounts in data elements 4, 5, and 6 will change to the new completed amount from the first exception. After the first exception, the values in these data elements will be different from the original amount.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
13	Date, Local Transaction	O	X	M	Must contain the same value from the original request message.
15	Date, Settlement	M	X	M	Must contain the same value from the original request response message.
16	Date, Conversion	.	X	M	Contains the effective date of currency conversion performed for this transaction.
18	Merchant Type	.	X	O	Contains the same value from the original request message (if present).
23	Card Sequence Number	C	.	C	Contains the same value from the original request message (if present).
32	Acquiring Institution Identification Code	O	X	M	Must contain the same value from the original financial message.
33	Forwarding Institution Identification Code	M	P	M	Must contain the same value from the original financial message.
37	Retrieval Reference Number	O	X	C	Must contain the same value from the original financial message (if present).
39	Response Code	.	X	M	Will contain the same value from the original transaction response message.
41	Card Acceptor Terminal Identification	O	X	M	Must contain the same value from the original financial message.
42	Card Acceptor Identification Code	.	X	O	Must contain the same value from the original request message, (if present).
43	Card Acceptor Name/ Location	.	X	O	Must contain the same value from the original financial message.
48	Additional Data	.	X	C	Conditionally required, based on individual program or service agreement between Mastercard and the issuer. The Single Message System sends subelement 59 if the issuer elects to receive the original Switch Serial Number.  Refer to <a href="#">Data element definitions</a> for additional information.
49	Currency Code, Transaction	.	X	M	Must contain the same value from the original request message.
50	Currency Code, Settlement	.	X	M	Must contain the same value from the original request message.

Message layouts  
Acquirer Reversal Advice/0420: acquirer initiated exception

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
51	Currency Code, Cardholder Billing	.	X	M	Must contain the same value from the original request message.
54	Additional Amounts	M	P	C	Must be included on all Purchase with Cash Back transaction adjustments.
58	Authorizing Agent Institution ID	.	X	C	Must contain the same value from the original request message, (if present).
60	Advice Reason Code	M	P	M	Indicates the specific reason for this Reversal message.  Refer to <a href="#">Data element definitions</a> for additional information.
61	Point of Service (POS) Data	.	X	O	Contains the same value from the original request message (if present).
62	INF Data	O	X	C	Must contain the same value from the original request message (if present).
63	Network Data	M	X	M	For the acquirer, DE 63 must contain the same value from the original transaction response message.  For the issuer, a Single Message System-generated Adjustment Switch Serial Number will be included in DE 63, subfield 3.
90	Original Data Elements	O	X	M	Subfields within this data element may be used to identify the original reversed transaction.
95	Replacement Amounts	M	P	M	Actual completed amount of the transaction. Contains all zeros for full reversals.
100	Receiving Institution Identification Code	.	X	C	Must contain the same value from the original request message (if present).
110	Additional Data-2	C	P	C	Must contain the same value from the original financial message, (if present).
111	Amount, Currency Conversion Assessment	.	X	C	Contains the amount reflecting the Currency Conversion Assessment adjustment. <sup>b</sup>
112	Additional Data (National Use)	.	X	C	Must contain the same value from the original request message, (if present).

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
124	Member-defined Data	O	P	C	Must contain the same value from the original request message, (f present).
126	Switch Private Data	.	X	M	Contains settlement service and cross-border indicators along with Mastercard symbolic network information.
127	Private Data	O	X	C	Available for private use by the message originator. Does not pass through the Single Message System. <sup>a</sup>  If the issuer included DE 127 in the original Financial Transaction Request Response/0210 message, that value is included in this Acquirer Reversal Advice/0420—Acquirer Initiated Exception message.

## Issuer Reversal Advice/0422: exception, system initiated

This is the message layout for the Issuer Reversal Advice/0422—Exception, System Initiated message.

**NOTE:** Issuer Reversal Advice/0422—NICS Exception, System Initiated is renamed Issuer Reversal Advice/0422—Exception, System Initiated.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	.	X	M	Value Must be 0422.
-	Bit Map, Primary	.	X	M	Mandatory.
1	Bit Map, Secondary	.	X	M	Mandatory.
2	Primary Account Number (PAN)	.	X	M	Must contain the same value from the original request message. <sup>a</sup>
3	Processing Code	.	X	M	Must contain the same value from the original request message. <sup>a</sup>

<sup>a</sup> The system includes this DE data (from the previous message).

<sup>b</sup> If more than one exception is created, the amounts in data elements 4, 5, and 6 will change to the new completed amount from the first exception. After the first exception, the values in these data elements will be different from the original amount.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
4	Amount, Transaction <sup>b</sup>	.	X	M	Must contain the same value from the original request message.
5	Amount, Settlement <sup>b</sup>	.	X	M	Must contain the same value from the original request message.
6	Amount, Cardholder Billing <sup>b</sup>	.	X	C	Must contain the same value from the original request message.
7	Transmission Date and Time	.	X	M	The system initiates the date and time in UTC format of this message.
9	Conversion Rate, Settlement	.	X	M	Factor used in the conversion from transaction to settlement amount. DE 4 (Amount, Transaction) is multiplied by DE 9 to determine DE 5 (Amount, Settlement).
10	Conversion Rate, Cardholder Billing	.	X	C	Factor used in the conversion from transaction to cardholder billing amount. DE 4 (Amount, Transaction) is multiplied by DE 10 to determine DE 6 (Amount, Cardholder Billing).
11	System Trace Audit Number	.	X	M	The contents of this data element must be unique for each transaction initiated by a message originator on any single UTC date.
12	Time, Local Transaction	.	X	M	Must contain the same value from the original request message. <sup>a</sup>
13	Date, Local Transaction	.	X	M	Must contain the same value from the original request message. <sup>a</sup>
15	Date, Settlement	.	X	M	The Single Message System provides this data element.
16	Date, Conversion	.	X	M	Contains the effective date of currency conversion performed for this transaction.
20	Primary Account Number (PAN) Country Code	.	X	C	Only present if the processor participates in Enhanced Issuer Identification (EI) service.
32	Acquiring Institution Identification Code	.	X	M	Must contain the same value from the original request message. <sup>a</sup>
33	Forwarding Institution Identification Code	.	X	M	Must contain the same value from the original request message. <sup>a</sup>
37	Retrieval Reference Number	.	X	C	Must contain the same value from the original request message, if present.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
39	Response Code	.	X	M	Must contain the same value from the original transaction response message. <sup>a</sup>
41	Card Acceptor Terminal Identification	.	X	M	Must contain the same value from the original request message. <sup>a</sup>
48	Additional Data	.	X	C	Conditionally required, based on individual program or service agreement between Mastercard and the acquirer. The Single Message System sends subelement 59 if the acquirer elects to receive the original Switch Serial Number.  Refer to <a href="#">Data element definitions</a> for additional information.
49	Currency Code, Transaction	.	X	M	Must contain the same value from the original request message. <sup>a</sup>
50	Currency Code, Settlement	.	X	M	Must contain the same value from the original request message.
51	Currency Code, Cardholder Billing	.	X	C	Must contain the same value from the original request message.
54	Additional Amounts	.	X	C	Must be included on all Purchase with Cash Back transaction adjustments.
56	Payment Account Data	.	X	C	Regardless of the party that serves as the BIN Controller, DE 56 is populated with the PAR value from the original Financial Transaction Request Response/0210 message, when PAR was present.
60	Advice Reason Code	.	X	M	Indicates the specific reason for this reversal message.  Refer to <a href="#">Data element definitions</a> for additional information.
62	INF Data	.	X	C	Must contain the same value from the original request message, (if present.) <sup>a</sup>
63	Network Data	.	X	M	For both acquirer and issuer, a Single Message system generated adjustment Switch Serial Number may be included in DE 63, subfield 3.
90	Original Data Elements	.	X	M	Subfields within this data element may be used to identify the original reversed transaction.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
95	Replacement Amounts	.	X	M	<p>Actual completed amount of the transaction. Contains all zeros for full reversals.</p> <ul style="list-style-type: none"> <li>• All zeros for full chargebacks.</li> <li>• The replacement amount for partial chargebacks.</li> </ul>
100	Receiving Institution Identification Code	.	X	C	Only present if the processor participates in Enhanced Issuer Identification (EII) service.
126	Switch Private Data	.	X	M	Contains settlement service and cross-border indicators along with Mastercard symbolic network information.
127	Private Data	.	X	C	<p>Available for private use by the message originator. Does not pass through the Single Message System.<sup>a</sup></p> <p>If the acquirer included DE 127 in the original Financial Transaction Request/0200 message, that value is included in this Issuer Reversal Advice/0422—Exception, System Initiated message.</p>

## **Issuer Reversal Advice/0422: exception, issuer initiated**

This is the message layout for the Issuer Reversal Advice/0422—Exception, Issuer Initiated message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	M	P	M	Value must be 0422.
-	Bit Map, Primary	M	P	M	Mandatory.
1	Bit Map, Secondary	M	P	M	Mandatory.

<sup>a</sup> The system includes this DE data (from the previous message).

<sup>b</sup> If more than one exception is created, the amounts in data elements 4, 5, and 6 will change to the new completed amount from the first exception. After the first exception, the values in these data elements will be different from the original amount.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
2	Primary Account Number (PAN)	M	P	M	Must contain the same value from the original request message.
3	Processing Code	O	X	M	Must contain the same value from the original request message.
4	Amount, Transaction <sup>b</sup>	O	X	M	Must contain the same value from the original request message.
5	Amount, Settlement <sup>b</sup>	.	X	M	Must contain the same value from the original request message.
6	Amount, Cardholder Billing <sup>b</sup>	.	X	C	Must contain the same value from the original request message.
7	Transmission Date and Time	M	X	M	Date and time, in Universal Time (UTC) that the originator initiates the message. Upon receipt, the Single Message System updates this data element with its time stamp.
9	Conversion Rate, Settlement	.	X	M	Factor used in the conversion from transaction to settlement amount. DE 4 (Amount, Transaction) is multiplied by DE 9 to determine DE 5 (Amount, Settlement).
10	Conversion Rate, Cardholder Billing	.	X	C	Factor used in the conversion from transaction to the cardholder billing amount. DE 4 (Amount, Transaction) is multiplied by DE 10 to determine DE 6 (Amount, Cardholder Billing).
11	System Trace Audit Number	M	P	M	The contents of this data element must be unique for each transaction initiated by a message originator on any single UTC date.
12	Time, Local Transaction	O	X	M	Must contain the same value from the original request message.
13	Date, Local Transaction	O	X	M	Must contain the same value from the original request message.
14	Date, Expiration	O	P	C	Will contain the same value from the original request message.
15	Date, Settlement	M	X	M	Must contain the same value from the original request message.
16	Date, Conversion	.	X	M	Contains the effective date of currency conversion performed for this transaction.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
20	Primary Account Number (PAN) Country Code	.	X	C	Only present if the processor participates in Enhanced Issuer Identification (EI) service.
32	Acquiring Institution Identification Code	O	X	M	Must contain the same value from the original request message.
33	Forwarding Institution Identification Code	M	P	M	Must contain the same value from the original request message.
37	Retrieval Reference Number	O	X	C	Must contain the same value from the original request message (if present).
39	Response Code	.	X	M	Will contain the same value from the original transaction response message. The system includes this data element from the previous message.
41	Card Acceptor Terminal Identification	O	X	M	Must contain the same value from the original request message.
48	Additional Data	.	X	C	Conditionally required, based on individual program or service agreement between Mastercard and the acquirer. The Single Message System sends subelement 59 if the issuer elects to receive the original Switch Serial Number.  Refer to <a href="#">Data element definitions</a> for additional information.
49	Currency Code, Transaction	.	X	M	Will contain the same value from the original request message.
50	Currency Code, Settlement	.	X	M	Must contain the same value from the original request message.
51	Currency Code, Cardholder Billing	.	X	C	Must contain the same value from the original request message, (if present). <sup>a</sup>
54	Additional Amounts	M	P	C	Must contain the same value from the original request message, (if present).
60	Advice Reason Code	M	P	M	Indicates the specific reason for this Reversal message.  Refer to <a href="#">Data element definitions</a> for a listing of advice reason codes.
62	INF Data	O	X	C	Must contain the same value from the original request message (if present).

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
63	Network Data	M	X	M	For the issuer, DE 63 must contain the same value from the original transaction response message.  For the acquirer, a Single Message System-generated Adjustment Switch Serial Number will be included in DE63, subfield 3.
90	Original Data Elements	O	X	M	Subfields within this data element may be used to identify the original reversed transaction.
95	Replacement Amounts	M	P	M	Actual completed amount of the transaction. Contains all zeros for full reversals.
100	Receiving Institution Identification Code	•	X	C	Only present if the processor participates in Enhanced Issuer Identification (EI) service.
126	Switch Private Data	•	X	M	Contains settlement service and cross-border indicators along with Mastercard symbolic network information.
127	Private Data	O	X	C	Available for private use by the message originator. Does not pass through the Single Message System. <sup>a</sup>  If the acquirer included DE 127 in the original request message, that value is included in this Issuer Reversal Advice/0422 –Exception, Issuer Initiated message.

## Acquirer Reversal Advice Response/0430: system initiated

This is the message layout for the Acquirer Reversal Advice Response/0430—System Initiated message.

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- <sup>a</sup> The Single Message System applies the conversion rate in effect for the date the adjustment is processed. The exchange rate applied to the adjustment may vary from the one applied to the original transaction.
  - <sup>b</sup> If more than one exception is created, the amounts in data elements 4, 5, and 6 will change to the new completed amount from the first exception. After the first exception, the values in these data elements will be different from the original amount.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	.	X	M	Value Must be 0430.
-	Bit Map, Primary	.	X	M	Mandatory.
1	Bit Map, Secondary	.	X	M	Mandatory.
2	Primary Account Number (PAN)	.	X	M	Must contain the same value from the original reversal message.
3	Processing Code	.	X	M	Must contain the same value from the original reversal message.
4	Amount, Transaction <sup>b</sup>	.	X	M	Must contain the same value from the original reversal message.
5	Amount, Settlement <sup>b</sup>	.	X	M	Must contain the same value from the original reversal message (if present).
					<b>NOTE: If the Single Message System declines the request, DE 5 will not be returned in the Acquirer Reversal Advice Response/0430 message.</b>
6	Amount, Cardholder Billing <sup>b</sup>	.	X	C	Contains the same value from the original reversal message (if present).
					<b>NOTE: If the Single Message System declines the request, DE 6 will not be returned in the Acquirer Reversal Advice Response/0430 message.</b>
7	Transmission Date and Time	.	X	M	With limited exceptions, will contain the same value from the original reversal message.
9	Conversion Rate, Settlement	.	X	M	Must contain the same value from the original reversal message.
10	Conversion Rate, Cardholder Billing	.	X	C	Must contain the same value from the original reversal message, (if present). <sup>a</sup>
11	System Trace Audit Number	.	X	M	Must contain the same value from the original reversal message.
12	Time, Local Transaction	.	X	M	Must contain the same value from the original reversal message.

Message layouts  
Acquirer Reversal Advice Response/0430: system initiated

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<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
13	Date, Local Transaction	.	X	M	Must contain the same value from the original reversal message.
15	Date, Settlement	.	X	M	The Single Message System provides this data element.
16	Date, Conversion	.	X	M	Must contain the same value from the original reversal message (if present).
20	Primary Account Number (PAN) Country Code	.	X	C	Only present if the processor participates in Enhanced Issuer Identification (EI) service.
32	Acquiring Institution Identification Code	.	X	M	Must contain the same value from the original reversal message.
33	Forwarding Institution Identification Code	.	X	M	Must contain the same value from the original reversal message.
37	Retrieval Reference Number	.	X	C	Must contain the same value from the original reversal message (if present).
39	Response Code	.	X	M	Response code for this message.
41	Card Acceptor Terminal ID	.	X	M	Must contain the same value from the original reversal message.
44	Additional Response Data	.	X	C	Indicates the data element location where the field edit error occurred.
49	Currency Code, Transaction	.	X	M	Must contain the same value from the original reversal message.
50	Currency Code, Settlement	.	X	M	Must contain the same value from the original reversal message.
51	Currency Code, Cardholder Billing	.	X	C	Must contain the same value from the original reversal message, (if present). <sup>a</sup>
54	Additional Amounts	.	X	C	Must contain the same value from the original reversal message, (if present).
56	Payment Account Data	.	X	C	Regardless of the party that serves as the BIN Controller, DE 56 is populated with the PAR value from the original Financial Transaction Request Response/0210 message, when PAR was present.
62	INF Data	.	X	C	Must contain the same value from the original reversal message (if present).

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<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
63	Network Data	.	X	M	Must contain the same value from the original reversal message.
95	Replacement Amounts	.	X	M	Contains the subfield 1 value from the original reversal message and contains subfields 2–4 provided by the Single Message System.
100	Receiving Institution Identification Code	.	X	C	Only present if the processor participates in Enhanced Issuer Identification (EI) service.
126	Switch Private Data	.	X	M	Must contain the same value from the original reversal message.
127	Private Data	O	X	C	<p>Available for private use by the message originator. Does not pass through the Single Message System.</p> <p>If the acquirer included DE 127 in the Acquirer Reversal Advice/0420 message, that value is included in this reversal advice response message.</p> <p>If the acquirer does not include DE 127 in the Acquirer Reversal Advice/0420 message, and included it in the original request message, the DE 127 value from the request message is included in this reversal advice response message.</p>

## Acquirer Reversal Advice Response/0430: issuer initiated

This is the message layout for the Acquirer Reversal Advice Response/0430—Issuer Initiated message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	.	X	M	Value Must be 0430.

- <sup>a</sup> The Single Message System applies the conversion rate in effect for the date the adjustment is processed. The exchange rate applied to the adjustment may vary from the one applied to the original transaction.
- <sup>b</sup> If more than one exception is created, the amounts in data elements 4, 5, and 6 will change to the new completed amount from the first exception. After the first exception, the values in these data elements will be different from the original amount.

Message layouts  
Acquirer Reversal Advice Response/0430: issuer initiated

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Bit Map, Primary	.	X	M	Mandatory.
1	Bit Map, Secondary	.	X	M	Mandatory.
2	Primary Account Number (PAN)	.	X	M	Must contain the same value from the original reversal message.
3	Processing Code	.	X	M	Must contain the same value from the original reversal message.
4	Amount, Transaction <sup>b</sup>	.	X	M	Must contain the same value from the original reversal message.
5	Amount, Settlement <sup>b</sup>	.	X	M	Must contain the same value from the original reversal message (if present).
<b>NOTE: If the Single Message System declines the request, DE 5 will not be returned in the Acquirer Reversal Advice Response/0430 message.</b>					
6	Amount, Cardholder Billing <sup>b</sup>	.	X	C	Contains the same value from the original reversal message (if present).
<b>NOTE: If the Single Message System declines the request, DE 6 will not be returned in the Acquirer Reversal Advice Response/0430 message.</b>					
7	Transmission Date and Time	.	X	M	With limited exceptions, will contain the same value from the original reversal message.
9	Conversion Rate, Settlement	.	X	M	Must contain the same value from the original reversal message.
10	Conversion Rate, Cardholder Billing	.	X	C	Must contain the same value from the original reversal message, (if present). <sup>a</sup>
11	System Trace Audit Number	.	X	M	Must contain the same value from the original reversal message.
12	Time, Local Transaction	.	X	M	Must contain the same value from the original reversal message.
13	Date, Local Transaction	.	X	M	Must contain the same value from the original reversal message.
15	Date, Settlement	.	X	M	The Single Message System provides this data element.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
16	Date, Conversion	.	X	M	Must contain the same value from the original reversal message (if present).
20	Primary Account Number (PAN) Country Code	.	X	C	Only present if the processor participates in Enhanced Issuer Identification (EII) service.
32	Acquiring Institution Identification Code	.	X	M	Must contain the same value from the original reversal message.
33	Forwarding Institution Identification Code	.	X	M	Must contain the same value from the original reversal message.
37	Retrieval Reference Number	.	X	C	Must contain the same value from the original reversal message (if present).
39	Response Code	.	X	M	Response code for this message.
41	Card Acceptor Terminal ID	.	X	M	Must contain the same value from the original reversal message.
44	Additional Response Data	.	X	C	Indicates the data element location where the field edit error occurred.
49	Currency Code, Transaction	.	X	M	Must contain the same value from the original reversal message.
50	Currency Code, Settlement	.	X	M	Must contain the same value from the original reversal message.
51	Currency Code, Cardholder Billing	.	X	C	Must contain the same value from the original reversal message, (if present). <sup>a</sup>
54	Additional Amounts	.	X	C	Must contain the same value from the original reversal message, (if present).
62	INF Data	.	X	C	Must contain the same value from the original reversal message (if present).
63	Network Data	.	X	M	Must contain the same value from the original reversal message.
95	Replacement Amounts	.	X	M	Contains the subfield 1 value from the original reversal message and contains subfields 2–4 provided by the Single Message System.
100	Receiving Institution Identification Code	.	X	C	Only present if the processor participates in Enhanced Issuer Identification (EII) service.
126	Switch Private Data	.	X	M	Must contain the same value from the original reversal message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
127	Private Data	O	X	C	<p>Available for private use by the message originator. Does not pass through the Single Message System.</p> <p>If the acquirer included DE 127 in the Acquirer Reversal Advice/0420 message, that value is included in this reversal advice response message.</p> <p>If the acquirer does not include DE 127 in the Acquirer Reversal Advice/0420 message, and included it in the original request message, the DE 127 value from the request message is included in this reversal advice response message.</p>

## **Issuer Reversal Advice Response/0432: exception, acquirer initiated**

This is the message layout for the Issuer Reversal Advice Response/0432—Exception, Acquirer Initiated message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	M	X	.	Value must be 0432.
-	Bit Map, Primary	M	X	.	Mandatory.
1	Bit Map, Secondary	M	X	.	Mandatory.
2	Primary Account Number (PAN)	M	X	.	Must contain the same value from the original reversal message.
3	Processing Code	M	X	.	Must contain the same value from the original reversal message.
4	Amount, Transaction <sup>a</sup>	M	X	.	Must contain the same value from the original reversal message.
5	Amount, Settlement <sup>a</sup>	M	X	.	Must contain the same value from the original reversal message.

<sup>a</sup> If more than one exception is created, the amounts in data elements 4, 5, and 6 will change to the new completed amount from the first exception. After the first exception, the values in these data elements will be different from the original amount.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
6	Amount, Cardholder Billing <sup>a</sup>	M	X	•	Must contain the same value from the original reversal message.
7	Transmission Date and Time	M	X	•	Must contain the same value from the original reversal message.
9	Conversion Rate Settlement	M	X	•	Must contain the same value from the original reversal message.
10	Conversion Rate, Cardholder Billing	M	X	•	Must contain the same value from the original reversal message.
11	System Trace Audit Number	M	X	•	Must contain the same value from the original reversal message.
12	Time, Local Transaction	M	X	•	Must contain the same value from the original reversal message.
13	Date, Local Transaction	M	X	•	Must contain the same value from the original reversal message.
15	Date, Settlement	M	X	•	Must contain the same value from the original reversal message.
16	Date, Conversion	M	X	•	Must contain the same value from the original reversal message.
20	Primary Account Number (PAN) Country Code	C	X	•	Must contain the same value from the original reversal message, if present.
32	Acquiring Institution Identification Code	M	X	•	Must contain the same value from the original reversal message.
33	Forwarding Institution Identification Code	M	X	•	Must contain the same value from the original reversal message.
37	Retrieval Reference Number	C	X	•	Must contain the same value from the original reversal message, if present.
39	Response Code	M	X	•	Response code for this message.
41	Card Acceptor Terminal ID	M	X	•	Must contain the same value from the original reversal message.
44	Additional Response Data	C	X	•	Indicates the data element location where the field edit error occurred.
49	Currency Code, Transaction	M	X	•	Must contain the same value from the original reversal message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
50	Currency Code, Settlement	M	X	.	Must contain the same value from the original reversal message.
51	Currency Code, Cardholder Billing	M	X	.	Must contain the same value from the original reversal message.
62	INF Data	C	X	.	Must contain the same value from the original reversal message, if present.
63	Network Data	M	X	.	Must contain the same value from the original reversal message.
95	Replacement Amounts	M	X	.	Must contain the same value from the original reversal message.
100	Receiving Institution Identification Code	C	X	.	Must contain the same value from the original reversal message, if present.
126	Switch Private Data	M	X	.	Must contain the same value from the original reversal message.
127	Private Data	O	X	.	Available for private use by the message originator. Does not pass through the Single Message System.

## Issuer Reversal Advice Response/0432: exception, system initiated

This is the message layout for the Issuer Reversal Advice Response/0432—Exception, System Initiated message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	.	X	M	Value must be 0432.
-	Bit Map, Primary	.	X	M	Mandatory.
1	Bit Map, Secondary	.	X	M	Mandatory.
2	Primary Account Number (PAN)	.	X	M	Must contain the same value from the original reversal message.

<sup>a</sup> If more than one exception is created, the amounts in data elements 4, 5, and 6 will change to the new completed amount from the first exception. After the first exception, the values in these data elements will be different from the original amount.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
3	Processing Code	.	X	M	Must contain the same value from the original reversal message.
4	Amount, Transaction <sup>a</sup>	.	X	M	Must contain the same value from the original reversal message
5	Amount, Settlement <sup>a</sup>	.	X	M	Must contain the same value from the original reversal message (if present).
					<b>NOTE: If the Single Message System declines the request, DE 5 will not be returned in the Issuer Reversal Advice Response/0432 message.</b>
6	Amount, Cardholder Billing <sup>a</sup>	.	X	M	Contains the same value from the original reversal message (if present).
					<b>NOTE: If the Single Message System declines the request, DE 6 will not be returned in the Issuer Reversal Advice Response/0432 message.</b>
7	Transmission Date and Time	.	X	M	Must contain the same value from the original reversal message.
9	Conversion Rate, Settlement	.	X	M	Must contain the same value from the original reversal message.
10	Conversion Rate, Cardholder Billing	.	X	M	Must contain the same value from the original reversal message.
11	System Trace Audit Number	.	X	M	Must contain the same value from the original Must contain the same value from the original reversal message. message.
12	Time, Local Transaction	.	X	M	Must contain the same value from the original reversal message.
13	Date, Local Transaction	.	X	M	Must contain the same value from the original reversal message.
15	Date, Settlement	.	X	M	The Single Message System provides the applicable current settlement date.
16	Date, Conversion	.	X	M	Must contain the same value from the original reversal message (if present).
20	Primary Account Number (PAN) Country Code	.	X	C	Must contain the same value from the original reversal message (if present).

Message layouts  
Issuer Reversal Advice Response/0432: exception, system initiated

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
32	Acquiring Institution Identification Code	.	X	M	Must contain the same value from the original reversal message.
33	Forwarding Institution Identification Code	.	X	M	Must contain the same value from the original reversal message.
37	Retrieval Reference Number	.	X	C	If DE 63 is not present, DE 37 from original transaction must be present.
39	Response Code	.	X	M	Response code for this message.
41	Card Acceptor Terminal ID	.	X	M	Must contain the same value from the original reversal message.
44	Additional Response Data	.	X	C	If exception request is declined, contains the denial reason in four-digit numeric format.
49	Currency Code, Transaction	.	X	M	Must contain the same value from the original reversal message.
50	Currency Code, Settlement	.	X	M	Must contain the same value from the original reversal message.
51	Currency Code, Cardholder Billing	.	X	M	Must contain the same value from the original reversal message.
58	Authorizing Agent Institution ID	.	X	C	Must contain the same value from the original reversal message (if present).
62	INF Data	.	X	C	Must contain the same value from the original reversal message (if present).
63	Network Data	.	X	M	Must contain the same value from the original reversal message.
90	Original Data Elements	.	X	M	Must contain the same value from the original reversal message.
95	Replacement Amounts	.	X	M	Contains the same subfield 1 value from the original reversal message and contains subfields 2–4 provided by the Single Message System.
100	Receiving Institution Identification Code	.	X	C	Must contain the same value from the original reversal message (if present).
126	Switch Private Data	.	X	M	Must contain the same value from the original reversal message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
127	Private Data	.	X	C	<p>Available for private use by the message originator. Does not pass through the Single Message System.</p> <p>If the issuer included DE 127 in the Issuer Reversal Advice/0422 message, that value is returned in this Acquirer Advice Response/0432—Exception, System Initiated message.</p> <p>If the issuer did not include DE 127 in the Issuer Reversal Advice/0422 message, and included it in the original Financial Transaction Request Response/0210 message, the value from the Financial Transaction Request Response/0210 message is included in this Acquirer Advice Response/0432—Exception, System Initiated message.</p>

## Administrative Advice/0620: Single Message System initiated

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This is the message layout for the Administrative Advice/0620—Single Message System Initiated message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	.	X	M	Value must be 0620.
-	Bit Map, Primary	.	X	M	Mandatory.
1	Bit Map, Secondary	.	X	M	Mandatory.
7	Transmission Date and Time	.	X	M	Date and time, in UTC format, of this message.
11	System Trace Audit Number	.	X	M	Contains a unique value for each transaction initiated by a message originator on any single UTC date.
33	Forwarding Institution Identification Code	.	X	M	Contains the value 9000000000 for Single Message System-generated 0620 messages.
42	Card Acceptor Identification Code	.	M	M	Identifies the card acceptor.

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<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
56	Payment Account Data	.	X	C	When Mastercard is the BIN Controller (as defined by EMVCo.), DE 56 will be present and contain the PAR value when one is associated with the PAN.
60	Advice Reason Code	.	X	M	Indicates the specific reason for this message.  600 = rejected message
63	Network Data	.	X	M	Contains the Single Message System reference number for this transaction.
100	Receiving Institution Identification Code	.	X	M	Contains the processor ID of the network destination for this message.
120	Record Data	.	X	C	If DE 60 (Advice Reason Code) = 600, this data element may be used to contain the original (rejected) message.  DE 120 will also be present if DE 60 = 0250, 0251, or 0252.
126	Switch Private Data	.	X	M	Contains Mastercard symbolic network information.

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## Administrative Advice/0620: processor initiated

This is the message layout for the Administrative Advice/0620—Processor Initiated message.

**NOTE:** The Single Message System will not respond to this Administrative Advice/0620 message with an Administrative Advice Response/0630 message.

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<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	M	X	.	Value must be 0620.
-	Bit Map, Primary	M	X	.	Mandatory.
1	Bit Map, Secondary	C	X	.	Mandatory.
7	Transmission Date and Time	M	X	.	Date and time, in Universal Time (UTC) that the originator initiates the message.

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DE ID	Data element name	Org	Sys	Dst	Comments
11	System Trace Audit Number	M	X	.	Contains unique value for each transaction initiated by a message originator on any single UTC date.
33	Forwarding Institution Identification Code	M	X	.	Contains the processor ID of the CPS or NCID originating this message.
60	Advice Reason Code	M	X	.	Indicates the specific reason for this message. 600 = Rejected message
63	Network Data	.	X	.	Contains the Single Message System reference number for this transaction.
100	Receiving Institution Identification Code	O	X	.	Contains the processor ID of the network destination for this message.
120	Record Data	C	X	.	If Advice Reason Code (DE 60) = 600, this data element may be used to contain the original (rejected) message.
126	Switch Private Data	.	X	.	Contains Mastercard symbolic network information.
127	Private Data	O	X	.	Available for private use by the message originator. Does not pass through the Single Message System.

## Administrative Advice/0620: processor initiated time-based exception

This is the message layout for the Administrative Advice/0620—Processor Initiated Time-Based Exception message.

**NOTE:** The Time-based payments service is currently available for customers in Brazil only.

DE ID	Data element name	Org	Sys	Dst	Comments
-	Message Type Identifier (MTI)	M	P	M	Value must be 0620.
-	Bit Map, Primary	M	P	M	Mandatory.
1	Bit Map, Secondary	C	P	M	Mandatory.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
7	Transmission Date and Time	M	P	M	Date and time, in Universal Time (UTC) that the originator initiates the message.
11	System Trace Audit Number	M	P	M	Contains unique value for each transaction initiated by a message originator on any single UTC date.
33	Forwarding Institution Identification Code	M	P	M	Contains the processor ID of the CPS or NCID originating this message.
60	Advice Reason Code	M	P	M	Indicates the specific reason for this message. 603 = Time-Based exception.
63	Network Data	.	X	M	Contains the Single Message System reference number for this transaction.
100	Receiving Institution Identification Code	O	P	M	Must contain the processor ID of the network destination for this message.
112	Additional Data (National Use)	C	P	C	Must contain the same values from the original Time-based request message, with the exception of subelement 24 which is optionally included by the originator.
120	Record Data	C	P	C	If Advice Reason Code (DE 60) = 600, this data element may be used to contain the original (rejected) message.
126	Switch Private Data	.	X	M	Contains Mastercard symbolic network information.
127	Private Data	O	X	.	Available for private use by the message originator. Does not pass through the Single Message System.

## Administrative Advice Response/0630: processor initiated to the Single Message System

This is the message layout for the Administrative Advice Response/0630—Processor Initiated to the Single Message System message.

**NOTE:** This is the response to the Administrative Advice/0620—Single Message System Initiated message.

<b>DE ID</b>	<b>Data Element Name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	M	X	.	Value must be 0630.
-	Bit Map, Primary	M	X	.	Mandatory.
1	Bit Map, Secondary	M	X	.	Mandatory.
7	Transmission Date and Time	M	X	.	Must contain the same value from the original advice message.
11	System Trace Audit Number	M	X	.	Must contain the same value from the original advice message.
33	Forwarding Institution Identification Code	M	X	.	Must contain the same value from the original advice message.
39	Response Code	M	X	.	Response code for this message.
44	Additional Response Data	C	X	.	May contain data element number where edit error occurred in a rejected message.
63	Network Data	M	X	.	Must contain the same value from the original advice message.
100	Receiving Institution Identification Code	M	X	.	Must contain the processor ID of the network destination for this message.
126	Switch Private Data	M	X	.	Must contain the same value from the original advice message.
127	Private Data	O	X	.	Available for private use by the message originator. This data does not pass through the Single Message System.

## Administrative Advice Response/0630: processor initiated to the time-based exception

This is the message layout for the Administrative Advice Response/0630—Processor Initiated message.

**NOTE:** This is the response to the Administrative Advice/0620—Processor Initiated Time-Based Exception message.

**NOTE:** The Time-based payments service is currently available for customers in Brazil only.

<b>DE ID</b>	<b>Data Element Name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	M	P	M	Value must be 0630.
-	Bit Map, Primary	M	P	M	Mandatory.
1	Bit Map, Secondary	M	X	M	Mandatory.
7	Transmission Date and Time	M	P	M	Must contain the same value from the original advice message.
11	System Trace Audit Number	M	P	M	Must contain the same value from the original advice message.
33	Forwarding Institution Identification Code	M	P	M	Must contain the same value from the original advice message.
39	Response Code	M	P	M	Response code for this message.
44	Additional Response Data	C	P	C	May contain data element number where edit error occurred in a rejected message.
63	Network Data	M	X	M	Must contain the same value from the original advice message.
100	Receiving Institution Identification Code	M	P	M	Must contain the processor ID of the network destination for this message.
126	Switch Private Data	M	P	M	Must contain the same value from the original advice message.
127	Private Data	O	X	.	Available for private use by the message originator. This data does not pass through the Single Message System.

## Administrative Advice/0644

This is the message layout for the Administrative Advice/0644 message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	.	X	M	Value must be 0644.
-	Bit Map, Primary	.	X	M	Mandatory.

Message layouts  
Network Management Request/0800: acquirer or issuer initiated

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<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
1	Bit Map, Secondary	.	X	M	Mandatory.
7	Transmission Date and Time	.	X	M	Date and time, in UTC format, of this message.
11	System Trace Audit Number	.	X	M	Must contain the same value from the original message.
33	Forwarding Institution Identification Code	.	X	M	Must contain the same value from the original message.
60	Advice Reason Code	.	X	M	Indicates the specific reason for this message. Subfield 1 value 650x = rejected message.
63	Network Data	.	X	M	Contains the Single Message System switch serial number for this transaction.
100	Receiving Institution Identification Code	.	X	M	Contain the Processor ID of the network destination for this message.
120	Record Data	.	X	C	If Advice Reason Code (DE 60, subfield 1 = 690, this data element may be used to contain the original (rejected) message.
127	Private Data	.	X	C	Available for private use by the message originator. Does not pass through the Single Message System.

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## Network Management Request/0800: acquirer or issuer initiated

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This is the message layout for the Network Management Request/0800—Acquirer or Issuer Initiated message.

<b>DE ID</b>	<b>Data Element Name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	M	X	.	Value must be 0800.
-	Bit Map, Primary	M	X	.	Mandatory.
1	Bit Map, Secondary	M	X	.	Mandatory.
2	Primary Account Number (PAN)	O	.	.	May contain the originating processor ID: this data is not used by the Single Message System.

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Message layouts  
Network Management Request/0800: acquirer or issuer initiated

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<b>DE ID</b>	<b>Data Element Name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
7	Transmission Date and Time	M	X	•	Date and time, in UTC format, of the message.
11	System Trace Audit Number	M	X	•	Must contain unique value for each transaction initiated by a message originator on any single UTC date.
33	Forwarding Institution Identification Code	M	X	•	For <b>debit</b> processors, DE 33 contains the processor ID of the CPS or NCID originating this message. For <b>credit</b> customers, DE33 contains the Mastercard customer ID number of the CPS or INF originating this message.
48	Additional Data	C	X	•	Key data for PIN encryption key exchange messages only, where DE 70 = 161.  Refer to DE 48, subelement 11 for more information.
63	Network Data	O	X	•	Contains Single Message System reference number for this transaction.
70	Network Management Information Code	M	X	•	Indicates the specific purpose of this message.  Refer to <a href="#">Data element definitions</a> for specific data element definitions information.
96	Message Security Code	C	X	•	Password security code to verify that the originator of the Sign-on Request is allowed access to the requested functions.
127	Private Data	O	X	•	Available for private use by the message originator. Does not pass through the Single Message System.

## Network Management Request/0800: system initiated

This is the message layout for the Network Management Request/0800—System Initiated message.

DE ID	Data element name	Org	Sys	Dst	Comments
-	Message Type Identifier (MTI)	.	X	M	Value must be 0800.
-	Bit Map, Primary	.	X	M	Mandatory.
1	Bit Map, Secondary	.	X	M	Mandatory.
7	Transmission Date and Time	.	X	M	Date and time, in UTC format, of the message.
11	System Trace Audit Number	.	X	M	Must contain unique value for each transaction initiated by a message originator on any single UTC date.
33	Forwarding Institution Identification Code	.	X	M	For <b>debit</b> processors receiving this message, DE 33 contains the processor ID of the CPS or NCID originating this message. For <b>credit</b> customers, DE 33 contains Mastercard ICA number 002202.
48	Additional Data	.	X	C	Key data for X9.17 PIN encryption key exchange messages only, where DE 70 = 161.  Refer to DE 48, subelement 11 for more information.
63	Network Data	.	X	M	Single Message System reference number for this transaction.
70	Network Management Information Code	.	X	M	Indicates the specific purpose of this message.  Refer to <a href="#">Data element definitions</a> for specific data element definitions information.
110	Additional Data -2	.	X	C	Key data for TR-31 PIN encryption key exchange messages only, where DE 70 = 161.  Refer to DE 110, subelements 09 and 10 for more information.

DE ID	Data element name	Org	Sys	Dst	Comments
126	Switch Private Data	.	X	M	Contains Mastercard symbolic network information.

## Network Management Request Response/0810: acquirer or issuer initiated

This is the message layout for the Network Management Request Response/0810—Acquirer or Issuer Initiated message.

DE ID	Data element name	Org	Sys	Dst	Comments
-	Message Type Identifier (MTI)	M	X	.	Value must be 0810.
-	Bit Map, Primary	M	X	.	Mandatory.
1	Bit Map, Secondary	M	X	.	Mandatory.
7	Transmission Date and Time	M	X	.	Must contain the same value from the original request message.
11	System Trace Audit Number	M	X	.	Must contain the same value from the original request message.
33	Forwarding Institution Identification Code	M	X		Must contain the same value from the original request message.
39	Response Code	M	X	.	Response code for this message.
44	Additional Response Data	C	X	.	May contain additional response or diagnostic information when DE 39 (Response Code) is 30.
48	Additional Data	C	X	.	For X9.17 key exchange messages (DE 70 = 161), this field may contain the PIN encryption key.  Refer to DE 48, subelement 11 for more information.
63	Network Data	M	X	.	Must contain the same value from the original request message.
70	Network Management Information Code	M	X	.	Must contain the same value from the original request message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
110	Additional Data-2	O	X	.	For TR-31 key exchange messages (DE 70 = 161), this field may contain the PIN encryption key and key check value.  Refer to DE 110, subelement 09 and 10 for more information.
126	Switch Private Data	M	X	.	Must contain the same value from the original request message.
127	Private Data	O	X	.	Available for private use by the message originator. Does not pass through the Single Message System.

## Network Management Request Response/0810: system initiated

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This is the message layout for the Network Management Request Response/0810—System Initiated message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	.	X	M	Value must be 0810.
-	Bit Map, Primary	.	X	M	Mandatory.
1	Bit Map, Secondary	.	X	M	Mandatory.
7	Transmission Date and Time	.	X	M	Must contain the same value from the original request message.
11	System Trace Audit Number	.	X	M	Must contain the same value from the original request message.
33	Forwarding Institution Identification Code	.	X	M	Must contain the same value from the original request message.
39	Response Code	.	X	M	Response code for this message.
44	Additional Response Data	.	X	C	May contain additional response or diagnostic information when DE 39 (Response Code) is 30.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
48	Additional Data	.	X	C	For key exchange messages (DE 70 = 161), this field may contain the PIN encryption key.  Refer to DE 48, subelement 11 for more information.
63	Network Data	.	X	M	Single Message System reference number for this transaction.
70	Network Management Information Code	.	X	M	Must contain the same value from the original request message.
126	Switch Private Data	.	X	M	Contains Mastercard symbolic network information.
127	Private Data	.	X	C	Available for private use by the message originator. Does not pass through the Single Message System.

## Network Management Advice/0820

This is the message layout for the Network Management Advice/0820 message.

**NOTE:** Single Message System-generated Network Management Advice/0820 messages do not require a subsequent response message.

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
-	Message Type Identifier (MTI)	.	X	M	Value must be 0820.
-	Bit Map, Primary	.	X	M	Mandatory.
1	Bit Map, Secondary	.	X	M	Mandatory.
7	Transmission Date and Time	.	X	M	Contains the date and time, in UTC format, of the message.
11	System Trace Audit Number	.	X	M	Contains the same value from the original request message.
33	Forwarding Institution Identification Code	.	X	M	Contains the same value from the original request message.

---

<b>DE ID</b>	<b>Data element name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Comments</b>
48	Additional Data	.	X	C	For key exchange messages (DE 70 = 161), this field will be present. Will not be present when the 0810 message is declined.  Refer to DE 48, subelement 11 for more information.
63	Network Data	.	X	M	Single Message System reference number for this transaction.
70	Network Management Information Code	.	X	C	Indicates the specific purpose of this message. Will not be present when the 0810 message is declined.  Refer to <a href="#">Data element definitions</a> for specific data element definitions information.
110	Additional Data-2	.	X	C	For successful TR-31 key exchange messages, this field will contain the PIN encryption key check value.  Refer to DE 110, subelement 10 for more information.
126	Switch Private Data	.	X	M	Contains Mastercard symbolic network information.
127	Private Data	.	.	.	Available for private use by the message originator. The Single Message System does not return DE 127 in the 0820 message when provided in the 0810 message.

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## Chapter 4 Data element definitions

*This section provides the detailed definitions of all the ISO 8583–1987 message data elements used within the Single Message System application messages.*

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Overview.....	216
Annotation conventions for data element attributes.....	216
Conventions for data representation.....	216
General representation.....	217
Character sets.....	218
Extended character sets.....	226
Length attributes.....	233
Field content attributes.....	233
Data element message format requirements.....	234
Message data elements.....	235
Data elements currently used by the Single Message System.....	235
Data elements not currently used by the Single Message System.....	238
Message type identifier (MTI).....	240
Transaction data classification.....	241
Primary and secondary bit maps.....	264
DE 1 (Bit Map, Secondary).....	267
DE 2 (Primary Account Number [PAN]).....	269
DE 3 (Processing Code).....	270
Subfield 1 (Cardholder Transaction Type Code).....	272
Subfield 2 (Cardholder Account Type [From]).....	273
Subfield 3 (Cardholder Account Type [To]).....	273
DE 4 (Amount, Transaction).....	277
DE 5 (Amount, Settlement).....	280
DE 6 (Amount, Cardholder Billing).....	282
DE 7 (Transmission Date and Time).....	284
DE 8 (Amount, Cardholder Billing Fee).....	287
DE 9 (Conversion Rate, Settlement).....	288
DE 10 (Conversion Rate, Cardholder Billing).....	290
DE 11 (Systems Trace Audit Number).....	291
DE 12 (Time, Local Transaction).....	294
DE 13 (Date, Local Transaction).....	296
DE 14 (Date, Expiration).....	297
DE 15 (Date, Settlement).....	298

---

DE 16 (Date, Conversion).....	300
DE 17 (Date, Capture).....	301
DE 18 (Merchant Type).....	302
DE 19 (Acquiring Institution Country Code).....	304
DE 20 (Primary Account Number [PAN] Country Code).....	304
DE 21 (Forwarding Institution Country Code).....	306
DE 22 (Point of Service Entry Mode).....	306
Subfield 1 (POS Terminal PAN Entry Mode).....	307
Subfield 2 (POS Terminal PIN Entry Mode).....	310
DE 23 (Card Sequence Number).....	312
DE 24 (Network International Identifier).....	315
DE 25 (Point of Service Condition Code [ISO]).....	315
DE 26 (Point of Service [POS] PIN Capture Code).....	316
DE 27 (Authorization Identification Response Length).....	317
DE 28 (Amount, Transaction Fee).....	317
DE 29 (Amount, Settlement Fee).....	320
DE 30 (Amount, Transaction Processing Fee).....	320
DE 31 (Amount, Settlement Processing Fee).....	321
DE 32 (Acquiring Institution Identification Code).....	321
DE 33 (Forwarding Institution Identification Code).....	323
DE 34 (Primary Account Number, Extended).....	325
DE 35 (Track 2 Data).....	325
Subfield 1 (Start Sentinel).....	326
Subfield 2 (Primary Account Number [PAN]).....	327
Subfield 3 (Field Separator).....	327
Subfield 4 (Expiration Date).....	327
Subfield 5 (Extended Service Code).....	328
Subfield 6 (Discretionary Data).....	328
Subfield 7 (End Sentinel).....	329
Subfield 8 (Longitudinal Redundancy Check [LRC]).....	329
DE 36 (Track 3 Data).....	331
DE 37 (Retrieval Reference Number).....	331
Subfield 1 (Transaction Date and Initiator Discretionary Data).....	333
Subfield 2 (Terminal Transaction Number).....	333
DE 38 (Authorization Identification Response).....	334
DE 39 (Response Code).....	335
DE 40 (Service Restriction Code).....	345
DE 41 (Card Acceptor Terminal Identification).....	345
DE 42 (Card Acceptor Identification Code).....	347

---

DE 43 (Card Acceptor Name and Location).....	348
Subfield 1 (ATM Owner Name and/or Location, or POS Merchant Name [or Payment Facilitator and Sub-Merchant Information, if applicable]).....	350
Subfield 2 (Space/surcharge-free indicator).....	352
Subfield 3 (Card Acceptor City [or sub-merchant information, if applicable]).....	352
Subfield 4 (Space).....	353
Subfield 5 (Card Acceptor State [U.S.], Province Code [Canada and Canadian territories], or Country Code [or Sub-Merchant Information, if applicable]).....	353
DE 44 (Additional Response Data).....	354
DE 45 (Track 1 Data).....	365
Subfield 1 (Start Sentinel).....	366
Subfield 2 (Format Code).....	367
Subfield 3 (Primary Account Number [PAN]).....	367
Subfield 4 (Field Separator).....	367
Subfield 5 (Cardholder Name).....	368
Subfield 6 (Field Separator).....	368
Subfield 7 (Expiration Date).....	368
Subfield 8 (Extended Service Code).....	369
Subfield 9 (Discretionary Data).....	369
Subfield 10 (End Sentinel).....	370
Subfield 11 (Longitudinal Redundancy Check [LRC]).....	370
DE 46 (Expanded Additional Amounts).....	370
DE 47 (Additional Data [National]).....	371
DE 48 (Additional Data).....	372
List of DE 48 subelements.....	375
Subelement descriptions.....	377
Subelement 09 (Virtual Card Number Data).....	377
Subfield 01 (Virtual Card Number Indicator).....	378
Subfield 02 (Virtual Card Number).....	378
Subfield 03 (Virtual Card Number Expiration Date).....	379
Subelement 11 (Key Exchange Data Block [Double-Length Keys]).....	379
Subfield 1 (Key Class ID).....	380
Subfield 2 (Key Index Number).....	380
Subfield 3 (Key Cycle Number).....	381
Subfield 4 (PIN Encryption Key [PEK]).....	381
Subfield 5 (Key Check Value).....	382
Subelement 11 (Key Exchange Data Block [Triple-Length Keys]).....	382
Subfield 1 (Key Class ID).....	383
Subfield 2 (Key Index Number).....	383

---

Subfield 3 (Key Cycle Number).....	384
Subfield 4 (PIN Encryption Key [PEK]).....	384
Subfield 5 (Key Check Value).....	384
Subelement 17 (Authentication Indicator).....	385
Subelement 19 (Fraud Notification Information).....	386
Subfield 1 (Fraud Notification Service Date).....	388
Subfield 2 (Fraud Notification Service Chargeback Counter).....	388
Subfield 3 (Fraud Notification Service Second Presentment Rights Indicator).....	389
Subelement 21 (Acceptance Data).....	389
Subfield 1 (mPOS Acceptance Device Type).....	390
Subfield 2 (Additional Terminal Capability Indicator).....	391
Subelement 22 (Multi-Purpose Merchant Indicator).....	392
Subfield 1 (Low-Risk Merchant Indicator).....	393
Subfield 2 (Single Tap Indicator).....	394
Subfield 3 (Response to PIN Request).....	395
Subfield 4 (Issuer PIN Request in a Single Tap Mode).....	396
Subfield 5 (Cardholder/Merchant Initiated Transactions Indicator).....	397
Subelement 23 (Payment Initiation Channel).....	398
Subfield 1 (Device Type).....	399
Subelement 25 (Mastercard Cash Program Data).....	402
Subfield 1 (Message Identifier).....	402
Subelement 26 (Wallet Program Data).....	403
Subfield 1 (Wallet Identifier).....	404
Subelement 27 (Transaction Analysis).....	406
Subfield 1 (Overview).....	407
Subfield 2 (Test Results).....	407
Subelement 28 (Cardless ATM Order ID).....	409
Subelement 29 (Additional POS Terminal Locations).....	409
Subelement 30 (Token Transaction Identifier).....	410
Subelement 32 (Mastercard Assigned ID).....	411
Subfield 1 (Mastercard Assigned ID).....	411
Subelement 33 (PAN Mapping File Information).....	412
Subfield 1 (Account Number Indicator).....	413
Subfield 2 (Account Number PAN).....	414
Subfield 3 (Expiration Date).....	414
Subfield 5 (Token Assurance Level).....	415
Subfield 6 (Token Requestor ID).....	416
Subfield 8 (Storage Technology).....	416
Subelement 34 (ATC Information).....	418

---

Subfield 1 (ATC Value).....	419
Subfield 2 (ATC Discrepancy Value).....	419
Subfield 3 (ATC Discrepancy Indicator).....	420
Subelement 35 (Contactless Device Request Response).....	420
Subfield 1 (Contactless Device Request Response).....	421
Subelement 37 (Additional Merchant Data).....	421
Subfield 1 (Payment Facilitator ID).....	422
Subfield 2 (Independent Sales Organization ID).....	423
Subfield 3 (Sub-Merchant ID).....	423
Subfield 4 (Merchant Country of Origin).....	424
Subelement 38 (Account Category).....	425
Subfield 1 (Account Category).....	425
Subelement 39 (Account Data Compromise Information).....	425
Positions 1–3 (reserved for future use).....	426
Positions 4–6 (reserved for future use).....	427
Positions 7–12 (Case Key Code 1).....	427
Positions 13–18 (Case Key Code 2).....	427
Positions 19–24 (Case Key Code 3).....	428
Position 25 (ADC Data Type: PAN).....	428
Position 26 (ADC Data Type: Expiration Date).....	428
Position 27 (ADC Data Type: CVC 2).....	429
Position 28 (ADC Data Type: PIN).....	429
Position 29 (ADC Data Type: Magnetic Stripe).....	430
Position 30 (ADC Data Type: Personal Information).....	430
Subelement 40 (Electronic Commerce Merchant/Cardholder Certificate Serial Number).....	431
Subfield 1 (Merchant Certificate Serial Number).....	431
Subfield 2 (Cardholder Certificate Serial Number).....	432
Subelement 41 (Electronic Commerce Certificate Qualifying Information).....	432
Subfield 1 (Reserved for future use).....	433
Subfield 2 (Reserved for future use).....	433
Subfield 3 (Reserved for future use).....	434
Subfield 4 (Reserved for future use).....	434
Subfield 5 (Reserved for future use).....	434
Subfield 6 (Reserved for future use).....	435
Subfield 7 (Reserved for future use).....	435
Subfield 8 (Reserved for future use).....	436
Subfield 9 (Reserved for future use).....	436
Subfield 10 (Reserved for future use).....	437
Subfield 11 (National ID).....	437

---

Subfield 12 (Reserved for future use).....	437
Subfield 13 (Reserved for future use).....	438
Subfield 14 (Reserved for future use).....	438
Subfield 15 (Reserved for future use).....	439
Subfield 16 (Reserved for future use).....	439
Subfield 17 (Reserved for future use).....	440
Subfield 18 (Reserved for future use).....	440
Subfield 19 (Reserved for future use).....	440
Subfield 20 (Reserved for future use).....	441
Subfield 21 (Reserved for future use).....	441
Subelement 42 (Electronic Commerce Indicators).....	442
Subfield 1 (Electronic Commerce Security Level Indicator [SLI] and UCAF Collection Indicator).....	444
Subfield 2 (Original Electronic Commerce Security Level Indicator and UCAF Collection Indicator).....	448
Subfield 3 (Reason for UCAF Collection Indicator Downgrade).....	449
Subelement 43 (Universal Cardholder Authentication Field [UCAF]).....	449
Subfield 1 (UCAF Data).....	450
Subelement 48 (Mobile Program Indicators).....	452
Subfield 1 (Remote Payments Program Type Identifier).....	453
Subfield 2 (Mastercard Mobile Remote Payment Transaction Type).....	454
Subfield 3 (Mobile Phone Number).....	454
Subfield 4 (Convenience Fee).....	455
Subelement 49 (Time Validation Information).....	455
Subfield 1 (Time Value).....	456
Subfield 2 (Time Discrepancy Value).....	456
Subfield 3 (Time Discrepancy Indicator).....	457
Subelement 52 (Transaction Integrity Class).....	457
Subelement 54 (Ancillary Service Charges).....	459
Subfield 1 (Ancillary Fee Code).....	460
Subfield 2 (Ancillary Fee Amount).....	461
Subelement 56 (Security Services Additional Data for Issuers).....	461
Subfield 1 (Security Services Indicator).....	463
Subfield 2 (Security Services Data).....	463
Subelement 56 (Valid Subfield 1 and Subfield 2 Value Combinations).....	463
Subelement 59 (Original Switch Serial Number).....	474
Subfield 1 (Original Switch Serial Number).....	475
Subelement 61 (POS Data, Extended Condition Codes).....	475
Subfield 1 (Partial Approval Terminal Support Indicator).....	476

---

Subfield 2 (Purchase Amount Only Terminal Support Indicator).....	477
Subfield 3 (Real-Time Substantiation Indicator).....	477
Subfield 4 (Reserved for Future Use).....	478
Subfield 5 (Final Authorization Indicator).....	479
Subelement 63 (Trace ID).....	479
Subelement 64 (Transit Program).....	481
Subfield 1 (Transit Transaction Type Indicator).....	482
Subfield 2 (Transportation Mode Indicator).....	483
Subelement 65 (Terminal Compliant Indicator).....	484
Subfield 1 (TLE Compliant).....	485
Subfield 2 (UKPT/DUKPT Compliant).....	485
Subelement 66 (Authentication Data).....	486
Subfield 1 (Program Protocol).....	486
Subfield 2 (Directory Server Transaction ID).....	487
Subelement 67 (MoneySend Information).....	487
Subfield 01 (Sanctions Score).....	488
Subelement 69 (Trace ID of Authorization Advice).....	489
Subfield 1 (Network Data).....	490
Subfield 2 (Date Settlement).....	491
Subelement 70 (Implied Decimal).....	491
Subfield 1 (Implied Decimal).....	492
Subelement 71 (On-behalf Service [OBS]).....	492
Subfield 1 (On-behalf Service Indicator).....	493
Subfield 2 (On-behalf Result 1).....	494
Subfield 3 (On-behalf Result 2).....	494
Valid Subfield 1 and Subfield 2 value combinations.....	494
Valid Subfield 1 and Subfield 3 value combinations.....	504
Valid Subfield 1, Subfield 2, and Subfield 3 value combinations.....	505
Subelement 72 (Issuer Chip Authentication).....	506
Subelement 74 (Additional Processing Information).....	507
Subfield 1 (Process Indicator).....	508
Subfield 2 (Processing Information).....	508
Valid Subfield 1 and Subfield 2 value combinations.....	509
Subelement 75 (Fraud Scoring Data).....	510
Subfield 1 (Assessment Score).....	511
Subfield 2 (Score Reason Code).....	512
Subfield 3 (Rules Score).....	513
Subfield 4 (Rule Reason Code 1).....	513
Subfield 5 (Rule Reason Code 2).....	514

---

Subelement 76 (Mastercard Electronic Transaction Indicator).....	514
Subfield 1 (Mastercard Electronic Program Participation Level).....	515
Subelement 77 (Transaction Type Identifier).....	515
Subelement 79 (Chip CVR/TVR Bit Error Results Listing).....	518
Subfield 1 (CVR or TVR Identifier).....	519
Subfield 2 (Byte ID).....	519
Subfield 3 (Bit Identifier).....	520
Subfield 4 (Value of Bit in Error).....	520
Subelement 80 (PIN Service Code).....	521
Subelement 81 (Maestro PIN-less Program Indicator).....	522
Subelement 82 (Address Verification Service Request).....	522
Subfield 1 (AVS Option Code).....	523
Subelement 83 (Address Verification Service Response).....	524
Subfield 1 (AVS Result Code).....	524
Subelement 84 (Merchant Advice Code).....	525
Subfield 1 (Merchant Advice Code).....	525
Subelement 87 (Card Validation Code Result).....	527
Subfield 1 (Code Values).....	528
Subelement 88 (Magnetic Stripe Compliance Status Indicator).....	528
Subfield 1 (Monitoring Status).....	529
Subelement 89 (Magnetic Stripe Compliance Error Indicator).....	529
Subfield 1 (Data/Code Indicators).....	529
Subelement 90 (Lodging and Auto Rental Indicator).....	530
Subfield 1 (Enrolled Program).....	531
Subelement 92 (CVC 2 Value).....	531
Subfield 1 (CVC 2 Value).....	532
Subelement 93 (Airline Ticket Number).....	532
Subfield 1 (Ticket Number).....	532
Subelement 94 (Program Participation Indicator).....	533
Subfield 1 (CVC 2 Validation Program Indicator).....	533
Subfield 2 (QPS/Contactless Chargeback Eligibility).....	534
Subfields 3–20 (Reserved for Future Use).....	534
Subelement 95 (Mastercard Promotion Code).....	535
Subfield 1 (Surcharge-Free Alliance).....	535
Subelement 98 (Mastercard Corporate Fleet Card ID/Driver Number).....	536
Subfield 1 (ID/Driver Number).....	536
Subelement 99 (Mastercard Corporate Fleet Card Vehicle Number).....	537
Subfield 1 (Vehicle Number).....	537
DE 49 (Currency Code, Transaction).....	537

---

DE 50 (Currency Code, Settlement).....	539
DE 51 (Currency Code, Cardholder Billing).....	541
DE 52 (Personal Identification Number [PIN] Data).....	542
DE 53 (Security Related Control Information).....	543
DE 54 (Additional Amounts).....	544
Subfield 1 (Account Type).....	550
Subfield 2 (Amount Type).....	551
Subfield 3 (Currency Code).....	552
Subfield 4 (Debit or Credit Indicator).....	552
Subfield 5 (Amount).....	553
DE 55 (Integrated Circuit Card [ICC] System-Related Data).....	553
DE 56 (Payment Account Data).....	559
Subelement 01 (Payment Account Data).....	560
Subfield 01 (Payment Account Reference [PAR]).....	560
DE 57 (Reserved for National Use).....	562
DE 58 (Authorizing Agent Institution ID).....	562
DE 59 (Reserved for National Use).....	563
DE 60 (Advice Reason Code).....	564
Subfield 1 (Advice Reason Code).....	565
Subfield 2 (Advice Reason Detail Code).....	566
Subfield 3 (Advice Reason Detail Text).....	567
Subfield 4 (Advice Reason Additional Text).....	569
Message type 0220: financial transaction advice.....	570
Message type 0220: Debit Mastercard stand-in-financial transaction advice.....	577
Message type 0220: non-financial transaction advice.....	583
Message type 0420: acquirer reversal advice.....	583
Message type 0422: issuer reversal advice.....	591
Message type 0620: administrative advice.....	596
Message type 0644: administrative advice.....	596
DE 61 (Point of Service [POS] Data).....	597
Subfield 1 (POS Terminal Attendance).....	599
Subfield 2 (Reserved for Future Use).....	599
Subfield 3 (POS Terminal Location).....	600
Subfield 4 (POS Cardholder Presence).....	600
Subfield 5 (POS Card Presence).....	601
Subfield 6 (POS Card Retention).....	602
Subfield 7 (POS Transaction Status).....	602
Subfield 8 (POS Transaction Security).....	603
Subfield 9 (Reserved for Future Use).....	604

---

Subfield 10 (Cardholder-Activated Terminal Level).....	604
Subfield 11 (POS Card Data Terminal Input Capability).....	605
Subfield 12 (POS Authorization Life Cycle).....	606
Subfield 13 (POS Country Code [or Sub-Merchant Information, if applicable]).....	607
Subfield 14 (POS Postal Code [or Sub-Merchant Information, if applicable]).....	607
DE 62 (Intermediate Network Facility [INF] Data).....	608
DE 63 (Network Data).....	609
Subfield 1 (Financial Network Code).....	612
Subfield 2 (Interchange Rate Indicator).....	613
Subfield 3 (Network Reference Number).....	613
Subfield 4 (Banknet Reference Number).....	614
Subfield 5 (Acquirer's Reference Number).....	615
Subfield 6 (GCMS Processing Date and Cycle Number).....	615
DE 64 (Message Authentication Code [MAC]).....	616
DE 65 (Bit Map, Extended).....	616
DE 66 (Settlement Code).....	617
DE 67 (Extended Payment Code).....	618
DE 68 (Receiving Institution Country Code).....	618
DE 69 (Settlement Institution Country Code).....	619
DE 70 (Network Management Information Code).....	619
DE 71 (Message Number).....	621
DE 72 (Message Number Last).....	621
DE 73 (Date, Action).....	622
DE 74 (Credits, Number).....	622
DE 75 (Credits, Reversal Number).....	623
DE 76 (Debits, Number).....	623
DE 77 (Debits, Reversal Number).....	624
DE 78 (Transfers, Number).....	624
DE 79 (Transfers, Reversal Number).....	625
DE 80 (Inquiries, Number).....	625
DE 81 (Authorizations, Number).....	626
DE 82 (Credits, Processing Fee Amount).....	626
DE 83 (Credits, Transaction Fee Amount).....	627
DE 84 (Debits, Processing Fee Amount).....	627
DE 85 (Debits, Transaction Fee Amount).....	628
DE 86 (Credits, Amount).....	628
DE 87 (Credits, Reversal Amount).....	629
DE 88 (Debits, Amount).....	629
DE 89 (Debits, Reversal Amount).....	630

---

DE 90 (Original Data Elements).....	630
Subfield 1 (Message Type Identifier).....	632
Subfield 2 (System Trace Audit Number).....	632
Subfield 3 (Transmission Date and Time).....	633
Subfield 4 (Acquiring Institution ID Code).....	633
Subfield 5 (Forwarding Institution ID Code).....	634
DE 91 (File Update Code).....	634
DE 92 (File Security Code).....	635
DE 93 (Response Indicator).....	636
DE 94 (Service Indicator).....	636
DE 95 (Replacement Amounts).....	637
Subfield 1 (Actual Amount, Transaction).....	639
Subfield 2 (Actual Amount, Settlement).....	640
Subfield 3 (Actual Amount, Cardholder Billing).....	640
Subfield 4 (Zero-filled).....	641
DE 96 (Message Security Code).....	641
DE 97 (Amount, Net Settlement).....	642
DE 98 (Payee).....	642
DE 99 (Settlement Institution Identification Code).....	643
DE 100 (Receiving Institution Identification Code).....	643
DE 101 (File Name).....	645
DE 102 (Account Identification 1).....	646
DE 103 (Account Identification 2).....	647
DE 104 (Digital Payment Data).....	648
Subelement 001 (Digital Payment Cryptogram).....	650
Subelement 002 (Estimated Amount).....	651
Subelement 003 (Remote Commerce Acceptor Identifier).....	652
Subelement 004 (Additional Digital Data).....	653
Subfield 001 (Digital Service Provider ID).....	654
DE 105 (Enhanced Identification Data).....	654
Subelement 1 (AUA Code).....	656
Subelement 2 (Sub-AUA Code).....	657
Subelement 3 (Terminal Device ID).....	657
Subelement 4 (Version).....	658
Subelement 5 (Transaction Identifier).....	659
Subelement 6 (Unique Device Code).....	659
Subelement 7 (Fingerprint Device Code).....	660
Subelement 8 (Reserved for future use).....	660
Subelement 9 (Certificate Identifier).....	661

---

Subelement 10 (PID Block Type).....	662
Subelement 11 (Primary Biometric Type).....	662
Subelement 12 (Product Code).....	664
Subelement 13 (Return Value).....	664
Subelement 14 (Authenticator Code).....	665
Subelement 15 (Time Stamp).....	666
Subelement 16 (Meta Information).....	667
Subelement 17 (Error Code).....	667
Subelement 18 (Internal Mastercard Use).....	668
Subelement 71 (Internal Mastercard Use).....	669
DE 106 (Private Data).....	669
Subelement 1 (Private Biometric Data).....	670
DE 107 (India On-Soil Data).....	671
Subelement 1 (Accountholder UID Number).....	672
Subelement 2 (License Key).....	673
Subelement 3 (Public IP Address).....	673
Subelement 4 (Key Identifier).....	674
Subelement 5 (HMAC Value).....	674
Subelement 6 (Encryption Key).....	675
Subelement 7 (Location Type).....	676
Subelement 8 (Location Value).....	676
DE 108 (Additional Transaction Reference Data).....	677
Subelement 01 (Receiver/Recipient Data).....	679
Subfield 01 (Receiver/Recipient First Name).....	681
Subfield 02 (Receiver/Recipient Middle Name).....	682
Subfield 03 (Receiver/Recipient Last Name).....	682
Subfield 04 (Receiver/Recipient Street Address).....	683
Subfield 05 (Receiver/Recipient City).....	684
Subfield 06 (Receiver/Recipient State/Province Code).....	684
Subfield 07 (Receiver/Recipient Country).....	685
Subfield 08 (Receiver/Recipient Postal Code).....	686
Subfield 09 (Receiver/Recipient Phone Number).....	686
Subfield 10 (Receiver/Recipient Date of Birth).....	687
Subfield 11 (Receiver/Recipient Account Number).....	687
Subfield 12 (Receiver/Recipient Identification Type).....	688
Subfield 13 (Receiver/Recipient Identification Number).....	689
Subfield 14 (Receiver/Recipient Identification Country Code).....	690
Subfield 15 (Receiver/Recipient Identification Expiration Date).....	690
Subfield 16 (Receiver/Recipient Nationality).....	691

---

Subfield 17 (Receiver/Recipient Country of Birth).....	691
Subfield 18 (Receiver/Recipient Account Number Type).....	692
Subelement 02 (Sender Data).....	693
Subfield 01 (Sender First Name).....	694
Subfield 02 (Sender Middle Name).....	695
Subfield 03 (Sender Last Name).....	695
Subfield 04 (Sender Street Address).....	696
Subfield 05 (Sender City).....	697
Subfield 06 (Sender State/Province Code).....	697
Subfield 07 (Sender Country).....	698
Subfield 08 (Postal Code).....	698
Subfield 09 (Sender Phone Number).....	699
Subfield 10 (Sender Date of Birth).....	699
Subfield 11 (Sender Account Number).....	700
Subfield 12 (Sender Identification Type).....	701
Subfield 13 (Sender Identification Number).....	702
Subfield 14 (Sender Identification Country Code).....	702
Subfield 15 (Sender Identification Expiration Date).....	703
Subfield 16 (Sender Nationality).....	703
Subfield 17 (Sender Country of Birth).....	704
Subfield 18 (Sender Account Number Type).....	704
Subelement 03 (Transaction Reference Data).....	705
Subfield 01 (Unique Transaction Reference).....	706
Subfield 02 (Additional Message).....	708
Subfield 03 (Funding Source).....	708
Subfield 04 (Participation ID).....	710
Subfield 05 (Transaction Purpose).....	710
Subelement 04 (Language Description).....	711
Subfield 01 (Language Identification).....	711
Subfield 02 (Language Data).....	712
Subelement 05 (Digital Account Information).....	712
Subfield 01 (Digital Account Reference Number).....	713
Subfield 02 (Mastercard Merchant Presented QR receiving account number).....	713
Subelement 06 (QR Dynamic Code Data).....	714
DE 109 (Reserved for ISO Use).....	715
DE 110 (Additional Data 2).....	716
Subelement 1 (Merchant ID).....	717
Subelement 2 (Program Registration ID).....	717
Subelement 3 (PLUS Acquirer ID).....	718

---

Subelement 4 (Visa International Fee Indicator).....	719
Subelement 5 (Additional Card Information).....	720
Subelement 6 (Business Service Arrangement).....	726
Subelement 7 (Settlement Service).....	729
Subelement 8 (Product ID).....	730
DE 110, Subelement 8, product identifier values.....	731
Subelement 9 (ANSI X9 TR-31 Key Block Key [128-bit Key Block Protection Key]).....	741
Subelement 9 (ANSI X9 TR-31 Key Block Key [192-bit Key Block Protection Key]).....	742
Subelement 10 (Key Check Value).....	743
DE 111 (Amount, Currency Conversion Assessment).....	743
DE 112 (Additional Data [National Use]).....	745
DE 112 (Subelement Contents).....	747
Additional Data (National Use) Subelements.....	750
Subelement 1 (Time Payment Options).....	750
Subelement 2 (Parcelas Transaction).....	752
Subelement (Credit Line Usage Fee [CLUF]).....	753
Subelement 5 (Issuing Bank Name [AKA Doing Business As {DBA}]).....	753
Subelement 6 (Financial Institution ID [FIID]).....	754
Subelement 11 (CDC Inquiry and Purchase).....	754
Subelement 12 (CDC Inquiry).....	755
Subelement 13-16 (CDC Inquiry).....	756
Subelement 18 (Post-Dated Transactions [preauthorization and completion]).....	756
Subelement 19 (Maestro Installment Transactions [preauthorization and completion]).....	757
Subelement 22 (Positive ID Transactions).....	759
Subelement 23 (Positive ID Translation/Validation error code).....	760
Subelement 24 (Time-Based Transactions).....	762
Subelement 25 (Merchant-Generated Installment Payments Transactions [preauthorization and completion]).....	762
Subelement 26 (Merchant-Generated Installment Payments: Receipt Information).....	764
Subelement 27 (ATM Credit Card Cash Advance Installments).....	764
Subelement 28 (Merchant Fraud Score Data).....	767
Subelement 29 (Brazil Merchant Tax ID).....	768
Subelement 035 (Issuer Fee Inquiry Indicator).....	769
Subelement 036 (Issuer Fee Amount).....	769
Subelement 042 (Card Acceptor Tax ID).....	770
DE 113 to DE 119 (Reserved for National Use).....	771
DE 120 (Record Data).....	772
Stand-in account file MCC102.....	773
Electronic warning bulletin file MCC103.....	775

---

Payment cancellation file MCC105.....	776
PAN mapping file MCC106.....	778
Application transaction counter (ATC) file MCC109.....	780
PAN-PAR (Payment Account Reference) mapping file MCC111.....	781
DE 120 Usage for Address Verification Service.....	782
DE 121 (Authorizing Agent Identification Code).....	783
DE 122 (Additional Record Data).....	784
DE 123 (Mastercard Merchant Data Services).....	785
Subelement 1 (Merchant Data Services).....	786
Subelement 2 (Original Merchant Data).....	788
Subelement 3 (Mastercard Merchant Data Cleansing Service).....	790
Subelement 4 (Merchant Data Cleansing Plus).....	792
Subelement 5 (Mastercard Merchant Data Advance).....	794
DE 124 (Member-Defined Data).....	802
Uses and formats of DE 124 ( Member-Defined Data).....	804
DE 124 subfields in a Financial Transaction Request/0200 message.....	804
Subfield 1 (Unique Reference Number).....	804
Subfield 2 (Sender/Payer Name/User ID).....	805
Subfield 3 (Sender/Payer Address).....	805
Subfield 4 (Additional Sender Information).....	806
DE 124 subfields in a Financial Transaction Request Response/0210 message.....	807
Subfield 1 (Unique Reference Number).....	807
Subfield 2 (Recipient).....	807
Subfield 3 (Recipient Address).....	808
Subfield 4 (Reserved Data).....	808
DE 124 (Member-defined data: Mastercard Send).....	809
DE 124 (Member-defined data [Argentina Domestic Use Only]).....	809
DE 124 usage for Argentina domestic use only.....	810
Subfield 1 (Billing Period).....	810
Subfield 2 (Recurrent Payment Reference Number).....	810
Subfield 3 (Card Acceptor Tax ID).....	811
Subfield 4 (Legal Corporate Name).....	811
Subfield 5 (Cardholder Identification Method).....	812
Subfield 6 (POS Invoice Number).....	812
DE 124 usage for Brazil only.....	813
Credito Direto ao Consumidor (CDC) transactions with Maestro in Financial Transaction Request/0200 message.....	813
Subfield 1 (Merchant CNPJ Number to Attend CDC [Timed-based transactions]).....	813
Subfield 2 (Not Used).....	814

---

Other financed transactions with Maestro in Financial Transaction Request Response/0210 message.....	814
Subfields 1–9 (Not Used).....	814
Subfield 10 (CET: Total Annual Effective Cost).....	815
Subfield 11 (CET: Total Annual Effective Cost).....	815
Subfield 12 (Not Used).....	815
Distribution transactions with Maestro in Financial Transaction Request/0200 message.....	816
Subfield 1 (Not Used).....	816
Subfield 2 (Distribution [Distributor Code]).....	816
Subfield 3 (Distribution [Distributor Code]).....	817
Subfield 4 (Distribution [Issuer Reference Code]).....	817
Subfield 5 (Not Used).....	817
Purchase transaction with specific credit lines in Financial Transaction Request and Response/0200 and 0210 messages.....	818
Subfields 1–4 (Not Used).....	818
Subfield 5 (Issuer and Acquirer Reference Code).....	818
Subfield 6 (Not Used).....	819
Custo Efetivo Total (CET) for ATM cash withdrawal with credit card in a Financial Transaction Request Response/0210 message.....	819
Subfields 1–12 (Not Used).....	819
Subfield 13 (CET: Total Annual Effective Cost).....	819
Subfield 14 (Not Used).....	820
Discretionary message on sales slip with Maestro in Financial Transaction Request/0200 message.....	820
Subfields 1–5 (Not Used).....	820
Subfield 6 (Discretionary Message on Sales Slip Supported).....	821
Subfield 7 (Not Used).....	821
Discretionary message on sales slip with Maestro in Financial Transaction Request Response/0210 message.....	822
Subfields 1–6 (Not Used).....	822
Subfield 7 (Discretionary Message on Sales Slip Code).....	822
Subfield 8 (Discretionary Message on Sales Slip).....	822
Subfield 9 (Not Used).....	823
Subelement 023 (PIN Length Edit Error Message Code in a Financial Transaction Request Response/0210 Message).....	823
Maestro-branded (IIAS) healthcare transactions.....	824
DE 124 (Member-Defined Data [Colombia Domestic Use Only]).....	825
Subfield 1 (Card Issuer Data).....	825
Subfield 2 (Tax [IVA]).....	825
Subfield 3 (Tax Amount Base).....	826

---

Subfield 4 (Retailer Data).....	826
Subfield 5 (Terminal Acquirer Data).....	826
Subfield 6 (Original Processing Code).....	827
Subfield 7 (Bill Payment/Top Up Data).....	827
Subfield 8 (Local POS Data).....	828
Subfield 9 (Local Response Codes).....	828
Subfield 10 (Original Transaction Data).....	829
Subfield 11 (Payment Indicator).....	829
Subfield 12 (Interchange Code).....	830
Subfield 13 (Interchange Fixed Amount).....	830
Subfield 14 (Interchange Percentage).....	831
Subfield 15 (Local Interchange Group).....	831
Subfield 16 (IAC Tax Amount).....	831
DE 124 (Member Defined Data [Mexico rePower Use Only]).....	832
Subfield 4 (Reference Deposit Number).....	833
Subfield 5 (Merchant Fee).....	834
DE 124 (Member Defined Data [Uruguay Domestic Maestro POS Transactions Use Only]).....	834
Subfield 1 (Merchant Tax ID).....	834
Subfield 2 (Original Transaction Amount).....	835
Subfield 3 (Total Amount Applicable for Discount).....	835
Subfield 4 (Local Regulation Identifier).....	836
Subfield 5 (Discount Amount).....	836
Subfield 6 (Discount Cap Reached).....	837
Use of Data Element 124 by message type and card type.....	837
DE 125 (New PIN Data).....	838
DE 126 (Switch Private Data).....	839
Subfield 1 (Settlement Service Data).....	841
Subfield 2 (Single Message System Private Data 1).....	841
Subfield 3 (Cross-Border Transaction Indicator).....	842
Subfield 4 (Currency Indicator).....	842
Subfield 5 (Fraud Score).....	843
Subfield 6 (Fraud Risk Indicator).....	843
Subfield 7 (Single Message System Private Data 2).....	844
DE 127 (Processor Private Data).....	845
DE 128 (Message Authentication Code [MAC]).....	847

## Overview

This chapter provides a detailed definition of all data elements that are used within ISO 8583-1987 bank card message types.

Information is presented in the following order:

1. Explanation of the notation used throughout this section to describe all data element attributes.
2. Summary list of all ISO 8583-1987 data elements in the order of their ISO-assigned bit map numbers, including annotation of those data elements that are currently **not implemented** within the ISO 8583-1987 specification.
3. Detailed definition of each message data element, presented in the order of the data element bit map number. Information provided for each data element includes the:
  - data element definition
  - data element formats, including data representation attributes, data field format, and data field length
  - data element usage
  - data element values or field edits indicating the specific value(s) or permissible range of values that may be present within the data element, and
  - product application notes, where applicable, that detail unique, product-specific, or message-specific usage of the data element.

## Annotation conventions for data element attributes

These notation conventions are used throughout this section to describe the attributes of ISO 8583-1987 message data elements.

### Conventions for data representation

This section provides valid data representation conventions.

The data encoding conventions listed below have been adapted for all ISO 8583-1987 messages:

- The system aligns all message data element fields on byte boundaries; for example a data field cannot begin with the low order "nibble" or any bit other than the high-order bit of any byte.
- All of the data types listed in the General Representations table are encoded for transmission between the Single Message System and processor systems using EBCDIC display character representation.
- The Character Sets table indicate alpha, numeric, and special characters that are sent to the Single Message System. When received, the Single Message System passes these characters through as they are received. The Extended ASCII Character Sets table presents the mapping of decimal to hexadecimal character sets when received by the Single Message System. Any characters not shown in the tables are mapped as a space.

- All numeric (attribute **n**) data elements are **right-justified** with **leading zeros** unless otherwise specified in the individual data element definitions. All other data elements are **left-justified** with **trailing blanks** unless otherwise specified.
- All binary (attribute **b**) data elements are constructed of bit-strings that have lengths that are an integral number of 8-bit bytes. No binary data element has a length of less than eight bits (one byte).
- All Track-2 or Track-3 (attribute **z**) data elements are encoded as EBCDIC representations of the hexadecimal data specified in ISO specification 7811 and 7812. Thus, a hex "D" (binary 1101) is encoded as an EBCDIC "D" character, and so on. The LLVAR or LLLVAR length specification associated with these data elements specifies the field length in number of bytes.
- The system encodes all length subfields as numeric EBCDIC, right-justified with leading zeros.
  - Fields designated LL are 2-character numeric fields with values from 01 to 99.
  - Fields designated LLL are 3-character numeric fields with values from 001 to 999.

## General representation

This table shows the annotation conventions used throughout this section.

**Table 25: Annotation conventions for data types**

Notation	Description
a	alphabetic characters only (MUST USE UPPERCASE LETTERS) <sup>a</sup>
an	alpha and numeric characters
ans	alpha, numeric, and special characters
as	alpha and special characters
b	binary data <sup>b</sup>
n	numeric characters only
ns	numeric and special characters
s	special characters only
x	character "C" or "D" to indicate "credit" or "debit" value of a dollar amount

<sup>a</sup> The Single Message System application requires use of uppercase letters in data specifying state and country codes. Thus, safe, general practice is to code alpha data as uppercase.

<sup>b</sup> All binary (attribute **b**) data elements are constructed of bit-strings that have lengths that are an integral number of 8-bit bytes. No binary data element has a length of less than eight bits (one byte). For example, 64 bits equal 8 bytes (**00000001 00000001 00000001 00000001 00000001 00000001 00000001 00000001 00000001 00000001**)

Notation	Description
z	magnetic stripe Track-2 or Track-3 data

## Character sets

These tables contains valid ASCII to EBCDIC character sets.

**Table 26: ASCII to EBCDIC character set: ASCII hex order**

**Note:** For the purposes of ISO 8583, the < space > character is treated as a special character (attribute "s"). It may, however, also be used in fields designated as alphanumeric (attribute "an") but only in the form of trailing spaces used to pad out significant data to fill a fixed-length field.

Decimal value	ASCII hex	EBCDIC hex	ASCII symbol	Meaning	EBCDIC symbol	Meaning
032	20	40	< space >	Space	DS	digit select
033	21	5A	!	exclamation mark	SOS	start of significance
034	22	7F	"	straight double quotation mark	FS	field separator
035	23	7B	#	number sign	WUS	word underscore
036	24	5B	\$	dollar sign	BYP/INP	bypass/inhibit presentation
037	25	6C	%	percent sign	LF	line feed
038	26	50	&	ampersand	ETB	end of transmission block
039	27	7D	'	apostrophe	ESC	escape
040	28	4D	(	left parenthesis	SA	set attribute
041	29	5D	)	right parenthesis	SFE	
042	2A	5C	*	asterisk	SM/SW	set mode switch
043	2B	4E	+	addition sign	CSP	control sequence prefix

<b>Decimal value</b>	<b>ASCII hex</b>	<b>EBCDIC hex</b>	<b>ASCII symbol</b>	<b>Meaning</b>	<b>EBCDIC symbol</b>	<b>Meaning</b>
044	2C	6B	,	comma	MFA	modify field attribute
045	2D	60	-	subtraction sign	ENQ	enquiry
046	2E	4B	.	period	ACK	acknowledge
047	2F	61	/	right slash	BEL	bell
048	30	F0	0			
049	31	F1	1			
050	32	F2	2		SYN	synchronous idle
051	33	F3	3		IR	index return
052	34	F4	4		PP	presentation position
053	35	F5	5		TRN	
054	36	F6	6		NBS	numeric backspace
055	37	F7	7		EOT	end of transmission
056	38	F8	8		SBS	subscript
057	39	F9	9		IT	indent tab
058	3A	7A	:	colon	RFF	required form feed
059	3B	5E	;	semicolon	CU3	customer use 3
060	3C	4C	<	less than	DC4	device control 4
061	3D	7E	=	equal	NAK	negative acknowledge
062	3E	6E	>	greater than		
063	3F	6F	?	question mark	SUB	substitute
064	40	7C	@	at symbol	SP	space
065	41	C1	A		RSP	
066	42	C2	B		â	
067	43	C3	C		ä	

Decimal value	ASCII hex	EBCDIC hex	ASCII symbol	Meaning	EBCDIC symbol	Meaning
068	44	C4	D		à	
069	45	C5	E		á	
070	46	C6	F		ã	
071	47	C7	G		å	
072	48	C8	H		ç	
073	49	C9	I		ñ	
074	4A	D1	J		□	cent
075	4B	D2	K	.	.	period
076	4C	D3	L	<	<	less than
077	4D	D4	M		(	left parenthesis
078	4E	D5	N		+	addition sign
079	4F	D6	O			logical or
080	50	D7	P		&	ampersand
081	51	D8	Q		é	
082	52	D9	R		ê	
083	53	E2	S		ë	
084	54	E3	T		è	
085	55	E4	U		í	
086	56	E5	V		î	
087	57	E6	W		ï	
088	58	E7	X		ì	
089	59	E8	Y		þ	
090	5A	E9	Z		!	exclamation point
091	5B	AD	[	left bracket	\$	dollar sign
092	5C	E0	\	left slash	*	asterisk
093	5D	BD	]	right bracket	)	right parenthesis
094	5E	5F	^	hat, circumflex	;	semicolon

Decimal value	ASCII hex	EBCDIC hex	ASCII symbol	Meaning	EBCDIC symbol	Meaning
095	5F	6D	-	underscore	^	hat, circumflex
096	60	79	`	grave	-	subtraction sign
097	61	81	a		/	right slash
098	62	82	b		Â	
099	63	83	c		Ä	
100	64	84	d		À	
101	65	85	e		Á	
102	66	86	f		Ã	
103	67	87	g		Å	
104	68	88	h		Ç	
105	69	89	i		Ñ	
106	6A	91	j			split vertical bar
107	6B	92	k		,	comma
108	6C	93	l		%	percent sign
109	6D	94	m		-	underscore
110	6E	95	n		>	greater than
111	6F	96	o		?	question mark
112	70	97	p		Ø	
113	71	98	q		É	
114	72	99	r		Ê	
115	73	A2	s		Ë	
116	74	A3	t		È	
117	75	A4	u		Í	
118	76	A5	v		Î	
119	77	A6	w		Ï	
120	78	A7	x		ì	
121	79	A8	y		`	grave
122	7A	A9	z		:	colon

Decimal value	ASCII hex	EBCDIC hex	ASCII symbol	Meaning	EBCDIC symbol	Meaning
123	7B	C0	{	left brace	#	number sign
124	7C	6A		logical or	@	at symbol
125	7D	D0	}	right brace	'	apostrophe
126	7E	A1	~	similar, tilde	=	equal

**Table 27: ASCII to EBCDIC character set: EBCDIC hex order**

**Note:** For the purposes of ISO 8583, the < space > character is treated as a special character (attribute "s"). It may, however, also be used in fields designated as alphanumeric (attribute "an") but only in the form of trailing spaces used to pad out significant data to fill a fixed-length field.

Decimal value	EBCDIC hex	ASCII hex	EBCDIC symbol	Meaning	ASCII symbol	Meaning
032	40	20	DS	digit select	< space >	Space
046	4B	2E	ACK	acknowledge	.	period
060	4C	3C	DC4	device control	< 4	less than
040	4D	28	SA	set attribute	(	left parenthesis
043	4E	2B	CSP	control sequence prefix	+	addition sign
038	50	26	ETB	end of transmission block	&	ampersand
033	5A	21	SOS	start of significance	!	exclamation mark
036	5B	24	BYP/INP	bypass/inhibit presentation	\$	dollar sign
042	5C	2A	SM/SW	set mode switch	*	asterisk
041	5D	29	SFE		)	right parenthesis
059	5E	3B	CU3	customer use 3	;	semicolon
094	5F	5E	;	semicolon	^	hat, circumflex

Decimal value	EBCDIC hex	ASCII hex	EBCDIC symbol	Meaning	ASCII symbol	Meaning
045	60	2D	ENQ	enquiry	-	subtraction sign
047	61	2F	BEL	bell	/	right slash
124	6A	7C	@	at symbol		logical or
044	6B	2C	MFA	modify field attribute	,	comma
037	6C	25	LF	line feed	%	percent sign
095	6D	5F	^	hat, circumflex	-	underscore
062	6E	3E			>	greater than
063	6F	3F	SUB	substitute	?	question mark
096	79	60	-	subtraction sign	`	grave
058	7A	3A	RFF	required form feed	:	colon
035	7B	23	WUS	word underscore	#	number sign
064	7C	40	SP	space	@	at symbol
039	7D	27	ESC	escape	'	apostrophe
061	7E	3D	NAK	negative acknowledge	=	equal
034	7F	22	FS	field separator	"	straight double quotation mark
097	81	61	/	right slash	a	
098	82	62	Â		b	
099	83	63	Ä		c	
100	84	64	À		d	
101	85	65	Á		e	
102	86	66	Ã		f	
103	87	67	Å		g	
104	88	68	Ҫ		h	
105	89	69	Ñ		i	

Decimal value	EBCDIC hex	ASCII hex	EBCDIC symbol	Meaning	ASCII symbol	Meaning
106	91	6A		split vertical bar	j	
107	92	6B	,	comma	k	
108	93	6C	%	percent sign	l	
109	94	6D	_	underscore	m	
110	95	6E	>	greater than	n	
111	96	6F	?	question mark	o	
112	97	70	Ø		p	
113	98	71	É		q	
114	99	72	Ê		r	
126	A1	7E	=	equal	~	similar, tilde
115	A2	73	Ë		s	
116	A3	74	È		t	
117	A4	75	Í		u	
118	A5	76	Î		v	
119	A6	77	Ï		w	
120	A7	78	Ì		x	
121	A8	79	߱	grave	y	
122	A9	7A	:	colon	z	
091	AD	5B	\$	dollar sign	[	left bracket
093	BD	5D	)	right parenthesis	]	right bracket
123	C0	7B	#	number sign	{	left brace
065	C1	41	RSP		A	
066	C2	42	â		B	
067	C3	43	ä		C	
068	C4	44	à		D	
069	C5	45	á		E	
070	C6	46	ã		F	
071	C7	47	å		G	
072	C8	48	ç		H	

Decimal value	EBCDIC hex	ASCII hex	EBCDIC symbol	Meaning	ASCII symbol	Meaning
073	C9	49	ñ			
125	D0	7D	'	apostrophe	}	right brace
074	D1	4A	¤	cent	J	
075	D2	4B	.	period	K	
076	D3	4C	<	less than	L	
077	D4	4D	(	left parenthesis	M	
078	D5	4E	+	addition sign	N	
079	D6	4F		logical or	O	
080	D7	50	&	ampersand	P	
081	D8	51	é		Q	
082	D9	52	ê		R	
092	E0	5C	*	asterisk	\	left slash
083	E2	53	ë		S	
084	E3	54	è		T	
085	E4	55	í		U	
086	E5	56	î		V	
087	E6	57	ï		W	
088	E7	58	ì		X	
089	E8	59	ß		Y	
090	E9	5A	!	exclamation point	Z	
048	F0	30			0	
049	F1	31			1	
050	F2	32	SYN	synchronous idle	2	
051	F3	33	IR	index return	3	
052	F4	34	PP	presentation position	4	
053	F5	35	TRN		5	
054	F6	36	NBS	numeric backspace	6	

Decimal value	EBCDIC hex	ASCII hex	EBCDIC symbol	Meaning	ASCII symbol	Meaning
055	F7	37	EOT	end of transmission	7	
056	F8	38	SBS	subscript	8	
057	F9	39	IT	indent tab	9	

## Extended character sets

These tables contains valid ASCII to EBCDIC extended character sets.

**Table 28: Extended character set: ASCII Hex order**

Decimal value	ASCII hex	EBCDIC hex	ASCII character representation	Meaning	Mapped character	Mapping hex
192	C0	64	À	capital A, grave	A	41
193	C1	65	Á	capital A, acute	A	41
194	C2	62	Â	capital A, circumflex	A	41
195	C3	66	Ã	capital A, tilde	A	41
196	C4	63	Ä	capital A, umlaut	A	41
197	C5	67	Å	capital A, ring	A	41
198	C6	9E	Æ	capital AE, diphthong	E	45
199	C7	68	Ҫ	capital C, cedilla	C	43
200	C8	74	È	capital E, grave	E	45
201	C9	71	É	capital E, acute	E	45
202	CA	72	Ê	capital E, circumflex	E	45
203	CB	73	Ӭ	capital E, umlaut	E	45

<b>Decimal value</b>	<b>ASCII hex</b>	<b>EBCDIC hex</b>	<b>ASCII character representation</b>	<b>Meaning</b>	<b>Mapped character</b>	<b>Mapping hex</b>
204	CC	78	Ì	capital I, grave	Ì	49
205	CE	75	Í	capital I, acute	Í	49
206	CD	76	Î	capital I, circumflex	Î	49
207	CF	77	Ï	capital I, umlaut	Ï	49
208	D0	AC	Ð	capital Eth, Icelandic	Ð	44
209	D1	69	Ñ	capital N, tilde	N	4E
210	D2	ED	Ò	capital O, tilde	O	4F
211	D3	EE	Ó	capital O, acute	Ó	4F
212	D4	EB	Ô	capital O, circumflex	Ô	4F
213	D5	EF	Õ	capital O, tilde	Õ	4F
214	D6	EC	Ö	capital O, umlaut	Ö	4F
215	D7	BF	×	multiply sign	×	78
216	D8	80	Ø	capital O, slash	Ø	4F
217	D9	FD	Ù	capital U, grave	Ù	55
218	DA	FE	Ú	capital U, acute	Ú	55
219	DB	FB	Û	capital U, circumflex	Û	55
220	DC	FC	Ü	capital U, umlaut	Ü	55
221	DD	BA	Ý	capital Y, acute	Ý	59
222	DE	AE	Þ	capital THORN, Icelandic	Þ	50

<b>Decimal value</b>	<b>ASCII hex</b>	<b>EBCDIC hex</b>	<b>ASCII character representation</b>	<b>Meaning</b>	<b>Mapped character</b>	<b>Mapping hex</b>
223	DF	59	ß	small sap s, German	S	53
224	E0	44	à	small a, grave	a	61
225	E1	45	á	small a, acute	a	61
226	E2	42	â	small a, circumflex	a	61
227	E3	46	ã	small a, tilde	a	61
228	E4	43	ä	small a, umlaut	a	61
229	E5	47	å	small a, ring	a	61
230	E6	9C	æ	small ae diphthong	e	65
231	E7	48	ç	small c, cedilla	c	63
232	E8	54	è	small e, grave	e	65
233	E9	51	é	small e, acute	e	65
234	EA	52	ê	small e, circumflex	e	65
235	EB	53	ë	small e, umlaut	e	65
236	EC	58	ì	small i, grave	i	69
237	ED	55	í	small i, acute	i	69
238	EE	56	î	small i, circumflex	i	69
239	EF	57	ï	small i, umlaut	i	69
240	F0	8C	ð	small eth, Icelandic	d	64
241	F1	49	ñ	small n, tilde	n	6E
242	F2	CD	ò	small o, grave	o	6F
243	F3	CE	ó	small o, acute	o	6F
244	F4	CB	ô	small o, circumflex	o	6F
245	F5	CF	õ	small o, tilde	o	6F

Decimal value	ASCII hex	EBCDIC hex	ASCII character representation	Meaning	Mapped character	Mapping hex
246	F6	CC	ö	small o, umlaut	o	6F
247	F7	E1	÷	division sign	/	2F
248	F8	70	ø	small o, slash	o	6F
249	F9	DD	ù	small u, grave	u	75
250	FA	DE	ú	small u, acute	u	75
251	FB	DB	û	small u, circumflex	u	75
252	FC	DC	ü	small u, umlaut	u	75
253	FD	8D	ý	small y, acute	y	79
254	FE	8E	þ	small thorn, Icelandic	p	70
255	FF	DF	ÿ	small y, umlaut	ÿ	79

Table 29: Extended Character Set—EBCDIC Hex order

Decimal Value	EBCDIC Hex	ASCII Hex	ASCII Character Representation	Meaning	Mapped Character	Mapping Hex
226	42	E2	â	small a, circumflex	a	61
228	43	E4	ä	small a, umlaut	a	61
224	44	E0	à	small a, grave	a	61
225	45	E1	á	small a, acute	a	61
227	46	E3	ã	small a, tilde	a	61
229	47	E5	å	small a, ring	a	61
231	48	E7	ç	small c, cedilla	c	63
241	49	F1	ñ	small n, tilde	n	6E

Decimal Value	EBCDIC Hex	ASCII Hex	ASCII Character Representation	Meaning	Mapped Character	Mapping Hex
233	51	E9	é	small e, acute	e	65
234	52	EA	ê	small e, circumflex	e	65
235	53	EB	ë	small e, umlaut	e	65
232	54	E8	è	small e, grave	e	65
237	55	ED	í	small i, acute	i	69
238	56	EE	î	small i, circumflex	i	69
239	57	EF	ï	small i, umlaut	i	69
236	58	EC	ì	small i, grave	i	69
223	59	DF	ß	small sap s, German	S	53
194	62	C2	Â	capital A, circumflex	A	41
196	63	C4	Ä	capital A, umlaut	A	41
192	64	C0	À	capital A, grave	A	41
193	65	C1	Á	capital A, acute	A	41
195	66	C3	Ã	capital A, tilde	A	41
197	67	C5	Å	capital A, ring	A	41
199	68	C7	Ҫ	capital C, cedilla	C	43
209	69	D1	Ñ	capital N, tilde	N	4E
248	70	F8	ø	small o, slash	o	6F
201	71	C9	É	capital E, acute	E	45
202	72	CA	Ê	capital E, circumflex	E	45
203	73	CB	Ë	capital E, umlaut	E	45

Decimal Value	EBCDIC Hex	ASCII Hex	ASCII Character Representation	Meaning	Mapped Character	Mapping Hex
200	74	C8	È	capital E, grave	E	45
205	75	CE	Í	capital I, acute	I	49
206	76	CD	Î	capital I, circumflex	I	49
207	77	CF	Ï	capital I, umlaut	I	49
204	78	CC	Ì	capital I, grave	I	49
216	80	D8	Ø	capital O, slash	O	4F
240	8C	F0	ð	small eth, Icelandic	d	64
253	8D	FD	ÿ	small y, acute	y	79
254	8E	FE	þ	small thorn, Icelandic	p	70
230	9C	E6	æ	small ae diphthong	e	65
198	9E	C6	Æ	capital AE, diphthong	E	45
208	AC	D0	Ð	capital Eth, Icelandic	D	44
222	AE	DE	Þ	capital THORN, Icelandic	P	50
221	BA	DD	Ý	capital Y, acute	Y	59
215	BF	D7	×	multiply sign	×	78
244	CB	F4	ô	small o, circumflex	o	6F
246	CC	F6	ö	small o, umlaut	o	6F
242	CD	F2	ò	small o, grave	o	6F
243	CE	F3	ó	small o, acute	o	6F

Decimal Value	EBCDIC Hex	ASCII Hex	ASCII Character Representation	Meaning	Mapped Character	Mapping Hex
245	CF	F5	õ	small o, tilde	o	6F
251	DB	FB	û	small u, circumflex	u	75
252	DC	FC	Ü	small u, umlaut	u	75
249	DD	F9	ù	small u, grave	u	75
250	DE	FA	ú	small u, acute	u	75
255	DF	FF	ÿ	small y, umlaut	y	79
247	E1	F7	÷	division sign	/	2F
212	EB	D4	Ô	capital O, circumflex	O	4F
214	EC	D6	Ö	capital O, umlaut	O	4F
210	ED	D2	Ò	capital O, tilde	O	4F
211	EE	D3	Ó	capital O, acute	O	4F
213	EF	D5	Õ	capital O, tilde	O	4F
219	FB	DB	Û	capital U, circumflex	U	55
220	FC	DC	Ü	capital U, umlaut	U	55
217	FD	D9	Ù	capital U, grave	U	55
218	FE	DA	Ú	capital U, acute	U	55

## Length attributes

This table presents the annotation conventions for data length attributes.

**Table 30: Annotation conventions for data length attributes**

Notation	Description
-digit(s)	Fixed length in number of positions.  Example: "n-3" indicates a 3-position numeric field.  Example: "an-10" indicates a 10-position alphanumeric field.
...digit(s)	Variable length field, with maximum number of positions specified.  Example: "n...11" indicates a variable length numeric field of up to 11 digits.  Example: "an...25" indicates a variable length alphanumeric field of up to 25 characters.
LLVAR	Present with a variable-length data element attribute, indicates that the data element contains two fields:  "LL" is the length field and represents the number of positions in the variable-length data field that follows. The length field contains a value in the range of 01-99.  "VAR" is the variable-length data field.  Example: "an...25; LLVAR" represents a variable-length alphanumeric data element with a length of 1-25 positions.
LLLVAR	Present with a variable-length data element attribute, indicates that the data element contains two fields:  "LLL" is the length field and represents the number of positions in the variable-length data field that follows. The length field contains a value in the range 001-999.  "VAR" is the variable-length data field.  Example: "an...500; LLLLVAR" indicates a variable-length alphanumeric data element having a length of 1-500 positions.

## Field content attributes

This table presents conventions for date and time notation.

**Table 31: Message data elements: date and time notation attributes**

Notation	Description
MM	month (two digits, 01-12)

<b>Notation</b>	<b>Description</b>
DD	day (two digits, 01–31)
YY	year (last two digits of calendar year, 00–99)
hh	hour (two digits, 00–23)
mm	minute (two digits, 00–59)
ss	second (two digits, 00–59)

## **Data element message format requirements**

These notations describe the requirements for each data element. These notations appear in the originator (Org), Single Message System (Sys), and destination (Dst) entities.

The originator or destination can only use the codes in the following table:

<b>Usage code</b>	<b>Description</b>
<b>M</b>	<b>Mandatory.</b> The data element is required in the message.
<b>C</b>	<b>Conditional.</b> The data element is required in the message if the conditions described in the accompanying text are applicable.
<b>O</b>	<b>Optional.</b> The data element is not required but may be included in the message at the message initiator's option.
.	<b>Not required or not applicable.</b> The data element is not required or not applicable.

Only the Mastercard Network can use the following codes:

<b>Usage code</b>	<b>Description</b>
<b>X</b>	<b>Interaction.</b> The data element will be accepted, inserted or overwritten by the Single Message System. Any modification is determined by specific programs and services.
<b>P</b>	<b>Pass-through.</b> The data element is forwarded by the Mastercard Network to the destination (unmodified).

## Message data elements

These tables list all data elements (DEs) implemented within the ISO 8583-1987 message standard, both used and not used by the Single Message System, in numeric order.

### Data elements currently used by the Single Message System

This table lists all data elements (DEs) implemented within the ISO 8583-1987 message standard, that are currently **used** by the Single Message System, in numeric order.

**Table 32: Message data elements currently used by the Single Message System**

DE	Name	Attributes
1	Bit map, Secondary	b-64
2	Primary Account Number (PAN)	n...19; LLVAR
3	Processing Code	n-6
4	Amount, Transaction	n-12
5	Amount, Settlement	n-12
6	Amount, Cardholder Billing	n-12
7	Transmission Date and Time	n-10; MMDDhhmmss
9	Conversion Rate, Settlement	n-8
10	Conversion Rate, Cardholder Billing	n-8
11	System Trace Audit Number	n-6
12	Time, Local Transaction	n-6; hhmmss
13	Date, Local Transaction	n-4; MMDD
14	Date, Expiration	n-4; YYMM
15	Date, Settlement	n-4; MMDD
16	Date, Conversion	n-4; MMDD
18	Merchant Type	n-4
20	Primary Account Number (PAN) Country Code	n-3
22	Point of Service Entry Mode	n-3
23	Card Sequence Number	n-3

Data element definitions  
Data elements currently used by the Single Message System

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<b>DE</b>	<b>Name</b>	<b>Attributes</b>
26	Point of Service (POS) PIN Capture Code	n-2
28	Amount, Transaction Fee	x+n-8
32	Acquiring Institution Identification Code	n...11; LLVAR
33	Forwarding Institution Identification Code	n...11; LLVAR
35	Track 2 Data	z...37; LLVAR
37	Retrieval Reference Number	an-12
38	Authorization Identification Response	ans-6
39	Response Code	an-2
41	Card Acceptor Terminal Identification	ans-8
42	Card Acceptor Identification Code	ans-15
43	Card Acceptor Name and Location	ans-40
44	Additional Response Data	ans...25; LLVAR
45	Track-1 Data	ans...76; LLVAR
48	Additional Data	ans...999; LLLVAR
49	Currency Code, Transaction	n-3
50	Currency Code, Settlement	n-3
51	Currency Code, Cardholder Billing	n-3
52	Personal Identification Number (PIN) Data	b-64
54	Additional Amounts	an...120; LLLVAR
55	Integrated Circuit Card (ICC) System-Related Data	b...255; LLLVAR
56	Payment Account Data	an...37; LLLVAR
58	Authorizing Agent Institution ID	n...009; LLLVAR
60	Advice Reason Code	ans...060; LLLVAR
61	Point of Service (POS) Data	ans...026; LLLVAR
62	Intermediate Network Facility (INF) Data	ans..050; LLLVAR
63	Network Data	ans...049; LLLVAR
70	Network Management Information Code	n-3

Data element definitions  
Data elements currently used by the Single Message System

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<b>DE</b>	<b>Name</b>	<b>Attributes</b>
90	Original Data Elements	n-42
91	File Update Code	an-1
95	Replacement Amount	n-42
96	Message Security Code	n-8
100	Receiving Institution Identification Code	n...11; LLVAR
101	File Name	ans...17; LLVAR
102	Account Identification-1	n...28; LLVAR
103	Account Identification-2	n...28; LLVAR
104	Digital Payment Data	ans...999; LLLVAR
105	Enhanced Identification Data	ans...999; LLLVAR
106	Private Data	ans...999; LLLVAR
107	India On-Soil Data	ans...999; LLLVAR
108	Additional Transaction Reference Data	ans...999; LLLVAR
110	Additional Data-2	ans...999; LLLVAR
111	Amount, Currency Conversion Assessment	n....012; LLLVAR
112	Additional Data (National Use)	ans...248; LLLVAR
120	Record Data	ans...999; LLLVAR
122	Additional Record Data	ans...100; LLLVAR
123	Mastercard Merchant Data Services	ans...999; LLLVAR
124	Member-defined Data	ans...199; LLLVAR
125	New PIN Data	b-64
126	Switch Private Data	ans...050; LLLVAR
127	Processor Private Data	ans...050; LLLVAR

## **Data elements not currently used by the Single Message System**

This table lists all data elements (DEs) implemented within the ISO 8583-1987 message standard, that are currently not used by the Single Message System, in numeric order.

**Table 33: Message data elements not used by the Single Message System**

<b>DE</b>	<b>Name</b>	<b>Attributes</b>
8	Amount, Cardholder Billing Fee	n-8
17	Date, Capture	n-4; MMDD
19	Acquiring Institution Country Code	n-3
21	Forwarding Institution Country Code	n-3
24	Network International Identifier	n-3
25	Point of Service Condition Code (ISO)	n-2
27	Authorization Identification Response Length	n-1
29	Amount, Settlement Fee	x+n-8
30	Amount, Transaction Processing Fee	x+n-8
31	Amount, Settlement Processing Fee	x+n-8
34	Primary Account Number, Extended	ns...28; LLVAR
36	Track 3 Data	z...104; LLLVAR
40	Service Restriction Code	an-3
46	Expanded Additional Amounts	ans...999; LLLVAR
47	Additional Data (National)	ans...999; LLLVAR
53	Security Related Control Information	n-16
57	Reserved for National Use	ans...999; LLLVAR
59	Reserved for National Use	ans...999; LLLVAR
64	Message Authentication Code (MAC)	b-64
65	Bit map, Extended	b-64
66	Settlement Code	n-1
67	Extended Payment Code	n-2

Data element definitions  
Data elements not currently used by the Single Message System

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<b>DE</b>	<b>Name</b>	<b>Attributes</b>
68	Receiving Institution Country Code	n-3
69	Settlement Institution Country Code	n-3
71	Message Number	n-4
72	Message Number Last	n-4
73	Date, Action	n-6; YYMMDD
74	Credits, Number	n-10
75	Credits, Reversal Number	n-10
76	Debits, Number	n-10
77	Debits, Reversal Number	n-10
78	Transfers, Number	n-10
79	Transfers, Reversal Number	n-10
80	Inquiries, Number	n-10
81	Authorizations, Number	n-10
82	Credits, Processing Fee Amount	n-12
83	Credits, Transaction Fee Amount	n-12
84	Debits, Processing Fee Amount	n-12
85	Debits, Transaction Fee Amount	n-12
86	Credits, Amount	n-16
87	Credits, Reversal Amount	n-16
88	Debits, Amount	n-16
89	Debits, Reversal Amount	n-16
92	File Security Code	n-2
93	Response Indicator	an-5
94	Service Indicator	an-7
97	Amount, Net Settlement	x+n-16
98	Payee	ans-25

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<b>DE</b>	<b>Name</b>	<b>Attributes</b>
99	Settlement Institution Identification Code	n...11; LLVAR
109	Reserved for ISO use	ans...999; LLLVAR
113-119	Reserved for National use	ans...999; LLLVAR
121	Authorizing Agent Identification Code	ans...011; LLLVAR
128	Message Authentication Code (MAC)	b-64

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## Message type identifier (MTI)

The message type identifier is a four-digit numeric field describing the type of interchange message.

### Attributes

<b>Attribute</b>	<b>Description</b>
Data Representation	n-4
Length Field	None
Data Field	Fixed length, contents of positions 1-4
Subfields	None
Justification	Right-justified with leading zeros

### Usage

This data element must be present as the first field of each ISO 8583-1987 message.

### Values

The following table lists the valid message types for the Single Message System.

**Table 34: Data element definitions: ISO 8583-1987 message codes**

<b>Message code</b>	<b>Message description</b>
<b>02xx</b>	<b>Financial Transaction/02xx Messages</b>
0200	Financial Transaction Request
0210	Financial Transaction Request Response

<b>Message code</b>	<b>Message description</b>
0220	Financial Transaction Advice
0230	Financial Transaction Advice Response
<b>03xx</b>	<b>File Update/03xx Messages</b>
0302	File Update Request
0312	File Update Request Response
<b>04xx</b>	<b>Reversal Advice/04xx Messages</b>
0420	Acquirer Reversal Advice
0422	Issuer Reversal Advice
0430	Acquirer Reversal Advice Response
0432	Issuer Reversal Advice Response
<b>06xx</b>	<b>Administrative Advice/06xx Messages</b>
0620	Administrative Advice
0630	Administrative Advice Response
0644	Administrative Advice
<b>08xx</b>	<b>Network Management/08xx Messages</b>
0800	Network Management Request
0810	Network Management Request Response
0820	Network Management Advice

## Transaction data classification

The following table specifies the category of each data element, subelement, and subfield as Category One Transaction Data or Category Two Transaction Data. Subelements and subfields are assigned the category of the higher level element unless, otherwise specified in the following table.

<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 1	DE 1 (Bit Map, Secondary)	One
DE 2	DE 2 (Primary Account Number [PAN])	One

<sup>1</sup> Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.

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<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 3	DE 3 (Processing Code)	One
DE 3	Subfield 1 (Cardholder Transaction Type Code)	One
DE 3	Subfield 2 (Cardholder Account Type [From])	One
DE 3	Subfield 3 (Cardholder Account Type [To])	One
DE 4	DE 4 (Amount, Transaction)	One
DE 5	DE 5 (Amount, Settlement)	One
DE 6	DE 6 (Amount, Cardholder Billing)	One
DE 7	DE 7 (Transmission Date and Time)	One
DE 8	DE 8 (Amount, Cardholder Billing Fee)	One
DE 9	DE 9 (Conversion Rate, Settlement)	One
DE 10	DE 10 (Conversion Rate, Cardholder Billing)	One
DE 11	DE 11 (Systems Trace Audit Number)	One
DE 12	DE 12 (Time, Local Transaction)	One
DE 13	DE 13 (Date, Local Transaction)	One
DE 14	DE 14 (Date, Expiration)	One
DE 15	DE 15 (Date, Settlement)	One
DE 16	DE 16 (Date, Conversion)	One
DE 17	DE 17 (Date, Capture)	One
DE 18	DE 18 (Merchant Type)	One
DE 19	DE 19 (Acquiring Institution Country Code)	One
DE 20	DE 20 (Primary Account Number [PAN] Country Code)	One
DE 21	DE 21 (Forwarding Institution Country Code)	One

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<sup>1</sup> **Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.**

<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 22	DE 22 (Point of Service Entry Mode)	One
DE 22	Subfield 1 (POS Terminal PAN Entry Mode)	One
DE 22	Subfield 2 (POS Terminal PIN Entry Mode)	One
DE 23	DE 23 (Card Sequence Number)	One
DE 24	DE 24 (Network International Identifier)	Two
DE 25	DE 25 (Point of Service Condition Code [ISO])	One
DE 26	DE 26 (Point of Service [POS] PIN Capture Code)	One
DE 27	DE 27 (Authorization Identification Response Length)	Two
DE 28	DE 28 (Amount, Transaction Fee)	One
DE 29	DE 29 (Amount, Settlement Fee)	One
DE 30	DE 30 (Amount, Transaction Processing Fee)	Two
DE 32	DE 32 (Acquiring Institution Identification Code)	One
DE 33	DE 33 (Forwarding Institution Identification Code)	One
DE 34	DE 34 (Primary Account Number, Extended)	One
DE 35	DE 35 (Track 2 Data)	One
DE 35	Subfield 1 (Start Sentinel)	One
DE 35	Subfield 2 (Primary Account Number (PAN))	One
DE 35	Subfield 3 (Field Separator)	One
DE 35	Subfield 4 (Expiration Date)	One
DE 35	Subfield 5 (Extended Service Code)	One
DE 35	Subfield 6 (Discretionary Data)	One

<sup>1</sup> Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.

<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 35	Subfield 7 (End Sentinel)	One
DE 35	Subfield 8 (Longitudinal Redundancy Check [LRC])	One
DE 37	DE 37 (Retrieval Reference Number)	Two
DE 37	Subfield 1 (Transaction Date and Initiator Discretionary Data)	Two
DE 37	Subfield 2 (Terminal Transaction Number)	Two
DE 38	DE 38 (Authorization Identification Response)	One
DE 39	DE 39 (Response Code)	One
DE 41	DE 41 (Card Acceptor Terminal Identification)	One
DE 42	DE 42 (Card Acceptor Identification Code)	One
DE 43	DE 43 (Card Acceptor Name and Location)	One
DE 43	Subfield 1 (ATM Owner Name and/or Location, or POS Merchant Name [or Payment Facilitator and Sub-Merchant Information, if applicable])	One
DE 43	Subfield 2 (Space/Surcharge-Free Indicator)	One
DE 43	Subfield 3 (Card Acceptor City [or Sub-Merchant Information, if applicable])	One
DE 43	Subfield 4 (Space)	One
DE 43	Subfield 5 (Card Acceptor State [U.S.], Province Code [Canada and Canadian territories], or Country Code [or Sub-Merchant Information, if applicable])	One
DE 44	DE 44 (Additional Response Data)	One
DE 45	DE 45 (Track 1 Data)	One

<sup>1</sup> **Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.**

<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 45	Subfield 1 (Start Sentinel)	One
DE 45	Subfield 2 (Format Code)	One
DE 45	Subfield 3 (Primary Account Number [PAN])	One
DE 45	Subfield 4 (Field Separator)	One
DE 45	Subfield 5 (Cardholder Name)	One
DE 45	Subfield 6 (Field Separator)	One
DE 45	Subfield 7 (Expiration Date)	One
DE 45	Subfield 8 (Extended Service Code)	One
DE 45	Subfield 9 (Discretionary Data)	One
DE 45	Subfield 10 (End Sentinel)	One
DE 45	Subfield 11 (Longitudinal Redundancy Check [LRC])	One
DE 48	DE 48 (Additional Data)	See subelements
DE 48, SE 11	Subelement 11 (Key Exchange Data Block [Double-Length Keys])	Two
DE 48, SE 11	Subfield 1 (Key Class ID)	Two
DE 48, SE 11	Subfield 2 (Key Index Number)	Two
DE 48, SE 11	Subfield 3 (Key Cycle Number)	Two
DE 48, SE 11	Subfield 4 (PIN Encryption Key [PEK])	Two
DE 48, SE 11	Subfield 5 (Key Check Value)	Two
DE 48, SE 11	Subelement 11 (Key Exchange Data Block [Triple- Length Keys])	Two
DE 48, SE 11	Subfield 1 (Key Class ID)	Two
DE 48, SE 11	Subfield 2 (Key Index Number)	Two
DE 48, SE 11	Subfield 3 (Key Cycle Number)	Two
DE 48, SE 11	Subfield 4 (PIN Encryption Key [PEK])	Two
DE 48, SE 11	Subfield 5 (Key Check Value)	Two

<sup>1</sup> Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.

<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 48, SE 17	Subelement 17 (Authentication Indicator)	Two
DE 48, SE 19	Subelement 19 (Fraud Notification Information)	Two
DE 48, SE 19	Subfield 1 (Fraud Notification Service Date)	Two
DE 48, SE 19	Subfield 2 (Fraud Notification Service Chargeback Counter)	Two
DE 48, SE 19	Subfield 3 (Fraud Notification Service Second Presentment Rights Indicator)	Two
DE 48, SE 21	Subelement 21 (Acceptance Data)	One
DE 48, SE 21	Subfield 01 (mPOS Acceptance Device Type)	One
DE 48, SE 21	Subfield 02 (Additional Terminal Capability Indicator)	One
DE 48, SE 22	Subelement 22 (Multi-Purpose Merchant Indicator)	Two
DE 48, SE 22	Subfield 01 (Low-Risk Merchant Indicator)	Two
DE 48, SE 22	Subfield 02 (Single Tap Indicator)	Two
DE 48, SE 22	Subfield 03 (Response to PIN Request)	Two
DE 48, SE 22	Subfield 04 (Issuer PIN Request in a Single Tap Mode)	Two
DE 48, SE 23	Subelement 23 (Payment Initiation Channel)	One
DE 48, SE 23	Subfield 1 (Device Type)	One
DE 48, SE 25	Subelement 25 (Mastercard Cash Program Data)	Two
DE 48, SE 25	Subfield 1 (Message Identifier)	Two
DE 48, SE 26	Subelement 26 (Wallet Program Data)	Two
DE 48, SE 26	Subfield 1 (Wallet Identifier)	Two

<sup>1</sup> Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.

<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 48, SE 27	Subelement 27 (Transaction Analysis)	Two
DE 48, SE 27	Subfield 1 (Overview)	Two
DE 48, SE 27	Subfield 2 (Test Results)	Two
DE 48, SE 28	Subelement 28 (Cardless ATM Order ID)	Two
DE 48, SE 29	Subelement 29 (Additional POS Terminal Locations)	One
DE 48, SE 30	Subelement 30 (Token Transaction Identifier)	Two
DE 48, SE 32	Subelement 32 (Mastercard Assigned ID)	Two
DE 48, SE 32	Subfield 1 (Mastercard Assigned ID)	Two
DE 48, SE 33	Subelement 33 (PAN Mapping File Information)	Two
DE 48, SE 33	Subfield 1 (Account Number Indicator)	Two
DE 48, SE 33	Subfield 2 (Account Number PAN)	Two
DE 48, SE 33	Subfield 3 (Expiration Date)	Two
DE 48, SE 33	Subfield 5—Token Assurance Level)	Two
DE 48, SE 33	Subfield 6 (Token Requestor ID)	Two
DE 48, SE 33	Subfield 8 (Storage Technology)	Two
DE 48, SE 34	Subelement 34 (ATC Information)	Two
DE 48, SE 34	Subfield 1 (ATC Value)	Two
DE 48, SE 34	Subfield 2 (ATC Discrepancy Value)	Two
DE 48, SE 34	Subfield 3 (ATC Discrepancy Indicator)	Two
DE 48, SE 35	Subelement 35 (Contactless Device Request Response)	Two

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<sup>1</sup> **Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.**

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<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 48, SE 35	Subfield 1 (Contactless Device Request Response)	Two
DE 48, SE 37	Subelement 37 (Additional Merchant Data)	Two
DE 48, SE 37	Subfield 1 (Payment Facilitator ID)	Two
DE 48, SE 37	Subfield 2 (Independent Sales Organization ID)	Two
DE 48, SE 37	Subfield 3 (Sub-Merchant ID)	Two
DE 48, SE 38	Subelement 38 (Account Category)	Two
DE 48, SE 38	Subfield 1 (Account Category)	Two
DE 48, SE 39	Subelement 39 (Account Data Compromise Information)	Two
DE 48, SE 39	Positions 1–3 (Reserved for Future Use)	Two
DE 48, SE 39	Positions 4–6 (Reserved for Future Use)	Two
DE 48, SE 39	Positions 7–12 (Case Key Code 1)	Two
DE 48, SE 39	Positions 13–18 (Case Key Code 2)	Two
DE 48, SE 39	Positions 19–24 (Case Key Code 3)	Two
DE 48, SE 39	Position 25 (ADC Data Type: PAN)	Two
DE 48, SE 39	Position 26 (ADC Data Type: Expiration Date)	Two
DE 48, SE 39	Position 27 (ADC Data Type: CVC 2)	Two
DE 48, SE 39	Position 28 (ADC Data Type: PIN)	Two
DE 48, SE 39	Position 29 (ADC Data Type: Magnetic Stripe)	Two
DE 48, SE 39	Position 30 (ADC Data Type: Personal Information)	Two

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<sup>1</sup> Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.

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<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 48, SE 40	Subelement 40 (Electronic Commerce Merchant/Cardholder Certificate Serial Number)	Two
DE 48, SE 40	Subfield 1 (Merchant Certificate Serial Number)	Two
DE 48, SE 40	Subfield 2 (Cardholder Certificate Serial Number)	Two
DE 48, SE 41	Subelement 41 (Electronic Commerce Certificate Qualifying Information)	Two
DE 48, SE 41	Subfield 1 (Reserved for future use)	Two
DE 48, SE 41	Subfield 2 (Reserved for future use)	Two
DE 48, SE 41	Subfield 3 (Reserved for future use)	Two
DE 48, SE 41	Subfield 4 (Reserved for future use)	Two
DE 48, SE 41	Subfield 5 (Reserved for future use)	Two
DE 48, SE 41	Subfield 6 (Reserved for future use)	Two
DE 48, SE 41	Subfield 7 (Reserved for future use)	Two
DE 48, SE 41	Subfield 8 (Reserved for future use)	Two
DE 48, SE 41	Subfield 9 (Reserved for future use)	Two
DE 48, SE 41	Subfield 10 (Reserved for future use)	Two
DE 48, SE 41	Subfield 11 (National ID)	Two
DE 48, SE 41	Subfield 12 (Reserved for future use)	Two
DE 48, SE 41	Subfield 13 (Reserved for future use)	Two

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<sup>1</sup> Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.

<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 48, SE 41	Subfield 14 (Reserved for future use)	Two
DE 48, SE 41	Subfield 15 (Reserved for future use)	Two
DE 48, SE 41	Subfield 16 (Reserved for future use)	Two
DE 48, SE 41	Subfield 17 (Reserved for future use)	Two
DE 48, SE 41	Subfield 18 (Reserved for future use)	Two
DE 48, SE 41	Subfield 19 (Reserved for future use)	Two
DE 48, SE 41	Subfield 20 (Reserved for future use)	Two
DE 48, SE 41	Subfield 21 (Reserved for future use)	Two
DE 48, SE 42	Subelement 42 (Electronic Commerce Indicators)	One
DE 48, SE 42	Subfield 1 (Electronic Commerce Security Level Indicator [SLI] and UCAF)	One
DE 48, SE 42	Collection Indicator	One
DE 48, SE 43	Subelement 43 (Universal Cardholder Authentication Field [UCAF])	Two
DE 48, SE 43	Subfield 1 (UCAF Data)	Two
DE 48, SE 43	Subelement 43 (Digital Secure Remote Payment Universal Cardholder Authentication Field [UCAF])	Two
DE 48, SE 48	Subelement 48 (Mobile Program Indicators)	Two
DE 48, SE 48	Subfield 1 (Remote Payments Program Type Identifier)	Two
DE 48, SE 48	Subfield 2 (Mastercard Mobile Remote Payment Transaction Type)	Two

<sup>1</sup> **Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.**

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<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 48, SE 48	Subfield 3 (Mobile Phone Number)	Two
DE 48, SE 48	Subfield 4 (Convenience Fee)	Two
DE 48, SE 49	Subelement 49 (Time Validation Information)	One
DE 48, SE 49	Subfield 1 (Time Value)	One
DE 48, SE 49	Subfield 2 (Time Discrepancy Value)	One
DE 48, SE 49	Subfield 3 (Time Discrepancy Indicator)	One
DE 48, SE 52	Subelement 52 (Transaction Integrity Class)	Two
DE 48, SE 54	Subelement 54 (Ancillary Service Charges)	One
DE 48, SE 54	Subfield 1 (Ancillary Fee Code)	One
DE 48, SE 54	Subfield 2 (Ancillary Fee Amount)	One
DE 48, SE 56	Subelement 56 (Security Services Additional Data for Issuers)	Two
DE 48, SE 56	Subfield 1 (Security Services Indicator)	Two
DE 48, SE 56	Subfield 2 (Security Services Data)	Two
DE 48, SE 56	Subelement 56 (Valid Subfield 1 and Subfield 2 Value Combinations)	Two
DE 48, SE 59	Subelement 59 (Original Switch Serial Number)	Two
DE 48, SE 59	Subfield 1 (Original Switch Serial Number)	Two
DE 48, SE 61	Subelement 61 (POS Data, Extended Condition Codes)	One
DE 48, SE 61	Subfield 1 (Partial Approval Terminal Support Indicator)	One
DE 48, SE 61	Subfield 2 (Purchase Amount Only Terminal Support Indicator)	One

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<sup>1</sup> Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.

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<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 48, SE 61	Subfield 3 (Real-time Substantiation Indicator)	One
DE 48, SE 61	Subfield 4 (Reserved for Future Use)	One
DE 48, SE 61	Subfield 5 (Final Authorization Indicator)	One
DE 48, SE 63	Subelement 63 (Trace ID)	One
DE 48, SE 64	Subelement 64 (Transit Program)	One
DE 48, SE 64	Subfield 1 (Transit Transaction Type Indicator)	One
DE 48, SE 64	Subfield 2 (Transportation Mode Indicator)	One
DE 48, SE 65	Subelement 65 (Terminal Compliant Indicator)	One
DE 48, SE 65	Subfield 1 (TLE Compliant)	One
DE 48, SE 65	Subfield 2 (UKPT/DUKPT Compliant)	One
DE 48, SE 66	Subelement 66 (Authentication Data)	Two
DE 48, SE 66	Subfield 1 (Program Protocol)	Two
DE 48, SE 66	Subfield 2 (Directory Server Transaction ID)	Two
DE 48, SE 67	Subelement 67 (MoneySend Information)	Two
DE 48, SE 67	Subfield 01 (Sanctions Score)	Two
DE 48, SE 69	Subelement 69 (Trace ID of Authorization Advice)	Two
DE 48, SE 69	Subfield 1 (Network Data)	Two
DE 48, SE 69	Subfield 2 (Date Settlement)	Two
DE 48, SE 70	Subelement 70 (Implied Decimal)	Two
DE 48, SE 70	Subfield 1 (Implied Decimal)	Two
DE 48, SE 71	Subelement 71 (On-behalf Service [OBS])	Two

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<sup>1</sup> **Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.**

<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 48, SE 71	Subfield 1 (On-behalf Service Indicator)	Two
DE 48, SE 71	Subfield 2 (On-behalf Result 1)	Two
DE 48, SE 71	Subfield 3 (On-behalf Result 2)	Two
DE 48, SE 71	Valid Subfield 1 and Subfield 2 Value Combinations	Two
DE 48, SE 72	Subelement 72 (Issuer Chip Authentication)	Two
DE 48, SE 74	Subelement 74 (Additional Processing Information)	One
DE 48, SE 74	Subfield 1 (Process Indicator)	One
DE 48, SE 74	Subfield 2 (Processing Information)	One
DE 48, SE 74	Valid Subfield 1 and Subfield 2 Value Combinations	One
DE 48, SE 75	Subelement 75 (Fraud Scoring Data)	Two
DE 48, SE 75	Subfield 1 (Assessment Score)	Two
DE 48, SE 75	Subfield 2 (Score Reason Code)	Two
DE 48, SE 75	Subfield 3 (Rules Score)	Two
DE 48, SE 75	Subfield 4 (Rule Reason Code 1)	Two
DE 48, SE 75	Subfield 5 (Rule Reason Code 2)	Two
DE 48, SE 76	Subelement 76 (Mastercard Electronic Transaction Indicator)	One
	Subfield 1 (Mastercard Electronic Program)	
DE 48, SE 76	Participation Level	One
DE 48, SE 77	Subelement 77 (Transaction Type Identifier)	One
DE 48, SE 79	Subelement 79 (Chip CVR/TVR Bit Error Results Listing)	Two
DE 48, SE 79	Subfield 1 (CVR or TVR Identifier)	Two
DE 48, SE 79	Subfield 2 (Byte ID)	Two

<sup>1</sup> **Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.**

<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 48, SE 79	Subfield 3 (Bit Identifier)	Two
DE 48, SE 79	Subfield 4 (Value of Bit in Error)	Two
DE 48, SE 80	Subelement 80 (PIN Service Code)	Two
DE 48, SE 81	Subelement 81 (Maestro PIN-less Program Indicator)	Two
DE 48, SE 82	Subelement 82 (Address Verification Service Request)	One
DE 48, SE 82	Subfield 1 (AVS Option Code)	One
DE 48, SE 83	Subelement 83 (Address Verification Service Response)	One
DE 48, SE 83	Subfield 1 (AVS Result Code)	One
DE 48, SE 84	Subelement 84 (Merchant Advice Code)	One
DE 48, SE 84	Subfield 1 (Merchant Advice Code)	One
DE 48, SE 87	Subelement 87 (Card Validation Code Result)	One
DE 48, SE 87	Subfield 1 (Code Values)	One
DE 48, SE 88	Subelement 88 (Magnetic Stripe Compliance Status Indicator)	Two
DE 48, SE 88	Subfield 1 (Monitoring Status)	Two
DE 48, SE 89	Subelement 89 (Magnetic Stripe Compliance Error Indicator)	Two
DE 48, SE 89	Subfield 1 (Data/Code Indicators)	Two
DE 48, SE 90	Subelement 90 (Lodging and Auto Rental Indicator)	One
DE 48, SE 90	Subfield 1 (Enrolled Program)	One
DE 48, SE 92	Subelement 92 (CVC 2 Value)	One
DE 48, SE 92	Subfield 1 (CVC 2 Value)	One
DE 48, SE 93	Subelement 93 (Airline Ticket Number)	Two
DE 48, SE 93	Subfield 1 (Ticket Number)	Two

<sup>1</sup> Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.

<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 48, SE 94	Subelement 94 (Program Participation Indicator)	One
DE 48, SE 94	Subfield 1 (CVC 2 Validation Program Indicator)	One
DE 48, SE 94	Subfield 2 (QPS/Contactless Chargeback Eligibility)	One
DE 48, SE 94	Subfields 3 to 20 (Reserved for Future Use)	One
DE 48, SE 95	Subelement 95 (Mastercard Promotion Code)	Two
DE 48, SE 95	Subfield 1 (Surcharge-Free Alliance)	Two
DE 48, SE 98	Subelement 98 (Mastercard Corporate Fleet Card ID/Driver Number)	Two
DE 48, SE 98	Subfield 1 (ID/Driver Number)	Two
DE 48, SE 99	Subelement 99 (Mastercard Corporate Fleet Card Vehicle Number)	Two
DE 48, SE 99	Subfield 1 (Vehicle Number)	Two
DE 49	DE 49 (Currency Code, Transaction)	One
DE 50	DE 50 (Currency Code, Settlement)	One
DE 51	DE 51 (Currency Code, Cardholder Billing)	One
DE 52	DE 52 (Personal Identification Number [PIN] Data)	One
DE 53	DE 53 (Security Related Control Information)	One
DE 54	DE 54 (Additional Amounts)	One
DE 54	Subfield 1 (Account Type)	One
DE 54	Subfield 2 (Amount Type)	One
DE 54	Subfield 3 (Currency Code)	One

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<sup>1</sup> Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.

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<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 54	Subfield 4 (Debit or Credit Indicator)	One
DE 54	Subfield 5 (Amount)	One
DE 55	DE 55 (Integrated Circuit Card [ICC] System-Related Data)	One
DE 56	DE 56 (Payment Account Data)	One
DE 56	Subelement 01 (Payment Account Data)	One
DE 57	DE 57 (Reserved for National Use)	One
DE 58	DE 58 (Authorizing Agent Institution ID)	One
DE 59	DE 59 (Reserved for National Use)	One
DE 60	DE 60 (Advice Reason Code)	One
DE 60	Subfield 1—Advice Reason Code	One
DE 60	Subfield 2—Advice Reason Detail Code	One
DE 60	Subfield 3 (Advice Reason Detail Text)	One
DE 60	Subfield 4 (Advice Reason Additional Text)	One
DE 61	DE 61 (Point of Service (POS) Data)	One
DE 61	Subfield 1 (POS Terminal Attendance)	One
DE 61	Subfield 2 (Reserved for Future Use)	One
DE 61	Subfield 3 (POS Terminal Location)	One
DE 61	Subfield 4 (POS Cardholder Presence)	One
DE 61	Subfield 5 (POS Card Presence)	One
DE 61	Subfield 6 (POS Card Retention)	One

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<sup>1</sup> Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.

<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 61	Subfield 7 (POS Transaction Status)	One
DE 61	Subfield 8 (POS Transaction Security)	One
DE 61	Subfield 9 (Reserved for Future Use)	One
DE 61	Subfield 10 (Cardholder-Activated Terminal Level)	One
DE 61	Subfield 11 (POS Card Data Terminal Input Capability)	One
DE 61	Subfield 12 (POS Authorization Life Cycle)	One
DE 61	Subfield 13 (POS Country Code [or Sub-Merchant Information, if applicable])	One
DE 61	Subfield 14 (POS Postal Code [or Sub-Merchant Information, if applicable])	One
DE 62	DE 62 (Intermediate Network Facility [INF] Data)	Two
DE 63	DE 63 (Network Data)	Two
DE 63	Subfield 1 (Financial Network Code)	One
DE 63	Subfield 2 (Interchange Rate Indicator)	Two
DE 63	Subfield 3 (Network Reference Number)	Two
DE 63	Subfield 4 (Banknet Reference Number)	One
DE 63	Subfield 5 (Acquirer's Reference Number)	One
DE 63	Subfield 6 (GCMS Processing Date and Cycle Number)	Two
DE 70	DE 70 (Network Management Information Code)	Two
DE 90	DE 90 (Original Data Elements)	One

<sup>1</sup> **Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.**

<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 90	Subfield 1 (Message Type Identifier)	One
DE 90	Subfield 2 (System Trace Audit Number)	One
DE 90	Subfield 3 (Transmission Date and Time)	One
DE 90	Subfield 4 (Acquiring Institution ID Code)	One
DE 90	Subfield 5 (Forwarding Institution ID Code)	One
DE 95	DE 95 (Replacement Amounts)	One
DE 95	Subfield 1 (Actual Amount, Transaction)	One
DE 95	Subfield 2 (Actual Amount, Settlement)	One
DE 95	Subfield 3 (Actual Amount, Cardholder Billing)	One
DE 95	Subfield 4 (Zero-filled)	One
DE 96	DE 96 (Message Security Code)	Two
DE 100	DE 100 (Receiving Institution Identification Code)	One
DE 101	DE 101 (File Name)	Two
DE 102	DE 102 (Account Identification: 1))	One
DE 103	DE 103 (Account Identification: 2)	One
DE 104	DE 104 (Digital Payment Data)	Two
DE 104	Subelement 1 (Digital Payment Cryptogram)	Two
DE 105	DE 105 (Enhanced Identification Data)	Two
DE 105	Subelement 1 (AUA Code)	Two
DE 105	Subelement 2 (Sub-AUA Code)	Two
DE 105	Subelement 3 (Terminal Device ID)	Two

<sup>1</sup> Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.

<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 105	Subelement 4 (Version)	Two
DE 105	Subelement 5 (Transaction Identifier)	Two
DE 105	Subelement 6 (Unique Device Code)	Two
DE 105	Subelement 7 (Fingerprint Device Code)	Two
DE 105	Subelement 8 (Reserved for future use)	Two
DE 105	Subelement 9 (Certificate Identifier)	Two
DE 105	Subelement 10 (PID Block Type)	Two
DE 105	Subelement 11 (Primary Biometric Type)	Two
DE 105	Subelement 12 (Product Code)	Two
DE 105	Subelement 13 (Return Value)	Two
DE 105	Subelement 14 (Authenticator Code)	Two
DE 105	Subelement 15 (Time Stamp)	Two
DE 105	Subelement 16 (Meta Information)	Two
DE 105	Subelement 17 (Error Code)	Two
DE 105	Subelement 18 (Internal Mastercard Use)	Two
DE 105	Subelement 71 (Internal Mastercard Use)	Two
DE 106	DE 106 (Private Data)	Two
DE 107	DE 107 (India On-Soil Data)	Two
DE 107	Subelement 1 (Private Biometric Data)	Two
DE 107	Subelement 1 (Accountholder UID Number)	Two
DE 107	Subelement 2 (License Key)	Two
DE 107	Subelement 3 (Public IP Address)	Two

<sup>1</sup> Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.

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<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 107	Subelement 4 (Key Identifier)	Two
DE 107	Subelement 5 (HMAC Value)	Two
DE 107	Subelement 6 (Encryption Key)	Two
DE 107	Subelement 7 (Location Type)	Two
DE 107	Subelement 8 (Location Value)	Two
DE 108	DE 108 (Additional Transaction Reference Data)	Two
DE 108	Subelement 01 (Receiver/Recipient Data)	Two
DE 108	Subelement 02 (Sender Data)	Two
DE 108	Subelement 03 (Transaction Reference Data)	Two
DE 108	Subelement 04 (Language Description)	Two
DE 108	Subelement 05 (Digital Account Information)	Two
DE 108	Subfield 01 (Digital Account Reference Number)	Two
DE 108	Subfield 02 (Mastercard Merchant Presented QR Receiving Account Number)	Two
DE 108	Subelement 06 (QR Dynamic Code Data)	Two
DE 110	DE 110 (Additional Data: 2)	Two
DE 110	Subelement 1 (Merchant ID)	Two
DE 110	Subelement 2 (Program Registration ID)	Two
DE 110	Subelement 3 (PLUS Acquirer ID)	Two
DE 110	Subelement 4 (Visa International Fee Indicator)	Two
DE 110	Subelement 5 (Additional Card Information)	Two
DE 110	Subelement 6 (Business Service Arrangement)	Two

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<sup>1</sup> **Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.**

<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 110	Subelement 7 (Settlement Service)	Two
DE 110	Subelement 8 (Product ID)	Two
DE 111	DE 111 (Amount, Currency Conversion Assessment)	Two
DE 112	DE 112 (Additional Data [National Use])	One
DE 112	Subelement 1 (Time Payment Options)	One
DE 112	Subelement 2 (Parcelas Transaction)	One
DE 112	Subelement 4 (Credit Line Usage Fee [CLUF])	One
DE 112	Subelement 6 (Financial Institution ID [FIID])	One
DE 112	Subelement 11 (CDC Inquiry and Purchase)	One
DE 112	Subelement 12 (CDC Inquiry)	One
DE 112	Subelement 13-16 (CDC Inquiry)	One
DE 112	Subelement 18 (Post-Dated Transactions [preauthorization and completion])	One
DE 112	Subelement 19 (Maestro Installment Transactions [preauthorization and completion])	Two
DE 112	Subelement 22 (Positive ID Transactions)	One
DE 112	Subelement 23 (Positive ID Translation/Validation error code)	One
DE 112	Subelement 24 (Time-Based Transactions)	One
DE 112	Subelement 25 (Merchant Generated InstallmentPayments Transactions (preauthorization and completion))	One

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<sup>1</sup> **Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.**

<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 112	Subelement 26 (Merchant Generated Installment Payments–Receipt Information)	One
DE 112	Subelement 27 (ATM Credit Card Cash Advance Installments)	One
DE 112	Subelement 29 (Brazil Merchant Tax ID)	One
DE 112	Subelement 035 (Issuer Fee Inquiry Indicator)	Two
DE 112	Subelement 036 (Issuer Fee Amount)	Two
DE 120	DE 120 (Record Data)	Two
DE 121	DE 121 (Authorizing Agent Identification Code)	Two
DE 122	DE 122 (Additional Record Data)	Two
DE 123	DE 123 (Mastercard Merchant Data Services)	Two
DE 123	Subelement 1 (Merchant Data Services)	Two
DE 123	Subfield 1 (Service Level Indicator)	Two
DE 123	Subfield 2 (Response Code)	Two
DE 123	Subelement 2 (Original Merchant Data)	Two
DE 123	Subfield 1 (POS Merchant Name)	Two
DE 123	Subfield 2 (Merchant City)	Two
DE 123	Subfield 3 (Merchant State, Province Code or Region Code)	Two
DE 123	Subelement 3 (Mastercard Merchant Data Cleansing Service)	Two
DE 123	Subfield 1 (Cleansed Merchant Street Address)	Two
DE 123	Subfield 2—Cleansed Merchant Postal Code	Two

<sup>1</sup> Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.

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<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 123	Subfield 3 (Cleansed Country Code)	Two
DE 123	Subfield 4 (Cleansed Merchant Telephone Number)	Two
DE 123	Subelement 4 (Merchant Data Cleansing Plus)	Two
DE 123	Subfield 1 (Cleansed Legal Corporate Name)	Two
DE 123	Subfield 2 (Sales Channel: Percentage Brick)	Two
DE 123	Subfield 3 (Sales Channel: Percentage Online)	Two
DE 123	Subfield 4 (Sales Channel: Percentage Other)	Two
DE 123	Subfield 5 (Cleansed Merchant URL)	Two
DE 123	Subelement 5 (Mastercard Merchant Data Advance)	Two
DE 123	Subfield 1 (Aggregate Merchant ID)	Two
DE 123	Subfield 2 (Aggregate Merchant Name)	Two
DE 123	Subfield 3 (Industry Code)	Two
DE 123	Subfield 4 (Super Industry Code)	Two
DE 123	Subfield 5 (Key Aggregate Merchant ID)	Two
DE 123	Subfield 6 (Channel Distribution ID)	Two
DE 123	Subfield 7 (NAICS Code)	Two
DE 123	Subfield 8 (Parent Aggregate Merchant ID)	Two
DE 124	DE 124 (Member-defined Data)	Two
DE 124	Subfield 1 (Unique Reference Number)	Two

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<sup>1</sup> Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.

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<b>Data element</b>	<b>Data element description</b>	<b>Transaction data category<sup>1</sup></b>
DE 124	Subfield 2 (Sender/Payer Name/ User ID)	Two
DE 124	Subfield 3 (Sender/Payer Address)	Two
DE 124	Subfield 4 (Reserved Data)	Two
DE 125	DE 125 (New PIN Data)	Two
DE 126	DE 126 (Switch Private Data)	Two
DE 126	Subfield 1 (Settlement Service Data)	Two
DE 126	Subfield 2 (Single Message System Private Data-1)	Two
DE 126	Subfield 3 (Cross-Border Transaction Indicator)	Two
DE 126	Subfield 4 (Currency Indicator)	Two
DE 126	Subfield 5 (Fraud Score)	Two
DE 126	Subfield 6 (Fraud Risk Indicator)	Two
DE 126	Subfield 7 (Single Message System Private Data-2)	Two
DE 127	DE 127 (Processor Private Data)	Two
DE 128	DE 128 (Message Authentication Code [MAC])	Two

## Primary and secondary bit maps

A bit map is a series of 64 bits used to identify the presence or absence (denoted by "1" or "0", respectively) of each data element. The Single Message System interprets the bit map from left to right. The left-most bit represents DE 1 in the Primary Bit Map and DE 65 in the Secondary Bit Map. The right-most bit represents DE 64 in the Primary Bit Map and DE 128 in the Secondary Bit Map.

### Attributes

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<b>Attribute</b>	<b>Description</b>
Data Representation	b-64 (for each bit map)

<sup>1</sup> Transaction Data Category Two applies to any unspecified data element, subelement, or subfield.

---

<b>Attribute</b>	<b>Description</b>
Length Field	None
Data Field	Fixed length, contents of positions 1–64  <i>Each bit map is a 64-bit string contained within an 8-byte field.</i>
Subfields	None
Justification	N/A

---

**NOTE:** If both bit maps are present, the total length of the bit map field is 128 bits (16 bytes).

### Usage

Following is the usage of Primary Bit Map (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

---

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	P	M
Financial Transaction Request Response/0210	M	P	M
Financial Transaction Advice/0220	M	P	M
Financial Transaction Advice/0220—Debit Mastercard Stand-In	M	P	M
Financial Transaction Advice Response/0230	M	P	M
File Update Request/0302	M	P	M
File Update Request Response/0312	M	P	M
Acquirer Reversal Advice/0420—Acquirer Initiated	M	P	M
Acquirer Reversal Advice/0420—Time-out induced, Acquirer Initiated	M	P	M
Acquirer Reversal Advice/0420—Time-out induced, System Initiated	•	X	M
Acquirer Reversal Advice/0420—Exception, System Initiated	•	X	M
Acquirer Reversal Advice/0420—Acquirer Initiated Exception	M	P	M
Issuer Reversal Advice/0422—Exception, System Initiated	•	X	M
Issuer Reversal Advice/0422—Exception, Issuer Initiated	M	P	M
Acquirer Reversal Advice Response/0430—System Initiated	•	X	M
Acquirer Reversal Advice Response/0430—Issuer Initiated	M	X	•
Issuer Reversal Advice Response/0432—Exception, Acquirer Initiated	M	X	•
Issuer Reversal Advice Response/0432—Exception, System Initiated	•	X	M

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<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Administrative Advice/0620—Single Message System Initiated	.	X	M
Administrative Advice/0620—Processor Initiated	M	X	.
Administrative Advice/0620—Processor Initiated Time-Based Exception	M	P	M
Administrative Advice Response/0630—Processor Initiated to the Single Message System	M	X	.
Administrative Advice Responses/0630—Processor Initiated	M	P	M
Administrative Advice/0644	.	X	M
Network Management Request/0800—Acquirer or Issuer Initiated	M	X	.
Network Management Request/0800—System-Initiated	.	X	M
Network Management Request Response/0810—Acquirer or Issuer Initiated	M	X	.
Network Management Request Responses/0810—System Initiated	.	X	M
Network Management Advice/0820	.	X	M

### **Application notes**

All bit positions are interpreted from left to right within each bit map; such as within the Primary Bit map the left-most bit is DE 1, (Bit Map, Secondary) and the right-most bit is DE 64, (Message Authentication Code [MAC]).

- ISO 8583–1987 messages are variable length, with a bit map scheme that indicates the presence or absence of additional fields in the message.
- The first bit in each bit map is set to "1" indicating the presence or "0" indicating the absence of an additional 64-bit bit map field that immediately follows the preceding bit map field.
- ISO 8583–1987 message format uses a maximum of 2-bit maps: a "Primary" and a "Secondary" bit map.
- Bits set to "1" or "0" in the Primary Bit map indicate the presence or absence of DE 2 through DE 64.
- Bits set to "1" or "0" in the Secondary Bit map indicate the presence or absence of DE 66 through DE 128.
- Bit No. 1 in the Primary Bit Map and Bit 1 in the Secondary Bit Map (such as the first bit in each bit map) do not have corresponding data elements. These bits indicate the presence or absence of additional bit map fields in the message.
  - If bit No. 1 is set to "1", it indicates that the Secondary Bit Map is present, and selected data elements in the DE 66 through DE 128 range are also present in the message (as indicated by bit positions in the Secondary Bit Map).
  - Bit No. 65 **must always be set to "0"** because there are no additional bit maps defined beyond the Secondary Bit Map in the ISO 8583–1987 message specification.
- All ISO 8583–1987 messages must contain a Primary Bit Map.

- The Secondary Bit Map is only included in a message when data elements in the range DE 66 through DE 128 are present in the message.
- Although additional bit maps are accommodated in ISO Standard 8583 (such as setting the first bit in any bit map to "1" to indicate the presence of a following extended bit map), the ISO 8583-1987 implementation uses a **maximum of two bit maps** (Primary and Secondary), with a maximum number of message data elements in the range DE 1 through DE 128. Consequently, DE 65 (the first bit in Bit Map, Secondary) **must always be set to zero**.
- Bits corresponding to **mandatory** data elements for a specific message type must be set to "1" to indicate the presence of the data element in the message. Otherwise, the message will be rejected by the Single Message System through the appropriate response message or through an Administrative Advice (Reject)/0620 message.

## DE 1 (Bit Map, Secondary)

DE 1 (Bit Map, Secondary) is a series of 64 bits used to identify the presence, with the value of 1, or absence, with a value of 0, of each data element in the second segment of a message, for example, data elements in the range of DE 65 (Settlement Code) through DE 128 (Message Authentication Code).

### Attributes

Attribute	Description
Data representation	b-64
Data element length	None
Data field	Fixed length, contents of positions 1-64
Subfields	None
Justification	N/A

### Usage

Following is the usage of DE 1 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	P	C
Financial Transaction Request Response/0210	C	P	C
Financial Transaction Advice/0220	C	P	C
Financial Transaction Advice/0220: Debit Mastercard stand-In	C	P	C
Financial Transaction Advice Response/0230	C	P	C

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
File Update Request/0302	M	P	M
File Update Request Response/0312	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer Initiated Exception	M	P	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	M	P	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M
Administrative Advice/0620: Single Message System initiated	.	X	M
Administrative Advice/0620: processor Initiated	C	X	.
Administrative Advice/0620: processor initiated time-based exception	C	P	M
Administrative Advice Response/0630: processor initiated to the Single Message System	M	X	.
Administrative Advice Responses/0630: processor initiated	M	X	M
Administrative Advice/0644	.	X	M
Network Management Request/0800: acquirer or issuer initiated	M	X	.
Network Management Request/0800: system-initiated	.	X	M
Network Management Request Response/0810: acquirer or issuer initiated	M	X	.
Network Management Request Responses/0810: system initiated	.	X	M
Network Management Advice/0820	.	X	M

## DE 2 (Primary Account Number [PAN])

DE 2 (Primary Account Number [PAN]) is a series of digits used to identify a customer account or relationship.

### Attributes

Attribute	Description
Data representation	n...19; LLVAR
Data element length	Two-positions, value = 12-19
Data field	Variable length, contents of positions 1-19
Subfields	None
Justification	N/A

**NOTE:** PANs must be a minimum of 12 digits.

### Usage

Following is the usage of DE 2 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	M	P	M
Financial Transaction Request Response/0210	M	P	M
Financial Transaction Advice/0220	M	P	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	P	M
Financial Transaction Advice Response/0230	M	P	M
File Update Request/0302	M	P	M
File Update Request Response/0312	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	M	P	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M

Message	Org	Sys	Dst
Issuer Reversal Advice/0422: exception, issuer initiated	M	P	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M
Network Management Request/0800: acquirer or issuer initiated	O	.	.

### Application Notes

DE 2 contains the primary account number (PAN) in Authorization/01xx, Financial Transaction/02xx, and Reversal Advice/04xx messages.

The Single Message System uses this data element for all PANs up to 19 digits in length, in Authorization/01xx, Financial Transaction/02xx, File Update request/03xx, and Reversal Advice/04xx messages.

PAN data consists of three primary components:

- Issuer identification number (IIN)
- Individual account identification number, and
- PAN check digit

ISO specification 7812 and 7813 details the specific requirements for PAN composition. All PANs used in ISO 8583–1987 messages must conform to the ISO PAN encoding requirements as specified in these documents.

The PAN field may contain only an Issuer Identification Number or card prefix sequence identified by a card-issuing institution. The individual Message Layout Specification section in this manual details the specific usage requirements for each message.

The Single Message System will accommodate variable-length prefix sequences from four to eleven digits, where card prefix information is required.

## DE 3 (Processing Code)

DE 3 (Processing Code) is a series of digits used to describe the effect of a transaction on the customer account and the type of accounts affected.

### Attributes

Attribute	Description
Data representation	n-6

<b>Attribute</b>	<b>Description</b>
Data element length	None
Data field	Fixed length, contents of subfields 1–3
Subfields	3
Justification	See "Subfields"

### Usage

Following is the usage of DE 3 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	P	M
Financial Transaction Request Response/0210	M	P	M
Financial Transaction Advice/0220	M	P	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	P	M
Financial Transaction Advice Response/0230	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	O	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	O	X	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M

## Subfield 1 (Cardholder Transaction Type Code)

DE 3, subfield 1 (Cardholder Transaction Type Code) describes the specific transaction being performed.

### Attributes

Attribute	Description
Data representation	n-2
Data field	Contents of positions 1-2
Justification	N/A

### Values

Value	Description
00	Purchase
01	Withdrawal
02	Debit adjustment (Debit Mastercard only)
09	Purchase with cash back
17	Cash disbursement (Debit Mastercard only)
20	Refund/correction
21	Deposit
28	Payment transaction
30	Balance inquiry
39	Reserved for future use
40	Account transfer
50	Reserved for future use
91	PIN unblock (valid for chip cards only)
92	PIN change (valid for chip and magnetic stripe cards)

### Application notes

The Single Message System identifies refund transactions in DE 3, subfield 1 (Cardholder Transaction Type Code) with a value of 20 (Refund/Correction). Mastercard requires that issuers receive and respond to refund transactions involving a Debit Mastercard.

## Subfield 2 (Cardholder Account Type [From])

DE 3, Subfield 2, Cardholder Account Type (From) describes the cardholder account type affected for cardholder account debits and inquiries, and the "from" account type for cardholder account transfer transactions.

### Attributes

Attribute	Description
Data representation	n-2
Data field	Contents of positions 3-4
Justification	N/A

### Values

Value	Description
00	No account specified (NAS)/default account
10	Savings account
20	Checking account
30	Credit card account

## Subfield 3 (Cardholder Account Type [To])

DE 3, Subfield 3, Cardholder Account Type (To) describes the cardholder account type affected for cardholder account credits and the "to" account type for cardholder account transfer transactions.

### Attributes

Attribute	Description
Data representation	n-2
Data field	Contents of positions 5-6
Justification	N/A

### Values

Value	Description
00	No account specified (NAS)/default account

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<b>Value</b>	<b>Description</b>
10	Savings account
20	Checking account
30	Credit card account

#### **Processing code values: Single Message System**

**The Single Message System only supports the specific processing code subfield combinations listed in the following table.**

---

<b>Code</b>	<b>Description</b>
000000	Purchase; no account specified  Not valid for ATM Gateway transactions (for example, Plus, or Visa).
001000	Purchase from savings account
002000	Purchase from checking account
010000	Withdrawal; no account specified
011000	Withdrawal from savings account
012000	Withdrawal from checking account
013000	Withdrawal from credit card account
020000	Debit adjustment; no account specified  Codes valid for Debit Mastercard only. Debit Mastercard adjustments must be 020000.
021000	Debit adjustment to savings account (Debit Mastercard Only)
022000	Debit adjustment to checking account (Debit Mastercard Only)
090000	Purchase with cash back no account specified
091000	Purchase with cash back from savings account
092000	Purchase with cash back from checking account
170000	Cash disbursement, no account specified
171000	Cash disbursement from savings account
172000	Cash disbursement from checking account
173000	Cash disbursement from credit card account
200000	Online refund; no account specified  Codes valid for Debit Mastercard and Maestro transactions only.

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<b>Code</b>	<b>Description</b>
201000	Online refund to savings account
202000	Online refund to checking account
210010	Online deposit to savings account
210020	Online deposit to checking account
280000	Payment; no account specified
280010	Payment to savings account
280020	Payment to checking account
280030	Payment to credit card account
300000	Balance inquiry; no account specified  When no account is specified on a balance inquiry transaction, the issuer may return both checking and savings account balances if applicable.
301000	Balance inquiry on savings account
302000	Balance inquiry on checking
303000	Balance inquiry on credit card (credit line)
390000	Reserved for future use
401020	Transfer from savings account to checking account
402010	Transfer from checking account to savings account
500000	Bill payment, no account specified  Not currently used.
501000	Bill payment, from savings account  Not currently used.
502000	Bill payment, from checking account  Not currently used.
503000	Bill payment, from credit card account  Not currently used.
910000	PIN Unblock, no account specified
920000	PIN Change, no account specified

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### **Application notes**

When the Account Type value processing code in the Financial Transaction Request/0200 message indicates, "no account specified," the issuer may specify an Account Type in the

Financial Transaction Request Response/0210 message. For example, when an acquirer sends processing code 010000 (withdrawal, no account specified), the issuer may send a Financial Transaction Request Response/0210 message containing processing code 012000 (withdrawal, checking account).

The Single Message System generates an Acquirer Reversal Advice/0420 message in response to a late Financial Transaction Request Response/0210 message for an approved transaction when DE 3, subelement 1, Cardholder Transaction Type Code has a value of 40 (Account Transfer).

Mastercard supports Financial Transaction Request/0200 messages containing DE 3 (Processing Code), subfield 1 (Cardholder Transaction Type Code), value 20 (Refund Correction) without a PIN.

The Single Message System allows acquirers to process same-day reversals for payment transaction (DE 3, subfield 1, [Cardholder Transaction Type Code] has a value of 28, Payment). Payment transaction is mandated for issuers to receive.

When a reversal for a Maestro Europe acquired refund is submitted, the Single Message System will change the value in DE 3 (Processing Code) from 20 (Refund/Correction) to 00 (Purchase) and send the issuer a Financial Transaction Advice/0220 force post message, and the issuer will apply the refund reversal as a debit to the cardholder. The refund reversal will use DE 60 (Advice Reason Code) with a value 260, Advice Reason Detail code 0092.

PIN Management transactions are identified in online messages with DE 3 (Processing Code), subfield 1 (Cardholder Transaction Type), value of 91 (PIN Unblock) or 92 (PIN Change).

**NOTE:**

**PIN Management transactions can now be supported for Chip and magnetic stripe cards. When used with a Chip card where DE 22 (POS Entry Mode), subfield 1 (POS Terminal PAN Entry Mode) = 05 (PAN auto-entry via integrated circuit card), and DE 3, subfield 1 = 91 or 92, then DE 55 (Integrated Circuit Card [ICC] System-Related) must also be present.**

**When used with magnetic stripe cards and DE 22, subfield 1 = 02 or 90, then DE 3 can only use a value of 92 (PIN Change) as PIN Unblock is not allowed with magnetic stripe cards.**

When PIN Management transactions are received and processed successfully, issuers will return the Financial Transaction Request Response/0210 message that includes DE 39, value of 85.

Transactions that contain a value of 85 in DE 39 that are not PIN Management or Account Status Inquiry Service requests will be declined.

Mastercard supports Debit Mastercard and Maestro Cash Back without Purchase for India intracountry transactions. India intracountry Cash Back without Purchase transactions will be identified in Financial Transaction Request/0200 messages that include DE 3, subfield 1, value 09 and an acquiring and issuing country code of India (356).

DE 3, subfield 1 (Cardholder Transaction Type Code), value 09 (Purchase with Cash Back) can be used for healthcare-related transactions with PIN if the issuer participates in the optional unrestricted purse service.

Acquirers and prepaid card issuers in the U.S. region must support the POS balance inquiry transaction type and functionality for all prepaid Mastercard credit, Debit Mastercard, and Maestro card account ranges.

### **Passing account information in processing code**

The "bridging path" is the Mastercard process to pass account information in DE 3 (Processing Code), subfield 2 (Cardholder Account Type [From], and subfield 3 (Cardholder Account Type [To]) on transactions acquired on the Dual Message System (Authorization) and bridged to the Single Message System.

This process is used for:

- Debit Mastercard transactions for issuers connected to the Single Message System and
- transactions with Maestro cards acquired in the Europe region and issued outside of the Europe region.

Currently, Mastercard will begin passing the information when value 10 (Savings Account) or 20 (Checking Account) is received in DE 3, subfield 2 or subfield 3. Otherwise, Mastercard will pass value 00 (No account specified).

Although this change does not affect the specifications of any fields or messages on either system, issuers must be able to support these values in

- Financial Transaction Request/0200 and
- Financial Transaction Advice/0220 messages.

## **DE 4 (Amount, Transaction)**

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DE 4 (Amount, Transaction) is the amount of funds requested by the cardholder in the local currency of the acquirer or source location of the transaction.

**NOTE: In the event that more than one exception is created, the amounts in data elements 4, 5, and 6 will change to the new completed amount from the first exception. After the first exception, the values in these data elements will be different from the original amount.**

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data Representation	n-12
Data Element Length	None
Data Field	Fixed length, contents of positions 1-12
Subfields	None
Justification	Right with leading zeros

## Usage

Following is the usage of DE 4 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	M	P	M
Financial Transaction Request Response/0210	M	P	M
Financial Transaction Advice/0220	M	P	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	P	M
Financial Transaction Advice Response/0230	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	O	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	O	X	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M

## Application notes

DE 28 (Amount, Transaction, Fee) must be included in DE 4. DE 4 may include ATM Access fee and Convenience fees, if DE 28 is present.

The local currency of the card acceptor (currency used by the cardholder and merchant at the point of service) must always be specified using DE 49 (Currency Code, Transaction). The Single Message System refers to this currency as the "currency of the acquirer" or the "currency of the transaction at the point of service."

The Single Message System will send amounts in the acquirer's transaction currency, the issuer's settlement currency, and the issuer's cardholder billing currency (based on the issuer's current agreement with Mastercard) in all financial transaction messages to the issuer regardless of whether this results in redundant amount data being transmitted (all currencies are the same).

The Single Message System will send amounts in both the acquirer's transaction currency and the acquirer's settlement currency in all financial transaction messages to the acquirer

regardless of whether this results in redundant amount data being transmitted (all currencies are the same).

For a Purchase Amount Only, No Cash Back Allowed transaction, the Single Message System will provide the purchase only approval amount to the issuer in the Financial Transaction Request Advice/0220 message.

For Recurring Payment Test Transactions, when the Financial Transaction Request/0200 for message contains DE 61 (Point of Service [POS] Data), subfield 4 (POS Cardholder Presence), value 4 (Standing order/recurring transactions), and DE 61, subfield 7 (POS Transaction Status Indicator), value 4 (Preauthorized Request), then DE 4 must contain a value of zero.

For Debit Mastercard completions (Financial Transaction Advice/0220 message), this data element will contain the completed amount.

Amounts are expressed without a decimal separator. For currencies that support exponents, users and systems are responsible for placing the decimal separator appropriately.

Refer to the *Quick Reference Booklet* for a listing of currencies and their exponents.

#### **DE 4 (Amount, Transaction), decimal separator example**

Refer to the following table for examples of decimal separator placement.

<b>DE 4 (Amount, Transaction)</b>	<b>DE 49 (Currency Code)</b>	<b>Currency Exponent</b>	<b>Currency Name</b>	<b>Actual Monetary Value of DE 4</b>
000000001500	949	0	New Turkish Lira	1500 Lira
000000001500	124	2	Canadian Dollar	15.00 Dollars
000000001500	788	3	Tunisian Dinar	1.500 Dinars

#### **For Mastercard post-authorized aggregated transit transactions**

Mastercard Post-authorized Aggregated Transit transactions are no longer required to be authorized for one unit of local currency; instead they can be authorized for any amount in DE 4 but not exceeding the charge back protection amount published by Mastercard in the Chargeback Guide on the day of the transaction.

**NOTE:** A post-authorized aggregated transit transaction may be any amount.

## DE 5 (Amount, Settlement)

DE 5 (Amount, Settlement) is the amount of funds to be transferred between the acquirer and the issuer equal to the DE 4 (Amount, Transaction) in the currency of settlement.

**NOTE:** In the event that more than one exception is created, the amounts in data elements 4, 5, and 6 will change to the new completed amount from the first exception. After the first exception, the values in these data elements will be different from the original amount.

### Attributes

Attribute	Description
Data representation	n-12
Data element length	None
Data field	Fixed length, contents of positions 1–12
Subfields	None
Justification	Right with leading zeros

### Usage

Following is the usage of DE 5 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	.	X	M
Financial Transaction Request Response/0210	C	X	M
Financial Transaction Advice/0220	C	X	M
Financial Transaction Advice/0220—Debit Mastercard stand-in	C	P	C
Financial Transaction Advice Response/0230	C	P	M
Acquirer Reversal Advice/0420—acquirer initiated	.	X	M
Acquirer Reversal Advice/0420—time-out induced, acquirer initiated	.	X	M
Acquirer Reversal Advice/0420—time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420—exception, system initiated	.	X	M
Acquirer Reversal Advice/0420—acquirer initiated exception	.	X	M
Issuer Reversal Advice/0422—exception, system initiated	.	X	M
Issuer Reversal Advice/0422—exception, issuer initiated	.	X	M

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<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Acquirer Reversal Advice Response/0430—system initiated	.	X	M
Acquirer Reversal Advice Response/0430—issuer initiated	M	X	.
Issuer Reversal Advice Response/0432—exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432—exception, system initiated	.	X	M

### **Application notes**

The currency of this data element must always be specified using the DE 50 (Currency Code, Settlement).

The Single Message System will insert this data element into Financial Transaction/02xx and Reversal Advice/04xx messages as a currency conversion service under multiple conditions.

For additional information about currency conversion refer to the *Single Message System Programs and Services* manual.

**NOTE:** Issuers need to be aware that they may see Financial Transaction Advice/0220 messages with DE 5 with a zero amount, when there is a currency conversion involved which results in a zero amount in DE 5 even though the interchange fee is a non-zero amount from the currency conversion. Issuers will need to review the Interchange Fee field of the FREC in the 250-byte Batch Data File for details of the actual non-zero interchange amount.

For international Single Message System transactions, issuers must prepare their systems to:

- receive Financial Transaction Advice/0220 message with zero in DE 5 due to currency conversion rates, and
- accept the 250-byte Batch Data File containing these types of transactions. The Financial Record (FREC) Interchange Fee field will contain the non-zero interchange amount.

The settlement amount includes the transaction amount **plus** the Currency Conversion Assessment amount, if applicable.

For multiple currency processing and settlement transactions, the value in DE 5 in an online message to the issuer includes the settlement amount plus any applicable fees.

The Single Message System will send amounts in the acquirer's transaction currency, the issuer's settlement currency, and the issuer's cardholder billing currency (based on the issuer's current agreement with Mastercard) in all financial transaction messages to the issuer regardless of whether this results in redundant amount data being transmitted (all currencies are the same).

The Single Message System will send amounts in both the acquirer's transaction currency and the acquirer's settlement currency in all financial transaction messages to the acquirer regardless of whether this results in redundant amount data being transmitted (all currencies are the same).

Amounts are expressed without a decimal separator. For currencies that support exponents, users and systems are responsible for placing the decimal separator appropriately.

Refer to the *Quick Reference Booklet* for a listing of currencies and their exponents.

### **DE 5 (Settlement Amount), Decimal Separator Example**

The following table provides examples of decimal separator placement.

<b>DE 5 (Amount, Settlement)</b>	<b>DE 50 (Currency Code)</b>	<b>Currency Exponent</b>	<b>Currency Name</b>	<b>Actual Monetary Value of DE 5</b>	<b>Comments</b>
000000001500	840	2	United States Dollar	15.00 Dollars	
000000001500	949	0	New Turkish Lira	1500 Lira	intracurrency only
000000001500	124	2	Canadian Dollar	15.00 Dollars	
000000001500	788	3	Tunisian Dinar	1.500 Dinars	intracurrency only

When this field is present in a message, DE 9 (Conversion Rate, Settlement), DE 16 (Date, Conversion), and DE 50 (Currency Code, Settlement) must also be present.

For a purchase with cash back transaction, the issuer must provide the purchase only amount in DE 5 (Amount, Settlement) of the Financial Transaction Request Response/0210 message in the issuer's cardholder billing currency.

If the message is an Account Status Inquiry (Payment or Purchase), DE 5 will be zero-filled in the request and response message as account status inquiries are non-financial transactions.

#### **Exception for acquirers**

If the response message from the issuer contains a denial, DE 5 will be zero-filled and inserted into the response message returned to the acquirer.

If an acquirer-initiated message contains a format error, the message that the acquirer receives as a result will not contain the settlement amount.

## **DE 6 (Amount, Cardholder Billing)**

DE 6 (Amount, Cardholder Billing) is the transaction amount converted to the cardholder billing amount, exclusive of Currency Conversion Assessment.

**NOTE:** In the event that more than one exception is created, the amounts in data elements 4, 5, and 6 will change to the new completed amount from the first exception. After the first exception, the values in these data elements will be different from the original amount.

## Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	n-12
Data element length	None
Data field	Fixed length, contents of positions 1-12
Subfields	None
Justification	Right with leading zeros

## Usage

Following is the usage of DE 6 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	M
Financial Transaction Request Response/0210	C	P	.
Financial Transaction Advice/0220	.	X	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	.	X	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	.	X	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: cquirer initiated exception	.	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	C
Issuer Reversal Advice/0422: exception, issuer initiated	.	X	C
Acquirer Reversal Advice Response/0430: system initiated	.	X	C
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M

## Application Notes

The currency of this data element must always be specified using DE 51 (Currency Code, Cardholder Billing). The Single Message System calculates DE 6 (Amount, Cardholder Billing) for

all issuers. This data element is not returned to the acquirer in the Financial Transaction Request Response/0210 message.

The Single Message System calculates the value of DE 6 (Amount, Cardholder Billing) based upon the amount of DE 4 (Amount, Transaction), then DE 5 (Amount, Settlement) is calculated from the amount in DE 6.

When this field is present in a message, DE 10 (Conversion Rate, Cardholder Billing); DE 16, (Date, Conversion); and DE 51 (Currency Code, Cardholder Billing) must also be present.

The Single Message System will send amounts in the acquirer's transaction currency, the issuer's settlement currency, and the issuer's cardholder billing currency (based on the issuer's current agreement with Mastercard) in all financial transaction messages to the issuer regardless of whether this results in redundant amount data being transmitted (all currencies are the same).

For a purchase with cash back transaction, the issuer must provide the purchase only amount in DE 6 (Amount, Cardholder Billing) of the Financial Transaction Request Response/0210 message in the issuer's cardholder billing currency.

For purchase with cash back transactions, the Single Message system will provide the purchase only approval amount to the issuer in the Financial Transaction Request Advice/0220 message.

Issuers that support partial approvals can provide a partial approval amount, in DE 6 of the Financial Transaction Request Response/0210 message, that is less than or equal to the original transaction amount requested in DE 6 of the Financial Transaction Request/0200 message.

Issuers that support partial approvals can provide a partial approval amount, in DE 6 of the Financial Transaction Request Response/0210 message, that is greater than, less than, or equal to, the original transaction amount requested in DE 6 of the Financial Transaction Request/0200 message when DE 18 contains a value of 5542 indicating the transaction was initiated at an automated fuel dispenser (AFD).

Issuers that have enrolled in the optional Issuer Currency Conversion Rate (ICCR) service or Cross-Border Fee Manager (CBFM) service will have their mark-up added to the DE 6 (Amount, Cardholder Billing) amount for transactions with currency conversion. This mark-up amount is provided separately within DE 8 (Amount Cardholder Billing Fee).

## DE 7 (Transmission Date and Time)

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DE 7 (Transmission Date and Time) is the date and time a message was transmitted by a processing entity, to be expressed in Coordinated Universal Time (UTC).

### Attributes

Attribute	Description
Data representation	n-10
Data element length	None

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<b>Attribute</b>	<b>Description</b>
Data field	Fixed length, contents of positions 1–10
Subfields	None
Justification	N/A

### **Usage**

Following is the usage of DE 7 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	X	M
Financial Transaction Request Response/0210	M	X	M
Financial Transaction Advice/0220	M	X	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	X	M
Financial Transaction Advice Response/0230	M	X	M
File Update Request/0302	M	P	M
File Update Request Response/0312	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	M	X	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	X	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	.	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	M	X	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M
Administrative Advice/0620: Single Message System initiated	.	X	M
Administrative Advice/0620: processor initiated	M	X	.
Administrative Advice/0620: processor initiated Time-Based exception	M	P	M

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<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Administrative Advice Response/0630: processor initiated to the Single Message System	M	X	.
Administrative Advice Responses/0630: processor Initiated	M	P	M
Administrative Advice/0644	.	X	M
Network Management Request/0800: Acquirer or Issuer Initiated	M	X	.
Network Management Request/0800: system–Initiated	.	X	M
Network Management Request Response/0810: acquirer or issuer initiated	M	X	.
Network Management Request Responses/0810: system initiated	.	X	M
Network Management Advice/0820	.	X	M

### **Application notes**

The UTC timestamp is the date and time that a processor, including the Mastercard Network, transmits any message (as opposed to the initiation of an entire transaction), containing this data element, to another processor.

Mastercard recommends that processors do not include the values of this data element as part of their message key if they expect this data element to contain the original acquirer transmission timestamp.

If processors want to use the original acquirer timestamp as part of their message key, Mastercard recommends that they use DE 12 (Time, Local Transaction) and DE 13 (Date, Local Transaction).

Upon receipt of the Financial Transaction Request/0200 message, with limited exceptions, the Single Message System updates DE 7 with its internal time stamp before sending the message to the issuer. The issuer may return this time to the Single Message System in the Financial Transaction Request Response/0210 message, or the issuer may send its own transmission time in the data element.

When sending the Financial Transaction Request Response/0210 message to the acquirer, the Single Message System re-inserts the acquirer's time stamp from the request message in this data element.

### **Values**

This field must contain a valid date and time.

- **MM** (Month) = must be in the range 01–12
- **DD** (Day) = must be in the range 01–31
- **hh** (Hour) = must be in the range 00–23
- **mm** (Minute) = must be in the range 00–59
- **ss** (Second) = must be in the range 00–59

## DE 8 (Amount, Cardholder Billing Fee)

DE 8 (Amount, Cardholder Billing Fee) is the fee the issuer is to bill to the cardholder in the same currency as DE 6 (Amount, Cardholder Billing).

### Attributes

Attribute	Description
Data representation	n-8
Data element length	None
Data field	Contents of positions 1-8
Subfields	None
Justification	Right-justified with leading zeros

### Usage

Following is the usage of DE 8 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	.	X	C
Financial Transaction Advice/0220	.	X	C
Acquirer Reversal Advice/0420: acquirer initiated	.	X	C
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	.	X	C
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	C
Acquirer Reversal Advice/0420: NICS exception, system initiated	.	X	C

### ICCR optional service

The Issuer Currency Conversion Rate (ICCR) is an optional issuer service that charges cardholders a mark-up called ICCR within DE 6 (Amount, Cardholder Billing), when transaction currency is different from the cardholder billing currency. This mark-up amount is provided separately within DE 8 (Amount Cardholder Billing Fee). Issuers will be able to set the rate for this mark-up by BIN ranges. ICCR applies to POS and ATM transactions acquired worldwide. All payment transactions (DE 3 [Processing Code] value of 28) will be bypassed for ICCR.

### Cross-border fee manager (CBFM) optional service

The Cross-Border Fee Manager (CBFM) service is the next generation of Issuer Currency Conversion Rate (ICCR) and will modify DE 6 and DE 8 in the same manner; however CBFM offers far greater flexibility in terms of how an issuer may assign mark-ups. In addition to marking up transactions where the transaction currency is different from the cardholder billing currency, it also allows mark-ups to be assigned on cross-border transactions regardless of currency; on Dynamic Currency Conversion (DCC)/Multi-Currency Pricing (MCP) vs. Non-DCC/MCP transactions; on different transaction groupings including Card Not Present, Card Present, and ATM; and on intra vs. inter-regional transactions. Mark-ups may be percentage-based, flat rates, or both. In addition, CBFM offers transaction currency override mark-up assignments (up to three) for even greater flexibility while also providing customers with a self-service tool allowing them to modify mark-up assignments as they see fit.

For a complete view of CBFM service capabilities refer to the *Cross Border Fee Manager Service Program Guide*.

## DE 9 (Conversion Rate, Settlement)

DE 9 (Conversion Rate, Settlement) is the factor used in the conversion from transaction to settlement amount. The Single Message System multiplies the DE 4 (Amount, Transaction) by DE 9 to determine the DE 5 (Amount, Settlement).

### Attributes

Attribute	Description
Data representation	n-8
Data element length	None
Data field	Fixed length, contents of positions 1–8
Subfields	None
Justification	Right, excluding the decimal indicator that must be the left most digit.

### Usage

Following is the usage of DE 9 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	.	X	M
Financial Transaction Request Response/0210	C	X	M

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Advice/0220	C	X	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	P	C
Financial Transaction Advice Response/0230	C	P	M
Acquirer Reversal Advice/0420: acquirer initiated	.	X	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	.	X	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	.	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	.	X	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M

### **Application notes**

The Single Message System provides automatic currency conversion as a service for customers that participate in international interchange and will supply the conversion rate in this data element.

When this data element is present in a message, DE 5 (Amount, Settlement); DE 16 (Date, Conversion); and DE 50 (Currency Code, Settlement) must also be present.

### **Values**

The format is left-justified with trailing zeros. The left-most digit denotes the number of positions that the Single Message System moves the decimal separator **from the right**. The left-most digit must be in the range zero to seven. For example, a field value of 76887050 is interpreted as a conversion rate of 0.6887050.

### **Exceptions for acquirers**

If an acquirer-initiated message contains a format error, the message that the acquirer receives as a result will not contain the conversion rate.

## DE 10 (Conversion Rate, Cardholder Billing)

DE 10 (Conversion Rate, Cardholder Billing) is the factor used in the conversion from transaction to cardholder billing amount. DE 4 (Amount, Transaction) is multiplied by DE 10 to determine DE 6 (Amount, Cardholder Billing).

### Attributes

Attribute	Description
Data representation	n-8
Data element length	None
Data field	Fixed length, contents of positions 1-8
Subfields	None
Justification	Right, excluding the decimal indicator that must be the left most digit.

### Usage

Following is the usage of DE 10 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	.	X	M
Financial Transaction Advice/0220	.	X	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	.	X	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	.	X	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	.	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	C
Issuer Reversal Advice/0422: exception, issuer initiated	.	X	C
Acquirer Reversal Advice Response/0430: system initiated	.	X	C
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.

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<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M

### **Application notes**

When this data element is present in a message, DE 6 (Amount, Cardholder Billing); DE 16 (Date, Conversion); and DE 51 (Currency Code, Cardholder Billing) must also be present.

### **Values**

The format is left-justified with trailing zeros. The left-most digit denotes the number of positions that the Single Message System moves the decimal separator **from the right**. The left-most digit must be in the range zero to seven. For example, a field value of 69972522 is interpreted as a conversion rate of 9.972522.

## **DE 11 (Systems Trace Audit Number)**

DE 11 (Systems Trace Audit Number [STAN]), is the unique identifier assigned to each transaction by the originator of the message.

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data Representation	n-6
Data Element Length	None
Data Field	Fixed length, contents of positions 1-6
Subfields	None
Justification	N/A

### **Usage**

Following is the usage of DE 11 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	P	M
Financial Transaction Request Response/0210	M	P	M
Financial Transaction Advice/0220	M	X	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	X	M

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Advice Response/0230	M	P	M
File Update Request/0302	M	P	M
File Update Request Response/0312	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	M	P	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	M	P	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M
Administrative Advice/0620: Single Message System initiated	.	X	M
Administrative Advice/0620: processor initiated	M	X	.
Administrative Advice/0620: processor initiated time-based exception	M	P	M
Administrative Advice Response/0630: processor initiated to the Single Message System	M	X	.
Administrative Advice Responses/0630: processor initiated	M	P	M
Administrative Advice/0644	.	X	M
Network Management Request/0800: acquirer or issuer initiated	M	X	.
Network Management Request/0800: system-initiated	.	X	M
Network Management Request Response/0810: acquirer or issuer initiated	M	X	.
Network Management Request Responses/0810: system initiated	.	X	M
Network Management Advice/0820	.	X	M

### **Application Notes**

A number assigned by the originator of the message and echoed in the response to identify a specific "transaction." A transaction in this context is a message pair, such as a financial

transaction request **and** its response, a financial transaction advice **and** its response, or a reversal/adjustment **and** its response.

DE 11 cannot contain a value of all zeros, or the transaction will be declined with a format error 30 in DE 39 (Response Code).

This identifier, DE 11, when combined with other data elements should be unique for each transaction that occurs within an originator's day. Each originator's day must be based on coordinated universal time (UTC).

To ensure a unique identifier for each transaction message pair, it is recommended that DE 11 be combined with one or more additional identifiers, such as

- DE 32 (Acquiring Institution Identification Code)
- DE 33 (Forwarding Institution Identification Code)
- DE 2 (Primary Account Number [PAN]), or
- DE 37 (Retrieval Reference Number).

DE 11 may contain a different value from the original financial transaction request (0200) and its response (0210) when used in conjunction with either

- a financial transaction advice **and** its response/0220/0230 or
- a reversal/adjustment **and** its response/042x/043x.

In these messages flows the original trace number (DE 11) from the financial transaction request and response/0200/0210 must be contained in DE 90 (Original Data Elements) subfield 2, (System Trace Audit Number).

Processors must return the value received in DE 11 of the Financial Transaction Advice/0220 message or the reversal/adjustment advice/042x message in the Financial Transaction Advice Response/0230 or the reversal/adjustment response/043x.

For Maestro refund transactions (DE 3, subfield 1 = 20), originated from a dual message acquirer, DE 11 (Systems Trace Audit Number) and DE 90 (Original Data Elements) will be present in the Financial Transaction Advice/0220 to the issuer, however the values for the trace number, transmission date and time in these data elements may contain all zero values. This is due to the rules which do not require an original authorization for a refund transaction acquired on the Dual Message System. Issuers can also identify these types of refund transactions with the DE 60 (Advice Reason Code) value of 260 0092. The zero values may also apply in the event of a reversal of these refund transactions when the Financial Transaction Advice/0220 message contains DE 3, subfield 1 = 00 (Purchase) and DE 60 = 260 0092.

### **Enhanced Delivery Option**

In Debit Mastercard Financial Advice/0220 clearing messages, the Single Message System distinguishes messages depending on whether they originate from the store-and-forward (SAF) file through the SAF process or directly from the main processing module, through the Enhanced Delivery option.

The values for the STAN in these cases are

- 999999 Store and Forward and
- 999998 Enhanced Delivery.

### **Change Non-Same Day DE 11 Processing to Match Same Day**

A Single Message System-generated Adjustment System Trace Number will be included in existing DE 11. The original System Trace Number will continue to be included in DE 90, subfield 2 in some messages. DE 11 contains a new value whereas DE 90, subfield 2 contains the DE 11 value from the original 0200 for the same day 0420 and 0220 as well for non-same day 0420 and 0422 messages.

The changes will affect

- non-same day Acquirer Reversal Advice/0420 messages to the issuer from Single Message Transaction Manager and
- non-same day Issuer Reversal Advice/0422 messages to the acquirer from Single Message Transaction Manager.

## **DE 12 (Time, Local Transaction)**

DE 12 (Time, Local Transaction) is the local time the transaction takes place at the point of service.

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-6
Data element length	None
Data field	Fixed length, contents of positions 1–6
Subfields	None
Justification	N/A

### **Usage**

Following is the usage of DE 12 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	P	C
Financial Transaction Request Response/0210	M	P	M
Financial Transaction Advice/0220	M	P	M

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	P	C
Financial Transaction Advice Response/0230	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	O	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	O	X	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M

### **Application notes**

DE 12 is the local time that a cardholder transaction takes place and should be the same value that is printed on the cardholder receipt, if possible. This time must be specified in local time zone units and **not** in Coordinated Universal Time (UTC) units.

For Debit Mastercard completions (Financial Transaction Advice/0220 messages), this will contain the Single Message System time that the store-and-forward message is sent, not the value set in the original preauthorization.

DE 12 is not required for MDES pre-digitization messages. Refer to the Mastercard Digital Enablement Service section in the Program and Service Formats chapter of this manual for more information.

### **Values**

This field must contain a valid time in format HHMMSS.

- **HH** (Hours) = must be in the range 00–23
- **MM** (Minutes) = must be in the range 00–59
- **SS** (Seconds) = must be in the range 00–59

## DE 13 (Date, Local Transaction)

DE 13 (Date, Local Transaction) is the local month and day on which the transaction takes place at the point of service.

### Attributes

Attribute	Description
Data representation	n-4
Data element length	None
Data field	Fixed length, contents of positions 1-4
Subfields	None
Justification	N/A

### Usage

Following is the usage of DE 13 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	P	C
Financial Transaction Request Response/0210	M	P	M
Financial Transaction Advice/0220	M	P	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	P	C
Financial Transaction Advice Response/0230	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	O	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	O	X	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.

Message	Org	Sys	Dst
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M

### Application notes

DE 13 is the local date that a cardholder transaction takes place and should be the same value printed on the cardholder receipt, if possible. This time must be specified in local time zone units and **not** in coordinated universal time (UTC) units.

For Debit Mastercard completions (Financial Transaction Advice/0220 messages), DE 13 will contain the Single Message System date that the store-and-forward message is sent, not the value provided in the original preauthorization (Financial Transaction Request/0200).

DE 13 is not required for MDES pre-digitization messages. Refer to the Mastercard Digital Enablement Service section in the Program and Service Formats chapter of this manual for more information.

### Values

This field must contain a valid date in format MMDD.

- **MM** (Month) = must be in the range 01–12
- **DD** (Day) = must be in the range 01–31

## DE 14 (Date, Expiration)

DE 14 (Date, Expiration) specifies the year and month that a cardholder's bank card expires.

### Attributes

Attribute	Description
Data representation	n-4
Data element length	None
Data field	Fixed length, contents of positions 1–4
Subfields	None
Justification	N/A

### Usage

Following is the usage of DE 14 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	X	O
Financial Transaction Advice/0220	C	P	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	P	C
Issuer Reversal Advice/0422—exception, issuer initiated	O	P	C

### Application notes

This data element will not be included on a manually keyed Debit Mastercard transaction; however, the expiration date will be included in DE 35 (Track 2 Data), subfield 4 (Expiration Date) and sent to the issuer.

In addition, the Single Message System will not

- include DE 35 (Track 2 Data) for Maestro POS transaction unless valid DE 35 or DE 14 data is supplied by the acquirer or
- include DE 35 for Debit Mastercard POS transactions unless valid DE 35, DE 45 (Track 1 Data), or DE 14 data is supplied by the acquirer.

DE 14 is not required for Financial Transaction Request/0200 messages. If the acquirer does not populate DE 14 in the Financial Transaction Request/0200 message, then the Single Message System will autopopulate DE 14 with the expiration date from the Track Data.

### Values

This field must contain a valid year and month: format YYMM

- **YY** (Year) = must be in the range 00–99
- **MM** (Month) = must be in the range 01–12

## DE 15 (Date, Settlement)

DE 15 (Date, Settlement) is the date (month and day) that Mastercard uses to group the transactions for reporting and for subsequent settlement.

### Attributes

Attribute	Description
Data representation	n-4
Data element length	None
Data field	Fixed length, contents of positions 1–4
Subfields	None

Attribute	Description
Justification	N/A

### Usage

Following is the usage of DE 15 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	.	X	M
Financial Transaction Request Response/0210	M	P	M
Financial Transaction Advice/0220	M	P	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	P	M
Financial Transaction Advice Response/0230	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	M	X	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	.	X	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	M	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	M	X	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	M
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	P	M
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M

### Application notes

This data element is present in Financial Transaction/02xx and Reversal Advice/04xx messages that convey a settlement value. It contains the calendar date that Mastercard uses to group the transactions for reporting and for subsequent settlement. DE 15 does not reflect the date of the actual settlement of funds.

DE 15 will be generated by the Single Message System when the acquirer does not receive the Financial Transaction Request Response/0210 message.

### Values

This field must contain a valid date in format MMDD.

- **MM** (Month) = must be in the range 01–12
- **DD** (Day) = must be in the range 01–31

## DE 16 (Date, Conversion)

DE 16 (Date, Conversion) is the month and day that the conversion rate is effective to convert the transaction amount from the transaction currency into the currency of settlement or to convert the transaction amount from the original currency into the cardholder billing currency.

### Attributes

Attribute	Description
Data representation	n-4
Data element length	None
Data field	Fixed length, contents of positions 1–4
Subfields	None
Justification	N/A

### Usage

Following is the usage of DE 16 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	.	X	M
Financial Transaction Request Response/0210	C	P	M
Financial Transaction Advice/0220	C	X	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	P	M
Financial Transaction Advice Response/0230	C	P	M
Acquirer Reversal Advice/0420: acquirer initiated	.	X	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	.	X	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M

Message	Org	Sys	Dst
Acquirer Reversal Advice/0420: acquirer initiated exception	.	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	.	X	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M

### Application notes

DE 16 indicates the effective date (month and day) of the DE 9 (Conversion Rate, Settlement) and the DE 10 (Conversion Rate, Cardholder Billing). DE 16 must be present whenever either of these data elements is present within a message.

### Values

This field must contain a valid date in format MMDD.

- **MM** (Month) = must be in the range 01–12
- **DD** (Day) = must be in the range 01–31

The Single Message System will always provide DE 16 (Conversion Date) in any request or response message sent to either an issuer or an acquirer if either DE 9 (Settlement Conversion Rate) or DE 10 (Cardholder Billing Conversion Rate) is present in the message.

The conversion date will be included using the effective date from the T057 file created by the Mastercard Global Clearing Management System (GCMS).

### Exceptions for acquirers

If an acquirer-initiated message contains a format error, the message that the acquirer receives as a result will not contain the conversion date unless the original message contained DE 16.

## DE 17 (Date, Capture)

DE 17 (Date, Capture) is the month and day the acquirer processed the transaction data.

### Attributes

Attribute	Description
Data representation	n-4; MMDD
Data element length	None

<b>Attribute</b>	<b>Description</b>
Data field	Fixed length, contents of positions 1–4
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 18 (Merchant Type)

DE 18 (Merchant Type) code is the classification of the merchant's type of business or service.

### Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	n-4
Data element length	None
Data field	Fixed length, contents of positions 1–4
Subfields	None
Justification	N/A

### Usage

Following is the usage of DE 18 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	P	M
Financial Transaction Advice/0220	M	P	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	.	X	O
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	.	X	O
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	O
Acquirer Reversal Advice/0420: exception, system initiated	.	X	O
Acquirer Reversal Advice/0420: acquirer initiated exception	.	X	O

## Application notes

This data element is a four-digit indicator used to classify a merchant's product or service, selected from a standard list of classification codes referred to as card acceptor business codes (MCCs). The MCC is included in Financial Transaction Request/0200 messages and Financial Transaction Advice/0220 completion messages.

Debit Mastercard issuers who are connected to the Single Message System platform should note that with DE 18 (Merchant Type), value of 5542 (Fuel Dispenser, Automated), the preauthorization contained in the Financial Transaction Request/0200 will be followed by an Acquirer Reversal Advice/0420 message. If the transaction is successfully completed, the Acquirer Reversal Advice/0420 message will contain the final amount of the transaction and a DE 60 (Advice Reason Code), subfield 1 (Advice Reason Code), value of 450, subfield 2 (Advice Reason Detail Code), value 0018, subfield 3 (Advice Reason Detail Text Description), value Zero dispense/Over dispense card returned; POI failure.

Debit Mastercard issuers have the option to receive DE 18:

- In Acquirer Reversal Advice/0420 messages to assist in identifying a transaction as an AFD completion message.
- In ATM cash transactions.

Debit Mastercard issuers must contact their Customer Service representative if they choose to receive DE 18 in Acquirer Reversal Advice/0420 messages.

## Values

Refer to the *Quick Reference Booklet* for a list of MCCs and transaction category codes (TCCs).

For ATM cash withdrawals, this data element must contain a value of 6011 (Automated Cash Disbursement). For manual cash withdrawals, this data element must contain a value of 6010 (Manual Cash Disbursement). In these instances, the Single Message System, unless otherwise directed by the issuer's configuration file, removes DE 18 from the message before sending the message to the issuer.

For Mastercard Send Transactions (Funding Transactions, MoneySend Payment Transactions, and Gaming and Gambling Payments Transactions) the following MCCs will be included in DE 18:

- For MoneySend Payment Transactions, MCC 6536 (MoneySend Intracountry), or 6537 (MoneySend Intercountry) are used.
- For Funding Transactions, MCC 4829 (Money Transfer), MCC 6538 (Funding Transactions), and MCC 6540 (Funding Transactions) are used.
- For Gaming and Gambling Payments Transactions, MCCs 7800 (Government-owned Lottery), 7801 (Internet Gambling; U.S. Region Only), 7802 (Government Licensed Horse/Dog Racing; U.S. Region Only), 7994 (Video Game Arcades/Establishments), 7995 (Gambling Transactions), and 9406 (Government-Owned Lottery; Global, Excluding U.S. Region) are used.

For additional information regarding Funding MCCs, refer to *Mastercard MoneySend and Funding Transactions Program Standards*.

Mastercard reserves the right to decline online financial request messages when the card acceptor business code (MCC) value in the Merchant Type field (DE 18) equals 0000. Acquirers should anticipate receiving a format error when a Financial Transaction/02xx message contains a value of 0000 in DE 18.

**NOTE:** Special conditions apply, such as for the release of hold amounts, for automated fuel dispenser (AFD) transactions, identified by a value of 5542 (Fuel Dispenser, Automated), that are processed by Debit Mastercard issuers in the United States and Canada regions. For additional information, refer to the *Mastercard Rules*.

## DE 19 (Acquiring Institution Country Code)

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DE 19 (Acquiring Institution Country Code) is the code of the country where the acquirer is located. Refer to the ISO 3166 specification for more information.

### Attributes

Attribute	Description
Data representation	n-3
Data element length	None
Data field	Fixed length, contents of positions 1-3
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 20 (Primary Account Number [PAN] Country Code)

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DE 20 (PAN Country Code) is a code identifying the country where the card issuer is located.

### Attributes

Attribute	Description
Data representation	n-3
Data element length	None
Data field	Fixed length, contents of positions 1-3
Subfields	None

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<b>Attribute</b>	<b>Description</b>
Justification	N/A

### Usage

Following is the usage of DE 20 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request Response/0210	O	X	C
Financial Transaction Advice Response/0230	•	X	C
Issuer Reversal Advice/0422: exception, system initiated	•	X	C
Issuer Reversal Advice/0422: exception, issuer initiated	•	X	C
Acquirer Reversal Advice Response/0430: system initiated	•	X	C
Acquirer Reversal Advice Response/0430: issuer initiated	C	X	•
Issuer Reversal Advice Response/0432: exception, acquirer initiated	C	X	•
Issuer Reversal Advice Response/0432: exception, system initiated	•	X	C

### Application notes

The Mastercard Network retrieves this data from configured data of the issuer and provides it back to the acquirer in the Financial Transaction Request Response/0210 by the Single Message System when the acquirer uses the Mastercard Enhanced Issuer Identification (EII) service.

DE 20 is required to be included within any message whenever the associated PAN (in DE 2 [Primary Account Number] or DE 34, [Primary Account Number Extended]) is present and begins with a "59" prefix. PANs beginning with a "59" prefix are **not** guaranteed to be unique without the use of this associated Country Code.

**NOTE: DE 20 (PAN Country Code) will not be present in Financial Transaction Advice/0220: Debit Mastercard Stand-In messages.**

### Values

Country codes must be selected from the numeric ISO Standard Country Codes listed in ISO 8583-1987 Appendix 2, ISO Country, and Currency Codes.

For a listing of valid country and currency codes refer to the *Quick Reference Booklet*.

## DE 21 (Forwarding Institution Country Code)

DE 21 (Forwarding Institution Country Code) is the code of the country where the forwarding institution is located.

### Attributes

Attribute	Description
Data representation	n-3
Data element length	None
Data field	Fixed length, contents of positions 1-3
Subfields	None
Justification	None

**NOTE:** The Single Message System does not use this data element.

## DE 22 (Point of Service Entry Mode)

DE 22 (Point of Service Entry Mode) consists of numeric codes that indicate the method used to enter the PAN into the terminal device and the PIN entry capability of that device.

### Attributes

Attribute	Description
Data representation	n-3
Data element length	None
Data field	Contents of subfields 1-2
Subfields	2
Justification	See "Subfields"

### Usage

Following is the usage of DE 22 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	X	M
Financial Transaction Advice/0220	M	X	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	P	M

**NOTE:** On-behalf Service 02 (M/Chip Cryptogram Pre-Validation Service) or 03 (M/Chip Cryptogram Validation in Stand-In Processing) will only be performed when the first two positions of DE 22 (PAN Entry Mode) are 05 or 07. PAN Entry mode of 81x is not supported for On-behalf Service 02 or 03.

### **Subfield 1 (POS Terminal PAN Entry Mode)**

DE 22, subfield 1 (POS Terminal PAN Entry Mode), describes the method used for PAN entry to initiate a transaction.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-2
Data field	Contents of positions 1-2
Justification	N/A

#### **Values**

<b>Value</b>	<b>Description</b>
00	PAN entry mode unknown
01	PAN manual entry
<b>NOTE:</b> For details about Track 1 and Track 2 data see Point of Service Entry Mode—Special Mapping table at the end of this data element for more details about Special Mapping.	
02	PAN auto-entry via magnetic stripe
<b>NOTE:</b> Track data is not required, however if present, refer to Point of Service Entry Mode—Special Mapping table at the end of this data element for more details about Special Mapping.	
03	PAN auto-entry via bar code reader
04	PAN auto-entry via optical character reader (OCR)

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<b>Value</b>	<b>Description</b>
05	PAN auto-entry via integrated circuit card
06	PAN auto-entry via chip Contactless Mapping Service applied.  As of 14 June 2016, Mastercard will no longer use value 06 for the Contactless Mapping Service. Acquirers are reminded to not use value 06.
07	PAN auto-entry via contactless M/Chip
08	PAN auto-entry via chip Contactless Mapping Service applied.  As of 14 June 2016, Mastercard will no longer use value 08 for the Contactless Mapping Service. Acquirers are reminded to not use value 08.
09	PAN/Token entry via electronic commerce containing Digital Secure Remote Payment (DSRP) cryptogram in DE 55 (Integrated Circuit Card [ICC] System-Related Data).
10	Credential on file.
79	Chip card at chip-capable terminal was unable to process the transaction using chip technology. The transaction proceeds as fallback to a magnetic stripe read transaction, but the terminal is unable to send the transaction online. The transaction is subsequently authorized by the Voice Center, where the PAN is keyed in manually by the acquirer.  Only chip-certified acquirers may use this fallback indicator.
80	Chip card at chip-capable terminal was unable to process transaction using data on the chip; therefore, the terminal defaulted to the magnetic stripe-read PAN. The full track data has been read from the data encoded on the card and transmitted within the Financial Transaction Request/0200 message in DE 45 (Track 1 Data) or DE 35 (Track 2 Data) without alteration or truncation.  To use this value, the acquirer must be qualified to use a value of 90.  This mode is used as fallback to PAN auto-entry when all the following conditions apply: <ul style="list-style-type: none"> <li>• The physical Track 1 or Track 2 contains a Service Code of 2xx or 6xx.</li> <li>• The terminal is an EMV type approved terminal enabled to accept Mastercard branded smart cards.</li> <li>• The transaction cannot proceed as a smart card transaction and therefore proceeds as a magnetic stripe-read transaction.</li> <li>• Only chip certified acquirers can use the fallback indicator.</li> <li>• All fallback transactions must be authorized online</li> </ul>

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<b>Value</b>	<b>Description</b>
81	<p>PAN/Token entry via e-commerce with optional Identity Check-AAV or DSRP cryptogram in UCAF.</p> <p>For this value, when an issuer is registered for Chip to Magnetic Stripe Conversion service, this value will be modified to 01—PAN manual entry, and the Chip to Magnetic Stripe Conversion service will not be performed.</p> <p>Indicates participation in the Short Message Service (SMS) Balance Inquiry.</p>
82	PAN Auto Entry via Server (issuer, acquirer or third party vendor system).
90	PAN auto-entry via magnetic stripe—the full track data has been read from the data encoded on the card and transmitted within the authorization request in DE 35 (Track 2 Data) or DE 45 (Track 1 Data) without alteration or truncation.
<b>NOTE:</b>	
<p>If the Single Message System creates any Track 2 data using Track 1 data, the processors must be prepared to accept any character that would have been present in the Track 1.</p> <p>For details about Track 1 and Track 2 data see Point of Service Entry Mode—Special Mapping table at the end of this data element for more details about Special Mapping.</p>	
91	PAN auto-entry via contactless magnetic stripe—the full track data has been transmitted by the acquirer within the authorization request in DE 35 (Track 2 Data) or DE 45 (Track 1 Data) and forwarded to the issuer without alteration or truncation.
92	<p>Contactless input, Contactless Mapping Service applied when acquirer DE 22, subfield 1 = 91.</p> <p>As of 14 June 2016, Mastercard will no longer use value 92 for the Contactless Mapping Service. Acquirers are reminded to not use value 92.</p>
95	Visa only. Chip card with unreliable Card Verification Value (CVV) data.

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**NOTE:**

DE 22, subfield 1 is used in conjunction with DE 61 (Point of Service [POS] Data), subfield 11 (POS Card Data Terminal Input Capability Indicator). DE 61, subfield 11 values indicate the terminal capabilities, including fallback, for transferring the data on the card into the terminal.

The Single Message System will not populate a default value in DE 22, subfield 1 when an acquirer submits an invalid value. The value originally submitted by the acquirer will be passed to the issuer, and the issuer may choose to accept or decline the transaction to the acquirer.

## Subfield 2 (POS Terminal PIN Entry Mode)

DE 22, subfield 2, POS Terminal PIN Entry Mode describes the capability of the terminal device to support/accept PIN entry.

### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of position 3
Justification	N/A

### Values

Value	Description
0	Capability is unspecified or unknown
1	Terminal has PIN entry capability
2	Terminal <b>does not</b> have PIN entry capability
3	mPOS Software-based PIN Entry Capability
8	Terminal has PIN entry capability, but PIN pad is out of service

### Application Notes

The following conditions should be considered for these transaction types:

- ATM transactions:
  - Subfield 1 (POS Terminal PAN Entry Mode), position 1-2, should contain either 02 or 90
    - Issuers should receive values 02x and 90x
- ATM terminals that support contactless:
  - Subfield 1 (POS Terminal PAN Entry Mode), position 1-2, should contain either 07 or 91
    - Issuers should receive values 07x or 91x
- ATM terminals that are chip capable:
  - Subfield 1, (POS Terminal PAN Entry Mode), position 1-2, should contain 05, 79, or 80
    - Issuers should receive values 05x, 79x, or 80x
- For ATM transactions subfield 2 (POS Terminal PIN Entry Mode), position 3 should contain 1.
- If acquirers submit DE 55 (Integrated Circuit Card [ICC] System-Related Data) in the message, then DE 22, subfield 1 must be "05" PAN Auto-Entry, "07" PAN Auto-Entry Via contactless M/Chip, "09" PAN entry via electronic commerce, including remote chip, or "81"

E-Commerce. If DE 55 is present in the message, then the Single Message System will decline the transaction if acquirers do not include 05, 07, 09, or 81 in subfield 1 of DE 22.

- If an acquirer sends a Financial Transaction Request/0200 message that contains DE 22, subfield 1 with a value of 80 and the service code in DE 35, Track 2 Data is not 2xx or 6xx, indicating that it is not a chip card transaction, then the Single Message System will modify DE 22, subfield 1 to a value of 90 and forward this value to the issuer. For such transactions, the Single Message System will notify the acquirer of this downgrade by populating DE 48, subelement 74 (Additional Processing Information) in the Financial Request Response/0210 message where:
  - Subfield 1 = 90 (Chip Fallback Transaction Downgrade Process)
  - Subfield 2 = C (Completed Successfully)

#### **Point of service entry mode: Special mapping**

<b>Track 2 data present in inbound request message</b>		<b>Single Message System action taken</b>
<b>DE 22, subfield 1 from the acquirer</b>		
01	Yes	DE 22 and DE 35 will be sent as received.
01	No	<ul style="list-style-type: none"> <li>• If Track 1 data is not present, Track 2 data will be built using DE 2 (PAN) and DE 14 (Expiration Date) only when valid data has been provided by the acquirer.</li> <li>• If Track 1 data is present, Track 2 data will only be built using valid Track 1 data. Message will be forwarded with DE 22, subfield 1, value of 01.</li> </ul>
02	Yes	DE 22 and DE 35 will be sent as received.
02	No	<ul style="list-style-type: none"> <li>• If Track 1 data is not present, Track 2 data will be built using the PAN (DE 2) and the expiration date (DE 14) only when valid data has been provided by the acquirer. Message will be forwarded with DE 22, subfield 1, value of 01.</li> <li>• If Track 1 data is present, Track 2 data will only be built using valid Track 1 data. Message will be forwarded with DE 22, subfield 1, value of 02.</li> </ul>
90	Yes	DE 22 and DE 35 will be sent as received.

---

<b>Track 2 data present in inbound request message</b>		<b>Single Message System action taken</b>
<b>DE 22, subfield 1</b>	<b>from the acquirer</b>	
90	No	<ul style="list-style-type: none"> <li>• If Track 1 data is not present, Track 2 data will be built using the DE 2 (PAN) and DE 14 (Expiration Date) only when valid data has been provided by the acquirer. Message will be forwarded with DE 22, subfield 1, value of 01.</li> <li>• If Track 1 data is present, Track 2 data will only be built using valid Track 1 data. Message will be forwarded with DE 22, subfield 1, value of 02.</li> </ul>

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**NOTE:** If issuers are validating the CVC 1 data in the discretionary data within Track 2, these values should be used to determine when the CVC 1 data is available.

## DE 23 (Card Sequence Number)

DE 23 (Card Sequence Number) distinguishes among separate cards having the same PAN or DE 34 (Primary Account Number [PAN] Extended). Issuers may encode chip cards with Card Sequence Numbers. Acquirers with chip-reading capability may pass this information encoded on the chip in DE 23 of Financial Transaction/0200 messages.

### Attributes

---

<b>Attribute</b>	<b>Description</b>
Data representation	n-3
Data element length	N/A
Data field	Fixed length, contents of positions 1-3
Subfields	N/A
Justification	N/A

---

### Usage

Following is the usage of DE 23 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

---

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	X	C
Financial Transaction Advice/0220	C	X	C

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<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	.	C
Acquirer Reversal Advice/0420: acquirer initiated	C	X	C
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	C	.	C
Acquirer Reversal Advice/0420: time-out induced, system initiated	C	.	C
Acquirer Reversal Advice/0420: exception, system initiated	C	.	C
Acquirer Reversal Advice/0420: acquirer initiated exception	C	.	C

### **Values**

Valid values for Card Sequence Number are in the range 000–099.

**NOTE:** DE 23 may also be sent when DE 22 does not equal 05x or 07x.

#### **Values for acquirers:**

DE 23 must be three positions in the numeric range 000–099. For contact chip or contactless chip transactions where DE 22 subfield 1 is 05 or 07 respectively, DE 23 must contain the value of the Application PAN Sequence Number (EMV tag 5F34) as personalized on the chip. Considering that the Application PAN Sequence Number (EMV tag 5F34) is defined as a one-byte numeric value in the EMV specification, the terminal or the acquirer software must convert this one-byte numeric value to a three-byte value with leading zeros in DE 23. For example, if the value of EMV tag 5F34 on the chip card is 2, then the value of DE 23 is 002. For chip or contactless chip transactions, if EMV tag 5F34 is not personalized (not present) on the chip, DE 23 cannot be present in the authorization message. When DE 23 (Card Sequence Number) is present in a Financial Transaction Request/0200 message and the value is not in the range of 000–099, then the Single Message System forwards the Financial Transaction Request Response/0210 where DE 39 = 30 (Format Error) and DE 44 (Additional Response Data) = 023. If the account range is registered for the Authentication Indicator Type 1 Service, then DE 23 should be present.

#### **Values for issuers:**

The Single Message System does not cross-edit the presence or absence of DE 23 and the value in DE 22 (Point-of-Service [POS] Entry Mode) in Financial Transaction Request/0200 messages. However, if DE 22 has a value 05 (PAN auto-entry via chip) or 07 (PAN auto-entry via contactless M/Chip) and if DE 23 is present in the Financial Transaction Request/0200, DE 23 contains the card sequence number from the chip. If DE 22 has a value other than 05 or 07 and DE 23 is present, then DE 23 may contain erroneous information unrelated to the chip transaction. Because of the potential for DE 23 to be present in Financial Transaction/02xx messages, chip issuers must be prepared to receive store-and-forward (SAF) records containing DE 23. Issuers must not return DE 23 in an Financial Transaction Request Response/0210. If an issuer does so, Mastercard will delete DE 23 before passing the Financial Transaction Request Response/0210 to the acquirer.

## Application notes

DE 23 must be present in all ICC transactions (where DE 22 = "05x" or "07x") which include EMV-compliant ICC system related data (DE 55) and where the Application PAN Sequence Number (EMV tag 5F34) is provided by the IC card to the terminal.

DE 23 will be present in the Acquirer Reversal Advice/0420 messages if it was present in the related Financial Transaction Request/0200 or Financial Transaction Advice/0220.

DE 23 applies to Maestro processing of Visa Debit tokens.

## MDES application note

**NOTE:** The following feature only applies to tokens that use a secure element or cloud token type.

Note the following regarding usage of DE 23 with the Mastercard Digital Enablement Service (MDES):

- DE 23 is treated differently by Mastercard Digital Enablement Service (MDES) than by other Mastercard programs and services.
- If present, the value coming in to MDES from the acquirer in DE 23 is regarded as a Token Sequence Number, not a Card Sequence Number, and it is only used as part of the overall crypto validation process. The Token Sequence Number is not passed through to the issuer unless the issuer opts to receive it.

Additional information on MDES is available on MDES Information Center page on the Publications site through Mastercard Connect™.

## Card sequence number in transaction processing

When an issuer has opted-in to receive the Card Sequence Number (DE 23), and one is associated with the token, the Single Message System will send the Card Sequence Number to the issuer in the messages detailed in the following sections.

If no Card Sequence Number is associated with the token, then DE 23 will not be present in the message sent by Mastercard to the issuer.

Mastercard includes DE 23 in the following messages sent to issuers for Single Message System transactions when the Card Sequence Number is on file and when the POS entry mode is:

- 07: Contactless chip
- 09: Digital Secure Remote Payments (DSRP)-EMV version

For these messages:

- Financial Transaction Request/0200
- Financial Transaction Advice/0220
- Reversal Request/0400
- Reversal Request/0420 (same day reversal only)

## DE 24 (Network International Identifier)

DE 24 (Network International Identifier) identifies a single international network of card issuers.

### Attributes

Attribute	Description
Data representation	n-3
Data element length	None
Data field	Fixed length, contents of positions 1-3
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 25 (Point of Service Condition Code [ISO])

DE 25 (Point of Service Condition Code [ISO]) identifies the condition under which the transaction takes place at the point of service.

### Attributes

Attribute	Description
Data representation	n-2
Data element length	None
Data field	Fixed length, contents of positions 1-2
Subfields	None
Justification	N/A

**NOTE:** The Single Message System currently does not use this data element. All Mastercard customers are required to use DE 61 for POS Condition Code information. DE 25 must not be used.

## DE 26 (Point of Service [POS] PIN Capture Code)

DE 26 (Point of Service [POS] PIN Capture Code) is a code indicating the maximum number of PIN characters that can be accepted by the point of service device used to construct the personal identification number (PIN) data.

### Attributes

Attribute	Description
Data representation	n-2
Data element length	None
Data field	Fixed length, contents of positions 1-2
Subfields	None
Justification	Right-justified with leading zero

### Usage

Following is the usage of DE 26 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	P	C
Financial Transaction Advice/0220	C	P	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	P	C

### Application notes

The point of service PIN capture code must be used to indicate the maximum number of PIN characters that the acquiring terminal device (ATM, POS terminal, etc.) is capable of accepting.

The Single Message System requires that this data element be included in 0200 Financial Transaction messages **only** when DE 52 (PIN Data) is present and the maximum PIN character acceptance capability of the terminal is known to be other than 12 digits.

#### NOTE:

If this data element is not present in Debit Mastercard transactions the Single Message System defaults to a value of 12.

The Single Message System does not use this data element to specify the number of PIN characters actually accepted by a point of service terminal device.

### Values

Following are valid values for DE 26.

Code	Description
00-03	Invalid
04-12	Indicates the maximum number of PIN characters that the terminal can accept.
13-99	Reserved

## DE 27 (Authorization Identification Response Length)

---

DE 27 (Authorization Identification Response Length) is the maximum length of the authorization response that the acquirer can accommodate. Mastercard expects the issuer, or its agent, to limit response to this length.

### Attributes

Attribute	Description
Data representation	n-1
Data element length	None
Data field	Fixed length, contents of position 1
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 28 (Amount, Transaction Fee)

---

DE 28 (Amount, Transaction Fee) is the fee (for example, charged by the acquirer) for transaction activity in the currency of the DE 4 (Amount, Transaction).

### Attributes

Attribute	Description
Data representation	x+n-8

---

<b>Attribute</b>	<b>Description</b>
Data element length	None
Data field	Fixed length, contents of positions 1–9
Subfields	None
Justification	Right-justified with leading zeros for the n-8

### Usage

Following is the usage of DE 28 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	P	C
Financial Transaction Request Response/0210	C	P	C
Financial Transaction Advice/0220	C	P	C
Financial Transaction Advice Response/0230	C	P	C
Acquirer Reversal Advice/0420: acquirer initiated	C	P	C
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	C	P	C
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	C

### Application notes

This data element may be present in a message whenever an online transaction fee is permitted by the operating rules of a bank card product.

The credit or debit indicator (the first position of the data element) applies to the message recipient. Within acquirer-generated message types, a D (debit) fee amount indicates that the fee is to be applied as a debit to the message recipient, the issuer (and therefore as a credit to the message originator, the acquirer).

### For intracountry ATM transaction within Australia

Acquirers no longer will receive an ATM interchange fee for Australian intracountry transactions. Instead, an acquirer will have the option to charge another institution's cardholder a direct ATM access fee for Cash Withdrawal, Balance Inquiry, PIN Change, and PIN Unblock transactions conducted at its ATM.

Acquirers that choose to levy an ATM access fee must be prepared to send both the transaction amount and direct charging fee in DE 4 and the direct charging fee amount in DE 28.

Issuers must be prepared to receive the original transaction amount and the direct charging fee in DE 4, and the direct charging fee amount in DE 28.

### For ATM access fees for cross-border transactions

Acquirers can assess fees on cross-border transactions (for example, transactions that take place at an ATM located outside the country where the card was issued). The ATM access fee must be provided in DE 4 (Amount, Transaction) and DE 28 (Amount, Transaction Fee) of the Financial Transaction Request/0200 message.

For intracountry ATM transactions within Australia, the Single Message System will not include DE 28 in Financial Transaction Request Response/0210 and Financial Transaction Advice Response/0230 messages.

**NOTE:** For additional information about ATM access fees in Australia or for cross-border transactions, refer to the *Single Message System Programs and Services* manual.

### For applicable regions/countries, Mastercard convenience fee program for education and government merchants

**NOTE:** For Issuers processing purchase with cash back transactions and responding with a response code of 87 (purchase only, no cash back), the value in DE 28 should be subtracted from the total amount. If there is a currency conversion involved, the value in DE 28 will need to be converted using the conversion factor in DE 10 since DE 28 is only provided in the Acquirer currency.

The Single Message System supports the use of DE 28 (Amount, Transaction Fee) to report separately the convenience fee amount included in the transaction amount. The combined transaction amount and convenience fee amount must be represented in DE 4 (Amount, Transaction).

Issuers must be aware that a convenience fee may be assessed to cardholders.

Debit Mastercard issuers connected to the Single Message System must be prepared to receive the sum of the transaction amount and the convenience fee in DE 4 and the convenience fee amount in DE 28 in Financial Transaction Request/0200 messages.

When a cardholder convenience fee is present in the original Financial Transaction Request/0200 message, issuers must be prepared to return the original convenience fee amount in DE 28 in the Financial Transaction Response/0210 message.

### Values

This data element must contain valid numeric data with an appropriate indicator (C or D) in the first character position.

#### **NOTE:**

For acquirers that are approved to levy ATM and POS transaction fees, this data element must contain the fee amount, and this amount must also be added to the requested amount contained in DE 4 (Transaction Amount).

It is recommended that acquirers test with the Mastercard Network before implementation of this data element.

## DE 29 (Amount, Settlement Fee)

DE 29 (Amount, Settlement Fee) is the transferred fee between the acquirer and the issuer in the currency of DE 5 (Amount, Settlement).

### Attributes

Attribute	Description
Data representation	x+n-8
Data element length	None
Data field	Fixed length, contents of positions 1–9
Subfields	None
Justification	Right-justified with leading zeros for the n-8

**NOTE:** The Single Message System does not use this data element.

## DE 30 (Amount, Transaction Processing Fee)

In some transaction processing systems, DE 30 (Amount, Transaction Processing Fee) can represent the switch fee for the handling and routing of messages in the currency of DE 4 (Amount, Transaction).

### Attributes

Attribute	Description
Data representation	x+n-8
Data element length	None
Data field	Fixed length, contents of positions 1–9
Subfields	None
Justification	Right-justified with leading zeros for the n-8

**NOTE:** The Single Message System does not use this data element.

## DE 31 (Amount, Settlement Processing Fee)

DE 31 (Amount, Settlement Processing Fee) is the fee for handling and routing messages in U.S. dollars.

### Attributes

Attribute	Description
Data representation	x+n-8
Data element length	None
Data field	Fixed length, contents of positions 1–9
Subfields	None
Justification	Right-justified with leading zeros for the n-8

**NOTE:** The Single Message System does not use this data element.

## DE 32 (Acquiring Institution Identification Code)

DE 32 (Acquiring Institution Identification Code) identifies the acquirer (for example, merchant bank) or its agent.

### Attributes

Attribute	Description
Data representation	ISO Standard: n...11; LLVAR Mastercard Standard: n...9; LLVAR
Data element length	2 positions, value = 09
Data field	Variable length, contents of positions 1–9
Subfields	None
Justification	N/A

**NOTE:** ISO Standards define this data element as n...11; LLVAR however the Single Message System defines it as n...9; LLVAR.

### **Usage**

Following is the usage of DE 32 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	P	M
Financial Transaction Request Response/0210	M	P	M
Financial Transaction Advice/0220	M	P	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	P	M
Financial Transaction Advice Response/0230	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	O	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	O	X	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M

### **Application notes**

The length of DE 32 is 9 positions. For processor systems connected to the Mastercard Network this data element contains one of the following:

- A 9-digit Federal Reserve Routing and Transit (R & T) Number that identifies the acquirer or its agent
- A Mastercard assigned Institution ID number of the institution that identifies the acquirer or its agent
- A 9-digit representation of the licensed acquiring ICA in 000XXXXXX format, where X represents ICA when the transaction was acquired on the Dual Message System. These dual-message acquired transactions can be identified by an acquirer processor ID value of 9000000084 or 9000000752 in DE 33 (Forwarding Institution Identification Code).
- The licensed acquiring ICA supplied in the message is for informational purposes only and does not impact settlement processing.

## DE 33 (Forwarding Institution Identification Code)

DE 33 (Forwarding Institution Identification Code) identifies the institution forwarding a Request or Advice message in an interchange system if not the same institution as specified in the DE 32 (Acquiring Institution Identification Code).

### Attributes

Attribute	Description
Data representation	ISO Standard: n...11; LLVAR Mastercard Standard: n...10; LLVAR
Data element length	2 positions, value = 10
Data field	Variable length, contents of positions 1–10
Subfields	None
Justification	N/A

**NOTE:** ISO Standards define this data element as n...11; LLVAR, however the Single Message System defines it as n...10; LLVAR.

### Usage

Following is the usage of DE 33 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	M	P	M
Financial Transaction Request Response/0210	M	P	M
Financial Transaction Advice/0220	M	P	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	P	C
Financial Transaction Advice Response/0230	M	P	M
File Update Request/0302	M	P	M
File Update Request Response/0312	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Acquirer Reversal Advice/0420: acquirer initiated exception	M	P	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	M	P	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M
Administrative Advice/0620: Single Message System initiated	.	X	M
Administrative Advice/0620: processor initiated	M	X	.
Administrative Advice/0620: processor initiated time-based exception	M	P	M
Administrative Advice Response/0630: processor initiated to the Single Message System	M	X	.
Administrative Advice Responses/0630: processor initiated	M	P	M
Administrative Advice/0644	.	X	M
Network Management Request/0800: acquirer or issuer initiated	M	X	.
Network Management Request/0800: system-initiated	.	X	M
Network Management Request Response/0810: acquirer or issuer Initiated	M	X	.
Network Management Request Responses/0810: system initiated	.	X	M
Network Management Advice/0820	.	X	M

### **Application notes**

This data element, along with DE 32 (Acquirer ID Code) and DE 2 (PAN), must be present in all Financial Transaction/02xx, and Reversal/04xx messages. These three data elements must be properly encoded to ensure accurate routing for the original transaction and any subsequent reversals, chargebacks, adjustments, or representments.

Debit Mastercard issuers will receive Financial Transaction/02xx messages with values for Processor ID in addition to 084 to indicate Debit Mastercard in DE 33.

Debit Mastercard issuers will continue to receive only Processor ID value 084 to indicate Debit Mastercard in DE 33 in Reversal Advice/04xx and Financial Transaction Advice/0220 (force post) messages.

Debit Mastercard issuers must be prepared to receive values for Processor ID in Financial Transaction/02xx messages that will not equal the Processor ID value in Reversal/04xx and in Financial Transaction Advice/0220 (force post) messages.

### Values

When present in a message, this data element must contain the processor ID.

#### NOTE:

The processor ID is a ten-digit number of the format: "9000xxxxxx", where the Single Message System-assigned processor ID will be up to the last six digits "xxxxxx".

This data element must always contain a length value of "10" followed by ten characters of numeric data in the associated variable-length data field.

## DE 34 (Primary Account Number, Extended)

---

DE 34 (Primary Account Number, Extended) identifies a customer account or relationship. It is used only when a PAN is longer than 19 digits in length or contains special characters, and therefore cannot be placed into DE 2 (Primary Account Number).

### Attributes

Attribute	Description
Data representation	ns...28; LLVAR
Data element length	2 positions, value = 12-28
Data field	Variable length, contents of positions 1-28
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 35 (Track 2 Data)

---

DE 35 (Track 2 Data) is the information encoded on Track 2 of the card magnetic stripe as defined in ISO 7813, including field separators, but excluding beginning and ending sentinels and Longitudinal Redundancy Check (LRC) characters as defined therein.

### Attributes

Attribute	Description
Data representation	z...37; LLVAR
Data element length	2 positions, value = ...37

<b>Attribute</b>	<b>Description</b>
Data field	Variable length, contents of positions 1-37
Subfields	8
Justification	See "Subfields"

**NOTE:** Since all ATMs must send full and unaltered Track 2 data from the ATM to the issuer, Mastercard recommends that issuers validate the CVC 1 data.

### Usage

Following is the usage of DE 35 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	X	C
Financial Transaction Advice/0220	C	X	C
Financial Transaction Advice/0220: Debit Mastercard Stand-In	C	P	C

### Subfield 1 (Start Sentinel)

DE 35, subfield 1 contains the start sentinel.

#### Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	n-1
Format	Fixed
Justification	N/A

#### Values

<b>Value</b>	<b>Description</b>
Binary 1011	(not transmitted)

## Subfield 2 (Primary Account Number [PAN])

DE 35, subfield 2 contains the Primary Account Number (PAN) in the Track 2 Data.

### Attributes

Attribute	Description
Data representation	n...19
Format	Variable
Justification	N/A

### Values

Issuer Identification number (n-7), Individual account number (n...4-11), and check digit number (n-1).

## Subfield 3 (Field Separator)

DE 35, subfield 3 is the field separator used in Track 2 Data. For more details on this subfield see the Special Notes section at the end of this data element description.

Attribute	Description
Data representation	ans-1
Format	Fixed
Justification	N/A

### Values

Binary 1101 (see special notes section)

## Subfield 4 (Expiration Date)

DE 35, subfield 4 contains the expiration data.

### Attributes

Attribute	Description
Data representation	n-4
Format	Fixed
Justification	N/A

### Values

YYMM format

### Subfield 5 (Extended Service Code)

DE 35, subfield 5 contains the extended service code used in Track 2 Data.

### Attributes

Attribute	Description
Data representation	ans-3
Format	Fixed
Justification	N/A

### Values

Three-digit code is encoded on Track 1 and Track 2 of the magnetic stripe of a card and indicates to a magnetic stripe-reading terminal the transaction acceptance parameters of the card.

See DE 40 in the *IPM Clearing Formats* manual for further information.

### Subfield 6 (Discretionary Data)

DE 35, subfield 6 contains discretionary data.

### Attributes

Attribute	Description
Data Representation	ans...17
Format	Variable
Justification	N/A

### Values

The maximum length of the discretionary data subfield is dependent upon the length of the PAN (used in subfield 2).

## Subfield 7 (End Sentinel)

DE 35, subfield 7 contains the end sentinel.

### Attributes

Attribute	Description
Data representation	n-1
Format	Fixed
Justification	N/A

### Values

Binary 1111 (*not transmitted*)

## Subfield 8 (Longitudinal Redundancy Check [LRC])

DE 35, subfield 8 contains the longitudinal redundancy check for Track 2 Data.

### Attributes

Attribute	Description
Data representation	n-1
Format	Fixed
Justification	N/A

### Values

This data element must contain the hexadecimal digits "0" through "9" and "D" or "=" (the equal sign).

(*not transmitted*)

### Application notes

If any Track 2 data must be created by the Single Message System using Track 1 data, the processors must be prepared to accept any character that would have been present in the Track 1.

Whenever Track 2 data is captured automatically at the point of service, this field must contain whatever is encoded on the magnetic stripe (Track 2) of the card (regardless of whether or not the card has been properly encoded with information in accordance with ISO specifications).

For manually keyed Maestro and Debit Mastercard transactions, the Single Message System builds DE 35 (Track 2 Data) using the DE 2 (Primary Account Number [PAN]) and the DE 14, (Expiration Date) only when Track 2 is not available and the expiration date is valid. If both Track

2 Data and the expiration date are not available or invalid, the Single Message System will not build or include Track 2 Data.

For Debit Mastercard transactions where the acquirer sends DE 45 (Track 1 Data) without DE 35 (Track 2 Data), the Single Message System builds Track 2 from the PAN, field separator, expiration date, service code, and first 13 positions of the discretionary data.

The Single Message System will not include DE 35 (Track 2 Data) for Maestro point-of-sale (POS) transactions unless valid DE 35 or DE 14 (Expiration Date) data is supplied by the acquirer.

In addition, the Single Message System will not include DE 35 for Debit Mastercard POS transactions unless valid DE 35, DE 45, or DE 14 data is supplied by the acquirer.

The Single Message System will not generate DE 35 from other available data, including a generic value of 4912 or 0000 for the expiration date, when the original message does not contain the following:

- Maestro POS—valid DE 14 or DE 35 data
- Debit Mastercard —valid DE 14, DE 35, or DE 45 data

For e-commerce requests that do not contain DE 35, the Single Message System builds Track 2 using DE 2, DE 14 if available, and a Service Code value of 101. E-commerce requests contain DE 22 (Point of Service Entry Mode) value of 81x or a value of 05x with DE 48 subelements 40, 42, and 43 present.

For chip transactions, DE 35 carries data read from the chip as EMV tag 57 (Track 2 Equivalent Data). All ICCs issued by Mastercard customers must support EMV tag 57 (Track 2 Equivalent Data). Since January 2008, the value of the CVC in EMV tag 57 (Track 2 Equivalent Data) on the chip and the CVC value on the physical magnetic stripe must be different.

For MDES tokenized transactions, issuers may opt in through MDES Manager to receive track data in DE 35 (Track 2 Data) on Single Message System transactions.

### **Special notes**

The maximum length of the discretionary data is dependent upon the length of the PAN. For example, if the PAN has a length of 12 digits, the discretionary data may have a maximum length of 17 digits. The overall length of DE 35 cannot be greater than 37 digits.

The field separator character (binary "1101") is represented as the EBCDIC character D. However, because many ATM and POS devices perform non-standard character translation while reading binary coded decimal (BCD)-encoded magnetic stripe data, the EBCDIC character "=" may also be used to represent the field separator character in magnetic stripe data forwarded to the Single Message System.

If the Single Message System must create Track 2 data from Track 1 information, the issuer must be prepared to accept ANY character sent from the acquirer in Track 1 data.

Track 2 data is not present in the 0220 messages for Maestro non-preauthorization, Maestro issuer bound preauthorization completion, or Cirrus transactions. It is present in the issuer

bound 0220 message for "Chip Clearing" 0220 messages, if present in the 0220 message from the acquirer.

**NOTE:** Maestro issuers may request to receive DE 35 in Financial Transaction Advice/0220 completion message for a Maestro preauthorization. However, DE 35 will be present only when supplied by the acquirer in the Financial Transaction Advice/0220 completion (Maestro 0220 Preauthorization) message.

## DE 36 (Track 3 Data)

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DE 36 (Track 3 Data), as represented in the ISO 8583 specification, is the information encoded on Track 3 of the card magnetic stripe as defined in ISO 4909–1986. This includes field separators, but excludes beginning and ending sentinels and Longitudinal Redundancy Check (LRC) characters as defined therein.

### Attributes

Attribute	Description
Data representation	z...104; LLLVAR
Data element length	2 positions, value = ...104
Data field	Variable length, contents of positions 1–104
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 37 (Retrieval Reference Number)

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DE 37 (Retrieval Reference Number) is a document reference number supplied by the system retaining the original source document of the transaction. It is used to assist in locating that source document or a copy thereof.

### Attributes

Attribute	Description
Data representation	an-12
Data element length	None
Data field	Fixed length, contents of positions 1–12

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<b>Attribute</b>	<b>Description</b>
Subfields	2
Justification	See "Subfields"

### **Usage**

Following is the usage of DE 37 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	P	C
Financial Transaction Request Response/0210	C	P	C
Financial Transaction Advice/0220	C	P	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	P	C
Financial Transaction Advice Response/0230	C	P	C
Acquirer Reversal Advice/0420: acquirer initiated	C	P	C
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	C	P	C
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	C
Acquirer Reversal Advice/0420: exception, system initiated	.	X	C
Acquirer Reversal Advice/0420: acquirer initiated exception	O	X	C
Issuer Reversal Advice/0422: exception, system initiated	.	X	C
Issuer Reversal Advice/0422: exception, issuer initiated	O	X	C
Acquirer Reversal Advice Response/0430: system initiated	.	X	C
Acquirer Reversal Advice Response/0430: issuer initiated	C	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	C	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	C

### **Application notes**

This data element is reserved for use by the acquiring institution (or an affiliated merchant organization) for the purpose of recording a document retrieval reference number. The number can be used to locate original cardholder transaction information in subsequent retrieval request or any subsequent chargeback action.

The issuer in all corresponding response messages and in any subsequent chargeback action must return DE 37. The retrieval reference number should be printed on a customer's ATM or POS receipt.

### **Chip data**

Mastercard requires sending this data element for chip transactions (DE 22 = "05x" or "07x") and chip fallback transactions (DE 22 = "80x") as well as contactless magnetic stripe transactions (DE 22 = "91x").

Mastercard recommends the following format for DE 37 for chip transactions (contents are discretionary).

### **Subfield 1 (Transaction Date and Initiator Discretionary Data)**

DE 37, subfield 1 Transaction Date and Initiator Discretionary Data describes the date (MMDD) the transaction is captured at the point-of-service terminal.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	an-7
Data field	Contents of positions 1–7
Justification	Left-justified with trailing zeros

#### **Values**

<b>Value</b>	<b>Description</b>
(MMDD)	If no discretionary data is included, the remaining three positions of this subfield should be zero-filled.

### **Subfield 2 (Terminal Transaction Number)**

DE 37, subfield 2, Terminal Transaction Number describes the sequential number, per terminal.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-5
Data field	Contents of positions 8–12
Justification	Right-justified with leading zeros

### Values

Only numeric data may be present in this subfield. This subfield must contain a unique number that identifies the transaction with a specific POS terminal within a specific 24-hour time period.

Mastercard recommends that this subfield contain the value of the Transaction Sequence Counter (EMV ID 9F41), if available.

## DE 38 (Authorization Identification Response)

DE 38 (Authorization Identification Response) is a transaction response identification code assigned by the authorizing institution.

### Attributes

Attribute	Description
Data representation	ans-6
Data element length	None
Data field	Fixed length, contents of positions 1–6
Subfields	None
Justification	Left-justified with trailing spaces

### Usage

Following is the usage of DE 38 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request Response/0210	C	X	M
Financial Transaction Advice/0220	C	P	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	P	C
Acquirer Reversal Advice/0420: acquirer initiated	C	P	C
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	C	P	C
Acquirer Reversal Advice/0420: time-out induced, system initiated	•	X	C

### Application notes

The issuer processing system may use this data element for authorization tracking information. It is not mandatory for use in the Single Message System; however, Mastercard credit card issuers participating in the program via the Mastercard Network will provide this data element in approved Mastercard ATM transactions that are forwarded to the acquirer processor systems (APS) via the Single Message System.

**NOTE:** The Authorization Code may also be present in any "declined" Financial Transaction Request Response/0210 message.

### Values

Debit Mastercard clearing 0220 messages will contain all six positions from the original authorization response.

Mastercard Stand-In processing will set DE 38 to a six-digit switch serial number.

**NOTE:** Financial Transaction Advice/0220: Debit Mastercard stand-in messages will contain all six positions from the original authorization response. For more information regarding Stand-In Processing refer to the *Single Message System Programs and Services* manual.

## DE 39 (Response Code)

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DE 39 (Response Code) is a code that defines the disposition of a message.

### Attributes

Attribute	Description
Data representation	an-2
Data element length	None
Data field	Fixed length, contents of positions 1–2
Subfields	None
Justification	N/A

### Usage

Following is the usage of DE 39 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request Response/0210	M	P	M

Message	Org	Sys	Dst
Financial Transaction Advice/0220	M	P	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	P	M
Financial Transaction Advice Response/0230	M	P	M
File Update Request Response/0312	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	.	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	.	X	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M
Administrative Advice Response/0630: processor initiated to Single Message System	M	X	.
Administrative Advice Responses/0630: processor initiated	M	P	M
Network Management Request Response/0810: acquirer or issuer initiated	M	X	.
Network Management Request Responses/0810: system initiated	.	X	M

### Application notes

Response codes indicate the disposition of a previous message or indicate approval or denial of a transaction. When an authorization is declined, the response code will indicate the reason for rejection and may indicate an action to be taken by the card acceptor or POS terminal device (for example, to capture the card).

This data element must be present in all response messages. In addition, it will also be present in Financial Transaction Advice/0220 Stand-In messages to indicate that DE 39 was utilized in the response to the original Financial Transaction Request/0200 message.

For File Update Request Response/0312 messages, the response code will indicate whether the account record was successfully updated or the messages resulted in an error.

The Mastercard Network will invoke Stand-In processing, and may subsequently approve the transaction, for participating issuers if a format error is detected on incoming Financial Transaction Request Response/0210 messages for all brands, regardless of the response code provided by the issuer in DE 39.

In addition, the Mastercard Network will invoke Stand-In processing, for issuers that subscribe to Stand-In, and may subsequently approve the transaction, for all brands if a participating issuer responds to a Financial Transaction Request/0200 message with a Financial Transaction Request Response/0210 message with one of the following values in DE 39 (Response Code) that indicates a system error, the transaction was unable to route, or the issuer is unavailable:

- DE 39, value of 80 (Decline: System not available)
- DE 39, value of 91 (Decline: Destination processor [CPS or INF] not available)
- DE 39, value of 92 (Decline: Unable to route transaction)
- DE 39, value of 96 (Decline: System error)

If the issuer does not respond, then the acquirer will receive a Financial Transaction Request Response/0210 message with Response Code 91 (Decline). The issuer will receive an Acquirer Reversal/0420 message from the Single Message System with DE 39 =00 and DE 60, Advice Reason Code = 402, Advice Reason Detail Code = 0090 (Network advice: IPS timeout error not acceptable from acquirer).

For Cirrus and Maestro transactions only, Mastercard will invoke Stand-In processing for response code 80 (System not available), and may subsequently approve the transaction.

For Financial Transaction Advice Response/0230 or Acquirer Reversal Response/0430 messages, the value 10 is not valid for DE 39. The Single Message System will populate a value of 00 (Approved or completed successfully) in DE 39 for Financial Transaction Advice Response/0230 or Acquirer Reversal Response/0430 messages returned to the acquirer for a partial approval transaction.

## Values

These pages provide a list of valid response code values for DE 39.

### 0210 and 0220 messages (excluding Debit Mastercard stand-In transactions)

These are valid response codes for Financial Transaction Request Response/0210 and Financial Transaction Advice/0220 messages.

Code	Response	Description
00	Approve	Approved or completed successfully
01	Decline	Refer to card issuer Valid for e-commerce only
04	Capture	Capture card
05	Decline	Do not honor

<b>Code</b>	<b>Response</b>	<b>Description</b>
10	Approve	Transaction request approved for the partial approval amount
12	Decline	Invalid transaction
13	Decline	<p>Invalid amount</p> <p>For any financial transaction, the transaction amount must not be zero.</p> <p>Automated fuel dispenser (AFD) transactions will be declined when the difference between the preauthorization amount of a transaction and the completed amount of a transaction exceeds USD 1,000.</p>
14	Decline	Invalid card number
15	Decline	<p>Invalid issuer</p> <p>For Mastercard use only</p>
30	Decline	<p>Message format error</p> <p>Debit Mastercard issuers may only use this code if Mastercard sends a message indicating a format error.</p>
41	Capture	Lost card
43	Capture	Stolen card
51	Decline	Insufficient funds
54	Decline	Expired card
55	Decline	Invalid PIN
57	Decline	<p>Transaction not permitted to issuer or cardholder</p> <p>Mastercard recommends that chip issuers use response code "57" to indicate a chip cryptographic error.</p> <p><b>For 0210 transactions</b>, for special Brazil usage involving response code 57, refer to DE 112, subelement 23.</p>
58	Decline	Transaction not permitted to acquirer or terminal
61	Decline	Exceeds withdrawal limit
62	Decline	Restricted card
63	Decline	Error in decryption of PIN block

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<b>Code</b>	<b>Response</b>	<b>Description</b>
65	Decline	Exceeds withdrawal count limits
<b>NOTE:</b>		
Issuers may also use this response code for transaction types other than ATM. Issuers that wish to decline a contactless transaction, or card not present transaction, and obtain a cardholder verification through a second transaction may use this response code.		
Refer to the M/Chip Requirements manual for more details on contactless transactions and how to use response code 65. E-commerce merchants should trigger an authentication using Identity Check Program following an authorization decline with response code 65.		
70	Decline	Invalid transaction; contact card issuer
71	Decline	PIN not changed
75	Decline	Allowable number of PIN tries exceeded
76	Decline	Invalid "To" account specified
77	Decline	Invalid "From" account specified
78	Decline	Invalid account specified  For Single Message System use only
79	Decline	Lifecycle (Mastercard use only)
80	Decline	System not available
82	Decline	Policy (Mastercard use only)
83	Decline	Security (Mastercard use only)
85	NA	Not declined
87	Approved	Purchase amount only, no cash back allowed
89	Decline	PIN unacceptable. Retry.

<b>Code</b>	<b>Response</b>	<b>Description</b>
91	Decline	<p>Destination processor (CPS or INF) not available.</p> <p><b>Single Message System Generated:</b></p> <p><b>Timeout:</b> Authorization Request sent to issuer processor and no response is received by the Single Message System within required timers.</p> <p><b>Issuer processor inoperative:</b> Issuer processor does not logically have an online status with the Single Message System.</p> <p><b>Format error:</b> Issuer processor returns invalid data in the authorization response message/0110/0210.</p> <p><b>Issuer generated:</b></p> <p><b>Issuer processor inoperative:</b> A Single Message System direct connect customers' "downstream issuer processor" is not responding.</p>
92	Decline	Unable to route transaction.
94	Decline	Duplicate transmission detected.
96	Decline	System error

**NOTE:** Response codes from the Financial Transaction Advice/0220 and Acquirer Reversal Advice/0420 messages are stored temporarily in a queue. When the Single Message System formulates the Financial Transaction Advice Response/0230 or Acquirer Reversal Advice Response/0430 message, the Single Message System returns the response code from the queue in the online message. If the acquirer sends a response code 80 or 96, the Single Message System echoes it back to the acquirer.

**NOTE:** Effective 2 November 2021, issuer use of Response Code 05: Do not honor should not exceed 5% of all Mastercard and Maestro card-not-present decline responses. Issuers must not utilize codes 79, 82, or 83. These codes are reserved for Mastercard use only.

#### 0220 messages: Debit Mastercard stand-in

These are valid response codes for Financial Transaction Advice/0220: Debit Mastercard Stand-In messages.

<b>Code</b>	<b>Response</b>	<b>Description</b>
00	Approve	Approved or completed successfully
01	Call Issuer	Refer to card issuer
03	Decline	Invalid merchant
04	Capture	Capture card
05	Decline	Do not honor

<b>Code</b>	<b>Response</b>	<b>Description</b>
08	Approve	Honor with ID
10	Approve	Partial approval
12	Decline	Invalid transaction
13	Decline	Invalid amount
14	Decline	Invalid card number
15	Decline	Invalid issuer
30	Decline	Format error
41	Capture	Lost card
43	Capture	Stolen card
51	Decline	Insufficient funds/over credit limit
54	Decline	Expired card
55	Decline	Invalid PIN
57	Decline	Transaction not permitted to issuer/cardholder
58	Decline	Transaction not permitted to acquirer/terminal
61	Decline	Exceeds withdrawal amount limit
62	Decline	Restricted card
63	Decline	Security violation
65	Decline	Exceeds withdrawal count limit

**NOTE:**

Issuers may also use this response code for transaction types other than ATM. Issuers that wish to decline a contactless transaction, or card not present transaction, and obtain a cardholder verification through a second transaction may use this response code.

Refer to the M/Chip Requirements manual for more details on contactless transactions and how to use response code 65. E-commerce merchants should trigger an authentication using Identity Check Program following an authorization decline with response code 65.

70	Call Issuer	Contact card issuer
71	Decline	PIN not changed
75	Decline	Allowable number of PIN tries exceeded
76	Decline	Invalid/nonexistent "To Account" specified

<b>Code</b>	<b>Response</b>	<b>Description</b>
77	Decline	Invalid/nonexistent "From Account" specified
85	Valid	Not declined.
86	Decline	PIN validation not possible
87	Approved	Purchase amount only, no cash back allowed
88	Decline	Cryptographic failure
89	Decline	Unacceptable PIN: transaction declined: retry
91	Decline	Authorization System or issuer system inoperative
92	Decline	Unable to route transaction
94	Decline	Duplicate transaction detected
96	Decline	System error

### 0230 messages

These are valid response codes for Financial Transaction Advice Response/0230 messages.

<b>Code</b>	<b>Response</b>	<b>Description</b>
00	:	Approved or completed successfully.
30	:	Format error.
80	:	System not available.
96	:	System error or system timer expired on expected CPS Message.

### 0312 messages

These are valid response codes for File Update Request Response/0312 messages.

<b>Code</b>	<b>Response</b>	<b>Description</b>
00	:	Issuer File Update action completed successfully.
25	:	Unable to locate record on file (no action taken). Valid for Debit Mastercard only
26	:	Record not in active status.
27	:	File update field edit error. Valid for Debit Mastercard only

<b>Code</b>	<b>Response</b>	<b>Description</b>
28	:	Record permanently deleted.
29	:	Delete request less than 540 days.
30	:	Format error
40	:	Requested function not supported. Valid for Debit Mastercard only
63	:	Security violation. Valid for Debit Mastercard only
80	:	Duplicate add; action not performed. Valid for Debit Mastercard only
96	:	System error

#### **Acquirer and system initiated Reversal/0420 messages**

These are valid response codes for Acquirer Reversal Advice/0420 (acquirer and system initiated) messages.

<b>Code</b>	<b>Response</b>	<b>Description</b>
00	Approve	Approved for requested amount
10	Approve	Transaction request approved for the partial approval amount
87	Approve	Purchase amount only, no cash back allowed

#### **Timeout-induced reversal/0420 messages**

These are valid response codes for Acquirer Reversal Advice/0420 timeout-induced (acquirer and system initiated) messages.

<b>Code</b>	<b>Response</b>	<b>Description</b>
00	:	Required value

#### **0430, 0432 messages**

These are valid response codes for Acquirer Reversal Advice Response/0430 and Issuer Reversal Advice Response/0432 messages.

<b>Code</b>	<b>Response</b>	<b>Description</b>
00	:	Approved or completed successfully.
30	:	Format error.
80	:	System not available.
96	:	System error or system timer expired on expected CPS Message.

### **0630 messages (for reference only)**

These are valid response codes for Administrative Advice Response/0630 messages (used for reference only).

<b>Code</b>	<b>Response</b>	<b>Description</b>
00	:	Approved or completed successfully.
30	:	Format error.
80	:	System not available.
96	:	System error or system timer expired on expected CPS Message.

### **0810 messages**

These are valid response codes for Network Management Request Response/0810 messages.

<b>Code</b>	<b>Response</b>	<b>Description</b>
00	:	Approved or completed successfully.
96	:	System error or system timer expired on expected CPS Message.

## DE 40 (Service Restriction Code)

DE 40 (Service Restriction Code) identifies geographic or service availability.

### Attributes

Attribute	Description
Data representation	an-3
Data element length	None
Data field	Fixed length, contents of positions 1–3
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 41 (Card Acceptor Terminal Identification)

DE 41 (Card Acceptor Terminal Identification) is a unique code identifying the terminal at the Card Acceptor Location. It is mandatory for initial requests, and must be returned, unchanged, in a subsequent response message.

### Attributes

Attribute	Description
Data representation	ans-8
Data element length	None
Data field	Fixed length, contents of positions 1–8
Subfields	None
Justification	Left-justified with trailing spaces

**NOTE:** The Single Message System defines this data element as ans-8 and removes special characters before sending the data element to the 250-byte Batch Data File, but allows up to 10 positions for future growth. The 250-byte Batch Data File (in the Financial [FREC]/Non-financial [NREC] Record) adds trailing spaces to fill the 10 positions (an-10).

### **Usage**

Following is the usage of DE 41 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	P	C
Financial Transaction Request Response/0210	M	P	M
Financial Transaction Advice/0220	M	P	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	P	C
Financial Transaction Advice Response/0230	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	O	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	O	X	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M

### **Application notes**

The Single Message System uses this data element to identify specific terminal devices of acquiring institutions or merchant point of service (POS) systems. The terminal owner assigns each terminal ID. It must be unique within the terminal-owning organization.

When this data element is included within an originating financial transaction/02xx or reversal/04xx message, it must be returned in the corresponding response message.

The Single Message System does not perform edits on this data element.

DE 41 is not required for MDES pre-digitization messages. Refer to the Mastercard Digital Enablement Service section in the Program and Service Formats chapter of this manual for more information.

## DE 42 (Card Acceptor Identification Code)

DE 42 (Card Acceptor Identification Code) identifies the card acceptor, which defines the point of the transaction in both local and interchange environments.

### Attributes

Attribute	Description
Data representation	ans-15
Data element length	None
Data field	Fixed length, contents of positions 1–15
Subfields	None
Justification	Left-justified with trailing spaces

### Usage

Following is the usage of DE 42 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	X	C
Financial Transaction Advice/0220	C	X	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	P	C
Acquirer Reversal Advice/0420: acquirer initiated	.	X	O
Acquirer Reversal Advice/0420: acquirer initiated exception	.	X	O
Acquirer Reversal Advice/0420: time-out-induced, acquirer initiated	.	X	O
Acquirer Reversal Advice/0420: time-out-induced, system initiated	.	X	O
Acquirer Reversal Advice/0420: exception, system initiated	.	X	O
Administrative Advice/0620: Single Message System initiated	.	C	C

### Application notes

For POS transactions, the Single Message System uses DE 42 for the identification number of the merchant that owns the POS terminal. The Single Message System forwards DE 42 to issuers for all transactions regardless of type or brand.

For ATM transactions, ATM acquirers have the option of using DE 42 to identify either the terminal owner's name or the Card Acceptor Terminal Identification which is the unique terminal ID as assigned by the terminal owner (same information that is present in DE 41).

If an ATM acquirer chooses to use DE 42 for Card Acceptor Terminal Identification, the ATM acquirer then must provide both the terminal owner name AND terminal location (the "doing business as" name of the location a terminal resides) in DE 43 subfield 1.

POS acquirers must use DE 42 to identify the Card Acceptor Terminal Identification.

Issuers have the option to receive DE 42 (Card Acceptor Identification Code) in Acquirer and System Reversal Advice/0420 messages. Issuers that want to receive DE 42 in Acquirer and System Reversal Advice/0420 messages must register and test with Mastercard. Issuers that want to participate should contact their Customer Implementation Specialist.

If DE 42 is blank for either a Financial Transaction Request/0200 or a Financial Transaction Advice/0220 message, the Single Message System forwards DE 42 data to issuers using the name from the MDS Institution Definition File (IDF).

This information is entered on the *Institution Definition File* (Form 323), or the *Institution Routing Table* (Form 338).

**NOTE:** Mastercard is closely monitoring the data included in DE 42 to help ensure that all acquirers are submitting transactions that adhere to these specifications.

## DE 43 (Card Acceptor Name and Location)

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DE 43 (Card Acceptor Name/Location) contains the name and location of the card acceptor that defines the point of interaction in both local and interchange environments (excluding ATM and Card-Activated Public Phones).

### Attributes

Attribute	Description
Data representation	ans-40
Data element length	None
Data field	Contents of subfields 1–5
Subfields	5
Justification	See "Subfields"

### Usage

Following is the usage of DE 43 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	P	M
Financial Transaction Advice/0220	M	P	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	P	C
Acquirer Reversal Advice/0420: acquirer initiated	.	X	O
Acquirer Reversal Advice/0420: acquirer initiated exception	.	X	O
Acquirer Reversal Advice/0420: time-out-induced, acquirer initiated	.	X	O
Acquirer Reversal Advice/0420: time-out-induced, system initiated	.	X	O
Acquirer Reversal Advice/0420: exception, system initiated	.	X	O

### **Application notes**

The Single Message System uses this data element to satisfy national regulatory requirements concerning merchant identification within Financial Transaction/02xx messages. It is a required data element within Financial Transaction Request/0200 and Financial Transaction Advice/0220 messages.

If an ATM acquirer does not utilize DE 42 (Card Acceptor Identification Code) to identify the name of the entity that owns the terminal, the acquirer must use DE 43, subfield 1 to provide the name of the entity that owns the terminal and the terminal location (that is: the "doing business as" name of the location a terminal resides). If DE 43 contains blanks, the Single Message System will decline the transaction with DE 39 (Response Code), value of 30. DE 44 (Additional Response Data) will indicate that DE 43 is blank.

POS acquirers must include in DE 43, subfield 1, the name and location of the merchant that owns the POS terminal. DE 43, subfield 1 must contain the name and location for Maestro POS and Debit Mastercard POS transactions.

Issuers have the option to receive DE 43 (Card Acceptor Name and Location) in Acquirer and System Reversal Advice/0420 messages. Issuers that want to receive DE 43 in Acquirer and System Reversal Advice/0420 messages must register and test with Mastercard. Issuers that want to participate should contact their Customer Implementation Specialist.

Mastercard will provide a value of **DEBIT TRANSACTION** in DE 43, subfield 1 (ATM Owner Name and/or Address, or POS Merchant Name) when the data is not provided by the acquirer.

**For United States region only:** If the card acceptor is a Staged Digital Wallet Operator (DWO) that obtained authorization for the transaction from the issuer at the time of the consumer's purchase of products or services from a retailer, then the Staged DWO name must appear in conjunction with the retailer's name. DE 43, subfield 1, positions 1–7 must contain the full or abbreviated Staged DWO name, followed by the asterisk symbol and the retailer name, unless the retailer is identified with a card acceptor business code (MCC) in the 3xxx series. If the retailer is an airline identified with an MCC in the 3000 to 3299 range, then only the abbreviated

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airline name must appear. If the retailer is a car rental agency identified with an MCC in the 3351 to 3441 range or a lodging establishment identified with an MCC in the 3501 to 3999 range, then only the car rental agency or lodging establishment retailer name must appear.

The following table describes the subfields in DE 43.

### Values

Customers must select all State, Province, and Country Codes from the *Quick Reference Booklet*.

If a country code is used, it must be the ISO 3-character alphabetic (not numeric) Country Code. If used, a State or Province Code should be right-justified in this subfield with one leading blank space.

Delimiter fields must be the **blank** character. This is required because most cardholder statement rendering systems in operation today are not designed to perform printer output editing or formatting of the acquirer-supplied data contained within DE 43. The acquirer must pre-format DE 43 exactly as they want it printed on the cardholder's statement.

Customers must not use all zeros, all low values (binary zeros), or all high values (binary Fs) when formatting DE 43.

### Subfield 1 (ATM Owner Name and/or Location, or POS Merchant Name [or Payment Facilitator and Sub-Merchant Information, if applicable])

DE 43, subfield 1 (ATM Owner Name and/or Location, or POS Merchant Name—Payment Facilitator & Sub-Merchant Information) describes either the ATM owning institution name and/or ATM location (that is, the "doing business as" name of the location at which the terminal resides) or the POS Merchant or sub-Merchant Name.

#### ATM acquirers

If an ATM acquirer chooses to use DE 42 for Card Acceptor Terminal Identification, the ATM acquirer then must provide both the terminal owner name AND terminal location (the "doing business as" name of the location at which the terminal resides) in DE 43 subfield 1.

#### Subfield 1: ATM owner name and/or location

For ATM acquirers, subfield 1 describes the ATM owning institution name and/or ATM location.

#### POS acquirers

POS acquirers must include in DE 43, subfield 1, the name of the merchant that owns the POS terminal and terminal address.

#### Subfield 1: POS merchant name (or payment facilitator and sub-merchant information, if applicable)

For POS acquirers, subfield 1 describes the POS merchant name and address.

<b>Attributes</b>	<b>Description</b>
Data Representation	ans-22
Data Field	Contents of positions 1-22
Justification	Left-justified with trailing spaces

**NOTE:** This subfield cannot be blank. For Debit Mastercard transactions if data is not provided in this subfield by the acquirer, Mastercard will populate the field with "DEBIT TRANSACTION".

<b>Value</b>	<b>Description</b>
<b>ATM</b>	ATM owning institution name and/or ATM location.
ATM Owner Name and/or Location	If an ATM acquirer chose to use DE 42 for Card Acceptor Terminal Identification, the ATM acquirer then must provide both the terminal owner name AND terminal location in subfield 1.  If the ATM acquirer chose to use DE 42 to identify the terminal owner name, only the ATM location is required in this subfield.
<b>POS</b>	POS Merchant name must be present.
Merchant Name	

**NOTE:** This subfield cannot be blank. For Debit Mastercard transactions if data is not provided in this subfield by the acquirer, Mastercard will populate the field with "DEBIT TRANSACTION".

The Card Acceptor Name should contain the same name as imprinted or printed on the transaction information document (TID)—the name most recognizable to the cardholder.

Acquirers must identify a merchant chain/franchise by providing either DE 48, subelement 32 (Mastercard Assigned ID) and DE 110 (Additional Data-2), subelement 1 (Merchant ID) with the ID assigned to the chain/franchise, or by providing the chain/franchise name in DE 43, subfield 1 (Card Acceptor Name). If the merchant is part of a chain/franchise and the cardholder would not recognize the chain/franchise name, acquirers must provide the recognizable name in DE 43, subfield 1 and must provide DE 48 subelement 32 and DE 110, subelement 1 to reflect the chain or franchise identification. Whenever an acquirer has been provided a Mastercard Assigned ID for a merchant customer, they must identify that merchant by providing DE 48, subelement 32.

The Card Acceptor Name must contain the chain/franchise merchant name at the beginning of this subfield. If a chain is listed in the 3000–3999 range of card acceptor business codes (MCCs), use the exact chain name. If the merchant is part of a chain/franchise and the cardholder would not recognize the chain/franchise name, populate the recognizable name in DE 43, subfield 1, and provide DE 48 subelement 32 (Mastercard Assigned ID) as well as DE 110, subelement 1. (A

chain/franchise merchant is one of multiple merchant outlets selling the same line of goods or services, or authorized to sell a company's goods or services in a particular place.) This mandate will not be associated with any edits in the Single Message System; instead, it will be monitored and edited in the Data Integrity Monitoring Program.

The Card Acceptor Name should contain a unique identifier at the end of this subfield following the Card Acceptor Name/DBA Name if the merchant has more than one property in a city.

**NOTE:** The Card Acceptor Name can be abbreviated or shortened while maintaining the ability for a cardholder to recognize the name.

**NOTE:** The acquirer must ensure that the name of the payment facilitator appears in DE 43, subfield 1 in conjunction with the name of the sub-merchant. The payment facilitator name, in full or in abbreviated form, must be three, seven, or 12 characters in length, followed by an asterisk and the sub-merchant name. DE 43, subfields 3 and 5 must contain the location information of the sub-merchant, not the payment facilitator.

### **Subfield 2 (Space/surcharge-free indicator)**

DE 43, subfield 2 space indicates a space character.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-1
Data field	Contents of position 23
Justification	N/A

#### **Values**

<b>Value</b>	<b>Description</b>
A	Allpoint Surcharge Free Alliance
Delimiter (space)	

### **Subfield 3 (Card Acceptor City [or sub-merchant information, if applicable])**

DE 43, subfield 3 (Card Acceptor City—Sub-Merchant Information) indicates the city of the merchant.

#### **Attributes**

**NOTE:** For customers in Brazil, only this subfield is Merchant State.

Attribute	Description
Data representation	ans-13
Data field	Contents of positions 24-36
Justification	Left-justified with trailing spaces

#### Values

ATM or Merchant location city.

### Subfield 4 (Space)

DE 43, subfield 4 space indicates a space character.

#### Attributes

Attribute	Description
Data representation	ans-1
Data field	Contents of position 37
Justification	N/A

#### Values

Delimiter (space)

### Subfield 5 (Card Acceptor State [U.S.], Province Code [Canada and Canadian territories], or Country Code [or Sub-Merchant Information, if applicable])

DE 43, subfield 5 (Card Acceptor State [U.S.], Province Code [Canada and Canadian territories], or Country Code—Sub-Merchant Information) indicates the ATM or merchant location.

#### Attributes

**NOTE:** For customers in Brazil only, this subfield is the country code.

Attribute	Description
Data representation	a-3
Data field	Contents of positions 38-40
Justification	Right-justified, blank-filled

### Values

For the U.S. and U.S. territories: ATM or Merchant location state code. This data must be right-justified, blank-filled, and in upper case.

**Or,**

For Canada and Canadian territories: ATM or Merchant location province code. This data must be right-justified, blank-filled, and in upper case.

**Or,**

For all other countries: ATM or Merchant location country code. This data must be the three-character alphabetic country code.

## DE 44 (Additional Response Data)

The Single Message System uses DE 44 (Additional Response Data) field to provide other supplemental data (for example, a telephone number) that may be required in response to an authorization or other type of transaction request.

### Attributes

Attribute	Description
Data representation	ans...25; LLVAR
Data element length	2 positions, value = 3-25
Data field	Variable length, contents of positions 1-25
Subfields	None
Justification	N/A

### Usage

Following is the usage of DE 44 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request Response/0210	C	X	C
Financial Transaction Advice/0220	C	X	C
Financial Transaction Advice Response/0230	C	X	C
File Update Request Response/0312	C	X	C
Acquirer Reversal Advice Response/0430: system initiated	.	X	C

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Acquirer Reversal Advice Response/0430: issuer initiated	C	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	C	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	C
Administrative Advice Response/0630: processor initiated to Single Message System	C	X	.
Administrative Advice Responses/0630: processor initiated	C	P	C
Network Management Request Response/0810: acquirer or issuer Initiated	C	X	.
Network Management Request Responses/0810: system initiated	.	X	C

### **Application notes**

This data element may be present in any response message when the DE 39 (Response Code) is set to 30, indicating that a Format Error condition was detected in the preceding message. The first three bytes of DE 44, if present, will contain a three-digit numeric value indicating the ISO data element number where the Single Message System encountered the format error.

**Table 35: DE 44 (Additional Response Data Subelement): DE 44 Format in a 04xx online previous day exception response**

The following table presents a description of the format of DE 44 in a 04xx Online Previous Day Exception Response. Format is: CCNNNN000.

<b>Format name</b>	<b>Position</b>	<b>Attribute</b>	<b>Format</b>	<b>Description</b>
Reject Code	1–2	n-2	CC	Indicates the two digit reject code that supports errors 01–98. This position will contain 99 if the reject code is greater than 99.
Error Code	3–6	n-4	NNNN	Indicates the four digit reject code
Filler	7–9	n-3	000	Filler
Error Description	8–25	an-18		

**Table 36: Additional response data: DE 44 error codes**

If the Single Message System denies the issuer exception, which is indicated by a Response Code of "30" in DE 39, the reason for the denial is supplied in DE 44. Where possible, the ISO data element in error is also present in DE 44. The following table contains a partial listing of error codes and the corresponding description.

<b>Error code</b>	<b>Error message</b>
0003	VISA did not respond to request (time-out)

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<b>Error code</b>	<b>Error message</b>
0004	VISA did not respond to request (time-out)
0005	VISA rejected adjustment request
0006	Unable to process request
0007	DE 95 format error, or Field position format error xxx, or Unspecified reason
0009	Same settlement day reversal only permitted from Switch
0010	Original and current settlement dates are the same
0011	Only the Switch may enter an adjustment after reason 07
0012	Error reading reversal history file
0013	Unable to process request: queue error
0014	Invalid reason code: no history on file
0015	Reason 04, duplicate transaction may only follow Reason 04 or 10
0016	Reason code entered restricted to Switch entry only
0017	Reason code 10, ATM failure, invalid as second adjustment
0018	Invalid reason code: must use reason code 04
0019	Representment not allowed for closed account
0020	New amount and Org amount can't be equal
0021	Debit reversals not allowed after 45 days
0022	Chargeback for transaction beyond 65 days of original settlement date
0023	Chargeback for NSF or closed account beyond 20 days of adjustment
0024	Chargeback not allowed within 10 days of reversal
0025	Reason 13 not allowed 30 days beyond Chargeback
0026	Representment can only follow a valid Chargeback code
0027	Representment amount cannot be greater than Chargeback amount
0028	Representment not allowed for NSF
0029	Chargeback not allowed within five days of last settlement date
0030	Chargeback not allowed after 180 days
0031	Mismatch on PAN compare
0032	Contact name and phone required for ATM processor
0033	Contact name and phone required for Card processor

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<b>Error code</b>	<b>Error message</b>
0034	Chargeback not allowed; no reversal on history file
0035	Credit amount greater than completed amount
0036	Transaction record is not a financial record
0037	Invalid reversal reason code
0038	New amount exceeds USD 200 over original requested amount
0039	Processor number error
0040	Chargeback not permitted following previous adjustment
0041	New amount greater than both original and previous reversal amounts
0042	Chargebacks for INET issuers are only entered by the Switch
0043	Record contains non-adjustable processing code
0044	Only Switch may perform this type of adjustment
0046	Invalid adjustment amount
0047	Original completion amount equals zero
0048	Original completion amount equals zero
0049	Adjustment amount cannot be zero
0050	Record contains non-adjustable response code
0051	Reason 13 not allowed 45 days beyond Chargeback
0052	Chargebacks not allowed after 120 days
0053	Chargeback Reason Code 95 not valid for debit adjustment within first 10 days—use Reason Code 17
0054	Maximum number of adjustments have already been processed
0055	Transactions with zero as completed amount may not be adjusted
0056	Original settlement date required : format is MMDDYY
0057	Numeric Switch serial number required
0058	Reclassification denied. No EBF on file
0059	Reclassification denied. No ECF on file
0060	Reclassification denied. Acquirer not a Europay customer.
0061	Reclassification denied. No CEF on file
0062	Representation reversals only permitted from MasterCom
0063	Invalid fulfillment date
0064	Reversal not allowed for ATM Deposit transactions or chargebacks 53 or 70

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<b>Error code</b>	<b>Error message</b>
0065	Fulfillment date greater than 10 days after representment date
0066	Representment reversals only applicable to CI, MS, or MC brands
0067	Must contain fulfillment date or reversal code 19
0068	Fulfillment accepted. Reversal History File updated
0069	Transaction blocked
0070	Fee/File error message for 70
0071	Fee/File error message for 70
0072	ATM deposit adjustment resulting in debit must be entered within five days
0073	ATM deposit chargeback must be based on adjustment
0074	Prior reversal event must have detail code 20, 28, 53 or 70
0075	Reclassification denied. No Acquiring Institution ID or Forwarding Institution ID table on file
0076	Reclassification denied. No business service agreement on file
0077	Reclassification denied. No acquirer BIN file on file
0078	Reclassification denied. No issuer BIN file on file
0079	Reason code 20, 24 thru 30 only valid ATM deposit
0080	ATM deposit adjustment resulting in debit must be entered within 45 days
0081	No previous event to reverse
0082	Usage Code 1 only valid for reason code 82
0083	Previous event must be a chargeback
0084	Reversal can not be last event
0085	Only 1 chargeback reversal allowed per transaction
0086	Reversal must be full amount of chargeback
0087	New Amount exceeds \$10,000 over requested amount
0089	Pending record still exist. No Chargebacks allowed.
0091	Reason code not allowed for Mastercard Cash transactions
0092	Pending reversal found, cannot settle Chargeback Reversal
0093	Pending reversal found, representment not allowed.
0094	Previous event must be an Arbitration Chargeback
0095	Only 1 Arbitration Chargeback Reversal allowed per transaction
0096	Chargeback prohibited on reversal presentment

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<b>Error code</b>	<b>Error message</b>
0097	Chargeback prohibited after Arbitration Chargeback

**Table 37: Debit Mastercard error codes: DE 44**

<b>Error code</b>	<b>Error message</b>
0100	Reason Code 10 no longer available: Use 08
0101	Reason Code 36/39/43 no longer available: Use 37
0102	Reason code 32/51 no longer available: Use 31
0103	Reason code 52/58 no longer available: Use 35
0104	Chargeback allowed only after representment with reason code 02
0105	Chargeback requires reason code 01 when no fulfillment exists
0106	Chargeback not allowed beyond 120 days of transaction date
0107	Chargeback not allowed beyond 60 days of transaction date
0108	Chargeback not allowed beyond 45 days of transaction date
0109	Chargeback not allowed beyond 60 days of retrieval request
0110	Chargeback not allowed within 30 days of outstanding retrieval request
0111	Chargeback not allowed with reason code 01 after a fulfillment
0112	First chargeback for this transaction was previously processed
0114	DOC Ind (1) required. Please enter
0115	DOC Ind not compatible with usage code. Please re-enter
0119	Usage Code 3 only valid following transaction type 2: no history
0120	Only one adjustment usage code 3 allowed per transaction
0121	Usage code 3 only valid following a transaction type 2
0122	Usage Code 3 not allowed when previous usage code 2 and DOC IND 4
0124	Usage Code 3 not allowed beyond 45 days of second presentment
0125	Usage Code 3 must have same DOC IND as second presentment: Re-enter
0126	Only one retrieval request with Usage Code 6 allowed per transaction
0127	Usage Code 6 valid only as first transaction type on file
0130	Reason code 01 or 02 requires a retrieval request (usage code 6)
0131	Representment not allowed prior to 10 days of fulfilled document
0132	Illegible item 06 (other) requires explanation. Please enter

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<b>Error code</b>	<b>Error message</b>
0133	Illegible Item code invalid. Re-enter
0134	Region code required for foreign transactions
0135	Reason required. Please enter
0136	Data required in at least one field, enter
0137	Both authorization and floor limit required
0138	Select non-imprinted slip or enter valid reason code
0139	Invalid new reason code entered. Please enter valid code
0140	Julian day (ddd) of entry date (dddy) invalid. Please re-enter
0141	Julian year (Y) of entry date (DDDY) invalid. Please re-enter
0142	Julian day (ddd) of transaction date (dddy) invalid. Please re-enter
0143	Julian year (Y) of transaction date (DDDY) invalid. Please re-enter
0144	Listing Reason Code invalid. Please re-enter
0145	Must enter transaction currency amount
0146	Acquirer Reference Number required. Please enter
0147	Acquirer reference number must be 23 digits: numeric
0150	Invalid month. Enter 1-12
0151	Bulletin Number required. Please enter
0152	Telephone Transaction Number required. Please enter
0154	Reason code invalid (valid codes rendered services 1-7). Please enter
0155	Enter (7) for no show code 1-7 or enter cancel number
0156	Acquirer Reference number required. Please enter
0157	No Show Code invalid (valid codes no show 1-7). Please enter
0158	Only one choice permitted. Please select one
0159	Reason code 24 no longer available; use 07
0160	Reason Code not acceptable, re-enter
0161	Advice code invalid for online adjustment
0162	Reason code requires a retrieval request (usage code 6)
0163	Reason code for CIRRUS chargeback invalid
0164	Reason code for MAESTRO chargeback invalid
0165	Reason code 74 not valid for PIN based transactions
0167	Reason code invalid for ATM transaction

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<b>Error code</b>	<b>Error message</b>
0168	Reason code 56 No longer available-use 53
0169	Adjustment can only be equal or 2 times original amount
0170	Count field and total amount must be blank when not a multiple transaction item.
0171	Total chargeback must be numeric. please enter
0172	New amount field must be all zeros to validate
0173	Reason code 01 or 02 arbitration chargeback not allowed
0175	Error writing reversal history file, Error = xxx
0176	Reason code xx not allowed when merchant supports UCAF
0177	Reason code xx not allowed when merchant supplies UCAF
0178	Invalid Compliance Program: Received: xxxxxx
0179	Usage code blank when reason code indicates usage code required or Usage code is invalid. Transaction Declined.
0186	Adjustment amount exceeds limit for this transaction
0187	Adjustment amount is below limit for this transaction
0188	Reason code 37 is not allowed for Card Activated Terminal (CAT) level 1 or CAT level 3
0191	Retrieval request not allowed for Mastercard generated Payment Transaction
0193	Reason code 63 is not allowed for CAT Level 1, 2, or 3.
0194	Original and local currency exponents do not match
0195	Reason Code not allowed after Healthcare retrieval
0196	The transaction amount does not meet the minimum required limit.
0197	Adjustment not possible on trailing activity item prior to conversion
0198	Exception not allowed on MCE preauth transaction
0199	Exception not allowed on MCE converted BIN
0200	Exception not allowed on EBT transaction
0203	Reason Code xx requires new cash back amount must equal original.
0204	Chargeback was attempted more than the expected allowable days from the original transaction.
0205	Cash back adjustment must have new cash back amount

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<b>Error code</b>	<b>Error message</b>
0206	Edit error on cash back adjustment: (possible messages are:) <ul style="list-style-type: none"> <li>• CB (Chargeback) missing</li> <li>• Proc(essing) Code incorrect</li> <li>• Amount Type incorrect</li> <li>• Currency incorrect</li> <li>• New CB (Chargeback) amount spaces</li> <li>• EB (Error Bit) = 58, SB (Sub-Bit/Subfield) = x</li> <li>• CB (Chargeback) amount &gt; completed</li> <li>• EB (Error Bit) = xx, CB (Chargeback) = x</li> </ul>
0207	Reason Code for Mobile Device chargeback invalid
0208	Reason code for Mobile Device chargeback invalid for issuer domain
0209	Reason code for Mobile Device chargeback invalid for acquirer domain
0210	FSE SSN must be all zeros for settle date over 180 days or MD brand
0211	Reason code for Accel/Exchange chargeback invalid
0212	Reason 69 arbitration chargeback only for Accel/Exchange
0213	Reason 69 arbitration chargeback may only follow reason 13
0214	Arbitration chargeback not permitted after 20 days
0215	Advice Reason not valid for advice detail code
0216	Processor number is not active, Adjustment not allowed
0217	Reason code entered restricted to issuers
0218	Reason code entered restricted to acquirers
0219	Reason code not allowed for bridged transactions
0220	Only one adjustment reversal allowed per transaction
0221	Adjustment not allowed with prior reversal
0222	Reason code not allowed 10 days beyond adjustment
0223	Previous event must be an adjustment
0224	Previous event must be a representment
0225	Reversal must be full amount of adjustment
0226	Only user adjustment can be reversed
0227	Only one representment reversal allowed per transaction
0228	Cannot process sameday as nextday: prior adjustment exists
0229	Unauthorized override of FNS service
0230	Reserved for Mastercard use

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<b>Error code</b>	<b>Error message</b>
0231	MCE Automated CB, invalid US conversion rate
0232	MCE Representment Partial or Reversal: DO NOT AUTOMATE
0233	MCE automated difference has prior adjustment
0234	MCE automated reversal has prior adjustments
0235	MCE automated reversal has prior non 10 adj
0236	MCE automated reversal has prior non-switch adj
0237	MCE automated with invalid message type (1422)
0238	MCE automated with invalid reason code
0239	MCE automated from invalid source
0240	Reserved for Mastercard use
0241	Exception item not allowed
0242	Chargeback not allowed on ATM blocked bypassed transaction
0243	ATM representment must occur within XX business days of chargeback
0244	Reserved for Mastercard use
0245	POS representment must occur within XX business days of chargeback
0246	Second Representment Reversal is allowed only for Super User
0247	Third Representment Reversal is not allowed for any User
0248	Curr code for representment reversal must be same as representment
0249	FNS Date Exceeded
0250	FNS Counter Exceeded
0251-0259	Reserved for Mastercard use
0260	Too many adjustments exist
0261	RHF file could not be opened
0262	RHF record could not be selected
0263	RHF record could not be read
0264	RHF record could not be updated
0265	RHF record could not be written
0266	Unknown transaction type
0267	Out of memory error
0268	Reason code entered valid for Acq processor use only: Re-enter
0269	Acquirer interchange invalid

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<b>Error code</b>	<b>Error message</b>
0270	Message reason code invalid for this chargeback (edit 1)
0271	Message reason code invalid for this chargeback (edit 2)
0272	Message reason code invalid for this chargeback (edit 3)
0273	Message reason code invalid for this chargeback (edit 4)
0274	Message reason code invalid for this chargeback (edit 5)
0275	Message reason code invalid for this chargeback - Contactless
0276	Message reason code invalid for this chargeback - AFD EDIT
0277	New amount exceeds (deposit limit)* over original requested amount  *will display current deposit limit amount on file
0278	Colombia Edit error, prevent a partial chargeback

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**Table 38: DE 44 sample values in 0312 file update response**

When DE 44 exists in a File Update Request Response/0312, it contains the data element (in the File Update Request/0302 message) in which the error exists. If the error is in DE 120 of the 0302 message, the next three digits provide more specific information to identify the error condition. See the following table for examples of an error in DE 120 for a file update message.

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<b>Value</b>	<b>Description</b>
120001	The code has one of the following meanings: <ul style="list-style-type: none"> <li>• PAN is not numeric</li> <li>• BIN in PAN is not numeric</li> <li>• BIN does not belong to message initiator</li> <li>• Check digit of PAN is incorrect</li> <li>• PAN is not on the Account file</li> </ul>
120002	Entry reason is not one of the following: P, L, S, X, O, F, V, G, C, U
120005	PIN length not numeric or spaces
120006	Entry reason V and Premium limit is not numeric

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**Table 39: DE 44 values for 0210 responses to electronic commerce certificate requests**

For e-commerce cardholder certificate requests, the issuer must send a telephone number in DE 44 of the 0210 message when the response code is equal to 01. If the response code is equal to 85, then the issuer must send delay date and time in DE 44 of the 0210 message. The following table describes these values in DE 44.

<b>Response code DE 39</b>	<b>Attribute</b>	<b>Value</b>
01	ans...25	DE 44 contains the telephone number for "call issuer" response codes.
85	ans...10	DE 44 contains the date and time after which a cardholder may reapply for a certificate.

**NOTE:** When DE 39 is equal to 30, DE 44 is optional; DE 44 will not always be present to indicate the source location of a format error. If response code 30 is not generated by the Single Message System, DE 44 may or may not be present in the Financial Transaction Request Response/0210 message to the acquirer.

## DE 45 (Track 1 Data)

DE 45 (Track 1 Data) is the information encoded on Track 1 of a bankcard magnetic stripe as defined in ISO 7813, including field separators. However, this excludes beginning and ending sentinels and LRC characters, as defined therein.

### Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	ans...76; LLVAR
Data element length	2 positions, value = ...76
Data field	Variable length, contents of positions 1-76
Subfields	11
Justification	See "Subfields"

### Usage

Following is the usage of DE 45 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	P	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	P	C

### Application notes

DE 45 is used in point-of-service (POS) applications where the POS terminal equipment reads and transmits Track 1 data in lieu of or in addition to the Track 2 information encoded on the card magnetic stripe.

When DE 45 is received, as a part of a financial authorization request (Debit Mastercard only), the Single Message System will build DE 35 (Track 2 Data) from DE 45 if valid data is not present in DE 35. DE 45 will also be sent, when present.

If any Track 2 data must be created by the Single Message System using Track 1 data, the processors must be prepared to accept any character that would have been present in the Track 1.

For MDES tokenized transactions, issuers may opt in through MDES Manager to receive track data in DE 45 (Track 1 Data) on Single Message System transactions.

### Special notes

The field separator character (binary "1101") is represented as the EBCDIC character "D". However, because many ATM and POS devices perform non-standard character translation while reading binary coded decimal (BCD)-encoded magnetic stripe data, the EBCDIC character "=" may also be used to represent the field separator character in magnetic stripe data forwarded to the Single Message System.

## Subfield 1 (Start Sentinel)

DE 45, subfield 1 contains the start sentinel for the Track 1 Data.

### Attributes

Attribute	Description
Subfield ID	1
Subfield length	2
Data representation	n-1
Format	Fixed
Justification	N/A

### Values

(not transmitted)

## Subfield 2 (Format Code)

DE 45, subfield 2 contains the format code for the Track 1 Data.

### Attributes

Attribute	Description
Data representation	an-1
Format	Fixed
Justification	N/A

### Values

Literal character "B"

## Subfield 3 (Primary Account Number [PAN])

DE 45, subfield 3 contains the Primary Account Number (PAN) for Track 1 Data.

### Attributes

Attribute	Description
Data representation	n...19
Format	Variable
Justification	N/A

### Values

Issuer Identification number (n-7), Individual account number (n...4-11), and check digit number (n-1).

## Subfield 4 (Field Separator)

DE 45, subfield 4 contains a field separator for Track 1 Data.

### Attributes

Attribute	Description
Data representation	ans-1
Format	Fixed
Justification	N/A

### Values

Binary 1101

### Subfield 5 (Cardholder Name)

DE 45, subfield 5 contains the cardholder name on the Track 1 Data.

### Attributes

Attribute	Description
Data representation	ans...2-26
Format	Variable
Justification	N/A

### Values

Name of the cardholder on the account.

### Subfield 6 (Field Separator)

DE 45, subfield 6 contains a field separator for Track 1 Data.

### Attributes

Attribute	Description
Data representation	ans-1
Format	Fixed
Justification	N/A

### Values

Binary 1101

### Subfield 7 (Expiration Date)

DE 45, subfield 7 contains the expiration date of the Track 1 Data.

### Attributes

Attribute	Description
Data representation	ans-4
Format	Fixed

Attribute	Description
Justification	N/A

#### Values

YYMM format

### Subfield 8 (Extended Service Code)

DE 45, subfield 8 contains the extended service code of the Track 1 Data.

#### Attributes

Attribute	Description
Data representation	ans-3
Format	Fixed
Justification	N/A

#### Values

Three-digit code that indicates the type of card (such as integrated circuit card, proprietary card, or international card).

See DE 40 in the *IPM Clearing Formats* manual for further information.

### Subfield 9 (Discretionary Data)

DE 45, subfield 9 contains discretionary data on Track 1 Data.

#### Attributes

Attribute	Description
Data representation	ans...24
Format	Variable Length
Justification	N/A

#### Values

Balance of available digits not to exceed total track length of 79 characters.

### Subfield 10 (End Sentinel)

DE 45, subfield 10 contains the end sentinel for Track 1 Data.

#### Attributes

Attribute	Description
Data representation	n-1
Format	Fixed
Justification	N/A

#### Values

(not transmitted)

### Subfield 11 (Longitudinal Redundancy Check [LRC])

DE 45, subfield 11 contains the longitudinal redundancy check for Track 1 Data.

#### Attributes

Attribute	Description
Data Representation	n-1
Format	Fixed
Justification	N/A

#### Values

(not transmitted)

### DE 46 (Expanded Additional Amounts)

DE 46 (Expanded Additional Amounts) provides supplemental data to support additional amounts.

#### Attributes

Attribute	Description
Data representation	ans...999; LLLVAR
Data element length	None
Data field	Variable length, contents of positions 1-999

Attribute	Description
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

#### Usage

The Single Message System reserves this data element for future definition and use.

### DE 47 (Additional Data [National])

DE 47 (Additional Data [National]) is reserved for national organizations to define data unique to country applications.

#### Attributes

Attribute	Description
Data representation	ans..999; LLLVAR
Data element length	None
Data field	Variable length, contents of positions 1-999
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

#### Usage

This data element is reserved for future definition and use by appropriate national standards organizations.

## DE 48 (Additional Data)

DE 48 (Additional Data) is reserved for use based on product type.

### Attributes

Attribute	Description
Data representation	ans...999; LLLVAR
Data element length	3 positions, value = 001–999
Data field	Variable length
Subelements	45
Justification	See "Subelements"

### Usage

Following is the usage of DE 48 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	X	C
Financial Transaction Request Response/0210	C	P	C
Financial Transaction Advice/0220	O	X	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	X	C
Acquirer Reversal Advice/0420: acquirer initiated	O	X	C
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	•	X	C
Acquirer Reversal Advice/0420: exception, system initiated	•	X	C
Acquirer Reversal Advice/0420: acquirer initiated exception	•	X	C
Issuer Reversal Advice/0422: exception, system initiated	•	X	C
Issuer Reversal Advice/0422: exception, issuer initiated	•	X	C
Network Management Request/0800: acquirer or issuer initiated	C	X	•
Network Management Request/0800: system-initiated	•	X	C
Network Management Request Response/0810: acquirer or issuer Initiated	C	X	•
Network Management Request Responses/0810: system initiated	•	X	C

Message	Org	Sys	Dst
Network Management Advice/0820	.	X	C

### Application notes

DE 48 provides other supplemental data in a message when a specific ISO-designated data element is not available. It is a free-format, variable-length alphanumeric data element that may be used for multiple purposes. This data element's content may vary by program and service.

### Special notes

The following conditions apply:

Issuers and acquirers must be able to send and receive all DE 48 subelements. Responding to DE 48 subelements is conditional, or optional, per individual subelement.

Responding to DE 48 subelements may be dependent on brand, purpose of the request, and conditional to the individual program or service agreement between the Single Message System and the issuer.

### Transaction category code (TCC)

If the first character in DE 48 is an **alphabetic** character, the Single Message System reads that character as the transaction category code (TCC). Acquirers should send a TCC = Z for ATM transactions if other DE 48 subelements are present or other values for POS transactions as defined in the *Quick Reference Booklet*.

Refer to the *Quick Reference Booklet* for other TCC values.

If the first character in DE 48 (TCC) is not present (missing) or is present and contains a "space character" then the Single Message System processes it as not being provided by the acquirer. Therefore, following the rules below, the Single Message System forwards the message to the issuer with a space (hexadecimal 40 in EBCDIC) or a derived TCC value in the first character of DE 48 when required.

Inclusion of the TCC received from the acquirer in DE 48 of the Financial Transaction Request/0200 request, into the outbound Financial Transaction Request/0200 message sent by the Single Message System to the issuer, adheres to the following rules:

- The Single Message System will send the acquirer-supplied Transaction Category Code in DE 48 for each non-ATM Financial Transaction Request/0200, Acquirer Reversal Advice/0420, and Financial Transaction Advice/0220 message. If the acquirer does not provide a valid Transaction Category Code in the non-ATM Financial Transaction Request/0200, Acquirer Reversal Advice/0420, and Financial Transaction Advice/0220 messages, the Single Message System will determine the correct value, and will insert it in the first position of DE 48.
- If DE 48 subelements are present in an ATM Financial Transaction Request/0200, Acquirer Reversal Advice/0420, Financial Transaction Advice/0220 message, the Single Message

System will insert a value of Z in the first position. If there are no other DE 48 subelements present in an ATM transaction, the TCC will not be sent to the issuer.

**NOTE:** Cirrus purchases are considered non-ATM transactions; therefore, non-ATM inclusion rules for TCC will be applicable for Cirrus transactions.

### Subelement encoding scheme

DE 48 consists of encoded subelements. Except for the TCC, each subelement begins with a two-byte ID **and** an associated two-byte length indicator. The subelements do not need to be in any particular order or sequence within DE 48. Customers **must** be able to send and receive all subelements available within DE 48.

**NOTE:** This is the encoding scheme if subelements exist in transactions.

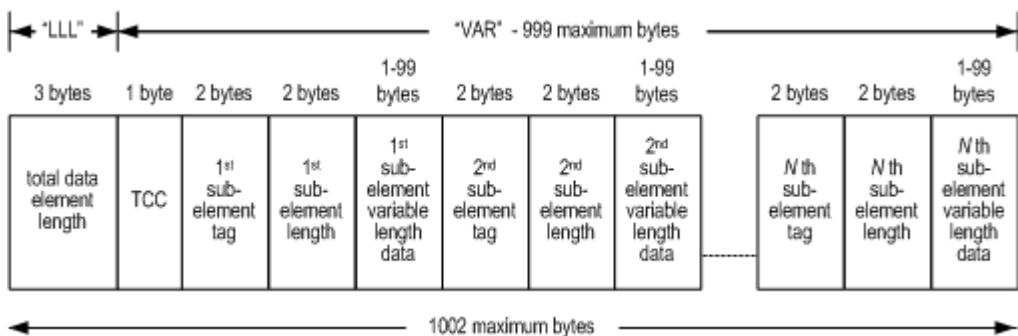
The first two bytes of each subelement must contain a ID in the range 00–99 to specify the type of DE 48 subelement. Mastercard universally defines values 00–69 for use by all programs and services. Values 70–99 are defined for use within individual programs and services only; individual program and service requirements dictate the use and content of the DE 48 subelement.

The second two bytes of each subelement must contain a length indicator in the range 01–99.

The overall length of the DE 48 is specified in its first three bytes (the "LLL" portion of the data element). The overall length of DE 48 is restricted to 999 bytes to accommodate practical operational limitations.

This diagram illustrates the construction of the entire DE 48 as well as subelements that may exist within it.

**Figure 5: Subelements of DE 48**



## List of DE 48 subelements

DE 48 subelements are listed in numeric order. Subelements specific to a brand service or program are clearly indicated in the subelement title or description or both.

<b>Subelement ID</b>	<b>Subelement name</b>	<b>Data representation</b>
11	Key Exchange Data Block (Double-Length Keys)	an-54
11	Key Exchange Data Block (Triple-Length Keys)	an-70
17	Authentication Indicator	n-1
19	Fraud Notification Information	an...23
21	Acceptance Data (Single Message)	n...11; LLVAR
22	Multi-Purpose Merchant Indicator	ans...21; LLVAR
23	Payment Initiation Channel	an-2
25	Mastercard Cash Program Data	ans...14
26	Wallet Program Data	an-3
27	Transaction Analysis	an...97
28	Cardless ATM Order ID	an-10
29	Additional POS Terminal Locations	an-1
30	Token Transaction Identifier	ans...64, LLVAR
32	Mastercard Assigned ID	an-6
33	PAN Mapping File Information	an...36
34	Dynamic CVC 3 Application Transaction Counter (ATC) Information	an-11
35	Contactless Device Request Response	an-1
37	Additional Merchant Data	ans-56
38	Account Category	an-1
39	Account Data Compromise Information	ans-30
40	Electronic Commerce Merchant/Cardholder Certificate Serial Number	n...40
41	Electronic Commerce Certificate Qualifying Information	ans...95
42	Electronic Commerce Indicators	n-7
43	Universal Cardholder Authentication Field (UCAF)	ans...32
43	Digital Secure Remote Payment Universal Cardholder Authentication Field (UCAF)	ans-28; (base 64 encoded)
48	Mobile Program Indicators	ans...73

<b>Subelement ID</b>	<b>Subelement name</b>	<b>Data representation</b>
49	Time Validation Information	n-15
52	Transaction Integrity Class	n-2
54	Ancillary Service Charges	an...84; LLVAR
56	Security Services Additional Data for Issuers	an...99; LLVAR
59	Original Switch Serial Number	n-9
61	POS Data, Extended Condition Codes	n-5
63	Trace ID	ans-15
64	Transit Program	n-4
65	Terminal Compliant Indicator	n-2
66	Authentication Data	ans-45; LLVAR
67	MoneySend Information	ans...99; LLVAR
69	Trace ID of Authorization Advice	ans...99; LLVAR
70	Implied Decimal	n-5
71	On-behalf Service (OBS)	ans...40
72	Issuer Chip Authentication	b...16
74	Additional Processing Information	an...30
75	Fraud Assessment Prediction Information	an...32
76	Mastercard Electronic Transaction Indicator	a-1
77	Transaction Type Identifier	an-3
79	Chip CVR/TVR Bit Error Results Listing	an....50
80	PIN Service Code	a-2
81	Maestro PIN-less Program Indicator	an-1
82	Address Verification Service Request	n-2
83	Address Verification Service Response	an-1
84	Merchant Advice Code	an-2
87	Card Validation Code Result	an-1
88	Magnetic Stripe Compliance Status Indicator	an-1
89	Magnetic Stripe Compliance Error Indicator	an-1
90	Lodging and Auto Rental Indicator	an-1
92	CVC 2 Value	n-3
93	Airline Ticket Number	ans-15

<b>Subelement ID</b>	<b>Subelement name</b>	<b>Data representation</b>
94	Program Participation Indicator	ans...28
95	Mastercard Promotion Code	an-1
98	Mastercard Corporate Fleet Card ID/Driver Number	n-6
99	Mastercard Corporate Fleet Card Vehicle Number	ans-15

## Subelement descriptions

These tables provide formats and descriptions for the subelements in DE 48. The subelement sequence does not have to be in the order of ID value. For example, subelement 11 does not have to precede subelement 40, which does not have to precede subelement 41, and so on.

**NOTE:** DE 48 is a free-format, variable-length alpha numeric with special spaces data element that may be used for multiple purposes. This data element's content may vary by program and service and may contain additional or supplemental information required to process transactions. Therefore, issuers and acquirers should ensure their systems are capable of receiving all possible values and data sent in DE 48, and its subelements. Responses to such data is conditional based on the individual program or service agreement with Mastercard.

## Subelement 09 (Virtual Card Number Data)

DE 48, subelement 09 (Virtual Card Number Data) is used to provide the VCN data required by the issuers for processing MDES token transactions.

### Attributes

<b>Attribute</b>	<b>Value</b>	<b>Description</b>
Subelement ID	09	Virtual Card Number Data
Subelement length	02	
Data representation	an...99, LLVAR	
Data field	Contents of subfields 1-3	
Number of subfields	3	Subfield 01 (Virtual Card Number Indicator)  Subfield 02 (Virtual Card Number)  Subfield 03 (Virtual Card Number Expiration Date)

### **Usage**

Usage shows whether the field is mandatory, conditional, optional, or system-provided in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Authorization Request Response/0200	.	X	C
Authorization Advice/0220: forcepost/stand-in advice/denied advice	.	X	C
Reversal Advice/0420: acquirer-initiated exception	.	X	C

### **Subfield 01 (Virtual Card Number Indicator)**

DE 48, subelement 09, subfield 01 (Virtual Card Number Indicator) provides the virtual card number indicator information to the issuer.

#### **Attributes**

<b>Attribute</b>	<b>Value</b>	<b>Description</b>
Subfield ID	01	
Subfield length	01	Two positions
Data representation	an-1	
Data field		Contents of subfield 01
Justification	N/A	

#### **Values**

V = Virtual card number

### **Subfield 02 (Virtual Card Number)**

DE 48, subelement 09, subfield 02 (Virtual Card Number) provides the virtual card number associated with the MDES token to the issuer.

#### **Attributes**

<b>Attribute</b>	<b>Value</b>	<b>Description</b>
Subfield ID	02	
Subfield length	12-19	Two positions
Data representation	n...19, LLVAR	
Data field		Contents of subfield 02

---

<b>Attribute</b>	<b>Value</b>	<b>Description</b>
Justification	N/A	

### **Subfield 03 (Virtual Card Number Expiration Date)**

DE 48, subelement 09, subfield 03 contains the VCN expiration date.

#### **Attributes**

<b>Attribute</b>	<b>Value</b>	<b>Description</b>
Subfield ID	03	
Subfield length	04	Two positions
Data representation	n-4; format YYMM	
Data field		Contents of subfield 03
Justification	N/A	

#### **Application notes**

DE 48, subelement 09, subfield 3 will not be present in Financial Transaction Advice/0220 messages, which are clearing advices from a Dual Message acquirer, just as DE 48, subelement 33, subfield 03 is not present in these messages today for non-tokenized VCN transactions.

### **Subelement 11 (Key Exchange Data Block [Double-Length Keys])**

Processors must expect the following subfield formatting for Network Management/0820 message used in Key Exchange Data Block sequences.

Upon receipt of a Network Management Advice/0820 message from the Single Message System, processors may begin to use the new working key delivered in the Network Management Request/0800 message.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	11
Subelement Length	n-2	54
Data Representation	an-54	

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Number of Subfields	5	Subfield 1–Key Class ID Subfield 2 (Key Index Number) Subfield 3 (Key Cycle Number) Subfield 4 (PIN Encryption Key [PEK]) Subfield 5 (Key Check Value)

### **Subfield 1 (Key Class ID)**

DE 48, subelement 11, subfield 1 contains the Key Class ID for the Key Exchange Data Block (Double-Length Keys).

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	an-2
Data field	Contents of positions 1–2
Justification	N/A

#### **Values**

<b>Value</b>	<b>Description</b>
PK	(PIN Key)

### **Subfield 2 (Key Index Number)**

DE 48, subelement 11, subfield 2 contains the Key Index Number for the Key Exchange Data Block (Double-Length Keys).

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-2
Data field	Contents of positions 3–4
Justification	N/A

### Values

Value	Description
00	(Constant value for the Single Message System)

### Subfield 3 (Key Cycle Number)

DE 48, subelement 11, subfield 3 contains the Key Cycle Number for the Key Exchange Data Block (Double-Length Keys).

### Attributes

Attribute	Description
Data representation	n-2
Data field	Contents of positions 5–6
Justification	N/A

### Values

00–99

### Subfield 4 (PIN Encryption Key [PEK])

DE 48, subelement 11, subfield 4 contains the PIN Encryption Key (PEK) for the Key Exchange Data Block (Double-Length Keys).

### Attributes

Attribute	Description
Data representation	an-32
Data field	Contents of positions 7–38
Justification	N/A

### Values

Hex characters 0–9 and A–F. Contains the hexadecimal representation of the 64 bits of the new encryption key, encrypted under the current communications key.

### **Subfield 5 (Key Check Value)**

DE 48, subelement 11, subfield 5 contains the Key Check Value for the Key Exchange Data Block (Double-Length Keys).

#### **Attributes**

Attribute	Description
Data representation	an-16
Data field	Contents of positions 39–54
Justification	N/A

#### **Values**

The key check value consists of the first four hexadecimal characters (0–9, A–F) of the calculated check value followed by spaces.

### **Subelement 11 (Key Exchange Data Block [Triple-Length Keys])**

Processors must expect the following subfield formatting for Network Management/0820 message used in Key Exchange Data Block sequences.

Upon receipt of a Network Management Advice/0820 message from the Single Message System, processors may begin to use the new working key delivered in the Network Management Request/0800 message.

#### **Attributes**

Attribute	Description	Value
Subelement ID	n-2	11
Subelement length	n-2	70
Data representation	an-70	
Number of subfields	5	Subfield 1—Key Class ID Subfield 2 (Key Index Number) Subfield 3 (Key Cycle Number) Subfield 4 (PIN Encryption Key [PEK]) Subfield 5 (Key Check Value)

### **Subfield 1 (Key Class ID)**

DE 48, subelement 11, subfield 1 contains the Key Class ID for the Key Exchange Data Block (Triple-Length Keys).

#### **Attributes**

Attribute	Description
Data representation	an-2
Data field	Contents of positions 1-2
Justification	N/A

#### **Values**

Value	Description
PK	(PIN Key)

### **Subfield 2 (Key Index Number)**

DE 48, subelement 11, subfield 2 contains the Key Index Number for the Key Exchange Data Block (Triple-Length Keys).

#### **Attributes**

Attribute	Description
Data representation	n-2
Data field	Contents of positions 3-4
Justification	N/A

#### **Values**

Value	Description
00	(Constant value for the Single Message System)

### **Subfield 3 (Key Cycle Number)**

DE 48, subelement 11, subfield 3 contains the Key Cycle Number for the Key Exchange Data Block (Triple-Length Keys).

#### **Attributes**

Attribute	Description
Data representation	n-2
Data field	Contents of positions 5–6
Justification	N/A

#### **Values**

00–99

### **Subfield 4 (PIN Encryption Key [PEK])**

DE 48, subelement 11, subfield 4 contains the PIN Encryption Key (PEK) for the Key Exchange Data Block (Triple-Length Keys).

#### **Attributes**

Attribute	Description
Data representation	an-48
Data field	Contents of positions 7–54
Justification	N/A

#### **Values**

Hex characters 0–9 and A–F. Contains the hexadecimal representation of the 64 bits of the new encryption key, encrypted under the current communications key.

### **Subfield 5 (Key Check Value)**

DE 48, subelement 11, subfield 5 contains the Key Check Value for the Key Exchange Data Block (Triple-Length Keys).

#### **Attributes**

Attribute	Description
Data representation	an-16
Data field	Contents of positions 55–70

---

<b>Attribute</b>	<b>Description</b>
Justification	N/A

### Values

The key check value consists of the first four hexadecimal characters (0–9, A–F) of the calculated check value followed by spaces.

### Subelement 17 (Authentication Indicator)

This subelement is defined by the Single Message System and is passed to the issuer to indicate that the transaction qualified for the Authentication service.

#### Attributes

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	17
Subelement length	n-2	01
Data representation	n-1	
Number of subfields	N/A	

#### Usage

Following is the usage of subelement 17 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C
Financial Transaction Request Response/0210	.	X	C
Financial Transaction Advice/0220: acquirer-generated	.	X	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	.	X	C
Financial Transaction Advice Response/0230	.	X	C

#### Values

<b>Value</b>	<b>Description</b>
1	Transaction qualified for Authentication Service Type 1

---

<b>Value</b>	<b>Description</b>
2	Transaction qualified for Authentication Service Type 2

### **Application notes**

Authentication Service Type 1 applies to designated cards within an account range that are participating in the Cardholder Authentication Service and identified by DE 23 (Card Sequence Number) value 01x where 1 indicates the participation in the service, and the numeric value in "x" distinguishes among separate cards having the same PAN in DE 2. If the account range is registered for Service Type 1, then DE 23 should be present.

Authentication Service Type 2 applies to all cards within an account range and does not carry a special formatting/designation in DE 23.

DE 48, subelement 17 is only populated based on the presence of the biometric authentication. To be present, DE 55, subelement 9F10, CVR byte1, bit1 must be value 1 (Successful) and byte2, bit2 must be value 1 (Biometric).

Mastercard will only populate DE 48, subelement 17 with an authentication indicator if the biometric authentication is successful.

### **Subelement 19 (Fraud Notification Information)**

DE 48, subelement 19 contains the data necessary to provide acquirers with the date of the second fraud-related chargeback, as well as an accurate count of total fraud-related chargebacks related to the same PAN and expiration date.

Subfields 1 and 2 are sent by Mastercard to the acquirer as part of the fraud-related chargeback to indicate to the acquirers their representment rights. Both of these subfields will be sent by Mastercard only on or after the second fraud-related chargeback has occurred on the account.

Subfield 3 is sent by the acquirer on representments going to the issuer, to let the issuer know they are receiving a representment based on the information provided by the Fraud Notification System (identified by means of the value "FNS").

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	19
Subelement length	n-2	2 positions, value = 16 or 23
Data representation	an...23; LLVAR	

---

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Number of subfields	3	Subfield 1—Fraud Notification Service Date  Subfield 2—Fraud Notification Service Chargeback Counter  Subfield 3—Fraud Notification Service Representation Rights Indicator
Justification	See "Subfields"	

---

### **Usage**

Following is the usage of subelement 19 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Acquirer Reversal Advice/0420: exception, system initiated	.	X	C
Acquirer Reversal Advice/0420: acquirer-initiated exception	C	.	C
Issuer Reversal Advice/0422: exception, system initiated	.	X	C
Issuer Reversal Advice/0422: exception, issuer-initiated	C	.	C

### **Application notes**

When a First/Second chargeback is received from the issuers with the fraud related reason codes such as 70 and 74 (For Single Message System to Single Message System transactions) and 37, 40, 63 and 70 (for Single Message Debit Mastercard branded transactions), FNS Blocking is applied on each chargeback that exceeds the FNS criteria (FNS Date and FNS counter) set in the system. Chargeback is blocked if either or both of the following condition matches:

- Original transaction settlement date is greater than FNS Date from FNS Service reply; DE 44, Debit Mastercard Error Code 0249 (FNS Date Exceeded).
- FNS Service reply for FNS Count is greater than FNS counter criteria (of 15 counts) in aggregate for the above mentioned qualifying fraud related charge back reason code: DE 44, Debit Mastercard Error Code 0250 (FNS Counter Exceeded).

Accepting or rejecting a reversal chargeback depends on the corresponding original chargeback status. If the original chargeback was accepted, then the corresponding reversal chargeback will also be accepted without validating FNS counter and FNS date criteria. If the original chargeback was rejected, then corresponding reversal chargeback will also be rejected without validating FNS counter and FNS date criteria. The FNS date and counter is updated for all Single Message System transactions regardless of the reject/accept due to the edit.

When the FNS request fails to obtain the FNS (date and counter) information, the chargeback gets accepted and processed. Rather than rejecting, these chargebacks are accepted and forwarded; this is a rare scenario in which the FNS criteria is exceeded and FNS data is not responded on time. The issuer receives a notification message via response message when blocking is applied on ineligible chargebacks. For online transactions, a response is sent via Issuer Reversal Advice Response/0432—Exception, System Initiated. For Single Message Transaction Manager transactions, the response message is displayed on the Single Message Transaction Manager screen.

### **Subfield 1 (Fraud Notification Service Date)**

Subfield 1 contains the date of the second fraud-related chargeback on the account.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Values</b>
Subfield ID	n-2	01
Subfield length	n-2	06
Data representation	n-6; format YYMMDD	
Data field	Contents of subfield 1	
Justification	N/A	

### **Subfield 2 (Fraud Notification Service Chargeback Counter)**

Subfield 2 contains the total number of fraud-related chargebacks processed for the same PAN and expiration date (including the current chargeback).

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Values</b>
Subfield ID	n-2	02
Subfield length	n-2	02
Data representation	n-2	
Data field	Contents of subfield 2	
Justification	Right-justified, leading zeros	

#### **Values**

00–99

**NOTE:** Acquirers must be aware that DE 48, subelement 19, subfield 2 (Fraud Notification Service Counter) may contain a value of 00 (Service was unable to be performed). In this case, the acquirer may call their Customer Operations Support Representative and request a "Fraud Notification Service Lookup." The acquirer must provide the Fraud Notification Service data associated with the specific chargeback: PAN, Expiration Month, Expiration Year (CCYY), Chargeback Settlement Date, and Chargeback Switch Serial Number (if the Chargeback Switch Serial Number is not available, then provide the Original Switch Serial Number). The correct Fraud Notification Service date and counter will be provided back to the requestor within three to five business days of the request for a Fraud Notification Service Lookup.

### **Subfield 3 (Fraud Notification Service Second Presentment Rights Indicator)**

DE 48, subelement 19, subfield 3 indicates to the issuer that the acquirer is representing the fraud-related chargeback due to information provided by the Fraud Notification Service. The acquirer provides the value of "FNS."

#### **Attributes**

Attribute	Description	Values
Subfield ID	n-2	03
Subfield length	n-2	03
Data representation	an-3	
Data field	Contents of subfield 3	
Justification	N/A	

#### **Values**

Valid value is: FNS

**NOTE:** Issuers must prepare to receive DE 48, subelement 19, subfield 3 (Fraud Notification Second Presentment Rights Indicator) in the Acquirer Reversal Advice/0420—Exception, System Initiated and Acquirer Reversal Advice/0420—Acquirer-Initiated Exception messages, in response to fraud-related chargeback activity.

### **Subelement 21 (Acceptance Data)**

DE 48, subelement 21 (Acceptance Data) indicates the merchant terminal's capability to support specific programs and services.

#### **Attributes**

Attribute	Description	Value
Subelement ID	n-21	Acceptance Data
Subelement Length	n-2	2

---

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Data representation	n...11; LLVAR	
Data field		Contents of subfields
Number of subfields	2	Subfield 1 (mPOS Acceptance Device Type) Subfield 2 (Additional Terminal Capability Indicator)

---

### Usage

Following is the usage of subelement 21 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Advice/0200	C	.	C
Financial Transaction Advice/0220—Debit Mastercard Stand-In	C	.	C
Financial/Non Financial Transaction Advice/0220	.	X	C

### Values

See Subfield.

### Application Notes

The subelement should be provided to indicate the merchant terminal's capabilities in supporting specific programs and services.

### Subfield 1 (mPOS Acceptance Device Type)

DE 48, subelement 21, subfield 01 (mPOS Acceptance Device Type) identifies the type of device used by the merchant as the terminal for accepting mPOS transactions. This subfield is required for all MPOS terminals.

### Attributes

<b>Attribute</b>	<b>Description</b>
Subfield ID	01
Subfield length	2
Data representation	n-1
Data field	Contents of subfield 1

---

<b>Attribute</b>	<b>Description</b>
Justification	N/A

### Values

<b>Value</b>	<b>Description</b>
0	Dedicated mPOS terminal with PCI compliant dongle (with or without key pad)
1	Off-the-shelf mobile device
2–9	Reserved for future use

### Subfield 2 (Additional Terminal Capability Indicator)

DE 48, subelement 21, subfield 2 (Additional Terminal Capability Indicator) identifies Mastercard Consumer Presented QR and barcode terminal capabilities. This subfield is optional. Customers that choose to submit or process tokenized Mastercard Consumer Presented QR transactions are expected to support this subfield.

### Attributes

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subfield ID	n-2	02
Subfield length	n-2	02
Data representation	n...2; LLVAR	
Data field	Contents of positions 1–2	
Justification	N/A	
	Position 1	Mastercard Consumer Presented QR Capability Support Indicator
	Position 2	Mastercard Consumer Presented Barcode Capability Support Indicator

### Values

<b>Value</b>	<b>Description</b>
0	Not supported
1	Supported

### **Subfield 2 (Valid Position 1 and Position 2 Value Combinations)**

<b>Valid Combinations</b>	<b>QR Capability</b>	<b>Barcode Capability</b>
00	Not supported	Not supported
01	Not supported	Supported
10	Supported	Not supported
11	Supported	Supported

### **Subelement 22 (Multi-Purpose Merchant Indicator)**

DE 48, subelement 22 (Multi-Purpose Merchant Indicator) may be used for multiple purposes needed to identify the transaction and may contain data that is unique to programs, services, or other specifics about the transaction.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subelement ID	22
Subelement length	02
Data representation	ans...29; LLVAR
Data field	Contents of subfields 1–5
Number of subfields	5
Justification	See subfields

#### **Usage**

Following is the usage of subelement 22 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	X	C
Financial Transaction Request Response/0210	C	X	C
Financial Transaction Advice/0220	O	X	C
Financial Transaction Advice/0220 – Debit Mastercard Stand-In	C	X	C
Acquirer Reversal Advice/0420	O	X	C
Issuer Reversal Advice/0422	C	X	C

### Application notes

Single Message System will remove DE 48, subelement 22, subfields 01, 02, and 03 if received in a Financial Transaction Request Response/0210 message from an issuer.

Refer to the subfields contained within this subelement for more details regarding their usage and to obtain the identifier supporting programs, services, or other specifics about the transaction.

### Subfield 1 (Low-Risk Merchant Indicator)

DE 48, subelement 22 (Multi-Purpose Merchant Indicator), subfield 01 (Low-Risk Merchant Indicator) is used by acquirers to identify why a low-risk transaction did not use Strong Customer Authentication (SCA) to prevent an unnecessary decline by an issuer in a European Economic Area (EEA) country.

### Attributes

Attribute	Description
Subfield ID	01
Subfield length	2
Data representation	an-2
Data field	Contents of subfield 01
Justification	N/A

### Usage

Following is the usage of subelement 22, subfield 01 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	O	X	C

### Values

Value	Description
01 =	Merchant initiated transaction
02 =	Acquirer low-fraud and transaction risk analysis
03 =	Recurring payment
04 =	Low-value payment

---

<b>Value</b>	<b>Description</b>
05 =	Strong customer authentication (SCA) delegation
06 =	Secure corporate payment
07 =	Authentication outage exception

### Application notes

Subfield 01 values enable acquirers to provide issuers with an indicator to identify Financial Transaction Request/0200 messages originating from merchants that use an acquirer exemption or other reasons for not applying SCA on transactions. This data will assist issuers in determining whether to approve or decline the transaction and to justify to Local Competent Authorities the reason why the issuers did not apply SCA on the transaction as required under PSD2.

### Subfield 2 (Single Tap Indicator)

DE 48, subelement 22 (Multi-Purpose Indicator), subfield 02 (Single Tap Indicator) allows acquirers to indicate that the merchant's point of interaction environment is capable of supporting single tap processing.

### Attributes

<b>Attribute</b>	<b>Description</b>
Subfield ID	02
Subfield length	2
Data representation	an-1
Data field	Contents of Subfield 02
Justification	N/A

### Usage

Following is the usage of subelement 22, subfield 02 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	X	C

### **Values**

<b>Value</b>	<b>Description</b>
1 =	Merchant capable of single tap processing

### **Application notes**

Value 1 must be used if the POI supports the service; otherwise, the subfield is not present.

### **Subfield 3 (Response to PIN Request)**

DE 48, subelement 22 (Multi-Purpose Merchant Indicator), subfield 03 (Response to PIN Request) allows acquirers to indicate that the transaction contains an intentionally duplicated (replayed) Application Transaction Counter (ATC) value, within the context of a single tap transaction.

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	03
Subfield length	2
Data representation	an-1
Data field	Contents of Subfield 03
Justification	N/A

### **Usage**

Following is the usage of subelement 22, subfield 03 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	X	C

### **Values**

<b>Value</b>	<b>Description</b>
1 =	Transaction contains an intentionally duplicated (replayed) ATC value.

### Application notes

Value 1 must be used if the issuer requests a PIN in single tap mode; otherwise, the subfield is not present.

### Subfield 4 (Issuer PIN Request in a Single Tap Mode)

DE 48, subelement 22 (Multi-Purpose Merchant Indicator), subfield 04 (Issuer PIN Request in a Single Tap Mode) allows issuers based in EEA countries to request a PIN within the context of a single tap transaction scenario.

### Attributes

Attribute	Description
Subfield ID	04
Subfield length	2
Data representation	an-1
Data field	Contents of Subfield 04
Justification	N/A

### Usage

Following is the usage of subelement 22, subfield 04 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request Response/0210	C	X	C

### Values

Value	Description
1 =	Issuer requests PIN in single tap mode.

### Application notes

Value 1 must be used if the issuer requests a PIN in single tap mode; otherwise, the subfield is not present.

When the issuer participates in the On-Behalf Contactless Counters Service, Mastercard will populate subfield 04 in Financial Transaction Request Response/0210 messages and forward to the acquirer when: The issuer supports duplicate ATC; a card present transaction is declined

with response code 65 (Decline: Exceeds withdrawal count limits); DE 48, subelement 22, subfield 02 is value 1 (Merchant capable of single tap processing).

### **Subfield 5 (Cardholder/Merchant Initiated Transactions Indicator)**

DE 48, subelement 22 (Multi-Purpose Merchant Indicator), subfield 05 (Cardholder/Merchant Initiated Transaction Indicator) allows acquirers to identify whether the transaction was initiated by the cardholder or the merchant as well as providing more detail as to the type of stored credential being used for the transaction. The CIT and MIT indicators will be available on the Transaction History Lookup screen.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	05
Subfield length	2
Data representation	an-4
Data field	Contents of subfield 05
Justification	N/A

#### **Usage**

Following is the usage of subelement 22, subfield 05 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	O	X	C
Financial Transaction Request Response/0210	C	X	C
Financial Transaction Advice/0220	O	X	C
Financial Transaction Advice/0220 – Debit Mastercard Stand-In	C	X	C
Acquirer Reversal Advice/0420	O	X	C
Issuer Reversal Advice/0422	C	X	C

**NOTE:** Effective 14 October 2022, the Org column will be updated to C or CE for each message type.

#### **Values**

Mastercard will ensure the DE 48, subelement 22, subfield 05 values include the following values.

<b>Indicator Category</b>	<b>Indicator Subcategory</b>
C1 Cardholder-Initiated	01: Credential-on-file (ad-hoc) 02: Standing Order (variable amount and fixed frequency) 03: Subscription (fixed amount and frequency) 04: Installment
M1 Merchant-Initiated Recurring Payment or Installment	01: Unscheduled Credential on File 02: Standing Order (variable amount and fixed frequency) 03: Subscription (fixed amount and frequency) 04: Installment
M2 Merchant-Initiated Industry Practice	05: Partial Shipment 06: Related/Delayed Charge 07: No Show Charge 08: Resubmission

### **Subelement 23 (Payment Initiation Channel)**

This subelement provides information about the device type used to identify mobile-initiated (m-commerce) or other EMV Contact, Magnetic stripe Contactless, or M/Chip Contactless transactions.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	23
Subelement length	n-2	02
Data representation	an-2	
Number of subfields	1	Subfield 1 (Device Type)

#### **Usage**

Following is the usage of subelement 23 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	O	P	C
Financial Transaction Advice/0220	C	P	C
Acquirer Reversal Advice/0420	C	P	C

### Application notes

Acquirers, in regions where it is mandated, must ensure that each newly deployed or re-deployed contactless-enabled POS terminal used by their merchants transmits the device type indicator value, if present, on the card or non-card form factor, in data element DE 48 (Additional Data), subelement 23 (Payment Initiation Channel), subfield 1 (Device Type) of financial transaction messages.

### Subfield 1 (Device Type)

DE 48, subelement 23, subfield 1 (Device Type) indicates the type of device used at the terminal. The device type value originates from tag 9F6E. The value is read from the chip or mobile device by the POS terminal and may be passed to the acquirer for use in authorization and clearing messages.

### Attributes

Attribute	Description
Data representation	an-2
Data field	Contents of positions 1–2
Justification	N/A

### Values

Value	Description
00	Card (default)
01	Mobile Network Operator (MNO) controlled removable secure element (SIM or UICC) personalized for use with a mobile phone or smartphone
02	Key fob
03	Watch using a contactless chip or a fixed (non-removable secure element not controlled by the MNO).
04	Mobile tag
05	Wristband

<b>Value</b>	<b>Description</b>
06	Mobile phone case or sleeve
07	Mobile phone or smartphone with a fixed (non-removable) secure element controlled by the MNO, for example, code division multiple access (CDMA).
08	Removable secure element not controlled by the MNO, for example, memory card personalized for use with a mobile phone or smartphone.
09	Mobile phone or smartphone with a fixed (non-removable) secure element not controlled by the MNO.
10	MNO controlled removable secure element (SIM or UICC) personalized for use with a tablet or e-book.
11	Tablet or E-Book with a fixed (non-removable) secure element controlled by the MNO.
12	Removable secure element not controlled by the MNO, for example, memory card personalized for use with a tablet or e-book.
13	Tablet or e-Book with fixed (non-removable) secure element not controlled by the MNO.
14	Mobile Phone or Smartphone with a payment application running in a host processor.
15	Tablet or e-Book with a payment application running in a host processor.
16	Mobile Phone or Smartphone with a payment application running in the Trusted Execution Environment (TEE) of a host processor.
17	Tablet or e-Book with a payment application running in the TEE of a host processor.
18	Watch with a payment application running in the TEE of a host processor.
19	Watch with a payment application running in a host processor.
20	Card Added for use when the device type is used only to indicate the form factor.
21	Mobile phone
22	Tablet computer or e-reader
23	Watch or Wristband Includes a fitness band, smart strap, disposable band, watch add-on, and security/ID band.
24	Sticker
25	PC or laptop
26	Device Peripheral Includes Mobile phone case or sleeve.

<b>Value</b>	<b>Description</b>
27	Tag  Includes key fob or mobile tag.
28	Jewelry  Includes ring, bracelet, necklace, and cuff links.
29	Fashion Accessory  Handbag, bag charm, and glasses.
30	Garment; Dress
31	Domestic Appliance  Includes refrigerator, washing machine.
32	Vehicle  Includes vehicle and vehicle attached devices.
33	Media/Gaming Device  Includes a set top box, media player, and television.
34–99	Reserved for future form factors. Any value in this range may occur within form factor and transaction data without prior notice.

### Application notes

The values in DE 48, subelement 23, subfield 1 will contain an indication of the form factor. Existing values from 00–19 may continue to be used, and their meanings remain unchanged.

Device type values from 20–99 will exclusively indicate the form factor only without also indicating the storage technology. This grouping will be sub-divided as the existing device type values from 00 to 19, as currently defined, convey a combination of different information to specify the physical form factor (such as, wristband) as well as, in some cases, an indication of the storage technology (such as Trusted Execution Environment [TEE] or Secure Element). With the constant evolution of digital technology, Mastercard anticipates further proliferation of new form factors for payments, as well as new storage technologies. Mastercard has already introduced a distinct storage technology field in DE 48, subelement 33 (PAN Mapping File Information), subfield 8 (Storage Technology).

- values from 20–33 in anticipation of new form factors for payments and
- values 34–99 reserved for future use.

Mastercard will define new values for new types of form factors as they are launched into the marketplace. These introductions will not be synchronized with a Release Document or *Global Operations Bulletin* articles. New values may start to appear in form factors and should be expected in the transaction data before the official launch of services.

## Subelement 25 (Mastercard Cash Program Data)

This subelement contains information necessary to process Mastercard Cash Program transactions, to include message type identifiers.

### Attributes

Attribute	Description	Value
Subelement ID	n-2	25
Subelement length	n-2	6...14
Data representation	ans...14; LLVAR	
Number of subfields	1	Subfield 1 (Message Identifier)

### Usage

Following is the usage of subelement 25 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	P	C
Financial Transaction Request Response/0210	.	C	C
Acquirer Reversal Advice/0420: acquirer initiated	C	P	C

### Subfield 1 (Message Identifier)

DE 48, subelement 25, subfield 1 contains the message identifier for the Mastercard Cash Program Data.

### Attributes

Attribute	Description
Subfield ID	01
Subfield length	2 positions, value 02-10
Data representation	ans...10; LLVAR
Data field	Contents of positions 1-2, positions 3-10 undefined
Justification	N/A

### **Positions 1–2 (Message Identifier)**

<b>Attribute</b>	<b>Description</b>
Data Representation	an-2

<b>Value</b>	<b>Description</b>
LR	Unlinked load request, or linked load request with no purchase
LP	Linked load request with purchase
LU	Linked status update
CM	Confirmation message

### **Positions 3–10 (Reserved for Future Use)**

<b>Attribute</b>	<b>Description</b>
Data Representation	an-8
<b>Values</b>	
Values are undefined.	

## **Subelement 26 (Wallet Program Data)**

Subelement 26 (Wallet Program Data) contains the subfield that will identify transactions submitted using wallets like the MasterPass™ by Mastercard® or Staged Digital Wallet (SDW).

Subelement 26 must be present in all Financial Transaction Request/0200 messages for transactions initiated through Masterpass, Staged Digital Wallet, or another Pass-through digital wallet. It will not be edited to ensure it has been provided. However, if provided it cannot contain special characters or value containing all zeros.

Subelement 26 will also be present in the Financial Transaction Advice/0220 messages (Debit Mastercard Force Post) for transactions initiated using the wallets.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Values</b>
Subelement ID	n-2	26
Subelement length	n-2	03
Data representation	an-3	
Number of subfields	1	Subfield 1 (Wallet Identifier)

---

<b>Attribute</b>	<b>Description</b>	<b>Values</b>
Justification	N/A	

### Usage

Following is the usage of subelement 26 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	.	C
Financial Transaction Advice/0220	.	C	C
Acquirer Reversal Advice/0420	.	X	C

### Subfield 1 (Wallet Identifier)

DE 48, subelement 26, subfield 1 (Wallet Identifier) provides information about transactions initiated through the Masterpass Online platform or through MDES and indicates who the wallet provider was for the transaction.

The Wallet Identifier is added for MDES transactions when it is available, which identifies the wallet through which the MDES token was initiated.

### Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	an-3
Data field	Provides the wallet indicator
Justification	N/A

### Values

**NOTE:** The following values apply to both Masterpass and MDES transactions.

<b>Value</b>	<b>Description</b>
101	Masterpass Remote

**NOTE:** The following values only apply to MDES transactions.

<b>Value</b>	<b>Description</b>
103	Apple Pay
216	Google Pay
217	Samsung Pay
327	Remote commerce programs

### **Application notes**

Wallet ID cannot contain all zeros, spaces, or special characters. There is no specified format for Wallet ID and can use any combination of numeric or alphanumeric values.

The submission of the Wallet ID is required on Masterpass Wallet transactions or other Staged/Pass-through wallets. This Wallet ID is received from the Masterpass Wallet and can vary from transaction to transaction. While values 101 and 102 were initially introduced, values other than 101 and 102 may be transmitted by Masterpass Wallet to the merchant or acquirer. Mastercard will not publish these values and as such, acquirer and processor systems should pass whatever value is provided by the Masterpass Wallet unaltered in the transaction record.

New Wallet Identifier values may be provided in this field without prior written notice.

The following tables indicate the presence of the Wallet Identifier in Masterpass and MDES transactions.

**Table 40: Masterpass**

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	.	C
Financial Transaction Advice/0220	.	C	C

### **Application notes**

For Masterpass, Mastercard passes the Wallet Identifier as sent in by the acquirer. If the "card" in Masterpass is an MDES token, MDES will add the correct Wallet Identifier to the transaction.

**Table 41: Mastercard Digital Enablement Service**

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C
Financial Transaction Advice/0220	.	X	C

---

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Acquirer Reversal Advice/0420	.	X	C

### **Application notes**

For MDES, Mastercard inserts the Wallet Identifier for the wallet that the token was supplied to.

### **Subelement 27 (Transaction Analysis)**

DE 48, subelement 27 (Transaction Analysis) contains information about additional transaction analysis.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	27
Subelement length	n-2	13...97
Data representation	an...97; LLVAR	
Data field		Contents of positions 1–2
Number of subfields	2	

### **Usage**

Following is the usage of subelement 27 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C
Financial Transaction Advice/0220: System-Generated	C	.	C

### **Application notes**

DE 48, subelement 27 and subfields 1 and 2 are setup in Tag, Length, Value format: 27LL01LLVV02LLVVVVVVVV... For example, see as follows:

<b>Subfield 1</b>	<b>Subfield 2</b>
0102CI	0206SNAOVP

### **Subfield 1 (Overview)**

DE 48, subelement 27, subfield 1 (Overview) provides issuers with a code that represents the transaction analysis overview based on the applicable transaction validation results and corresponding decision matrix.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	01
Data representation	an-2
Subfield length	2
Data field	Contents of subfield 1
Justification	N/A

#### **Values**

<b>Value</b>	<b>Description</b>
CI	Continue processing with information
CW	Continue processing with warning
DI	Decline issuer decision
DS	Decline suspicious

### **Subfield 2 (Test Results)**

DE 48, subfield 2 (Test Results) provides the list of failed validations. If several failed validations generate the same test result code, the code will only be reported one time in subfield 2.

#### **Attributes**

<b>Attribute</b>	<b>Value</b>
Subfield ID	02
Subfield length	2
Data representation	an...87; LLVAR; The LL length field of LLVAR will be an integral multiple of 3, not to exceed 87.
Data field	Contents of positions 3...87
Justification	N/A

## Values

Value	Description
CAM	Invalid card authentication
CCH	Cross channel
CRN	Consent requirements not fulfilled
CVF	Cardholder verification (on terminal) was not successful
CVU	CVM requirements not fulfilled
CVX	Status CVM unknown
DAF	ODA failed
DAU	ODA was not performed
DMM	Data mismatch
DNC	Data non consistent with application or product
EXP	Token expired
FER	Format error
FUZ	Fuzzing
ICT	Not a valid cryptogram type
NMK	No matching key file/KDI combination
OVE	CDCVM retry exceeded—token suspended
OVF	CDCVM failed
OVP	CDCVM (was possible but) not performed
OVU	CDCVM not performed
PKC	ODA compromised
PPP	PIN Pad Problem
PTB	PIN on terminal bypass
PWE	Possible wedge attack
REP	ATC replay—Same UN
SKC	Key compromised
SNA	Request service not allowed for this product
UTP	Unable to process
WOC	Wallet overrule of Mastercard decision on CDCVM

## **Subelement 28 (Cardless ATM Order ID)**

Subelement 28 (Cardless ATM Order ID) is defined by the ATM operator, sent by the acquirer participating in the Cardless ATM program and passed to the issuer participating in the Cardless ATM program.

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subelement ID	28
Subelement length	2
Data representation	an-10
Data field	Fixed length, contents of positions 1–10
Subfields	N/A
Justification	N/A

### **Values**

Cannot contain all spaces or all zeros.

## **Subelement 29 (Additional POS Terminal Locations)**

Subelement 29 is required when DE 61 (Point-of-Service [POS] Data), subfield 3 (POS Terminal Location) is present with the value of 8 (Additional Terminal Operating Environments).

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subelement ID	29
Subelement length	2
Data representation	an-1
Data field	Contents of position 1
Subfields	N/A
Justification	N/A

### **Values**

<b>Value</b>	<b>Description</b>
A	Transaction has been initiated remotely and completed at a physical terminal on premises of the card acceptor facility.

---

<b>Value</b>	<b>Description</b>
B	Transaction has been initiated remotely and completed at a physical terminal off premises of the card acceptor facility.

### **Subelement 30 (Token Transaction Identifier)**

This subelement will contain, when available, the calculated Token Transaction Identifier to identify the transaction. Token Transaction Identifier is to be retained and used to provide the transaction details associated with an original purchase and subsequent reversal messages. The Token Transaction Identifier is only sent to issuers participating in the Mastercard Digital Enablement Service.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	30
Subelement length	n-2	44 or 64
Data representation	ans...64, LLVAR	Variable
Number of subfields	N/A	

#### **Usage**

Following is the usage of subelement 30 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C
Financial Transaction Advice/0220	.	X	C

#### **Values**

A 44 byte base 64 value will be sent for Mastercard BIN ranges.

A 64 byte value will be sent for Visa BIN ranges which are also Maestro.

#### **Application notes**

DE 48, subelement 30 will not be present when DE 3 (Processing Code), subfield 1 (Cardholder Transaction Type Code) contains a value of 20 (Purchase Return/Refund).

## **Subelement 32 (Mastercard Assigned ID)**

This subelement is used to provide unique Mastercard Assigned ID data.

It is created by Mastercard and provided to merchants for use with the

- Maestro IIAS Healthcare Program. That program is used by Mastercard, when the value is submitted by merchants, to validate the merchant's certification with SIGIS for IIAS healthcare-related transactions.

**NOTE:** Exempt merchants under the 90 percent rule must also be prepared to send the Acquirer ID and Member ID in DE 124.

- Maestro Recurring Payments Program. That program is used by merchants to identify UCAF e-commerce transactions without the use of Mastercard® Identity Check DE 48, subelement 32 is sent in a Financial Transaction Request/0200 message along with the static AAV UCAF data in DE 48, subelement 43 to validate Maestro Recurring Payments Program transactions.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	32
Subelement length	n-2	06
Data representation	an-6	
Data field	Contents of subfield 1	
Number of subfields	1	Subfield 1 (Mastercard Assigned ID)

### **Subfield 1 (Mastercard Assigned ID)**

DE 48, subelement 32, subfield 1 contains the Mastercard Assigned ID.

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	an-6
Data field	Contents of positions 1–6
Justification	N/A

### **Values**

Six-digit, alpha-numeric.

## **Subelement 33 (PAN Mapping File Information)**

DE 48, subelement 33 (PAN Mapping File Information) supports the mapping between the virtual account data and actual account data.

Subelement 33 (PAN Mapping File Information) must be provided in response to transit authority transactions to return the embossed account number on the card when an alternate account number on the contactless chip of the card or on a companion device is used.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	33
Subelement length	n-2	29 or 36
Data representation	an...63; LLVAR	
Number of subfields	6	Subfield 1 (Account Number Indicator) Subfield 2 (Account Number PAN) Subfield 3 (Expiration Date) (YYMM) Subfield 5 (Token Assurance Level) Subfield 6 (Token Requestor ID) Subfield 8 (Storage Technology)

### **Application notes**

When the Contactless PAN Mapping Service is performed, the issuer receives the contactless PAN and contactless PAN expiration date in this subelement within financial request/advice/reversal messages. The value of P (Contactless Primary Account Number) in DE 48, subelement 33, subfield 1 identifies that the PAN within this subelement is a Contactless PAN. The acquirer receives the cardholder PAN in financial response messages. The value of M (Primary Account Number) in DE 48, subelement 33, subfield 1 identifies that the PAN within this subelement is a primary account number.

When the Mastercard In Control Service is performed, the issuer receives the virtual card number and virtual card number expiration date in this subelement within financial request/advice/reversal messages. The value of V (Virtual Card Number) in DE 48, subelement 33, subfield 1 identifies that the PAN within this subelement is a virtual card number (PAN).

When the Mastercard Digital Enablement Service is performed, the issuer receives the token and token expiration date in this subelement within financial request/advice/reversal messages:

- The value of C (Mastercard Digital Enablement Service Secure Element Token) or H (Mastercard Digital Enablement Service Cloud-Based Payments Token) in DE 48, subelement 33, subfield 1 identifies that the PAN within this subelement is a token.
- The acquirer receives the cardholder PAN in financial response messages.

- The value of F (Mastercard Digital Enablement Service) is present in DE 48, subelement 33, subfield 1.
- The value of M (Primary Account Number) in DE 48, subelement 33, subfield 1 identifies that the PAN within this subelement is a primary account number.

Issuers that issue contactless cards or devices that provide a primary account number (PAN) within a transaction different than what is embossed on the card, must ensure that the following is provided in Financial transaction Request Response/0210 messages when responding to MCC 4111, 4131, 4784, and 7523 transactions.

- The value E in DE 48, subelement 33, subfield 1 (Account Number Indicator)
- The embossed number in DE 48, subelement 33, subfield 2 (Account Number)
- The card expiration date of the embossed number in DE 48, subelement 33, subfield 3 (Expiration Date)

All Acquirers processing transactions for merchant categories 4111, 4131, 4784, and 7523 must pass the PAN Mapping information back to the merchants who requests this information.

#### **Token-related data element reminder**

Acquirers must be prepared to receive DE 48 (Additional Data), subelement 33 (PAN Mapping File Information) in

- Financial Transaction Request Response/0210 and
- Issuers Reversal Advice/0422 messages.

Acquirers should be prepared to receive this data element regardless of the value for a BIN in the Mastercard Digital Enablement Service Flag field (position 52) of the 80-byte Financial Institution Table (FIT) file.

#### **Subfield 1 (Account Number Indicator)**

DE 48, subelement 33, subfield 1 (Account Number Indicator) indicates the type of PAN mapping account.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	an-1
Data field	Contents of subfield 1
Justification	N/A

#### **Values**

<b>Value</b>	<b>Description</b>
C	Mastercard Digital Enablement Service secure element token

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<b>Value</b>	<b>Description</b>
E	Embossed account number provided by issuer
F	Mastercard Digital Enablement Service static token
H	Mastercard Digital Enablement Service cloud-based payments token
L	Pay with rewards loyalty program operator [LPO] card
M	Primary account number (acquirer message)
P	Contactless account number
R	Pay with rewards card
V	Virtual card number (valid for Mastercard In Control Virtual Card service)

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### **Subfield 2 (Account Number PAN)**

DE 48, subelement 33, subfield 2 contains the PAN mapping account number.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	02
Subfield length	2 positions, value = 12–19
Data representation	n...19; LLVAR
Data field	Contents of subfield 2
Justification	N/A

#### **Values**

- Issuer and acquirer response message = contains embossed PAN in response to transit transactions
- Acquirer message = contains Primary Account Number
- Issuer message = contains Contactless Primary Account Number, or virtual card number or Mastercard Digital Enablement Service Token

### **Subfield 3 (Expiration Date)**

DE 48, subelement 33, subfield 3 contains the expiration date of the PAN Mapping File Information.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	03

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<b>Attribute</b>	<b>Description</b>
Subfield length	2 positions, value = 04
Data representation	n-4
Data field	Contents of subfield 3
Justification	N/A

### Values

- Acquirer Message = contains the expiration date when
  - the issuer provided one for a PAN mapping record added to the MCC106 MDES PAN Mapping File
  - a transit transaction response contains MCC 4111, 4131, 4784, and 7523, or
  - the Mastercard Digital Enablement Service was applied.
- Issuer Message = contains Contactless card/device expiration date, or virtual card expiration date, or Mastercard Digital Enablement Service token expiration date, only if acquirer provided in DE 14
- Issuer and acquirer response message = contains embossed Expiration date in response to transit transactions

**NOTE:** Subfield 3 will not be present in Financial Transaction Advice/0220 Debit Mastercard (Force Post) messages.

### Subfield 5 (Token Assurance Level)

DE 48, subelement 33, subfield 5 contains a value indicating the confidence level of the token to PAN/cardholder binding.

### Attributes

<b>Attribute</b>	<b>Description</b>
Subfield ID	05
Subfield length	2
Data representation	n-2
Data field	Contents of subfield 5
Justification	N/A

### Values

Contains a value indicating the confidence level of the token to PAN/cardholder binding.

### Application notes

Subfield 5 is optional but should be included in messages sent to Mastercard by the acquirer if provided to the acquirer by the merchant. Acquirers may receive the value back in a Financial Transaction Request Response/0210 message.

### Subfield 6 (Token Requestor ID)

DE 48, subelement 33, subfield 6 contains the ID assigned by the Token Service Provider to the Token Requestor.

#### Attributes

Attribute	Description
Subfield ID	06
Subfield length	2
Data representation	n-11
Data field	Contents of subfield 6
Justification	N/A

#### Values

Contains the ID assigned by the Token Service Provider to the Token Requestor. The Token Requestor ID is optional for all token types.

### Application notes

Subfield 6 is optional but should be included in messages sent to Mastercard by the acquirer if provided to the acquirer by the merchant. Acquirers may receive the value back in a Financial Transaction Request Response/0210 message.

### Subfield 8 (Storage Technology)

DE 48, subelement 33, subfield 8 (Storage Technology) describes the Storage Technology of a requested or created token.

#### Attributes

Attribute	Description
Subfield ID	08
Subfield length	2
Data representation	an-2
Data fields	Contents of subfield 8

---

<b>Attribute</b>	<b>Description</b>
Justification	N/A

### **Usage**

Following is the usage of subelement 33 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	•	X	C
Financial Transaction Request Response/0210	•	X	C
Financial Transaction Advice/0220	•	X	C
Financial Transaction Advice/0220 Debit Mastercard stand-in	•	X	C
Acquirer Reversal Advice/0420	•	X	C
Financial Transaction Request/0200: tokenization eligibility	•	X	C
Financial Transaction Request/0200: tokenization authorization	•	X	C
Financial Transaction Request/0200: tokenization complete notification	•	X	C

### **Values**

<b>Value</b>	<b>Description</b>
01	Device Memory
02	Device Memory protected by Trusted Platform Module (TPM)
03	Server
04	Trusted Execution Environment (TEE)
05	Secure Element (SE)
06	Virtual Execution Environment (VEE)

### **Application Notes**

Subfield 8 is optional but should be included in messages sent to Mastercard by the acquirer if provided to the acquirer by the merchant. Acquirers may receive the value back in a Financial Transaction Request Response/0210 message.

## Subelement 34 (ATC Information)

Subelement 34 (ATC Information) is added when the Dynamic CVC 3 Pre-validation Service or Dynamic CVC 3 Validation in Stand-In Processing Service, M/Chip Cryptogram Pre-validation Service, or M/Chip Cryptogram Validation in Stand-In Processing Service was performed on the transaction and the validation result found in DE 48, subelement 71, subfield 2 (On-behalf Result 1) was **V** (Valid), **A** (Valid AC; ATC outside allowed range), **E** (Valid AC; ATC Replay), **T** (Valid ARQC/TC and ATC; TVR/CVR invalid), or **G** (Application Cryptogram is valid but not an ARQC; status of TVR/CVR unknown).

Subelement 34 should be used for processing authorization messages and maintaining the ATC values on the issuer host. Subfields 1–3 are always present.

**NOTE:** Issuers that participate in the Mastercard Digital Enablement Service will not receive subelement 34 for OBS 51 or 52.

### Attributes

Attribute	Description	Value
Subelement ID	n-2	34
Subelement length	n-2	11
Data representation	an-11	
Number of subfields	3	Subfield 1 (ATC Value) Subfield 2 (ATC Discrepancy Value) Subfield 3 (ATC Discrepancy Indicator)

### Application notes

The authorization platform inserts the ATC information for all MDES device transactions when it is available. Customer should note that ATC information will not be present on declined advices.

The following ATC information will be provided in Dual Message (Authorization) and Single Message Financial Transaction requests and advices to issuers for MDES transactions initiated with a device token, when available. ATC information will not be provided in declined advices.

- DE 48, subelement 34, subfield 1 (ATC Value)
- DE 48, subelement 34, subfield 2 (ATC Discrepancy Value)
- DE 48, subelement 34, subfield 3 (ATC Discrepancy Indicator)

The authorization platform inserts the ATC information for all MDES device transactions when it is available. Customer should note that ATC information will not be present on declined advices or when DE 48, subelement 71 (On-behalf Service [OBS]), subfield 1 (OB Service) value 61 (MDES Cloud-Based Payments Chip Pre-Validation Service/MDES Cloud-Based Payments Magnetic Stripe Pre-Validation Service) is applied.

### **Subfield 1 (ATC Value)**

DE 48, subelement 34, subfield 1 contains the Application Transaction Counter (ATC) value for the Dynamic CVC 3 ATC information.

#### **Attributes**

Attribute	Description
Data representation	n-5
Data field	Contents of positions 1-5
Justification	N/A

#### **Values**

Contains the derived full ATC Value used in the validation.

### **Subfield 2 (ATC Discrepancy Value)**

DE 48, subelement 34, subfield 2 contains the Application Transaction Counter (ATC) discrepancy value for the Dynamic CVC 3 ATC information.

#### **Attributes**

Attribute	Description
Data representation	n-5
Data field	Contents of positions 6-10
Justification	N/A

#### **Values**

ATC discrepancy value is

- the differential between the transaction ATC and the maximum value allowed by the issuer when the transaction ATC is above the latest highest ATC or
- the differential between the transaction ATC and the minimum value allowed by the issuer when the transaction ATC is below the latest highest ATC.

ATC Discrepancy Value will be zero when the transaction ATC is within the issuer-defined limits.

### **Subfield 3 (ATC Discrepancy Indicator)**

DE 48, subelement 34, subfield 3 contains the Application Transaction Counter (ATC) discrepancy indicator for the Dynamic CVC 3 ATC information.

#### **Attributes**

Attribute	Description
Data representation	an-1
Data field	Contents of position 11
Justification	N/A

#### **Values**

Value	Description
G	Indicates that the ATC value is greater than the maximum value allowed.
L	Indicates that the ATC value is lower than the minimum value allowed.
W	Indicates that the ATC value is within the issuer defined limits.

### **Subelement 35 (Contactless Device Request Response)**

This subelement supports the PAN Mapping Service.

#### **Attributes**

Attribute	Description	Value
Subelement ID	n-2	35
Subelement length	n-2	01
Data representation	an-1	
Number of subfields	1	Subfield 1—Contactless Device Request Response

### **Subfield 1 (Contactless Device Request Response)**

DE 48, subelement 35, subfield 1 contains the one character value of the Contactless Device Request Response.

#### **Attributes**

Attribute	Description
Data representation	an-1
Data field	Contents of position 1
Justification	N/A

#### **Values**

Value	Description
R	The issuer receives a message with a cardholder request for a contactless device.
A	The issuer responds with a message that approves a cardholder request for a contactless device.
D	The issuer responds with a message that declines a cardholder request for a contactless device.

### **Subelement 37 (Additional Merchant Data)**

DE 48, subelement 37 (Additional Merchant Data) contains subfields representing the ID of the participating service provider in a transaction and the sub-merchant ID. The service provider can be a payment facilitator or independent sales organization.

#### **Attributes**

Attribute	Description
Subelement ID	37
Subelement length	2
Data representation	ans...56; LLVAR
Data field	Contents of subfields 1–4
Subfields	1–4

#### **Usage**

Following is the usage of subelement 37 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message Type Identifier</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	.	C
Financial Transaction Advice/0220: acquirer-generated	C	.	C
Financial Transaction Advice/0220: system-generated	.	C	C

### **Subfield 1 (Payment Facilitator ID)**

DE 48, subelement 37, subfield 1 (Payment Facilitator ID) contains the Payment Facilitator ID assigned by Mastercard.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	01
Subfield length	2 positions, value = 11
Data representation	n-11
Data field	Contents of subfield 1
Justification	Right justified, with leading zeros

#### **Values**

The Payment Facilitator ID must always be a value assigned by Mastercard and must be the same value in both the Authorization and Clearing Platforms. This ID is the Company ID that will be assigned during the time of registration with Mastercard for a Service Provider as "Payment Facilitator."

The value must be provided by the acquirer when a registered payment facilitator is involved in a transaction and should be right justified with leading zeros. For example, if the Company ID is 123456, DE 48, SE 37, SF 1 should be 00000123456.

### **Subfield 2 (Independent Sales Organization ID)**

DE 48, subelement 37, subfield 2 (Independent Sales Organization ID) contains the Independent Sales Organization ID assigned by Mastercard.

#### **Attributes**

Attribute	Description
Subfield ID	02
Subfield length	2 positions, value = 11
Data representation	n-11
Data field	Contents of subfield 2
Justification	Right justified, with leading zeros

#### **Values**

The Independent Sales Organization ID must always be a value assigned by Mastercard and is the same value in both the Authorization and Clearing Platforms. This ID is the "Company ID" that is assigned during the time of registration via Mastercard Connect of a service provider as "Independent Sales Organization."

This value must be provided by the acquirer when a registered independent sales organization is involved in a transaction and should be right justified with leading zeros. For example, if the Company ID is 123456, DE 48, SE 37, SF 2 should be 00000123456.

### **Subfield 3 (Sub-Merchant ID)**

DE 48, subelement 37, subfield 3 (Sub-Merchant ID) contains the Merchant ID of the sub-merchant.

#### **Attributes**

Attribute	Description
Subfield ID	03
Subfield length	2 positions, value = 15
Data representation	ans-15
Data field	Contents of subfield 3
Justification	Left justified, with trailing spaces

#### **Values**

The Sub-Merchant ID must always be the merchant ID of the sub-merchant whenever a payment facilitator is involved in a transaction. This value, which is assigned by the payment

facilitator or their acquirer, must be provided by the acquirer whenever the Payment Facilitator ID is provided in DE 48, subelement 37 (Additional Merchant Data), subfield 1 (Payment Facilitator ID).

#### **Subfield 4 (Merchant Country of Origin)**

Subfield 4 contains the ISO numeric country code for the home country of the government that owns or controls the merchant that initiated the transaction.

<b>Attribute</b>	<b>Description</b>
Subfield ID	04
Data representation	n-3
Length field	2
Data field	Contents of subfield 4
Justification	n/a

#### **Values**

If present, DE 48, SE 37, subfield 4 must contain a valid ISO numeric country code.

For example, embassies are physically located in countries that are not their "home country" (that is, the embassy of Mexico may be physically located in Singapore; however, the "home country" is Mexico).

#### **Requirements**

DE 48, SE 37, subfield 4 must contain the location information of the government entity, not the location of the merchant.

When DE 48, SE 37, subfield 4 is provided, this field must contain a valid three byte ISO numeric country code in Financial Transaction Request/0200 messages and Financial Transaction Advice/0220 messages.

**Table 42: Usage**

<b>Message Type Identifier</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	.	C
Financial Transaction Advice/0220	C	.	C

### **Subelement 38 (Account Category)**

For Account Level Management, subelement 38 will be valid on Financial Transaction Request/0200 transactions.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	38
Subelement length	n-2	01
Data representation	an-1	
Number of subfields	1	Subfield 1 (Account Category)

#### **Subfield 1 (Account Category)**

DE 48, subelement 38, subfield 1 contains the type of account category.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	an-1
Data field	Contents of position 1
Justification	N/A

#### **Values**

<b>Value</b>	<b>Description</b>
B	Consumer Rewards
Z	The default value provided by Mastercard indicating that while the account range does participate in Account Level Management processing the specific cardholder account found in DE 2 (Primary Account Number [PAN]) of the transaction does not participate in Account Level Management processing.

### **Subelement 39 (Account Data Compromise Information)**

Subelement 39 (Account Data Compromise Information) contains confirmed or suspected account data compromise event information for account ranges. Information about account

data compromise events will be included in the Financial Transaction Request/0200 and Financial Transaction Advice/0220—Debit Mastercard Stand-In messages to the issuer.

### Attributes

Attribute	Description	Value
Subelement ID	n-2	39
Subelement length	n-2	30
Data representation	ans-30	
Number of subfields	N/A	

### Usage

Following is the usage of subelement 39 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	.	C	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	.	C	C

### Positions 1–3 (reserved for future use)

DE 48, subelement 39, positions 1–3 is reserved for future use.

### Attributes

Attribute	Description
Data representation	n-3
Data field	Contents of positions 1–3
Justification	N/A

### Values

Value	Description
000	Not available.

---

### Positions 4–6 (reserved for future use)

DE 48, subelement 39, positions 4–6 is reserved for future use.

#### Attributes

Attribute	Description
Data representation	n-3
Data field	Contents of positions 4–6
Justification	N/A

#### Values

Reserved for future use.

### Positions 7–12 (Case Key Code 1)

DE 48, subelement 39, positions 7–12 contains the unique key to identify case.

#### Attributes

Attribute	Description
Data representation	an-6
Data field	Contents of positions 7–12
Justification	N/A

#### Values

Key used by issuer to tie an account data compromise event to a case in alerts database.

### Positions 13–18 (Case Key Code 2)

DE 48, subelement 39, positions 13–18 contains the unique key to identify case.

#### Attributes

Attribute	Description
Data representation	an-6
Data field	Contents of positions 13–18
Justification	N/A

#### Values

Key used by issuer to tie an account data compromise event to a case in alerts database.

### Positions 19–24 (Case Key Code 3)

DE 48, subelement 39, positions 19–24 contains the unique key to identify case.

#### Attributes

Attribute	Description
Data representation	an-6
Data field	Contents of positions 19–24
Justification	N/A

#### Values

Key used by issuer to tie an account data compromise event to a case in alerts database.

### Position 25 (ADC Data Type: PAN)

DE 48, subelement 39, position 25 contains the number of account data compromise events for a specific PAN.

#### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of position 25
Justification	N/A

#### Values

Value	Description
0–9	Number of account data compromise events for a specific PAN.

### Position 26 (ADC Data Type: Expiration Date)

DE 48, subelement 39, position 26 contains the number of account data compromise events for an expiration date.

#### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of position 26

Attribute	Description
Justification	N/A

### Values

Value	Description
0-9	Number of account data compromise events for an expiration date.

### Position 27 (ADC Data Type: CVC 2)

DE 48, subelement 39, position 27 contains the number of account data compromise events for a CVC 2.

### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of position 27
Justification	N/A

### Values

Value	Description
0-9	Number of account data compromise events for a CVC 2.

### Position 28 (ADC Data Type: PIN)

DE 48, subelement 39, position 28 contains the number of account data compromise events for a PIN.

### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of position 28
Justification	N/A

---

### Values

Value	Description
0-9	Number of account data compromise for a PIN.

### Position 29 (ADC Data Type: Magnetic Stripe)

DE 48, subelement 39, position 29 contains the number of account data compromise events for a magnetic stripe.

### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of position 29
Justification	N/A

### Values

Value	Description
0-9	Number of account data compromise events for a magnetic stripe.

### Position 30 (ADC Data Type: Personal Information)

DE 48, subelement 39, position 30 contains the number of account data compromise events for personal information.

### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of position 30
Justification	N/A

### Values

Value	Description
0-9	Number of account data compromise for personal information.

**Subelement 40 (Electronic Commerce Merchant/Cardholder Certificate Serial Number)**

For e-commerce transactions, the acquirer can send the merchant certificate serial number and/or cardholder certificate serial number in subelement 40 of DE 48 of the Authorization Request/0100 and Financial Transaction Request/0200 messages.

The subelement designation has the format 40xx, where xx is the length of the data in the subelement. It contains Universal Cardholder Authentication Field™ (UCAF) compliant information.

Should only be used for purchases and cardholder certificate information.

**Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	40
Subelement length	n-2	20 or 40
Data representation	n...40 (also contains binary data); LLVAR	
Number of subfields	2	Subfield 1 (Merchant Certificate Serial Number)  Subfield 2 (Cardholder Certificate Serial Number)

This subelement contains one or both of the following subfields.

**Subfield 1 (Merchant Certificate Serial Number)**

DE 48, subelement 40, subfield 1 contains the merchant certificate serial number, if present.

**Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	01
Subfield length	2 positions, value = 16
Data representation	b...16
Data field	Contents of subfield 1
Justification	N/A

**Values**

Merchant Certificate Serial Number, if present. Must be binary data.

### **Subfield 2 (Cardholder Certificate Serial Number)**

DE 48, subelement 40, subfield 2 contains the cardholder certificate serial number, if present.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	02
Subfield length	2 positions, value = 16
Data representation	b...16
Data field	Contents of subfield 2
Justification	N/A

#### **Values**

Cardholder Certificate Serial Number, if present. Must be binary data.

### **Subelement 41 (Electronic Commerce Certificate Qualifying Information)**

Mastercard discontinued use of subelement 41 for submitting Electronic Commerce Certificate qualifying information. Subelement 41, subfields 1–10, and 12–18 are reserved for future use. Subelement 41, subfield 11 may contain National ID information.

#### **Citizen's ID for Maestro POS**

For Maestro POS transactions, the Single Message System accepts a Financial Transaction Request/0200 message with data present in DE 48 subelement 41 subfield 11 (National ID) from participating acquirers. The Single Message System will not log the actual data; only the presence of the data will be recognized. Issuers have the option of echoing back the data. Citizen's ID has no effect on settlement, or financial value. This means no changes to adjustment/chargeback processing, no special fees/no intracurrency impact. Citizen's ID does not apply to ATM transactions.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	41
Subelement length	n-2	24
Data representation	ans...95; LLVAR	

Attribute	Description	Value
Number of subfields	21	Subfields 01-10 (Reserved for future use) Subfield 11 (National ID) Subfields 12-21 (Reserved for future use)

### **Subfield 1 (Reserved for future use)**

DE 48, subelement 41, subfield 1 is reserved for future use.

#### **Attributes**

Attribute	Description
Subfield ID	01
Subfield length	2 positions, value = ...26
Data representation	ans...26
Data field	Contents of subfield 1
Justification	N/A

#### **Values**

Reserved for future use.

### **Subfield 2 (Reserved for future use)**

DE 48, subelement 41, subfield 2 is reserved for future use.

#### **Attributes**

Attribute	Description
Subfield ID	02
Subfield length	2 positions, value = 6
Data representation	n-6
Data field	Contents of subfield 2
Justification	N/A

#### **Values**

Reserved for future use.

### **Subfield 3 (Reserved for future use)**

DE 48, subelement 41, subfield 3 is reserved for future use.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	03
Subfield length	2 positions, value = 3
Data representation	n-3
Data field	Contents of subfield 3
Justification	N/A

#### **Values**

Reserved for future use.

### **Subfield 4 (Reserved for future use)**

DE 48, subelement 41, subfield 4 is reserved for future use.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	04
Subfield length	2 positions, value = ...22
Data representation	an...22
Data field	Contents of subfield 4
Justification	N/A

#### **Values**

Reserved for future use.

### **Subfield 5 (Reserved for future use)**

DE 48, subelement 41, subfield 5 is reserved for future use.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	05
Subfield length	2 positions, value = ...20

Attribute	Description
Data representation	ans...20
Data field	Contents of subfield 5
Justification	N/A

### Values

Reserved for future use.

### Subfield 6 (Reserved for future use)

DE 48, subelement 41, subfield 6 is reserved for future use.

### Attributes

Attribute	Description
Subfield ID	06
Subfield length	2 positions, value = ...13
Data representation	a...13
Data field	Contents of subfield 6
Justification	N/A

### Values

Reserved for future use.

### Subfield 7 (Reserved for future use)

DE 48, subelement 41, subfield 7 is reserved for future use.

### Attributes

Attribute	Description
Subfield ID	07
Subfield length	2 positions, value = 3
Data representation	a-3
Data field	Contents of subfield 7
Justification	N/A

---

### Values

Reserved for future use.

### Subfield 8 (Reserved for future use)

DE 48, subelement 41, subfield 8 is reserved for future use.

### Attributes

Attribute	Description
Subfield ID	08
Subfield length	2 positions, value = ...10
Data representation	a.....10
Data field	Contents of subfield 8
Justification	N/A

### Values

Reserved for future use.

### Subfield 9 (Reserved for future use)

DE 48, subelement 41, subfield 9 is reserved for future use.

### Attributes

Attribute	Description
Subfield ID	09
Subfield length	2 positions, value = ...22
Data representation	a....22
Data field	Contents of subfield 9
Justification	N/A

### Values

Reserved for future use.

### **Subfield 10 (Reserved for future use)**

DE 48, subelement 41, subfield 10 is reserved for future use.

#### **Attributes**

Attribute	Description
Subfield ID	10
Subfield length	2 positions, value = 09
Data representation	n-9
Data field	Contents of subfield 10
Justification	N/A

#### **Values**

Reserved for future use.

### **Subfield 11 (National ID)**

DE 48, subelement 41, subfield 11 contains the cardholder specific national ID.

#### **Attributes**

Attribute	Description
Subfield ID	11
Subfield length	2 positions, value = ...20
Data representation	an...20
Data field	Contents of subfield 11
Justification	N/A

#### **Values**

Cardholder specific national ID.

### **Subfield 12 (Reserved for future use)**

DE 48, subelement 41, subfield 12 is reserved for future use.

#### **Attributes**

Attribute	Description
Subfield ID	12
Subfield length	2 positions, value = ...20

Attribute	Description
Data representation	ans...20
Data field	Contents of subfield 12
Justification	N/A

### Values

Reserved for future use.

### Subfield 13 (Reserved for future use)

DE 48, subelement 41, subfield 13 is reserved for future use.

### Attributes

Attribute	Description
Subfield ID	13
Subfield length	2 positions, value = ...20
Data representation	ans...20
Data field	Contents of subfield 13
Justification	N/A

### Values

Reserved for future use.

### Subfield 14 (Reserved for future use)

DE 48, subelement 41, subfield 14 is reserved for future use.

### Attributes

Attribute	Description
Subfield ID	14
Subfield length	2 positions, value = ...20
Data representation	ans...20
Data field	Contents of subfield 14
Justification	N/A

### Values

Reserved for future use.

### Subfield 15 (Reserved for future use)

DE 48, subelement 41, subfield 15 is reserved for future use.

### Attributes

Attribute	Description
Subfield ID	15
Subfield length	2 positions, value = ...10
Data representation	ans...10
Data field	Contents of subfield 15
Justification	N/A

### Values

Reserved for future use.

### Subfield 16 (Reserved for future use)

DE 48, subelement 41, subfield 16 is reserved for future use.

### Attributes

Attribute	Description
Subfield ID	16
Subfield length	2 positions, value = 02
Data representation	n-2
Data field	Contents of subfield 16
Justification	N/A

### Values

Reserved for future use.

### **Subfield 17 (Reserved for future use)**

DE 48, subelement 41, subfield 17 is reserved for future use.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	17
Subfield length	2 positions, value = 01
Data representation	a-1
Data field	Contents of subfield 17
Justification	N/A

#### **Values**

Reserved for future use.

### **Subfield 18 (Reserved for future use)**

DE 48, subelement 41, subfield 18 is reserved for future use.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	18
Subfield length	2 positions, value = ...20
Data representation	a...20
Data field	Contents of subfield 18
Justification	N/A

#### **Values**

Reserved for future use.

### **Subfield 19 (Reserved for future use)**

DE 48, subelement 41, subfield 19 is reserved for future use.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	19
Subfield length	2 positions, value = ...30

Attribute	Description
Data representation	a...30
Data field	Contents of subfield 19
Justification	N/A

### Values

Reserved for future use.

### Subfield 20 (Reserved for future use)

DE 48, subelement 41, subfield 20 is reserved for future use.

### Attributes

Attribute	Description
Subfield ID	20
Subfield length	2 positions, value = ...30
Data representation	a...30
Data field	Contents of subfield 20
Justification	N/A

### Values

Reserved for future use.

### Subfield 21 (Reserved for future use)

DE 48, subelement 41, subfield 21 is reserved for future use.

### Attributes

Attribute	Description
Subfield ID	21
Subfield length	2 positions, value = ...30
Data representation	a...30
Data field	Contents of subfield 21
Justification	N/A

## Values

Reserved for future use.

## Subelement 42 (Electronic Commerce Indicators)

For e-Commerce purchases, the acquirer can send a level of security in subelement 42 of DE 48 of the Financial Transaction Request/0200 message. Subelement 42 must be present in all financial messages for e-commerce transactions. When available, this information will be provided in the Financial Transaction Advice/0220 message (force post messages).

DE 48 (Additional Data), subelement 42, subfield 1 (Electronic Commerce Security Level Indicator and UCAF Collection Indicator) indicates the electronic commerce security level and UCAF collection in positions 1, 2, and 3.

Mastercard supports the Maestro Recurring Payment Program using the existing values of DE 48, subelement 42, subfield 1, position 3 (UCAF Collection Indicator), value 3 (UCAF data collection is supported by the merchant).

Mastercard supports value 2 (UCAF data collection supported by merchant) in the UCAF Collection Indicator field in DE 48, subelement 42, subfield 1, position 3 for mail/fax order transactions to comply with the mandate from the Reserve Bank of India.

**NOTE:** In the following, subfield 1 contains valid combinations of positions 1, 2, and 3 for the e-commerce security level indicator and UCAF collection indicator data. The Security Level Code consists of values in positions 1 and 2. The Universal Cardholder Authentication Field™ (UCAF) Data Status contains a value in position 3.

## Attributes

Attribute	Description
Subelement ID	42
Subelement length	2
Data representation	n-7 (except n-19 for acquirer Financial Transaction Request Response/0210 messages if Security Level Indicator [SLI] values modified.)
Data field	Contents of subfield 1 (except contents of subfields 1, 2, and 3 for acquirer Financial Transaction Request Response/0210 messages if Security Level Indicator [SLI] values modified.)
Subfields	3
Justification	N/A

### Usage

Subelement 42 must be present in all Financial Transaction Request/0200 messages for electronic commerce transactions. Following is the usage of subelement 42 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	.	C
Financial Transaction Request Response/0210	CE	X	C
Financial Transaction Advice/0220	C	X	C

### Values

Contains the electronic security level indicator data and may contain the original security level indicator data and the reason for the downgrade authorization.

Subfields 2 and 3 are only present in Mastercard provided Financial Transaction Request Response/0210 to acquirer.

If Security Level Indicator (SLI) downgrade did not occur, it will contain the electronic commerce security level indicator and UCAF collection indicator data in subfield 1 that consists of a valid combination of positions 1, 2, and 3.

If Security Level Indicator (SLI) downgrade/modification occurred, it will contain contents of subfield 1 (Electronic Commerce Security Level Indicator and UCAF Collection Indicator), subfield 2 (Original Electronic Commerce Security Level Indicator and UCAF Collection Indicator), and subfield 3 (Reason for UCAF Collection Indicator Downgrade/Modified Values) for acquirer Financial Transaction Request Response/0210 messages.

### Application Notes

A Mastercard Security Level Indicator (SLI) transaction is downgraded if an Accountholder Authentication Value (AAV) is not present or is invalid in DE 48, subelement 43 (Universal Cardholder Authentication Field [UCAF]).

The Security Level Indicator (SLI) value will be validated or modified when incorrect for e-commerce transactions initiated with Mastercard Digital Enablement Service (MDES) tokens.

### **Subfield 1 (Electronic Commerce Security Level Indicator [SLI] and UCAF Collection Indicator)**

DE 48, subelement 42, subfield 1 (Electronic Commerce Security Level Indicator (SLI) and UCAF Collection Indicator) indicates the electronic commerce security level and UCAF collection in positions 1, 2, and 3.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	01
Subfield length	2 positions, value = 03
Data representation	n-3
Data field	Contents of positions 1-3
Justification	N/A

#### **Values**

Valid combination of the security level indicators in positions 1 and 2 and the UCAF collection indicator in position 3.

#### **Position 1 (Security Protocol)**

**Table 43: Attributes**

<b>Attribute</b>	<b>Description</b>
Data Representation	n-1

**Table 44: Values**

<b>Value</b>	<b>Description</b>
0	Reserved for existing Mastercard Europe/Visa definitions
1	Reserved for future use
2	Channel
3-8	Reserved for future use
9	None (no security protocol)

**Position 2 (Cardholder Authentication)****Table 45: Attributes**

<b>Attribute</b>	<b>Description</b>
Data Representation	n-1

**Table 46: Values**

<b>Value</b>	<b>Description</b>
0	Reserved for future use
1	eCommerce/Identity Check
2	Processed through Masterpass
4	Tokenized Payment
3, 5–9	Reserved for future use

**Valid combinations of Position 1 and Position 2**

<b>Value</b>	<b>Description</b>
21	Channel encryption; cardholder certificate not used (this is the preferred value for Mastercard Identity Check)
22	Masterpass-generated transaction
24	Tokenized Payment
91	No security protocol; cardholder certificate not used

**Position 3 (UCAF Collection Indicator)****Table 47: Attributes**

<b>Attribute</b>	<b>Description</b>
Data Representation	n-1

**Table 48: Values**

<b>Value</b>	<b>Description</b>
0	Non-authenticated payment, Identity Check transaction with failed authentication, or Tokenized Payment with Dynamic Token Verification Code (DTVC).
1	UCAF data collection is supported by the merchant, and UCAF data must be present (DE 48, subelement 43 must be present and contain an attempt AAV for Mastercard Identity Check)
2	UCAF data collection is supported by the merchant, and UCAF data must be present (DE 48, subelement 43 must contain a fully authenticated AAV) and DSRP cryptogram shall be optionally present for tokenized transactions. This includes cardholder-initiated transactions (CIT) for authentication.
3	UCAF data collection is supported by the merchant, and UCAF (Mastercard assigned Static Accountholder Authentication Value) data must be present.
<p><b>NOTE: DE 48, subelements 32 and 43 are required for Static AAV transactions.</b>  <b>It identifies participation in one of the following programs:</b></p> <ul style="list-style-type: none"> <li>• Maestro Recurring Payments Program</li> <li>• Mastercard Utility Payment Program</li> <li>• Maestro Low Risk Merchant Program</li> <li>• Maestro Static AAV for Masterpass</li> </ul>	
4	Merchant has chosen to share authentication data within authorization; UCAF data collection must be present (DE 48, subelement 43 must contain an Insights AAV for Mastercard Identity Check)
5	Reserved for future use
6	Merchant Risk Based Decisioning
7	Merchant-initiated transactions (DE 48, subelement 43 only required for Identity Check)

**Valid Combinations of Position 1, Position 2 and Position 3**

Value	Description
210	Present in unauthenticated transactions, or in transactions where an Identity Check merchant has chosen not to undertake Identity Check, or where Identity Check failed authentication and the merchant desires to proceed with the transaction. Also present in transactions with a DTVC

211	Mastercard Identity Check transaction. UCAF data contains either an Attempts AAV or a Non-Low Risk AAV for Mastercard Identity Check from Smart Authentication
212	Mastercard Identity Check transaction. UCAF data contains a fully authenticated AAV for Mastercard Identity Check or a Low-Risk AAV for Mastercard Identity Check from Smart Authentication
214	Mastercard Identity Check where merchant has chosen to share data to generate insights within the authorization (used in Identity Check™ Insights or Ekata transactions). Insights or Ekata scores are provided to the Issuer in DE 48, subelement 56
216	Mastercard Identity Check transaction. Merchant Risk Based Decisioning. This includes European PSD2 Acquirer Exemption transactions
217	Mastercard Identity Check transaction. Merchant Initiated Transactions
<b>NOTE: Mastercard Identity Check split shipments should be managed as 1 authentication, 1 authorization and multiple clearing records.</b>	
242	Authenticated tokenized transaction with DSRP cryptogram. Transaction is not eligible for fraud-related chargeback by the issuer
246	Tokenized transaction with DSRP cryptogram
247	Tokenized Merchant Initiated Transaction

### Application notes

All acquirers must be prepared to receive DE 48, subelement 42, subfields 1, 2 and 3 in the Financial Transaction Request Response/0210 message. When Mastercard modifies the subfield 1 value originally provided by the acquirer in the 0200 request message, they will receive the modified SLI, the original SLI and the reason for the modification in subfields 1, 2 and 3 respectively. Otherwise, they will only receive subfield 1.

A Mastercard Security Level Indicator (SLI) transaction is downgraded if an Accountholder Authentication Value (AAV) is not present or is invalid in DE 48, subelement 43 (Universal Cardholder Authentication Field [UCAF]).

DE 48, subelement 42, subfields 2 and 3 are only present in the Financial Transaction Request Response/0210 message provided by Mastercard to the acquirer if an SLI downgrade occurred.

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**Subfield 2 (Original Electronic Commerce Security Level Indicator and UCAF Collection Indicator)**

DE 48, subelement 42, subfield 2 (Original Electronic Commerce Security Level Indicator and UCAF Collection Indicator) describes the original Security Level Indicators sent by the acquirer in the Financial Transaction Request/0200 message before the Identity Check downgrade or MDES SLI modification occurred.

**Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	02
Subfield Length	2
Data Representation	n-3
Data Field	Contents of subfield 2
Justification	N/A

**Positions**

<b>Position</b>	<b>Description</b>
1	Security Protocol
2	Cardholder Authentication
3	UCAF Collection Indicator

**Application Notes**

A Mastercard Identity Check transaction is downgraded to a non-Identity Check transaction if an Accountholder Authentication Value (AAV) is not present or is invalid in DE 48, subelement 43 (Universal Cardholder Authentication Field [UCAF]).

DE 48, subelement 42, subfields 2 and 3 are only present in the Financial Transaction Request Response/0210 message provided by Mastercard to the acquirer if an Identity Check downgrade or MDES SLI modification occurred.

The message format sent in the acquirer Financial Transaction Request Response/0210 message will be in the format 0103xxx0203yyy0301z only if the Identity Check downgrade occurs. Otherwise, the message format will remain as it is today which is 0103xxx.

**NOTE: DE 48, subelement 42, subfields 2 and 3 will always be submitted together.**

### **Subfield 3 (Reason for UCAF Collection Indicator Downgrade)**

DE 48, subelement 42, subfield 3 (Reason for UCAF Collection Indicator Downgrade) describes the reason why the Financial Transaction Request/0200 message was downgraded or modified. Refer to Application Notes for details on Identity Check downgrade or MDES SLI modification.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	03
Subfield Length	2
Data Representation	n-1
Data Field	Contents of subfield 3
Justification	N/A

#### **Values**

<b>Value</b>	<b>Description</b>
0	Missing Universal Cardholder Authentication Field (UCAF)
1	Invalid Universal Cardholder Authentication Field (UCAF)

#### **Application Notes**

A Mastercard Identity Check transaction is downgraded to a non-Identity Check transaction if an Accountholder Authentication Value (AAV) is not present or is invalid in DE 48, subelement 43 (Universal Cardholder Authentication Field [UCAF]).

DE 48, subelement 42, subfields 2 and 3 are only present in the Financial Transaction Request Response/0210 message provided by Mastercard to the acquirer if an Identity Check downgrade or MDES SLI modification occurred.

The message format sent in the acquirer Financial Transaction Request Response/0210 message will be in the format 0103xxx0203yyy0301z only if the Identity Check downgrade occurs. Otherwise, the message format will remain as it is today which is 0103xxx.

**NOTE:** DE 48, subelement 42, subfields 2 and 3 will always be submitted together.

### **Subelement 43 (Universal Cardholder Authentication Field [UCAF])**

This subelement contains the encoded Mastercard® Identity Check issuer or cardholder-generated authentication data (collected by the merchant) resulting from all Identity Check fully authenticated or attempt transactions, data for Visa, JCB, Diners Club, or American Express transactions associated with the 3-D Secure Electronic Commerce Verification Service (if collected), or the static AAV assigned by Mastercard for Maestro Recurring Payments Program,

or Mastercard Utility Payment Program, or Mastercard Digital Secure Remote Payment UCAF data.

For e-Commerce purchases, this subelement can carry Universal Cardholder Authentication Field™ (UCAF) data. This subelement is present when a UCAF-enabled merchant has collected authentication data from the cardholder and passed it to the acquirer for inclusion in the Financial Transaction Request/0200, or when the UCAF data contains a static AAV (Accountholder Authentication Value) assigned by Mastercard. This subelement may now also contain an attempted Accountholder Authentication Value (AAV), as evidence the merchant attempted to authenticate the transaction.

Effective 1 January 2016, the AAV is required for all Mastercard fully authenticated or attempted transactions. This mandate is not associated with any edits in the Single Message System; instead, it is monitored and edited in the Authorization Data Integrity Monitoring Program.

Effective 12 June 2018, Mastercard will not reject e-Commerce Payment transactions that do not contain a cryptogram. That is tokenized e-Commerce (identified by DE 22 [Point of Service Entry Mode], subfield 1 [POS Terminal PAN Entry Mode], value 81 [PAN TokenName entry via e-commerce with optional Identity Check-AAV]) Payment transactions (identified by DE 3 [Processing Code], subfield 1 [Cardholder Transaction Type Code], value 28 [Payment Transaction]) that do not contain a cryptogram in this UCAF field (DE 48, subelement 43).

### Attributes

Attribute	Description	Value
Subelement ID	n-2	43
Subelement length	n-2	...32
Data representation	ans...32; LLVAR	
Number of subfields	1	Subfield 1—UCAF Data

### Subfield 1 (UCAF Data)

DE 48, subelement 43, subfield 1 contains the Universal Cardholder Authentication Field (UCAF) data.

### Attributes

Attribute	Description
Data representation	ans...32; LLVAR
Data field	Contents of subfield 1
Justification	N/A

## Values

Accountholder Authentication Value (AAV)

Transaction specific. Secure Payment Application (SPA) algorithms. (Refer to [Table 50: Values: 3-D Secure for Mastercard Identity Check](#) for more details.)

### 3-D Secure for Mastercard Identity Check

Subelement 43 contains UCAF data and is described here for Mastercard Implementation of 3-D Secure for Mastercard® Identity Check.

**Table 49: Attributes: 3-D Secure for Mastercard Identity Check**

Attribute	Description
Data representation	ans-28 (base 64 encoded)
Data field	The Mastercard 3-D Secure SPA AAV

**Table 50: Values: 3-D Secure for Mastercard Identity Check**

## Values

Transaction specific. Position 1 of the Mastercard 3-D Secure SPA AAV is a control byte indicating the Identity Check platform that created the field contents.

j = Mastercard 3-D Secure SPA AAV for fully authenticated

h = Mastercard 3-D Secure SPA AAV for attempts

**NOTE: Values i, l, m, and n are reserved for future use.**

**Table 51: SPA1 and SPA2 values**

SPA1 value for SLI value 211	SPA2 values for SLI value 211
h	kE, kF, kL, kM
SPA1 value for fully authenticated SLI value 212	SPA2 values for fully authenticated SLI value 212
j	kA, kB, kC, kD, kG, kH, kJ, kK, kQ Reserved for future use—kR, kS, kT

**NOTE:** Control byte kQ is defined for AAV Refresh with SLI = 212, and kF is defined for Attempts Only with SLI = 211. Attempts Only indicates that authentication was attempted by the merchant but was not performed either by the issuer or by Mastercard Identity Check Smart Authentication Stand-In solution.

### Application notes

**NOTE:** Issuers must pass the correct ECI value with the corresponding AAV control byte during cardholder authentication. Mastercard 3DS protocol, Identity Check Program Rules, and DW Integrity Edits do not allow sending Fully Authenticated AAVs for Attempted Authentications nor Attempted AAVs for Fully Authenticated Authentications.

The following is an example of a properly coded DE 48, subelement 43 for Mastercard Identity Check for Fully Authenticated Authorization including AVS request.

T420701032124328jJLQtQa+lws8AREAEbjsA1MAAAA=

Refer to the *Mastercard Identity Check Program Guide* and the *SPA2 AAV for the Mastercard Identity Check Program* manual for more information.

Mastercard supports attempts AAV, the acquirer should forward to Mastercard any attempts AAV it receives so that Mastercard can pass to the issuer.

**NOTE:** Issuers should not perform Identity Check validation on static AAVs in DE 48, subelement 43 nor on attempts AAV generated by Mastercard.

The UCAF field (DE 48, subelement 43) is a variable length field up to a maximum of 32 positions. The Mastercard Identity Check AAV is 28 characters in length. There must be no trailing spaces in the UCAF field.

## Subelement 48 (Mobile Program Indicators)

DE 48 (Additional Data), subelement 48 contains information about the Mobile Remote Payments transactions.

### Attributes

Attribute	Description	Value
Subelement ID	n-2	48
Subelement Length	n-2	5...73
Data Representation	ans...73; LLVAR	

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Number of Subfields	4	Subfield 1 (Remote Payments Program Type Identifier) Subfield 2 (Reserved for future use) Subfield 3 (Mobile Phone Number) Subfield 4 (Convenience Fee)

### Usage

Following is the usage of subelement 48 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	.	C
Financial Transaction Advice/0220	.	C	C

### Application notes

DE 48, subelement 48 must be present in all Financial Transaction Request/0200 messages for Mobile Remote Payments Program transactions.

### Subfield 1 (Remote Payments Program Type Identifier)

Subfield 1 defines the program type identifier.

#### Attributes

<b>Attribute</b>	<b>Description</b>
Subfield ID	01
Subfield length	2 positions, value = 01
Data representation	n...1; LLVAR
Data field	Contents of subfield 1
Justification	N/A

#### Values

<b>Value</b>	<b>Description</b>
1	Issuer domain

Value	Description
2	Acquirer domain

### **Subfield 2 (Mastercard Mobile Remote Payment Transaction Type)**

Subfield 2 describes the available transaction types for Mastercard Mobile Remote Payments.

#### **Attributes**

Attribute	Description
Subfield ID	02
Subfield length	2 positions, value = 01
Data representation	n...1; LLVAR
Justification	N/A

#### **Values**

Value	Description
1	Remote purchase (consumer initiated): face-to-face
2	Remote purchase (consumer initiated): e-Commerce
3	Remote purchase (consumer initiated): MOTO
4	Bill pay (consumer initiated)
5	Top-up (consumer initiated)
6	Cash-out (consumer initiated)
7	Cash-out (ATM/agent triggered): DE 61, subfield 10 can differentiate between ATM or non-CAT (Agent) transaction
8	Remote purchase (merchant triggered): face-to-face
9	Remote purchase (merchant triggered): e-commerce

### **Subfield 3 (Mobile Phone Number)**

Subfield 3 contains the mobile phone number.

#### **Attributes**

Attribute	Description
Subfield ID	03

<b>Attribute</b>	<b>Description</b>
Subfield length	2 positions, value = ...15
Data representation	n...15; LLVAR
Data field	Contents of subfield 3
Justification	N/A

### Values

Customer mobile phone number.

### Subfield 4 (Convenience Fee)

Subfield 4 contains the convenience fee.

### Attributes

<b>Attribute</b>	<b>Description</b>
Subfield ID	04
Subfield length	2 positions, value = ...40
Data representation	ans...40; LLVAR
Data field	Contents of subfield 4
Justification	N/A

### Values

Customer convenience fee data.

### Application notes

The Convenience Fee amount that is present in subfield 4 must not be included in DE 4 (Amount, Transaction).

### Subelement 49 (Time Validation Information)

Subelement 49 (Time Validation Information) contains time data used to calculate time validation and the results of validation when performed.

### Attributes

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	49
Subelement length	n-2	15

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Data representation	n-15	Fixed
Number of subfields	3	Subfield 1 (Time Value) Subfield 2 (Time Discrepancy Value) Subfield 3 (Time Discrepancy Indicator)

### Usage

Following is the usage of subelement 49 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C
Financial Transaction Advice/0220	.	X	C

### Subfield 1 (Time Value)

DE 48, subelement 49, subfield 1 (Time Value) contains the time data derived from the acquirer transaction to be used in the time validation.

#### Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	n-8
Data field	Contents of subfield 1
Justification	Right-justified, leading zeros

### Subfield 2 (Time Discrepancy Value)

DE 48, subelement 49, subfield 2 (Time Discrepancy Value) contains a positive value representing the differential in minutes between the transaction time data and service-calculated time.

#### Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	n-5
Data field	Contents of subfield 2

---

<b>Attribute</b>	<b>Description</b>
Justification	Right-justified, leading zeros

### **Subfield 3 (Time Discrepancy Indicator)**

DE 48, subelement 49, subfield 3 (Time Discrepancy Indicator) contains a value that indicates if the time discrepancy value is below, above, or within the minimum and maximum values for the time validation window or that indicates time validation was not performed.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-2
Data field	Contents of subfield 3
Justification	Left-justified

#### **Values**

<b>Value</b>	<b>Description</b>
01	Positive value within time validation window
02	Positive value outside time validation window
03	Negative value within time validation window
04	Negative value outside time validation window
05	Unknown (time validation not performed)

### **Subelement 52 (Transaction Integrity Class)**

This subelement contains the Mastercard-provided Transaction Integrity Classification for Point of Sale (POS) Purchase and Purchase with Cash Back transactions initiated on the Authorization Platform.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	52
Subelement length	n-2	2
Data representation	n-2	
Data field		Contents of positions 1–2

---

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Number of subfields	N/A	

### Usage

Following is the usage of subelement 52 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C
Financial Transaction Request Response/0210	.	X	C
Financial Transaction Advice/0220	.	X	C
Issuer Reversal Advice/0422	O	.	C

### Values

<b>Classification</b>	<b>Description</b>	<b>Value</b>
Card and Cardholder Present	EMV/Token in a secure, trusted environment	A1
Card and Cardholder Present	EMV/Chip equivalent	B1
Card and Cardholder Present	Mag stripe	C1
Card and Cardholder Present	Key entered	E1
Card and Cardholder Present	Unclassified	U0
Card and/or Cardholder Not Present	Digital transactions	A2
Card and/or Cardholder Not Present	Authenticated checkout	B2
Card and/or Cardholder Not Present	Transaction validation	C2
Card and/or Cardholder Not Present	Enhanced data	D2
Card and/or Cardholder Not Present	Generic messaging	E2
Card and/or Cardholder Not Present	Unclassified	U0

### Application Notes

The Transaction Integrity Class is provided to all issuers in the U.S. region of Mastercard® credit and Debit Mastercard® cards.

## Subelement 54 (Ancillary Service Charges)

DE 48, subelement 54 (Ancillary Service Charges) provides information on the ancillary fee code and fee amount of the non-ticket related service charges applicable.

### Attributes

Attribute	Description	Value
Subelement ID	an-2	54
Subelement length	an-2	14...84
Data representation	an...84; LLVAR	The LL length field of LLVAR must be an integral multiple of 14, not to exceed 84.
Number of subfields	2	Subfield 1 (Ancillary Fee Code) Subfield 2 (Ancillary Fee Amount)
<b>NOTE:</b> Issuers must code to receive up to six instances of subfields 1 and 2. Each instance has the same format.		

### Usage

Following is the usage of subelement 54 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Advice/0220	.	C	C

DE 48, subelement 54 must be present in a Financial Transaction Advice/0220 message when the ancillary service charge data is provided by the card acceptor with an MCC of Airline, Railway, or Travel Agency.

When the ancillary service charge data is present for transactions with an MCC of Airline, Railway, or Travel Agency then the issuer must disclose the description of the ancillary service charges by making it visible in cardholder billing statements, online account tools, mobile apps, or other methods designed to inform cardholders of their purchases.

### **Subfield 1 (Ancillary Fee Code)**

DE 48, subelement 54, subfield 1 (Ancillary Fee Code) provides the Ancillary Fee Code used by the cardholder for the issuers.

#### **Attributes**

Attribute	Description
Data representation	a-2
Data field	Contents of positions 1-2
Justification	N/A

#### **Values**

A two character code will be populated. The valid values for subfield 1 are in the following table.

Value	Description
BF	Bundled service
BG	Baggage fee
CF	Change fee
CG	Cargo
CO	Carbon offset
FF	Frequent flyer
GF	Gift card
GT	Ground transport
IE	In-flight entertainment
LG	Lounge
MD	Medical
ML	Meal/beverage
OT	Other
PA	Passenger assist fee
PT	Pets
SA	Seat fees
SB	Standby
SF	Service fee
ST	Store

---

<b>Value</b>	<b>Description</b>
TS	Travel service
UN	Unaccompanied travel
UP	Upgrades
WI	Wi-Fi

---

### **Subfield 2 (Ancillary Fee Amount)**

DE 48, subelement 54, subfield 2 (Ancillary Fee Amount) contains the amount associated with the value provided in subfield 1.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-12
Data field	Contents of positions 3-14
Justification	Right with leading zeros

#### **Values**

A 12 digit numeric value will be populated.

#### **Application notes**

An occurrence is defined as one set of the two DE 48, subelement 54 subfields.

### **Subelement 56 (Security Services Additional Data for Issuers)**

This subelement supports Mastercard embedded security services for issuers including the IQ series and Auth IQ. Issuers supporting subelement 56 are enabled for all services.

Issuers can receive up to 16 instances of subelement 56, however, they must code to receive the 16 instances that the service supports. Each instance has the same format for each service.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	an-2	56
Subelement length	an-2	06...96
Data representation	an...99; LLVAR—The “LL” length field of LLVAR must be an integral multiple of 6, not to exceed 96.	

---

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Number of subfields	2	Subfield 1—Security Services Indicator
		Subfield 2—Security Services Data

---

### **Usage**

Following is the usage of subelement 56 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C
Financial Transaction Advice/0220	.	C	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	.	X	C

### **Application Notes**

Mastercard will require all issuing and acquiring processors to code for, support, and integrate into their systems the data elements, subelements, and values associated with this item.

The following provides the Global Safety and Security Standards effective dates:

- USA 21 Apr 2017
- EUR 13 Oct 2017
- LAC 13 Oct 2017
- MEA 13 Oct 2017
- Ukraine 1 Apr 2018
- CAN 13 Apr 2018
- AP 13 Apr 2018

For additional information about the requirement please refer to the *Global Safety and Security Standards Roadmap*.

**NOTE:** Mastercard does not require issuers or acquirers to enroll in these optional products and services, but they must code their systems to support these fields to leverage such product and services in a timely manner in the event of a security issue.

### **Subfield 1 (Security Services Indicator)**

DE 48, subelement 56, subfield 1 (Security Services Indicator) provides the security services indicator for issuers.

#### **Attributes**

Attribute	Description
Data representation	an-3
Data field	Contents of positions 1-3
Justification	N/A

#### **Values**

A three-character code identifying the real-time monitoring service used.

### **Subfield 2 (Security Services Data)**

DE 48, subelement 56, subfield 2 contains additional data supporting the issuer fraud score.

#### **Attributes**

Attribute	Description
Data representation	an-3
Data field	Contents of positions 4-6
Justification	N/A

#### **Values**

A three-character value will be populated.

### **Subelement 56 (Valid Subfield 1 and Subfield 2 Value Combinations)**

Following is the valid DE 48, subelement 56, subfield 1 (Security Services Indicator) and subfield 2 (Security Services Data) value combinations.

#### **Service data content for Mastercard authorization IQ service**

Following is the Service Data Content for the Mastercard Authorization IQ service. Customers that support Authorization IQ will receive AQV (GDV-based Spend Ranking), AQF (Frequency-based Spend Ranking), and AQS (Segment Qualifier) on all transactions.

**NOTE: Positions 2 and 3 use the same reason code definitions.**

<b>Subfield 2 (an-3)</b>			
<b>Subfield 1 (an-3)</b>	<b>Position 1</b>	<b>Position 2</b>	<b>Position 3</b>
<b>Spending dimension Insights</b>	<b>Overall account spending insights</b>	<b>Channel spending insights</b>	<b>Account transaction insights</b>
AQV: GDV-based Spend Ranking  Or  AQF: Frequency-based Spend Ranking	<b>New</b> (card activity on the network less than 60 days old)  <b>None</b> (No network activity in the last 12 months or Dormant Card Number)	<b>New</b> (card activity on the network less than 60 days old)  <b>Or</b>  <b>None</b> (No network activity in the last 12 months or Dormant Card Number)	<b>New</b> (card activity on the network less than 60 days old)  <b>Or</b>  <b>None</b> (No network activity in the last 12 months or Dormant Card Number)
	High = 1  Med-1 = 4  Med-2 = 5  Med-3 = 6  Low = 9	High = 1  Med-1 = 4  Med-2 = 5  Med-3 = 6  Low = 9	High = 1  Med-1 = 4  Med-2 = 5  Med-3 = 6  Low = 9
AQS: Segment Qualifier	Refer to the Segment Definitions table that follows.		

### **Service Data Content for Decision Intelligence Service: Digital Transaction Insights Feature**

Following is the Service Data Content for the Digital Transaction Insights Feature of the Decision Intelligence service.

<b>Subfield 2 (an-3)</b>			
<b>Subfield 1 (an-3)</b>	<b>Position 1</b>	<b>Position 2</b>	<b>Position 3</b>
<b>Security Services Indicator</b>	<b>Risk Level</b>	<b>Reason Code 1</b>	<b>Reason Code 2</b>
AIQ (Digital Transaction Insights)	0–9 where higher values indicate higher degree of risk.	The following codes apply to <b>both</b> Reason Code fields 1 and 2, where: <ul style="list-style-type: none"> <li>• Position 2 = a Mastercard-determined reason code</li> <li>• Position 3 = a merchant-determined reason code</li> </ul>	
<b>NOTE:</b> This information is subject to change.			
<b>Reason Code</b>	<b>Description</b>		

Data element definitions  
Subelement 56 (Valid Subfield 1 and Subfield 2 Value Combinations)

<b>Subfield 2 (an-3)</b>			
<b>Subfield 1 (an-3)</b>	<b>Position 1</b>	<b>Position 2</b>	<b>Position 3</b>
<b>Security Services Indicator</b>	<b>Risk Level</b>	<b>Reason Code 1</b>	<b>Reason Code 2</b>
	A	Risk event: suspicious account activity	
	B	Risk event: unknown device/account relationship	
	C	Risk event: device or profile information associated with fraud	
	D	Risk event: recent high risk change to device or profile information	
	E	Risk event: recent change to device or profile information	
	F	Risk event: PAN associated with fraud event	
	G	New account or insufficient data	
	H	Merchant/acquirer: merchant (fraud) risk high (assessed by Mastercard)	
	I	Merchant/acquirer: merchant (fraud) risk low (assessed by Mastercard)	
	J	Environment: good/known IP	
	K	Cardholder: billing address (prior history established)	
	L	Cardholder: email address (prior history established)	
	M	Cardholder: phone number (prior history established)	
	N	Cardholder: shipping address (prior history established)	
	O	Cardholder: card number (PAN) behavior established high trust in the current transaction	
	P	Environment: device known	
	Q	Environment: account established on Device	
	R	Environment: session trusted/normal/innocent session (no man in the middle attack/no bot, not suspicious account activity)	

<b>Subfield 2 (an-3)</b>			
<b>Subfield 1 (an-3)</b>	<b>Position 1</b>	<b>Position 2</b>	<b>Position 3</b>
<b>Security Services Indicator</b>	<b>Risk Level</b>	<b>Reason Code 1</b>	<b>Reason Code 2</b>
	S	More than one cardholder category established	
	T	More than one merchant/acquirer category established	
	U	More than one environment category established	
	V	Co-occurring established link between cardholder and merchant/acquirer	
	W	Co-occurring established link between cardholder and environment	
	X	Co-occurring established link between merchant/acquirer and environment	
	Y	All three categories established	
	Z	VIP, known customer (merchant submitted)	

**NOTE:** The above codes depict a potential list of reason codes and an appropriate ordering from negative to positive. This list may be further refined. Reason codes A–H reflect riskier, or less information while reason codes I–Z reflect positive information.

#### **Segment Definitions for Mastercard authorization IQ service**

The Mastercard Authorization IQ service supports the following series of segments under which each transaction is qualified for dimension analysis.

**NOTE:** New segments may be added to the Authorization IQ service at any time.

<b>Segment</b>	<b>Segment qualifier ID</b>
<b>Channel: card present: domestic segments</b>	000: Card activity on network less than 60 days old
Travel	001
Retail	002
Gaming	003
Gambling	004
Education/healthcare	005
Cash (for example: ATM)	006

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<b>Segment</b>	<b>Segment qualifier ID</b>
Fuel	007
Utilities	008
Leisure and entertainment	009
Digital goods	010
Professional services	011
Reserved for future use	012–198
Other card present: domestic	199
<b>Channel: card present: cross-border segments</b>	200: Card activity on network less than 60 days old
Travel	201
Retail	202
Gaming	203
Gambling	204
Education/healthcare	205
Cash (for example: ATM)	206
Fuel	207
Utilities	208
Leisure and entertainment	209
Digital goods	210
Professional services	211
Reserved for future use	212–398
Other card present: cross-border	399
<b>Channel: card not present: domestic segments</b>	400: Card activity on network less than 60 days old
Travel	401
Retail	402
Gaming	403
Gambling	404
Education/healthcare	405
Cash (for example: ATM)	406
Utilities	407
Leisure and entertainment	408
Digital goods	409

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<b>Segment</b>	<b>Segment qualifier ID</b>
Professional services	410
Reserved for future use	411–598
Other card not present: domestic	599
<b>Channel: card not present: cross-border segments</b>	600: Card activity on network less than 60 days old
Travel	601
Retail	602
Gaming	603
Gambling	604
Education/healthcare	605
Cash (for example: ATM)	606
Utilities	607
Leisure and entertainment	608
Digital goods	609
Professional services	610
Reserved for future use	611–798
Other card not present: cross-border	799
Reserved for future use	800–899
Dormant card number	900: Previously active card with no activity on the network in the last 120 days
Reserved for future use	901–999

#### **Service data content for decision intelligence service: authentication risk analysis (ARA) feature**

ARA reason codes include insights related to payer, payee and environment for a given transaction in real time. The values for DE 48, subelement 56 are:

- Subfield 1 (Security Services Indicator)
  - format = an-3
  - value = ARA
- Subfield 2 (Security Services Data) - an-3
  - Position 1 = Reason Code 1
    - format = an-1
    - values = A - Z
  - Position 2 - Reason Code 2

- format = an-1
- values = A - Z
- Position 3 = Reason Code 3
  - format = an-1
  - values = A - Z

The following table details the Service Data Content for the Authentication Risk Analysis Feature.

<b>ARA reason code</b>	<b>Risk Level</b>	<b>Descriptions</b>
AAA	high	Suspicious Account Activity, Merchant (fraud) risk low (assessed by Mastercard)
AAB	high	Suspicious Account Activity, Merchant (fraud) risk low (assessed by Mastercard), Good/ Known IP
AAC	high	Suspicious Account Activity, Merchant (fraud) risk low (assessed by Mastercard), Recent High Risk Change to Device or Profile Information
AAD	high	Suspicious Account Activity, Merchant (fraud) risk low (assessed by Mastercard), Recent change to Device or Profile Information
AAE	high	Suspicious Account Activity, Merchant (fraud) risk low (assessed by Mastercard), Unknown Device/Account Relationship
AAF	high	Cardholder Billing address prior history established, Merchant (fraud) risk low (assessed by Mastercard), Unknown Device/ Account Relationship
AAG	high	Suspicious Account Activity, Merchant (fraud) risk low (assessed by Mastercard), Session - Trusted/normal/ innocent session (no man in the middle attack/no bot, not suspicious account activity)

Data element definitions  
Subelement 56 (Valid Subfield 1 and Subfield 2 Value Combinations)

<b>ARA reason code</b>	<b>Risk Level</b>	<b>Descriptions</b>
AAH	high	PAN associated with fraud event, Merchant (fraud) risk low (assessed by Mastercard), Unknown Device/Account Relationship
AAI	high	New Account or Insufficient Data, Merchant (fraud) risk low (assessed by Mastercard), Unknown Device/Account Relationship
AAJ	high	Card number(PAN) behavior established high trust in the current transaction, Merchant (fraud) risk low (assessed by Mastercard), Unknown Device/ Account Relationship
AAK	medium	New Account or Insufficient Data, Merchant (fraud) risk low (assessed by Mastercard), Session - Trusted/normal/ innocent session (no man in the middle attack/no bot, not suspicious account activity)
AAL	medium	New Account or Insufficient Data, Merchant (fraud) risk low (assessed by Mastercard)
AAM	medium	New Account or Insufficient Data, Merchant (fraud) risk low (assessed by Mastercard), Recent change to Device or Profile Information
AAN	medium	Cardholder Shipping address prior history established, Merchant (fraud) risk low (assessed by Mastercard), Recent High Risk Change to Device or Profile Information
AAO	medium	New Account or Insufficient Data, Merchant (fraud) risk low (assessed by Mastercard), Recent High Risk Change to Device or Profile Information

Data element definitions  
Subelement 56 (Valid Subfield 1 and Subfield 2 Value Combinations)

<b>ARA reason code</b>	<b>Risk Level</b>	<b>Descriptions</b>
AAP	medium	Cardholder Phone number prior history established, Merchant (fraud) risk low (assessed by Mastercard), Unknown Device/ Account Relationship
AAQ	medium	Cardholder Card number(PAN) behavior established high trust in the current transaction, Merchant (fraud) risk low (assessed by Mastercard), Recent High Risk Change to Device or Profile Information
AAR	medium	Cardholder Phone number prior history established, Merchant (fraud) risk low (assessed by Mastercard), Recent High Risk Change to Device or Profile Information
AAS	medium	New Account or Insufficient Data, Merchant (fraud) risk high (assessed by Mastercard)
AAT	medium	Cardholder Billing address prior history established, Merchant (fraud) risk low (assessed by Mastercard), Recent High Risk Change to Device or Profile Information
AAU	medium	Cardholder Phone number prior history established, Merchant (fraud) risk low (assessed by Mastercard), Good/Known IP
AAV	medium	Cardholder Billing address prior history established, Merchant (fraud) risk low (assessed by Mastercard), Recent change to Device or Profile Information
AAW	medium	Cardholder Billing address prior history established, Merchant (fraud) risk low (assessed by Mastercard), Good/Known IP
AAX	medium	Cardholder Billing address prior history established, Merchant (fraud) risk low (assessed by Mastercard)

Data element definitions  
Subelement 56 (Valid Subfield 1 and Subfield 2 Value Combinations)

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<b>ARA reason code</b>	<b>Risk Level</b>	<b>Descriptions</b>
AAY	medium	PAN associated with fraud event, Merchant (fraud) risk low (assessed by Mastercard), Good/Known IP
AAZ	medium	PAN associated with fraud event, Merchant (fraud) risk low (assessed by Mastercard), Session - Trusted/normal/innocent session (no man in the middle attack/no bot, not suspicious account activity)
ABA	medium	PAN associated with fraud event, Merchant (fraud) risk low (assessed by Mastercard), Recent change to Device or Profile Information
ABB	medium	Limited information and refer to DTI reason code
ABC	low	Cardholder Card number (PAN) behavior established high trust in the current transaction, Merchant (fraud) risk low (assessed by Mastercard), Recent change to Device or Profile Information
ABD	low	Cardholder Billing address prior history established, Merchant (fraud) risk low (assessed by Mastercard), Session - Trusted/normal/innocent session (no man in the middle attack/no bot, not suspicious account activity)
ABE	low	Cardholder Shipping address prior history established, Merchant (fraud) risk low (assessed by Mastercard), Session - Trusted/normal/innocent session (no man in the middle attack/no bot, not suspicious account activity)

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Data element definitions  
Subelement 56 (Valid Subfield 1 and Subfield 2 Value Combinations)

<b>ARA reason code</b>	<b>Risk Level</b>	<b>Descriptions</b>
ABF	low	Cardholder Phone number prior history established, Merchant (fraud) risk low (assessed by Mastercard), Session - Trusted/normal/innocent session (no man in the middle attack/no bot, not suspicious account activity)
ABG	low	Cardholder Phone number prior history established, Merchant (fraud) risk low (assessed by Mastercard)
ABH	low	Cardholder Shipping address prior history established, Merchant (fraud) risk low (assessed by Mastercard), Recent change to Device or Profile Information
ABI	low	Cardholder Shipping address prior history established, Merchant (fraud) risk low (assessed by Mastercard)
ABJ	low	Cardholder Shipping address prior history established, Merchant (fraud) risk low (assessed by Mastercard), Good/Known IP
ABK	low	Cardholder Phone number prior history established, Merchant (fraud) risk low (assessed by Mastercard), Recent change to Device or Profile Information

#### **Service data content for Mastercard consumer controls**

Following is the service data content for the Mastercard consumer controls.

<b>Subfield 1 (an-3)</b>		<b>Subfield 2 (an-3)</b>
<b>Service code</b>	<b>Reason code</b>	<b>Description</b>
INC: Consumer Controls	AAL	Alert all transactions
	ABD	Alert budget
	ACB	Alert cross-border

<b>Subfield 1 (an-3)</b>	<b>Subfield 2 (an-3)</b>	
<b>Service code</b>	<b>Reason code</b>	<b>Description</b>
	ACH	Alert transaction channel
	AFL	Alert filter
	AGE	Alert transaction geography
	AMC	Alert merchant category code
	ATA	Alert transaction amount
	DBD	Decline budget
	DCB	Decline cross-border
	DCD	Decline card disabled
	DCH	Decline transaction channel
	DFL	Decline filter
	DGE	Decline transaction geography
	DMC	Decline merchant category code
	DTA	Decline transaction amount
	NAT	No action taken

### **Subelement 59 (Original Switch Serial Number)**

Receipt of this subfield is optional. It contains the original Switch Serial Number (from the original Financial Transaction Request/0200 or Financial Transaction Request Response/0210 message).

This subfield is available only in

- same-day Financial Transaction Advice/0220 multiple completion messages to the issuer
- Non-same-day Acquirer Reversal Advice/0420 messages to the issuer from Single Message Transaction Manager
- same-day Acquirer Reversal Advice/0420 messages to the issuer
- Non-same day Issuer Reversal Advice/0422 messages to the acquirer from Single Message Transaction Manager
- Non-same day Acquirer Reversal Advice/0420 messages to the issuer from the Single Message System during online exception processing, and
- non-same day Issuer Reversal Advice/0422 messages to the acquirer from the Single Message System during online exception processing.

### Attributes

Attribute	Description	Value
Subelement ID	n-2	59
Subelement length	n-2	09
Data representation	n-9	
Number of subfields	1	Subfield 1 (Original Switch Serial Number)

### Subfield 1 (Original Switch Serial Number)

DE 48, subelement 59, subfield 1 contains the original switch serial number.

### Attributes

Attribute	Description
Data representation	n-9
Data field	Contents of subfield 1
Justification	N/A

### Values

Nine-digit original Switch Serial Number.

### Subelement 61 (POS Data, Extended Condition Codes)

This subelement contains values used for three different types of transactions: partial approvals, cash back, and healthcare.

For partial approval transactions, this subelement indicates whether the merchant terminal supports the receipt of a partial approval response.

For purchase with cash back, this subelement is used to indicate whether the merchant can approve purchase with cash back or amount of purchase only (no cash back allowed) transactions.

For healthcare transactions, this subelement indicates:

- if the merchant terminal validated the transaction with the Inventory Information Approval System (IIAS) database.
- if the merchant is exempt from IIAS rules.
- if the transaction was submitted as IIAS, but is actually from a non-IIAS-certified merchant.

This subelement is conditional in Financial Transaction Request/0200 messages, but if present all five indicator fields must be present (the last two are reserved for future use). The Single

Message System will accept it from the acquirer in the Financial Transaction Request/0200 message and forward to the issuer.

### Attributes

Attribute	Description	Value
Subelement ID	n-2	61
Subelement length	n-2	05
Data representation	n-5	
Number of subfields	5	Subfield 1 (Partial Approval Terminal Support Indicator) Subfield 2 (Purchase Amount Only Terminal Support Indicator) Subfield 3 (Real-time Substantiation Indicator) Subfield 4 (Reserved for future use) Subfield 5 (Final Authorization Indicator)

### Usage

Following is the usage of subelement 61 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request /0200	C	X	C
Financial Transaction Request Response/0210	C	X	.

**NOTE:** In the Financial Transaction Request Response/0210 message from the issuer, the Single Message System does not pass the value back to the acquirer.

### Subfield 1 (Partial Approval Terminal Support Indicator)

DE 48, subelement 61, subfield 1 contains the partial approval terminal support indicator for the extended condition codes POS Data.

### Attributes

Attribute	Description
Data representation	n-1

Data element definitions  
Subfield 2 (Purchase Amount Only Terminal Support Indicator)

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Attribute	Description
Data field	Contents of subfield 1
Justification	N/A

#### Values

Value	Description
0	Merchant terminal does not support receipt of partial approvals.
1	Merchant terminal supports receipt of partial approvals.

#### Subfield 2 (Purchase Amount Only Terminal Support Indicator)

DE 48, subelement 61, subfield 2 contains the purchase amount only terminal support indicator for the extended condition codes POS Data.

#### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of subfield 2
Justification	N/A

#### Values

Value	Description
0	Merchant terminal does not support receipt of purchase only approvals.
1	Merchant terminal supports receipt of purchase only approvals.

#### Subfield 3 (Real-Time Substantiation Indicator)

DE 48, subelement 61, subfield 3 contains the real-time substantiation indicator for the extended condition codes POS Data.

#### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of subfield 3

---

<b>Attribute</b>	<b>Description</b>
Justification	N/A

### Values

<b>Value</b>	<b>Description</b>
0	(default) Merchant terminal did not verify purchased items against Inventory Information Approval System (IIAS).  Acquirer to provide value.
1	Merchant terminal did verify purchased items against Inventory Information Approval System (IIAS).  Acquirer to provide value.
2	Merchant exempt from Inventory Information Approval System (IIAS) based on IRS 90 percent rule.  Acquirer to provide value.
4	Transaction was submitted as Inventory Information Approval System (IIAS) but from a non-IIAS-certified merchant.  Mastercard to provide value.

### Subfield 4 (Reserved for Future Use)

DE 48, subelement 61, subfield 4 is reserved for future use.

### Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	n-1
Data field	Contents of subfield 4
Justification	N/A

### Values

0

### **Subfield 5 (Final Authorization Indicator)**

DE 48, subelement 61, subfield 5 (Final Authorization Indicator) designates the authorization type to determine the level of authorization finality.

#### **Attributes**

Attribute	Description
Data representation	n-1
Data field	Contents of subfield 5
Justification	N/A

#### **Values**

Value	Description
0	Normal authorization/undefined finality
1	Final authorization
2	Prauthorization

#### **Application notes**

This field is only applicable to Debit Mastercard transactions acquired by the Dual Message System and issued by the Single Message System. Issuers must use this field to identify the authorization type to adequately manage the cardholder balance management and open to buy amounts in support of the standards for processing authorizations and preauthorizations.

Final authorization is an authorization request for an amount greater than zero where the final transaction amount is known, and the transaction is not expected to be canceled after the authorization request is approved in full.

Normal authorization/undefined finality is an authorization request for an amount greater than zero where final amount may or may not be known, and the transaction is not expected to be canceled after the authorization request is approved in full.

Prauthorization is an authorization request for an estimated amount, the amount of the original authorization may be adjusted if the final transaction amount is different than the original authorization amount requested, or the transaction might not be completed for reasons other than technical failure or lack of full issuer approval.

### **Subelement 63 (Trace ID)**

DE 48 (Additional Data), subelement 63 (Trace ID) contains data from DE 63 (Network Data), subfield 1 (Financial Network Code) and subfield 2 (Banknet Reference Number) and DE 15

(Date, Settlement) that is mapped from the Authorization Request/0100 message to a Financial Transaction Request/0200 message for issuers on the Single Message System.

### Attributes

Attribute	Position	Description	Value
Subelement ID		n-2	63
Subelement length		n-2	15
Data representation		ans-15	
Number of subfields		N/A	
Network data	1-3	ans-3	Contents of DE 63, subfield 1 (Financial Network Code) in the original Financial Transaction Request/0200 message.
Network data	4-9	ans-6	Contents of DE 63, subfield 4 (Banknet Reference Number) in the original Financial Transaction Request/0200 message.
Date settlement	10-13	ans-4	Contents of DE 15 (Date, Settlement) in the original Financial Transaction Request/0200 message. The four-digit Settlement Date is in MMDD format.
Original message indicator	14-15	ans-2	For original Financial Transaction Request/0200 messages, this contains value 01.  For incremental messages that are sent for the same transaction event, this contains two spaces.  For Reversal Transactions, this contains value 02.

### Usage

Following is the usage of subelement 63 (whether it is mandatory, conditional, optional, system-provided, or not required) in Acquirer Reversal Advice/0420: acquirer initiated messages:

Message	Org	Sys	Dst
Financial Transaction Request/0200	X	.	C

---

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Advice/0220: acquirer generated	X	.	C
Financial Transaction Advice/0220: system generated	C	.	C
Financial Transaction Advice/0220: force post	C	.	C
Acquirer Reversal Advice/0420: acquirer Initiated	.	X	C

### **Application notes**

#### **Single Message System support for multiple authorizations (incremental) extended to all merchant types**

Single Message System issuers must be prepared to support DE 48, subelement 63 for Financial Transaction Request/0200, Financial Transaction Advice/0220, and Acquirer Reversal Advice/0420 messages on the Single Message System for all Merchant Category Code types for transactions acquired through the Dual Message System.

### **Subelement 64 (Transit Program)**

DE 48, subelement 64 (Transit Program) identifies a transit transaction.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	64
Subelement length	n-2	04
Data representation	n-4	
Number of subfields	2	Subfield 1 (Transit Transaction Type Indicator)  Subfield 2 (Transportation Mode Indicator)

### **Usage**

Following is the usage of subelement 64 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

---

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	.	C
Financial Transaction Advice/0220	C	.	C

---

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Advice/0220: Debit Mastercard stand-in	.	C	C

**NOTE:** The Transaction Program field is not limited to MCC 4111, MCC 4131, and MCC 4784.

#### **Subfield 1 (Transit Transaction Type Indicator)**

DE 48, subelement 64, subfield 1 contains the transit transaction type indicator for the transit program.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-2
Data field	Contents of positions 1–2
Justification	N/A

#### **Values**

<b>Value</b>	<b>Description</b>
01	Pre-funded
02	Real-time authorized
03	Post-authorized aggregated
04	Authorized aggregated split clearing
05	Other
06	Post-authorized aggregated Maestro
07	Debt recovery
08–99	Reserved for future use

**NOTE:** Values 3, 4, and 6 for subelement 64, subfield 1 (Transit Transaction Type Indicators) are limited to MCC 4111, MCC 4131, and MCC 4784.

### **Subfield 2 (Transportation Mode Indicator)**

DE 48, subelement 64, subfield 2 contains the transportation mode indicator for transit transactions.

#### **Attributes**

Attribute	Description
Data representation	n-2
Data field	Contents of positions 3-4
Justification	N/A

#### **Values**

Value	Description
00	Unknown
01	Urban bus
02	Interurban bus
03	Light train mass transit (underground metro, LTR)
04	Tram
05	Commuter trains
06	Water borne vehicle
07	Toll
08	Parking
09	Taxi
10	High speed train
11	Rural bus
12	Express commuter train
13	Para transit
14	Self drive vehicle
15	Coach
16	Locomotive
17	Powered motor vehicle
18	Trailer
19	Regional train

---

<b>Value</b>	<b>Description</b>
20	Inter city
21	Funicular train
22	Cable car
23–99	Reserved for future use

### **Subelement 65 (Terminal Compliant Indicator)**

DE 48 (Additional Data—Private Use), subelement 65 (Terminal Compliant Indicator) contains two subfields that identify whether or not a point-of-sale (POS) terminal from which the transaction originated is Terminal Line Encryption (TLE) and Unique Key Per Terminal (UKPT)/Derived Unique Key Per Terminal (DUKPT) compliant. This field must be present in intracountry, all card-present, POS transactions acquired in India.

<b>Attribute</b>	<b>Description</b>
Subelement ID	65
Subelement length	2
Data representation	n-2
Data field	Contents of subfields 1–2
Subfields	2
Justification	See "Subfields"

### **Usage**

Following is the usage of subelement 65 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	•	C
Financial Transaction Advice/0220	C	•	C

### **Values**

Contains the Terminal Compliant Indicator values in subfields 1 and 2.

### **Subfield 1 (TLE Compliant)**

DE 48, subelement 65, subfield 1 indicates whether or not the point-of-sale (POS) terminal from which the transaction occurred is Terminal Line Encryption (TLE)-certified.

#### **Attributes**

Attribute	Description
Data representation	n-1
Data field	Contents of subfield 1
Justification	N/A

#### **Values**

Value	Description
1	Not certified
2	Certified

### **Subfield 2 (UKPT/DUKPT Compliant)**

DE 48, subelement 65, subfield 2 indicates whether or not the point-of-sale (POS) terminal from which the transaction occurred is Unique Key Per Terminal/Derived Unique Key Per Terminal (UKPT/DUKPT-certified).

#### **Attributes**

Attribute	Description
Data Representation	n-1
Data Field	Contents of subfield 2
Justification	N/A

#### **Values**

Value	Description
1	Not certified
2	Certified

## **Subelement 66 (Authentication Data)**

DE 48, subelement 66 (Authentication Data) is populated by the acquirer and passed to the issuer to indicate the Program Protocol being used, 3D Secure Version 1.0 (3DS 1.0) or EMV 3-D Secure (3DS 2.0), and Directory Server Transaction ID.

This is a conditional field and must be provided by the acquirers part of the financial transaction messages if they are participating and have previously authenticated using the Mastercard Identity Check program. This field will not be edited to ensure that these elements were provided on the transaction. If provided by the acquirer or processor, it must meet the specifications defined.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	66
Subelement length	n-2	05 to 45
Data representation	ans...45; LLVAR	
Data field		Contents of subfields
Number of subfields	2	Subfield 1 (Program Protocol) Subfield 2 (Directory Server Transaction ID)

### **Usage**

Following is the usage of subelement 66 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	.	C
Financial Transaction Response/0210	.	CE	C
Financial Transaction Advice/0220	C	.	C

### **Subfield 1 (Program Protocol)**

DE 48 subelement 66, subfield 1 indicates the Program Protocol.

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	an-1

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<b>Attribute</b>	<b>Description</b>
Data field	Contents of Subfield 1
Justification	N/A

### Values

<b>Value</b>	<b>Description</b>
1 =	3D Secure Version 1.0 (3DS 1.0)
2 =	EMV 3-D Secure (3DS 2.0)

### Subfield 2 (Directory Server Transaction ID)

The Directory Server Transaction ID is generated by the Mastercard Directory Server during the authentication transaction and passed back to the merchant with the authentication results. The subfield 2 (Directory Server Transaction ID) allows the acquirer to pass the Directory Server Transaction ID during authorization in order to link authentication and authorization data.

### Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	ans-36
Data field	Contents of Subfield 2
Justification	N/A

### Values

The Directory Server Transaction ID is a Universally Unique Transaction ID which can be provided by the processors/acquirers as part of the transaction.

Example of a Directory Server Transaction ID: f38e6948-5388-41a6-bca4-b49723c19437

### Subelement 67 (MoneySend Information)

DE 48, subelement 67 (MoneySend Information) contains the subfield representing the Sanctions Score.

### Attributes

<b>Attribute</b>	<b>Value</b>
Subelement ID	67
Subelement length	2

---

<b>Attribute</b>	<b>Value</b>
Data representation	ans...99; LLVAR
Number of subfields	1
Justification	See "Subfields"

### **Usage**

Following is the usage of subelement 67 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C
Financial Transaction Request Response/0210	.	X	C
Financial Transaction Advice/0220: system-generated	.	X	C

See "Subfields."

### **Subfield 01 (Sanctions Score)**

DE 48, subelement 67, subfield 1 (Sanctions Score) contains the Sanctions Score populated by Mastercard.

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	01
Subfield length	2
Data representation	n-3
Data field	Contents of subfield 1
Justification	Right Justified with leading zeros

### **Values**

**NOTE:** Mastercard has suspended the MoneySend Sanctions Scoring Service effective 30 April 2021. Customers will be advised accordingly should Mastercard reinstate the service at a later date.

For issuers who opt-in to the Sanctions Scoring service, a Sanctions Score value will be populated by Mastercard on all cross-border MoneySend Payment Transactions globally and

domestic MoneySend Payment Transactions in Egypt, Canada, across Europe and the United States.

The Sanctions Scoring service automatically checks the Sender name (consumer, business, government, and non-government) against select sanctions watchlists such as the OFAC Specially Designated Nationals and Blocked Persons List, UN List, and EU List.

Based on the likelihood of a match of the sender's name to a sanctioned individual or entity, a score of 000 or a score from 070 to 099 is generated and included in DE 48 (Additional Data), subelement 67 (MoneySend Information), subfield 1 (Sanctions Score) of the authorization request message delivered to the issuer.

A higher score indicates a closer match to names on the applicable screening lists, while lower scores indicate a less likely match. When a score cannot be determined, the value will be 999. A score of 000 indicates that the transaction passes the Sanctions Scoring check.

**NOTE:** If the Sanctions Score is 100 or if the Sanctions Score produced by the Sanctions Scoring service is greater than or equal to the Blocking Score set up by the issuer in the opt-in service, then the authorization request will be declined and an advice will be sent to the issuer with the value of 33F (MoneySend Issuer Blocking—Sanctions Score limit exceeded) in DE 48, subelement 71 (On-behalf Service [OBS]), subfield 1 (On-behalf [OB] Service Indicator) and subfield 2 (On-behalf [OB] Result 1).

### **Subelement 69 (Trace ID of Authorization Advice)**

DE 48, subelement 69 (Trace ID of Authorization Advice) contains data from DE 63 (Network Data), subfield 1 (Financial Network Code) and subfield 2 (Banknet Reference Number) and DE 15 (Date, Settlement) that is mapped from the Authorization Advice/0120 message to an Acquirer Reversal Advice/0420 message for Debit Mastercard issuers connected to the Single Message System.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subelement ID	69
Subelement length	2
Data representation	ans-13
Data field	Contents of positions 1-13
Subfields	N/A
Justification	N/A

#### **Usage**

Following is the usage of this subelement and whether it is mandatory, conditional, optional, or system provided in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Acquirer Reversal Advice/0420 message	.	X	C

### **Values**

Contains the contents of positions 1-13.

**Table 52: Positions 1-9 (Network Data)**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-9
Data field	Contents of positions 1-9
Values	Contents of DE 63 (Network Data) in the original Authorization Advice/0120 message.

**Table 53: Positions 10-13 (Date Settlement)**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-4
Data field	Contents of positions 10-13
Values	Contents of DE 15 (Date, Settlement) in the original Authorization Advice/0120 message. The four-digit settlement date is in MMDD format.

### **Application notes**

Single Message System issuers must be prepared to receive DE 48, subelement 69 in Acquirer Reversal Advice/0420 messages on the Single Message System for Merchant Category Code 5542 Automated Fuel Dispenser transactions acquired through the Dual Message System.

### **Subfield 1 (Network Data)**

DE 48, subelement 69, subfield 1 (Network Data) contains the network data.

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	01

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<b>Attribute</b>	<b>Description</b>
Subfield length	2
Data representation	ans...09
Justification	N/A

### **Values**

Contents of DE 63 (Network Data) in the original Authorization Advice/0120 message.

### **Subfield 2 (Date Settlement)**

DE 48, subelement 69, subfield 2 (Date Settlement) contains the settlement date.

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	02
Subfield length	2
Data representation	ans-04
Justification	N/A

### **Values**

Contents of DE 15 (Date, Settlement) in the original Authorization Advice/0120 message. The four-digit Settlement Date is in MMDD format.

### **Subelement 70 (Implied Decimal)**

The Single Message System supports subelement 70 for participating processors. The Single Message System supports implied decimal exponent values for all currencies maintained by the Mastercard Network.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	70
Subelement length	n-2	01
Data representation	n-5	
Number of subfields	1	Subfield 1 (Implied Decimal)

### Values

Valid values are 0, 1, 2, or 3.

### Application notes

An example of correct data format would be 70010; where 70 = subelement ID, 01 = subelement length, and 0 = value.

### Subfield 1 (Implied Decimal)

DE 48, subelement 70, subfield 1 contains the implied decimal value.

### Attributes

Attribute	Description
Subfield ID	01
Subfield length	2 positions, value = 01
Data representation	n-1
Data field	Contents of subfield 1
Justification	N/A

### Values

Attribute	Description	Values
Implied decimal	n-1	Valid values are 0 through 3.

### Subelement 71 (On-behalf Service [OBS])

This subelement identifies the type of on-behalf service performed on the transaction. For M/Chip Cryptogram Pre-validation service, the On-behalf Result 1 Indicator identifies the results of the Authorization Request Cryptogram (ARQC) validation and Authorization Response Cryptogram (ARPC) generation. The issuer can use these results in the authorization decision process.

Issuers participating in the Chip to Magnetic Stripe Conversion Service will always receive this subelement. In addition, this subelement is sent when On-behalf M/Chip Cryptogram Pre-validation Service and M/Chip Cryptogram Validation in Stand-In Processing are performed.

Subelement 71 is not sent to the acquirer in any message.

The Accountholder Authentication Value (AAV) is part of the Mastercard® Identity Check program that uses the Universal Cardholder Authentication Field™ (UCAF) data to validate cardholder identity. AAV uses subelement 71 within the On-behalf services program infrastructure to accomplish account holder validation.

Issuers that participate in the Mastercard In Control Real Card Spend Control service will receive Financial Transaction Advice/0220—Debit Mastercard Stand-In messages, regardless of brand, when In Control declines a transaction to the cardholder based on the preassigned spend control rules.

Issuers that participate in the Mastercard Incontrol Real Card Spend Control Service, Mastercard Send (Funding Transactions, MoneySend Payment Transactions, and Gaming and Gambling Payments Transactions) Blocking Service and Mastercard Merchant Presented QR Service will not receive DE 48, subelement 71 in Financial Transaction Advice/0220 (force post) or Acquirer Reversal Advice/0420—Acquirer Initiated Exception messages.

Debit Mastercard issuers that participate in the Mastercard Incontrol Real Card Spend Control Service, Mastercard Send (Funding Transactions, MoneySend Payment Transactions, and Gaming and Gambling Payments Transactions) Blocking Service and Mastercard Merchant Presented QR Service will not receive DE 48, subelement 71 in Financial Transaction Advice/0220 (force post) or Acquirer Reversal Advice/0420—Acquirer Initiated Exception messages.

### Attributes

Attribute	Description	Value
Subelement ID	n-2	71
Subelement Length	n-2	04...40
Data Representation	ans...40; LLVAR (multiples of 4)	
Number of Subfields	3	Subfield 1—On-behalf Service Indicator Subfield 2 (On-behalf Result 1) Subfield 3 (On-behalf Result 2)

### Subfield 1 (On-behalf Service Indicator)

DE 48, subelement 71, subfield 1 contains the on-behalf service indicator.

### Attributes

Attribute	Description
Data representation	an-2
Data field	Contents of subfield 1
Justification	N/A

### **Subfield 2 (On-behalf Result 1)**

DE 48, subelement 71, subfield 2 indicates the results of the service processing.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	an-1
Data field	Contents of subfield 2
Justification	N/A

### **Subfield 3 (On-behalf Result 2)**

DE 48, subelement 71, subfield 3 contains the on-behalf result 2 indicator value.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-1
Data field	Contents of subfield 3
Justification	N/A

#### **Values**

May contain a space or a value.

**NOTE:** This subfield is reserved for Single Message System use only.

#### **Valid Subfield 1 and Subfield 2 value combinations**

Following are the valid DE 48 (Additional Data), subelement 71 (On-behalf Service [OBS]), subfield 1 (On-behalf [OB] Service Indicator) and subfield 2 (OB Result 1) value combinations. The contents of subfield 2 depend on the contents of subfield 1 as described here.

#### **Attributes**

<b>Attribute</b>	<b>Subfield 1 (On-behalf Service Indicator)</b>	<b>Subfield 2 (On-behalf Result 1)</b>
Data representation	an-2	an-1
Data field	Contents of positions 1–2	Contents of position 3
Justification	Left-justified	N/A

## Values

<b>DE 48, Subelement 71, Subfield 1 (OB Service Indicator) Values (an-2)</b>		<b>DE 48, Subelement 71, Subfield 2 (OB Result 1) Values (an-1)</b>
01 =	Chip to magnetic stripe conversion service	C = Conversion of the M/Chip transaction to a magnetic stripe transaction was completed from an original POS PAN Entry Mode value of 05 [PAN auto-entry via chip] or 79 [Chip card/PAN entry via manual entry]
		M = Conversion of the M/Chip fallback transaction to a magnetic stripe transaction was completed from an original POS PAN Entry Mode value of 80—PAN auto-entry with magnetic stripe
		S = Conversion of the M/Chip transaction to a magnetic stripe transaction was completed from an original POS PAN Entry Mode value of 07—PAN auto-entry via contactless M/Chip
02 =	M/Chip cryptogram pre-validation service	A = Valid Application Cryptogram (AC); ATC outside allowed range
		E = Valid Application Cryptogram; ATC Replay
		F = Format Error
		G = Application Cryptogram is valid but not an ARQC nor a TC, status of TVR/CVR unknown
		I = Invalid Cryptogram
		K = No matching key file for this PAN, PAN expiry date and KDI combination
		T = Valid ARQC/TC and ATC; TVR/CVR invalid
		U = Unable to process
		V = Valid
		X = Security platform time out
		Z = Security platform processing error
03 =	M/Chip cryptogram validation in stand-in processing	A = Valid Application Cryptogram (AC); ATC outside allowed range
		E = Valid Application Cryptogram; ATC Replay
		F = Format Error
		G = Application Cryptogram is valid but not an ARQC nor a TC, status of TVR/CVR unknown
		I = Invalid Cryptogram

<b>DE 48, Subelement 71, Subfield 1 (OB Service Indicator) Values (an-2)</b>	<b>DE 48, Subelement 71, Subfield 2 (OB Result 1) Values (an-1)</b>
	K = No matching key file for this PAN, PAN expiry date, and KDI combination
	T = Valid ARQC/TC and ATC; TVR/CVR invalid
	U = Unable to process
	V = Valid
	X = Security platform time out
	Z = Security platform processing error
05 = Mastercard® Identity Check AAV verification service	A = AAV and Amount Checked
	B = Balance to Verify
	C = Consider the Amount
	D = DS Transaction ID Failed
	I = Invalid AAV
	K = No matching key file for this PAN, PAN expiry date, and KDI combination
	S = DS Transaction ID Present – See Balance to Verify
	T = Transaction ID Present – Consider the Amount
	U = Unable to process
	V = Valid
	X = Security platform time out
	Z = Security platform processing error
06 = Mastercard® Identity Check dynamic AAV verification in stand-in processing	A = AAV and amount checked
	B = Balance to verify
	C = Consider the amount
	D = DS transaction ID failed
	I = Invalid AAV
	K = No matching key file for this PAN, PAN expiry date, and KDI combination
	M = Mismatched currency
	S = DS transaction ID present; see balance to verify
	T = Transaction ID present; consider the amount
	U = Unable to process

<b>DE 48, Subelement 71, Subfield 1 (OB Service Indicator) Values (an-2)</b>	<b>DE 48, Subelement 71, Subfield 2 (OB Result 1) Values (an-1)</b>
	V = Valid
	X = Security platform time out
	Z = Security platform processing error
10 = CVC1 validation service in stand-in	I = Invalid CVC 1
	U = Unable to process
	V = Valid
11 = CVC 1 pre-validation service	I = Invalid CVC 1
	K = No matching key file for this PAN, PAN Expiry date combination
	U = Unable to process
	V = Valid
<b>NOTE:</b> Issuers that enroll account ranges in the OBS 11 (CVC 1 Pre-Validation Service) that are currently enrolled in OBS 10 (CVC 1 Validation Service in Stand-In) must request the removal of those account ranges from the OBS 10 service.	
<b>NOTE:</b> CVC 1 Pre-Validation Service is not offered for Russia domestic transactions.	
14 = Contactless mapping service	C = Conversion of contactless account number to PAN was completed
	I = Invalid
	U = Unable to process
15 = Dynamic CVC 3 pre-validation (with or without contactless mapping service)	A = ATC outside allowed range (applicable when ATC value is dynamic [varying] value)
	E = CVC 3 ATC Replay
	I = Invalid CVC 3
	K = No matching key file for this PAN, PAN expiry date, and KDI combination
	N = Unpredictable Number Mismatch (applicable when the UN is dynamic [varying] value)  (Indicates that the number/length in the discretionary data in DE 45 or DE 35 does not match the number/length provided by the issuer during personalization)
	U = Unable to process

<b>DE 48, Subelement 71, Subfield 1 (OB Service Indicator) Values (an-2)</b>	<b>DE 48, Subelement 71, Subfield 2 (OB Result 1) Values (an-1)</b>
	V = Valid
	X = Security platform time out
	Z = Security platform system error
16 = Dynamic CVC 3 validation in stand-in processing	A = ATC outside allowed range (applicable when ATC value is dynamic [varying] value)
	E = CVC 3 ATC Replay
	I = Invalid CVC 3
	K = No matching key file for this PAN, PAN expiry date, and KDI combination
	N = Unpredictable Number Mismatch (applicable when the UN is dynamic [varying] value)  (Indicates that the number/length in the discretionary data in DE 45 or DE 35 does not match the number/length provided by the issuer during personalization)
	U = Unable to process
	V = Valid
	X = Security platform time out
	Z = Security platform system error
17 = In Control virtual card service	A = Virtual Card Number (expiration date does not match)
	B = Virtual Card Number (expiration date expired)
	C = Virtual Card Number Virtual CVC 2 does not match
	D = In Control Validity Period Limit
	E = In Control Transaction Amount Limit Check
	F = In Control Cumulative Amount Limit Check
	G = In Control Transaction Number Usage
	H = In Control Merchant ID Limit
	I = In Control Invalid Virtual Card Number–Real Card Number mapping relationship
	J = In Control MCC Limit
	K = In Control Database Status Bad
	L = In Control Geographic Restriction
	M = In Control Transaction Type Restriction

<b>DE 48, Subelement 71, Subfield 1 (OB Service Indicator) Values (an-2)</b>	<b>DE 48, Subelement 71, Subfield 2 (OB Result 1) Values (an-1)</b>
	P = In Control Transaction Time/Date Restriction
	U = Unable to process
	V = Valid
18 = Fraud scoring service	C = Fraud Scoring Service was performed successfully
	U = Fraud Scoring Service was not performed successfully
20 = In Control RCN spend control service	D = In Control Validity Period Limit
	E = In Control Transaction Amount Limit Check
	F = In Control Cumulative Amount Limit Check
	G = In Control Transaction Number Usage
	H = In Control Merchant ID Limit
	J = In Control MCC Limit
	K = In Control Database Status Bad
	L = In Control Geographic Restriction
	M = In Control Transaction Type Restriction
	P = In Control Transaction Time/Date Restriction
	U = Unable to process
	V = Valid
25 = Account data compromise information	Y = Compromised Event Data Found
	N = Compromised Event Data Not Found
	U = Unable to process
31 = Chip CVC to CVC 1 conversion service (CVC 1 key/decision matrix only)	C = Chip CVC Validated Successfully; Conversion of Chip CVC to CVC 1 Performed Successfully
	F = Track Data Formatted Incorrectly
	I = Chip CVC Invalid; Conversion of Chip CVC to CVC 1 Not Performed
	K = Issuer CVC 1 Key Record <b>not</b> Found for Account Range / Expiry Date combination; Service Not Performed
	U = Unable to process
32 = Chip CVC to CVC 1 conversion service (separate keys/decision matrices)	C = Chip CVC Validated Successfully; Conversion of Chip CVC to CVC 1 Performed Successfully
	F = Track Data Formatted Incorrectly

<b>DE 48, Subelement 71, Subfield 1 (OB Service Indicator) Values (an-2)</b>	<b>DE 48, Subelement 71, Subfield 2 (OB Result 1) Values (an-1)</b>
I	= Chip CVC Invalid; Conversion of Chip CVC to CVC 1 Not Performed
K	= Issuer Chip CVC Key Record <b>not</b> found and Issuer CVC 1 Key Record <b>not</b> found for Account Range / Expiry Date combination; Service Not Performed
L	= Issuer CVC 1 Key Record <b>not</b> Found for Account Range / Expiry Date combination; Service Not Performed
M	= Issuer Chip CVC Key Record <b>not</b> Found for Account Range / Expiry Date combination; Service Not Performed
U	= Unable to process
33 = Send Blocking Service <sup>2</sup>	A = Send issuer blocking: Transaction limit not allowed for the Transaction Type Identifier (TTI)
	B = Send issuer blocking: Merchant not allowed for the Transaction Type Identifier (TTI)
	D = Send issuer blocking: Country not allowed for the Transaction Type Identifier (TTI)
	E = Send issuer blocking: Domestic activity only allowed for the Transaction Type Identifier (TTI)
	F = Send issuer blocking: Sanctions Score limit exceeded for the Transaction Type Identifier (TTI)
	G = Send Mastercard blocking: Transaction limit not allowed for the Transaction Type Identifier (TTI) and Country
	H = Send Mastercard blocking: Merchant not allowed for the Transaction Type Identifier (TTI)
	I = Send Mastercard blocking: Cross-border not allowed for the Transaction Type Identifier (TTI)
	J = Send Mastercard blocking: Transaction Count exceeded for the Transaction Type Identifier (TTI)
	K = Send Mastercard blocking: Aggregate transaction amount limit exceeded for the Transaction Type Identifier (TTI)
	L = Send issuer blocking: Transaction Count exceeded for the Transaction Type Identifier (TTI)

<sup>2</sup> OBS 33 result code values A, B, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, U, V, W, X apply to Send Payment Transactions. OBS 33 result code values I, K, R, S, T, U, V, W apply to Send Funding Transactions. OBS 33 result code values I, R, S, U, V, W, Y apply to Send Funding Refund Transactions.

<b>DE 48, Subelement 71, Subfield 1 (OB Service Indicator) Values (an-2)</b>	<b>DE 48, Subelement 71, Subfield 2 (OB Result 1) Values (an-1)</b>
	M = Send issuer blocking: Aggregate transaction amount limit exceeded for the Transaction Type Identifier (TTI)
	N = Send issuer monitoring: Transaction Count exceeded for the Transaction Type Identifier (TTI)
	O = Send issuer monitoring: Aggregate transaction amount limit exceeded for the Transaction Type Identifier (TTI)
	P = Send issuer monitoring: Transaction amount limit exceeded for the Transaction Type Identifier (TTI)
	Q = Send issuer monitoring: Sanctions Score exceeded
	R = Send issuer blocking: Invalid Card
	S = Send Mastercard blocking: Product code invalid for the Transaction Type indicator (TTI)
	T = Send Mastercard blocking: Transaction Amount limit not allowed for the Funding Transaction Type Identifier (TTI)
	U = Unable to process
	V = Valid
	W = Send Mastercard blocking: Country not allowed for the Transaction Type Identifier (TTI)
	X = Send Mastercard blocking: Sender state not populated or invalid for the Transaction Type Identifier (TTI)
	Y = Send Mastercard blocking: Transaction amount limit not allowed for the funding refund transaction
37 = Mastercard Merchant Presented QR blocking service	D = Mastercard Merchant Presented QR Blocking—Transaction Amount Limit Exceeded
	E = Mastercard Merchant Presented QR Blocking—Cumulative Transaction Amount Limit Exceeded
	F = Mastercard Merchant Presented QR Blocking—Domestic Activity Only
	U = Unable to Process
	V = Valid
50 = Mastercard Digital Enablement Service PAN mapping	C = Conversion of Token to PAN completed successfully
	F = Format Error
	I = Invalid Token
	U = Unable to process

<b>DE 48, Subelement 71, Subfield 1 (OB Service Indicator) Values (an-2)</b>		<b>DE 48, Subelement 71, Subfield 2 (OB Result 1) Values (an-1)</b>
51 = Mastercard Digital Enablement Service chip pre-validation		A = ATC outside allowed range (applicable when ATC value is dynamic [varying] value)
		E = ATC Replay
		F = Format Error
		G = Application Cryptogram is valid but not an ARQC nor a TC, status of TVR/CVR unknown
		I = Invalid Cryptogram
		K = No matching key file for this PAN, PAN expiry date and KDI combination
		T = Valid ARQC/TC and ATC; TVR/CVR invalid
		U = Unable to process
		V = Valid ARQC/TC and ATC and TVR/CVR
		X = Security platform time out
		Z = Security platform system error
52 = Mastercard Digital Enablement Service CVC 3 pre-validation		A = ATC outside allowed range (applicable when ATC value is dynamic [varying] value)
		E = CVC 3 ATC Replay
		H = Invalid Time Validation
		I = Invalid CVC 3
		K = No matching key file for this PAN, PAN expiry date, and KDI combination
		N = Unpredictable Number Length Indicator Mismatch
		U = Unable to process
		V = Valid
		X = Security platform time out
		Z = Security platform system error
54 = Mastercard Digital Enablement Service digital payment data Validation service <sup>3</sup>		A = If the transaction amount in DE 4 is less than or equal to the approximate amount in the cryptogram
		B = If the transaction amount in DE 4 is greater than the approximate amount in the cryptogram by greater than 0% to 19.99%

<sup>3</sup> Refer to [Valid Subfield 1 and Subfield 3 value combinations](#) for more information on DE 48, subelement 71, subfield 1, value 54.

<b>DE 48, Subelement 71, Subfield 1 (OB Service Indicator) Values (an-2)</b>	<b>DE 48, Subelement 71, Subfield 2 (OB Result 1) Values (an-1)</b>
	C = If the transaction amount in DE 4 is greater than the approximate amount in the cryptogram by 20% or more
55 = Merchant validation service	M = The submitted merchant data is a match to Mastercard's merchant data
	N = The submitted merchant data is not a match to Mastercard's merchant data
61 = Mastercard Digital Enablement Service cloud-based payments chip pre-validation service	D = ATC Invalid—Not in list of currently active Single-Use Keys
	E = ATC Replay
	F = Format Error
	I = Invalid MD AC and UMD AC
	K = No matching key file for this PAN, PAN expiry date, and KDI combination
	L = Invalid MD AC; Valid UMD AC
	M = Valid MD AC; Invalid UMD AC (Mobile PIN Try Counter Max Limit Reached, Token Suspended)
	P = Valid MD AC; Invalid UMD AC (Invalid Mobile PIN)
	T = Invalid TVR/CVR
	U = Unable to process
	V = Valid
	X = Security platform time out
62 = Mastercard Digital Enablement Service cloud-based payments magnetic stripe pre-validation service	D = ATC Invalid—Not in list of currently active Single-Use Keys
	E = ATC Replay
	F = Format Error
	H = Invalid Time Validation
	I = Invalid MD AC and UMD AC
	K = No matching key file for this PAN, PAN expiry date, and KDI combination
	L = Invalid MD AC; Valid UMD AC
	M = Valid MD AC; Invalid UMD AC (Mobile PIN Try Counter Max Limit Reached, Token Suspended)
	N = Unpredictable Number Length Indicator Mismatch

<b>DE 48, Subelement 71, Subfield 1 (OB Service Indicator) Values (an-2)</b>		<b>DE 48, Subelement 71, Subfield 2 (OB Result 1) Values (an-1)</b>
P	=	Valid MD AC; Invalid UMD AC (Invalid Mobile PIN)
U	=	Unable to process
V	=	Valid
X	=	Security platform time out
Z	=	Security platform system error
71	=	Token service provider cloud-based payments chip validation service in stand-in
E	=	ATC Replay
F	=	Format Error
I	=	Invalid MD AC and UMD AC
K	=	No matching key file for this PAN, PAN expiry date, and KDI combination
L	=	Invalid MD AC; Valid UMD AC
P	=	Valid MD AC; Invalid UMD AC (Invalid Mobile PIN)
T	=	Invalid TVR/CVR
U	=	Unable to Process
V	=	Valid
X	=	Security platform time out
Z	=	Security platform system error

#### **Valid Subfield 1 and Subfield 3 value combinations**

Following are the valid DE 48 (Additional Data), subelement 71 (On-behalf Service [OBS]), subfield 1 (On-behalf [OB] Service Indicator) and subfield 3 (OB Result 2) value combinations. The contents of subfield 3 depend on the contents of subfield 1 as described here.

#### **Attributes**

<b>Attribute</b>	<b>Subfield 1 (OB Service Indicator)</b>	<b>Subfield 3 (OB Result 2)</b>
Data representation	an-2	ans-1
Data field	Contents of positions 1–2	Contents of position 4
Justification	Left-justified	N/A

## Values

<b>DE 48, Subelement 71, Subfield 1 (OB Service Indicator) Values (an-2)</b>	<b>DE 48, Subelement 71, Subfield 3 (OB Result 2—RCA Identifier Validation) Values (ans-1)</b>
54 = Mastercard Digital Enablement Service digital payment data validation Service <sup>4</sup>	M = In Europe: Transaction authenticated with Mastercard-qualified multifactor authentication method used as SCA delegation and valid merchant dynamic linking  Outside of Europe: Transaction authenticated with Mastercard-qualified multi-factor authentication method
	N = In Europe: Transaction not authenticated with Mastercard-qualified multifactor authentication method used as SCA delegation or no valid merchant dynamic linking  Outside of Europe: Transaction not authenticated with Mastercard-qualified multi-factor authentication method

### Valid Subfield 1, Subfield 2, and Subfield 3 value combinations

Following are the valid DE 48 (Additional Data), subelement 71 (On-behalf Service [OBS]), subfield 1 (On-behalf [OB] Service Indicator), subfield 2 (OB Result 1), subfield 3 (On-behalf Result 2) value combinations.

<b>Subfield 1—On-behalf (OB) Service</b>	<b>Subfield 2—On-behalf Result 1</b>	<b>Subfield 3—On-behalf Result 2</b>
<b>50</b> = Mastercard Digital Enablement Service PAN Mapping	<b>C</b> = Conversion of Token to PAN completed successfully <b>F</b> = Format Error <b>I</b> = Invalid Token <b>U</b> = Unable to process	<b>SPACE</b>

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<sup>4</sup> Refer to [Valid Subfield 1 and Subfield 2 value combinations](#) for more information on DE 48, subelement 71, subfield 1, value 54.

<b>Transaction Description</b>	<b>Subfield 1—On-behalf (OB) Service</b>	<b>Subfield 2—On-behalf Result 1</b>	<b>Subfield 3—On-behalf Result 2</b>
<b>Tokenized transactions that carry Dynamic Token Validation Code</b>	<b>61</b> - Mastercard Digital Enablement Service Static Token and Cloud-based payments Chip Pre-validation service	<b>V</b> = Valid <b>I</b> = Invalid <b>U</b> = Unable to Process	<b>T</b> = Dynamic Token Validation Code
<b>Tokenized transactions that carry DSRP cryptogram</b>	<b>61</b> - Mastercard Digital Enablement Service Static Token and Cloud-based payments Chip Pre-validation service	<b>V</b> = Valid <b>I</b> = Invalid <b>U</b> = Unable to Process	<b>SPACE</b> = DSRP Cryptogram

### **Application notes**

Single Message System issuers receive OBS 50 (Mastercard Digital Enablement Service PAN mapping) and corresponding result codes in DE 48, subelement 71 indicating the status of PAN mapping for both static and cloud tokenized transactions.

Issuers receive result code T in DE 48, subelement 71, subfield 3 (On-behalf Result 2) to indicate that the acquirer submitted dynamic token validation code (DTVC) and the validation outcome in On-Behalf Result 1 pertains to DTVC.

### **Subelement 72 (Issuer Chip Authentication)**

DE 48, subelement 72 (Issuer Chip Authentication) carries data used during cryptogram processing.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Values</b>
Subelement ID	n-2	72
Subelement length	n-2	
Data representation	b...16; LLVAR (The "LL" length field of LLVAR must be between 8-16 positions.)	
Number of subfields	N/A	

#### **Usage**

Following is the usage of subelement 72 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	C	C
Financial Transaction Advice/0220 message	.	C	C

### **Values**

When the issuer returns DE 48 (Additional Data), subelement 72 (Issuer Chip Authentication) and does not send DE 55 (Integrated Circuit Card System Related Data) in the Financial Transaction Request Response/0210 message, Mastercard provides the appropriate DE 55, tag 91 value in the Financial Transaction Request Response/0210 message to the acquirer, matching the approval or decline decision of the issuer.

As Mastercard provides the appropriate DE 55, tag 91 value in the response message, issuers do not need to return DE 48, subelement 72 in their response messages.

### **Application Notes**

Issuers no longer need to return DE 48, subelement 72 in their response messages.

## **Subelement 74 (Additional Processing Information)**

Acquirers that support chip transaction processing must be able to receive this subelement when there is a chip cryptogram validation problem.

Issuers that support chip transaction processing may include this subelement when there is a chip cryptogram validation problem to provide acquirers with additional information.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	74
Subelement length	n-2	03...30
Data representation	an...30; LLVAR—The LL length field of LLVAR must be an integral multiple of 03, not to exceed 30.	
Number of subfields	2	Subfield 1—Process Indicator Subfield 2—Processing Information

### **Usage**

Following is the usage of subelement 74 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request Response/0210	O	X	C

### Application Notes

The Single Message System will add DE 48, subelement 74 to the Financial Transaction Request Response/0210 message to the acquirer when the transaction is eligible for the Chip Fallback Transaction downgrade. In this scenario, subelement 74, subfield 1 value will be 90 and subelement 74 subfield 2 value will be C.

### Subfield 1 (Process Indicator)

DE 48, subelement 74, subfield 1 contains the process indicator for the chip transaction and identifies the service.

#### Attributes

Attribute	Description
Data representation	an-2
Data field	Contents of subfield 1
Justification	N/A

#### Values

Value	Description
02	Mastercard on-behalf service: M/Chip cryptogram pre-validation
03	Mastercard on-behalf service: M/Chip cryptogram validation in stand-in processing
50	Issuer chip validation
90	Chip fallback transaction downgrade process

### Subfield 2 (Processing Information)

DE 48, subelement 74, subfield 2 contains processing information for the chip transaction and provides additional information about the service.

#### Attributes

Attribute	Description
Data representation	an-1

<b>Attribute</b>	<b>Description</b>
Data field	Contents of subfield 2
Justification	N/A

### Values

<b>Value</b>	<b>Description</b>
A	Valid application cryptogram (AC); Application transaction Counter (ATC) outside allowed range
C	Completed successfully
E	Valid application cryptogram; ATC replay
F	Format error on DE 55, DE 48, subelement 43, or DE 104, subelement 001
G	Cryptogram in application is valid but is not an ARQC, or a TC
I	Application cryptogram invalid
K	No matching key file for this PAN, PAN expiry date and KDI combination
T	Application cryptogram is valid but TVR/CVR was invalid
U	Application cryptogram could not be validated due to technical error
X	Issuer provided incorrect subfield 2 value Security platform time out
Z	Security platform processing error

### Valid Subfield 1 and Subfield 2 value combinations

Following is the valid DE 48, subelement 74, subfield 1 (Process Indicator) and subfield 2 (Processing Information) value combinations. The contents of subfield 2 depend on the contents of subfield 1 as described here.

<b>IF subfield 1 contains...</b>	<b>THEN subfield 2 may contain...</b>
02	A, E, F, G, I, K, T, U, X, or Z
03	A, E, F, G, I, K, T, U, X, or Z
50	A, E, F, G, I, T, U, or X
90	C

## Subelement 75 (Fraud Scoring Data)

Customers can enroll with one of Mastercard scoring solutions, Expert Monitoring Real time Fraud Scoring Service or Decision Intelligence. A score will be included in Financial Transaction Request/0200 messages, and Financial Transaction Advice/0220—Debit Mastercard Stand-In messages to the issuer when the Expert Monitoring, Fraud Scoring Service, or Decision Intelligence were performed on a transaction. Issuers may also enroll in Fraud Rule Manager to create rules that may adjust these fraud scores.

### Attributes

Attribute	Description	Value
Subelement ID	n-2	75
Subelement length	n-2	13...32
Data representation	an...32; LLVAR	
Number of subfields	5	Subfield 1—Fraud Assessment Score Subfield 2 (Score Reason Code) Subfield 3 (Rules Score) Subfield 4 (Rule Reason Code 1) Subfield 5 (Rule Reason Code 2)

### Application Notes

The Single Message System inserts this subelement when one of the Fraud Scoring Services is performed or when both a Fraud Scoring Service and Fraud Rule Manager Service are performed on the transaction.

**NOTE:** When a rule adjusted score is provided in subfield 3, at least one or more rule reason code values will be provided in subfields 4–5. However, rule reason code values may be provided in subfields 4 or 5 with, or without, a rule adjusted score in subfield 3.

**NOTE:** Issuers participating in a scoring service will receive subfields 1–2. If those issuers choose to participate in the Fraud Rule Manager Service then those issuers must also prepare to receive subfields 3–5.

**NOTE:** DE 48, subelement 75 will not be included in Financial Transaction Request/0200 messages to the issuer when Mastercard is unable to perform the Fraud Scoring service.

Mastercard Decision Intelligence and Expert Monitoring Services evaluate fraud detection elements to produce a score that indicates a level of risk in the transaction. Both services utilize the same DE 48, subelement 75 field with financial transaction messages. Issuers can only enroll with one of these services through their Mastercard account representative.

These optional fraud scoring services provide issuers with a real-time score on single message financial transaction messages using predictive modeling technology.

Expert Monitoring (EMS) generates a fraud detection score that takes into account widespread fraud monitoring, fraud rules, and transaction fraud models and profiles.

Decision Intelligence (DI) generates a transaction decision score that takes into account fraud detection elements and integrates them with cardholder segmentation data from Mastercard Authorization IQ (CNP transaction attributes are for Dual Message transactions only.)

Mastercard Safety Net provides issuers with a second line of defense to limit the impact of a large-scale fraud attack on one or more of their payment channels (for example, in ATM or e-commerce) when their payment systems are breached. The service also identifies when large-scale fraud attacks are occurring, utilizing insights from the Mastercard Network, so that appropriate action can be taken by the issuer. It does not replace an issuer's primary fraud prevention system. Issuers may alternatively enroll in the Safety Net Alert Only feature.

When a transaction is declined by the Safety Net service, issuers will receive a Financial Transaction Advice/0220 message containing

- DE 48, subelement 71, subfield 1 = 18 (Fraud Scoring Service)
- DE 48, subelement 71, subfield 2 = C (Fraud Scoring Service was performed successfully)
- DE 48, subelement 75, subfield 1 = 998 or 000
- DE 48, subelement 75, subfield 2 = NM (Network Monitor)
- DE 60, subfield 1 = 120 (Transaction Blocking), and
- DE 121 = 000003 (Decline occurred due to an on-behalf service).

**NOTE:** The Single Message System does not use DE 121; however, if DE 121 is included in a Financial Transaction Request Response/0210 message, it will be included in any subsequent reversal activity.

Single Message System issuers that do not support Financial Transaction Advice/0220 messages will use the 250-byte Batch Date File, specifically the Financial Records (FREC) report.

### **Subfield 1 (Assessment Score)**

DE 48, subelement 75, subfield 1 contains the assessment score.

#### **Attributes**

Attribute	Description	Value
Subfield ID	n-2	01
Subfield length	n-2	03
Data representation	an-3	
Data field	Contents of subfield 1	

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<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Justification	N/A	

### **Values**

Fraud Scoring System provides the risk score of 000–999 where 000 indicates the least likely fraudulent transaction and 999 indicates the most likely fraudulent transaction.

### **Subfield 2 (Score Reason Code)**

DE 48, subelement 75, subfield 2 contains the key factors that influenced the fraud score.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subfield ID	n-2	02
Subfield length	n-2	02
Data representation	an-2	
Data field	Contents of subfield 2	
Justification	N/A	

### **Values**

Fraud Scoring System provides the Score Reason Code, an alphanumeric code identifying the data used to derive the fraud score.

### **Application Notes**

Issuers that participate in the Real-time Fraud Scoring Service will receive a Score Reason Code to identify the key factors that influenced the score.

The following table lists examples of reason codes and their descriptions that could be provided in subfield 2.

**NOTE:** Issuers that participate may contact the Risk Solutions team for a list of the specific score reason codes that apply to their institution.

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<b>Score</b>	<b>Reason Code Description</b>
XX	Suspicious transaction
YY	Four or more swiped transactions on a self-service terminal in the past two days
ZZ	Suspicious activity during the past three days

### **Subfield 3 (Rules Score)**

DE 48, subelement 75, subfield 3 contains the real-time fraud scoring rules score.

#### **Attributes**

Attribute	Description	Value
Subfield ID	n-2	03
Subfield length	n-2	03
Data representation	an-3	
Data field	Contents of subfield 3	
Justification	N/A	

#### **Values**

Fraud Rule Manager Service provides the rule adjusted score of 000–999, where 000 indicates the least likely fraudulent transaction and 999 indicates the most likely fraudulent transaction.

### **Subfield 4 (Rule Reason Code 1)**

DE 48, subelement 75, subfield 4 contains the rule reason code that identifies the data used to derive the Rule Adjusted Score.

#### **Attributes**

Attribute	Description	Value
Subfield ID	n-2	04
Subfield length	n-2	02
Data representation	an-2	
Data field	Contents of subfield 4	
Justification	N/A	

#### **Values**

Fraud Rule Manager Service provides the Rule Reason Code, an alphanumeric code that identifies the data used to derive the Rule Adjusted Score.

### **Subfield 5 (Rule Reason Code 2)**

DE 48, subelement 75, subfield 5 contains the rule reason code that identifies the data used to derive the Rule Adjusted Score.

#### **Attributes**

Attribute	Description	Value
Subfield ID	n-2	05
Subfield length	n-2	02
Data representation	an-2	
Data field	Contents of subfield 5	
Justification	N/A	

#### **Values**

Fraud Rule Manager Service provides the Rule Reason Code, an alphanumeric code that identifies the data used to derive the Rule Adjusted Score.

#### **Application Notes**

Mastercard requires all issuing and acquiring processors to code for, support, and integrate into their systems the data elements, subelements, and values associated with this item.

For additional information about the requirement please refer to the *Global Safety and Security Standards Roadmap*.

**NOTE:** Mastercard does not require issuers or acquirers to enroll in these optional products and services, but they must code their systems to support this field to leverage such product and services in a timely manner in the event of a security issue.

### **Subelement 76 (Mastercard Electronic Transaction Indicator)**

Identifies that the transaction is a Mastercard Electronic transaction. Indicates that the acquirer participates or does not participate in Mastercard Electronic card processing.

#### **Attributes**

Attribute	Description	Value
Subelement ID	n-2	76
Subelement length	n-2	01
Data representation	a-1	

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<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Number of subfields	1	Subfield 1 (Mastercard Electronic Program Participation Level)

### **Subfield 1 (Mastercard Electronic Program Participation Level)**

DE 48, subelement 76, subfield 1 contains the Mastercard Electronic Program Participation Level indicator.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data description	a-1
Data field	Contents of subfield 1
Justification	N/A

#### **Values**

<b>Value</b>	<b>Description</b>
C	Mastercard only participant (not considered a Mastercard Electronic card transaction).
E	Acquirer and its merchant both participate in Mastercard Electronic card processing (considered a Mastercard Electronic transaction).
U	Unidentified acquirer. It is unknown if the acquirer is a Mastercard Electronic card participant.

### **Subelement 77 (Transaction Type Identifier)**

DE 48, subelement 77 (Transaction Type Identifier) indicates the additional transaction purpose.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	77
Subelement length	n-2	03
Data representation	an-3	

### Usage

Following is the usage of subelement 77 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	.	C
Financial Transaction Request Response/0210	C	.	C
Financial Transaction Advice/0220	C	.	C
Acquirer Reversal Advice/0420: acquirer initiated	C	.	C
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	O	P	C
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	C	C
Acquirer Reversal Advice/0420: acquirer initiated exception	O	P	C

**NOTE:** For Mastercard Send transactions, this subelement must be present in Financial Transaction Request/0200 messages. Issuers are required to echo this subelement in Financial Transaction Request Response/0210 messages.

**NOTE:** All Mastercard Send transactions ( Funding Transactions, MoneySend Payment and Gaming and Gambling Payments Transactions) require this identifier.

### Values

Value	Description
C02	Mastercard Rebate
C03	rePower Load Value
C04	Gaming Re-pay
C07	General Person-to-Person
C51	Mastercard Send Indicator (Reserved for Future Use)
C52	General Transfer to Own Account
C53	Agent Cash Out
C54	Payment of Own Credit Card Bill
C55	Business Disbursement
C56	Government/Non-Profit Disbursement
C57	Rapid Merchant Settlement
C58	Cash-in at ATM (Usage limited to specific countries)

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<b>Value</b>	<b>Description</b>
C59	Cash-In at Point of Sale (Usage limited to specific countries)
C60	Mastercard Send Funding/Payment Indicator (Reserved for Future Use)
C61	Mastercard Send Indicator (Reserved for Future Use)
C62	Mastercard Send Indicator (Reserved for Future Use)
C63	Mastercard Send Indicator (Reserved for Future Use)
C64	Mastercard Send Indicator (Reserved for Future Use)
C65	General Business to Business Transfer
C66	Mastercard Send Indicator (Reserved for Future Use)
C67	Mastercard Merchant Presented QR
C68	Mastercard Merchant Presented QR Refund Payment
C91	Utility Payments (for Brazil domestic use only)
C92	Government Services (for Brazil domestic use only)
C93	Mobile phone top-ups (for Brazil domestic use only)
C94	Coupon booklet payments (for Brazil domestic use only)
F07	General Person-to-Person Transfer
F08	Person-to-Person Transfer to Card Account
F52	General Transfer to Own Account
F53	Agent Cash Out
F54	Payment of Own Credit Card Bill
F55	Business Disbursement
F61	Transfer to Own Staged Digital Wallet Account
F64	Transfer to Own Debit or Prepaid Account
F65	General Business-to-Business Transfer
P01	Mastercard ATM Cash Pick-Up Transaction
P10	Installment-based repayment
P70	Cryptocurrency
P71	High-risk Securities

#### **Application notes**

If DE 3, subfield 1 contains value 28 (Payment Transaction), then DE 48, subelement 77 must be present.

If DE 3, subfield 1 contains value 00 (Purchase of Goods and Services) and DE 18 contains value 4829 (Money Transfer), 6540 (Funding Transactions), or 6538 Funding Transactions for MoneySend (per Mastercard MoneySend and Funding Transactions Program Standards)), then DE 48, subelement 77 must be present.

Usage of value C04 is limited to eligible acquirers and issuers in eligible countries. For information about Gaming and Gambling Payment Transactions, refer to the Transaction Processing Rules. For information about U.S. region usage of this value, refer to the *Mastercard Gaming and Gambling Payments Program Standards*.

Usage of values C07, C52–C59, C60–C61, C64–C65, and F07–F65 is limited to eligible countries and eligible acquirers, as described in the *Mastercard MoneySend and Funding Transactions Program Standards*.

Usage of value C67 is limited to Mastercard Merchant Presented QR transactions.

Usage of value C68 is limited to Mastercard Merchant Presented QR refund transactions.

### **Subelement 79 (Chip CVR/TVR Bit Error Results Listing)**

This value will provide the issuer with a list of CVR and TVR bits that cause a validation result of **T** in the M/Chip Cryptogram Validation process. The validation occurs when OBS M/Chip Cryptogram Pre-validation Service and M/Chip Cryptogram Validation in Stand-In Processing are performed.

Mastercard will place this value in the record when an issue has occurred during the M/Chip Cryptogram Validation process. This value will provide specific information about the CVR/TVR bits that caused a validation result of **T**.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	79
Subelement length	n-2	05...50
Data representation	an...50; LLVAR (multiples of 05 not to exceed 50)	
Number of subfields	4	Subfield 1 (CVR or TVR Identifier) Subfield 2 (Byte ID) Subfield 3 (Bit Identifier) Subfield 4 (Value of Bit in Error)

#### **Usage**

Following is the usage of subelement 79 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

---

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C
Financial Transaction Advice/0220 (system-generated)	.	X	C

**NOTE:** DE 48, subelement 79 is not necessary in the Financial Transaction Advice/0220 or Financial Transaction Advice Response/0230 messages; or the Acquirer Reversal Advice/0420 or Issuer Reversal Advice/0422 messages. If present it will be removed before forwarding to destination.

#### **Subfield 1 (CVR or TVR Identifier)**

DE 48, subelement 79, subfield 1 contains the Card Verification Results (CVR), or Terminal Verification Results (TVR) identifier.

Indicates whether the bit reported in error is part of Card Verification Results (CVR), or Terminal Verification Results (TVR). Valid values are as follows.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	an-1
Data field	Contents of subfield 1
Justification	N/A

#### **Values**

<b>Value</b>	<b>Description</b>
C	CVR
T	TVR

#### **Subfield 2 (Byte ID)**

DE 48, subelement 79, subfield 2 contains the byte number of the associated bit reported in error.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	an-2
Data field	Contents of subfield 2

Attribute	Description
Justification	N/A

### Values

Identifies the byte number of the associated bit reported in error. Valid values are 01–99.

### Subfield 3 (Bit Identifier)

DE 48, subelement 79, subfield 3 contains the bit number in error within the byte identified in subfield 2.

### Attributes

Attribute	Description
Data representation	an-1
Data field	Contents of subfield 3
Justification	N/A

### Values

Identifies the bit number in error within the byte identified in subfield 2. Valid values are 1–8.

### Subfield 4 (Value of Bit in Error)

DE 48, subelement 79, subfield 4 contains the value of the bit in error that was submitted in the transaction.

### Attributes

Attribute	Description
Data representation	an-1
Data field	Contents of subfield 4
Justification	N/A

### Values

Value	Description
0	The bit is turned off.
1	The bit is turned on.

## Subelement 80 (PIN Service Code)

DE 48, subelement 80 (PIN Service Code) indicates the results of PIN processing by the Single Message System.

### Attributes

Attribute	Description	Value
Subelement ID	n-2	80
Subelement length	n-2	02
Data representation	a-2	
Data field		Contents of positions 1-2
Number of Subfields	N/A	

### Usage

Following is the usage of subelement 80 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	.	C	C
Financial Transaction Request Response/0210	.	.	.

### Values

Value	Description
TV =	The Single Message System translated the PIN for issuer verification.
TI =	The Single Message System was unable to translate the PIN (DE 52 is not provided).

### Application Notes

For participating issuers, the Single Message System provides DE 48, subelement 80 in every Financial Transaction Request/0200 message where the cardholder entered a PIN and DE 52 was received from the acquirer.

## **Subelement 81 (Maestro PIN-less Program Indicator)**

This subelement provides an indicator to identify a Maestro® PIN-less transaction.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	81
Subelement length	n-2	01
Data representation	an-1	
Number of subfields	N/A	

### **Usage**

Following is the usage of subelement 81 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C
Financial Transaction Advice/0220	.	X	C

### **Values**

<b>Value</b>	<b>Description</b>
Y	The transaction does qualify as a PIN-less Maestro transaction.
N	The transaction does not qualify as a PIN-less Maestro transaction.

### **Application notes**

Financial Transaction Advice/0220 message is sent to the issuer when a Maestro transaction is processed through the Stand-in system.

## **Subelement 82 (Address Verification Service Request)**

Contains the AVS address verification request option code.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	82

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<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement length	n-2	02
Data representation	n-2	
Number of subfields	1	Subfield 1 (AVS Option Code)

### **Application Notes**

Mastercard will require all issuing and acquiring processors to code for, support, and integrate into their systems the data elements, subelements, and values associated with this item.

The following provides the Global Safety and Security Standards effective dates:

- USA 21 Apr 2017
- EUR 13 Oct 2017
- LAC 13 Oct 2017
- MEA 13 Oct 2017
- Ukraine 1 Apr 2018
- CAN 13 Apr 2018
- AP 13 Apr 2018

For additional information about the requirement please refer to the *Global Safety and Security Standards Roadmap*.

**NOTE:** Mastercard does not require issuers or acquirers to enroll in these optional products and services, but they must code their systems to support these fields to leverage such product and services in a timely manner in the event of a security issue.

### **Subfield 1 (AVS Option Code)**

DE 48, subelement 82, subfield 1 contains the address verification service option code.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-2
Data field	Contents of subfield 1
Justification	N/A

#### **Values**

<b>Value</b>	<b>Description</b>
52	AVS and Financial Transaction Request/0200

## Subelement 83 (Address Verification Service Response)

Contains the AVS address verification response.

### Attributes

Attribute	Description	Value
Subelement ID	n-2	83
Subelement length	n-2	01
Data representation	an-1	
Number of subfields	1	Subfield 1—AVS Result Code

### Application notes

Mastercard will require all issuing and acquiring processors to code for, support, and integrate into their systems the data elements, subelements, and values associated with this item.

The following provides the Global Safety and Security Standards effective dates:

- USA 21 Apr 2017
- EUR 13 Oct 2017
- LAC 13 Oct 2017
- MEA 13 Oct 2017
- Ukraine 1 Apr 2018
- CAN 13 Apr 2018
- AP 13 Apr 2018

For additional information about the requirement please refer to the *Global Safety and Security Standards Roadmap*.

**NOTE:** Mastercard does not require issuers or acquirers to enroll in these optional products and services, but they must code their systems to support these fields to leverage such product and services in a timely manner in the event of a security issue.

### Subfield 1 (AVS Result Code)

DE 48, subelement 83, subfield 1 contains the address verification service result code.

### Attributes

Attribute	Description
Data representation	an-1
Data field	Contents of subfield 1
Justification	N/A

### Values

<b>Value</b>	<b>Description</b>
A	Address matches postal/ZIP code does not
N	Nothing matches
R	Retry, system unable to process
S	AVS currently not supported
U	No data from issuer/Single Message System
W	For U.S. addresses, nine-digit ZIP code matches, address does not; for address outside the U.S., the postal code matches, address does not
X	For U.S. addresses, all digits match, nine-digit ZIP code; for addresses outside the U.S., the postal code matches
Y	Yes, all digits match, five-digit ZIP code
Z	Five-digit ZIP code matches, address does not

### Subelement 84 (Merchant Advice Code)

Contains a merchant advice code to enable issuers to advise merchants of cardholder account status, or of system status.

#### Attributes

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	84
Subelement length	n-2	02
Data representation	an-2	
Number of subfields	1	Subfield 1 (Merchant Advice Code)

### Values

#### Subfield 1 (Merchant Advice Code)

DE 48, subelement 84, subfield 1 contains the merchant advice code value.

#### Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	an-2

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<b>Attribute</b>	<b>Description</b>
Data field	Contents of subfield 1
Justification	N/A

### Values

<b>Value</b>	<b>Description</b>
01	New account information available
02	Can not approve at this time, try again later
03	Do not try again
04	Token requirements not fulfilled for this token type
21	Payment Cancellation Service (Single Message System use only)
24	Retry after 1 hour (Mastercard use only)
25	Retry after 24 hours (Mastercard use only)
26	Retry after 2 days (Mastercard use only)
27	Retry after 4 days (Mastercard use only)
28	Retry after 6 days (Mastercard use only)
29	Retry after 8 days (Mastercard use only)
30	Retry after 10 days (Mastercard use only)

### Examples of combined DE 48, subelement 84 and DE 39 values

As part of the Decline Reason Code Service (for more information refer to the *Authorization Manual*), these are the actions merchants should take using the combination of DE 48, subelement 84, and DE 39 to make better decisions on card-not-present authorizations.

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<b>When DE 39 is...</b>	<b>and DE 48, subelement 84 is...</b>	<b>Then the merchant advise is...</b>
79 or 82	01	updated information was found in the Mastercard ABU database. Check for new information before reattempting.
79 or 82	03	updated credentials are not found to be available in the Mastercard ABU database. Do not retry.

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<b>When DE 39 is...</b>	<b>and DE 48, subelement 84 is...</b>	<b>Then the merchant advise is...</b>
83	01	authentication may improve the likelihood of an approval. Retry using authentication (such as EMV® 3DS).
83	03	suspected fraud. Do not retry.
79, 82 or 83	02	retry the transaction later.

### **Subelement 87 (Card Validation Code Result)**

Contains the magnetic stripe/CVC error ID, provided by the issuer or the Contactless On-behalf Service, when applicable. Cirrus and Maestro products do not support this subelement.

Subelement 87 must be provided by the issuer in the Financial Transaction Request Response/0210 message whenever CVC 2 verification is requested by the acquirer.

Subelement 87 is optional from the issuer in the Financial Transaction Request Response/0210 message whenever DE 45 (Track 1 Data) or DE 35 (Track 2 Data) is present in the Financial Transaction Request/0200 message and CVC 1 is invalid.

Subelement 87 is optionally provided by the issuer and will be provided by the Contactless On-behalf Service in the Financial Transaction Request Response/0210 message when an issue is encountered during CVC 3 validation.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	87
Subelement length	n-2	01
Data representation	an-1	
Number of subfields	1	Subfield 1 (Code values)

#### **Application notes**

##### **NOTE:**

Issuers should note when an acquirer transmits both CVC 1 and CVC 2 data, CVC 1 processing takes precedence over CVC 2 processing.

If the CVC 1 value is incorrect, issuers should respond with a value of Y (invalid CVC 1) in subelement 87 without validating the CVC 2 value. However, if the CVC 1 value is correct, then issuers must validate the CVC 2 and send the appropriate CVC 2 response to the acquirer.

### **Subfield 1 (Code Values)**

DE 48, subelement 87, subfield 1 contains the card validation code (CVC) result code value.

#### **Attributes**

Attribute	Description
Data Representation	an-1
Data Field	Contents of subfield 1
Justification	N/A

#### **Values**

Value	Description
E	Length of unpredictable number was not a valid length
M	Valid
N	Invalid (CVC 2)
P	Not processed, could not be validated (issuer temporarily unavailable)
U	CVC 2 unverified (Mastercard use only)
Y	Invalid (CVC 1), Invalid Outside of Range, or ATC Replay (CVC 3)

### **Subelement 88 (Magnetic Stripe Compliance Status Indicator)**

Subelement 88 is provided by the Authorization Platform whenever the Authorization Platform replaces the DE 22, subfield 1, value of 90 or 91 to a value of 02 due to magnetic stripe compliance adjustment of the acquirer.

#### **Attributes**

Attribute	Description	Value
Subelement ID	n-2	88
Subelement length	n-2	01
Data representation	an-1	
Number of subfields	1	Subfield 1 (Monitoring Status)

### **Subfield 1 (Monitoring Status)**

DE 48, subelement 88, subfield 1 contains the magnetic stripe compliance monitoring status indicator value.

#### **Attributes**

Attribute	Description
Data representation	an-1
Data field	Contents of subfield 1
Justification	N/A

#### **Values**

Value	Description
Y	Authorization Platform replaced DE 22, subfield 1, value 90 or 91 with value 02.

### **Subelement 89 (Magnetic Stripe Compliance Error Indicator)**

Subelement 89 is provided by the Authorization Platform whenever errors are detected while editing transactions for magnetic stripe compliance.

**NOTE:** Authorization System provides this subelement when applicable.

#### **Attributes**

Attribute	Description	Value
Subelement ID	n-2	89
Subelement length	n-2	01
Data representation	an-1	
Number of subfields	1	Subfield 1 (Data/Code Indicators)

#### **Subfield 1 (Data/Code Indicators)**

DE 48, subelement 89, subfield 1 contains magnetic stripe compliance error data code indicators.

#### **Attributes**

Attribute	Description
Data representation	an-1

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<b>Attribute</b>	<b>Description</b>
Data field	Contents of subfield 1
Justification	N/A

### **Values**

The following codes indicate Track data, POS data, or TCC errors.

<b>Value</b>	<b>Description</b>
A	Track 1 or Track 2 not present in the message
B	Track 1 and Track 2 present in the message
C	PAN (DE 2) not equal in Track data
D	Expiration Date (DE 14) not equal in Track data
E	Service code invalid in Track data
F	Field separator(s) invalid in Track data
G	A field within the Track data exceeds maximum length
H	PAN Entry Mode (DE 22, subfield 1) is 80, 90, or 91 when DE 48 Transaction Category code (TCC) is T
I	POS cardholder presence indicator (DE 61, position 4) is 1, 2, 3, 4, or 5
J	POS card presence indicator (DE 61, position 5) is 1

### **Subelement 90 (Lodging and Auto Rental Indicator)**

Subelement 90 indicates the presence of lodging and auto rental service interchange program.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	90
Subelement length	n-2	01
Data representation	an-1	
Number of subfields	1	Subfield 1—Enrolled Program

### **Subfield 1 (Enrolled Program)**

DE 48, subelement 90, subfield 1 contains the Mastercard travel industries premier service program indicator enrolled program value.

#### **Attributes**

Attribute	Description
Data representation	an-1
Data field	Contents of subfield 1
Justification	N/A

#### **Values**

Value	Description
P	Indicates the request is from a cardholder enrolled in a merchant preferred customer program, and magnetic stripe data may be absent.

### **Subelement 92 (CVC 2 Value)**

Contains the CVC 2 value from the signature panel of the card when applicable.

#### **Attributes**

Attribute	Description	Value
Subelement ID	n-2	92
Subelement Length	n-2	03
Data Representation	n-3	
Number of Subfields	1	Subfield 1—CVC 2 Value

#### **Usage**

Single Message System acquirers must be aware, when populated, the contents of DE 48, subelement 92 are passed to the Dual Message System (Authorization) issuer in transactions acquired through the Single Message System.

### **Subfield 1 (CVC 2 Value)**

DE 48, subelement 92, subfield 1 contains the card validation code 2 value sent in the request.

#### **Attributes**

Attribute	Description
Data representation	n-3
Data field	Contents of subfield 1
Justification	N/A

#### **Values**

The value for CVC 2 sent in the request.

### **Subelement 93 (Airline Ticket Number)**

Contains the airline ticket number information.

#### **Attributes**

Attribute	Description	Value
Subelement ID	n-2	93
Subelement length	n-2	15
Data representation	ans-15	
Number of subfields	1	Subfield 1 (Ticket number)

#### **Subfield 1 (Ticket Number)**

DE 48, subelement 93, subfield 1 contains the airline ticket number.

#### **Attributes**

Attribute	Description
Data representation	ans-15
Data field	Contents of subfield 1
Justification	N/A

#### **Values**

The airline ticket number.

## Subelement 94 (Program Participation Indicator)

Subelement 94 contains values received from GCMS and is used to monitor and track a participant's activity in special promotion programs.

### Attributes

Attribute	Description	Value
Subelement ID	n-2	94
Subelement length	n-2	05 or 10
Data representation	ans...28; LLVAR	
Data field	Contents of subfields 1–2	
Number of subfields	2	Subfield 01 (CVC 2 Validation Program Indicator)  Subfield 02 (QPS/Contactless Chargeback Eligibility)  Subfield 03–20 (Reserved for Future Use)

### Subfield 1 (CVC 2 Validation Program Indicator)

DE 48, subelement 94, subfield 1 contains the card validation code 2 program indicator.

### Attributes

Subfield	Attribute	Value
Subfield ID	n-2	01
Subfield length	n-2	01
Data representation	an-1	
Data field	Contents of subfield 1	
Justification	N/A	

### Values

Value	Description
C	Transaction qualifies for the CVC 2 Validation Program. Only the Single Message System will populate this subfield.

### **Subfield 2 (QPS/Contactless Chargeback Eligibility)**

DE 48, subelement 94, subfield 2 contains the Quick Payment Service (QPS)/Contactless chargeback eligibility.

#### **Attributes**

Attribute	Description	Value
Subfield ID	n-2	02
Subfield length	n-2	01
Data representation	ans-1	
Data field	Contents of subfield 2	
Justification	N/A	

#### **Values**

Value	Description
I	QPS or contactless transaction is ineligible for chargeback

### **Subfields 3–20 (Reserved for Future Use)**

DE 48, subelement 94, subfields 3 to 20 are reserved for future use.

#### **Attributes**

Attribute	Description
Data representation	an-18
Data field	Contents of subfields 3–20
Justification	N/A

#### **Values**

Reserved for future use.

## **Subelement 95 (Mastercard Promotion Code)**

This subelement indicates participation in a particular program or service established between issuers and merchants.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	95
Subelement length	n-2	01
Data representation	an-1	
Number of subfields	1	Subfield 1 (Surcharge Free Alliance)

### **Usage**

Following is the usage of Subelement 95 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C
Financial Transaction Advice/0220	.	X	C
Acquirer Reversal Advice/0420: acquirer initiated	.	X	C
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	.	X	C
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	C
Acquirer Reversal Advice/0420: exception, system initiated	.	X	C
Acquirer Reversal Advice/0420: acquirer initiated exception	.	X	C

### **Subfield 1 (Surcharge-Free Alliance)**

DE 48, subelement 95, subfield 1 contains the Mastercard promotions code surcharge-free alliance value.

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	an-1
Data field	Contents of subfield 1
Justification	N/A

### Values

Value	Description
A	The transaction participates in the Allpoint® surcharge-free ATM program

### Subelement 98 (Mastercard Corporate Fleet Card ID/Driver Number)

Mastercard Corporate Fleet Card® ID/Driver Number, used to enable the corporate customer to verify the user of the card, and to provide more detailed reporting.

### Attributes

Attribute	Description	Value
Subelement ID	n-2	98
Subelement length	n-2	06
Data representation	n-6	
Number of subfields	1	Subfield 1—ID/Driver Number

### Subfield 1 (ID/Driver Number)

DE 48, subelement 98, subfield 1 contains the Mastercard Corporate Fleet Card® ID/driver number.

### Attributes

Attribute	Description
Data representation	n-6
Data field	Contents of subfield 1
Justification	N/A

### Values

Mastercard Corporate Fleet Card® ID/driver number.

**Subelement 99 (Mastercard Corporate Fleet Card Vehicle Number)**

Mastercard Corporate Fleet Card® Vehicle Number, used to enable the corporate customer to verify the user of the card, and to provide more detailed reporting.

**Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	99
Subelement length	n-2	15
Data representation	ans-15	
Number of subfields	1	Subfield 1 (Vehicle Number)

**Subfield 1 (Vehicle Number)**

DE 48, subelement 99, subfield 1 contains the Mastercard Corporate Fleet Card® vehicle number.

**Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-15
Data field	Contents of subfield 1
Justification	N/A

**Values**

Mastercard Corporate Fleet Card® vehicle number.

**DE 49 (Currency Code, Transaction)**

DE 49 (Currency Code, Transaction) is the code defining the currency of the transaction as it was submitted to the Single Message System. The Single Message System uses it to specify the currency used in DE 4 (Amount, Transaction).

**Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-3
Data element length	None

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<b>Attribute</b>	<b>Description</b>
Data field	Fixed length, contents of positions 1–3
Subfields	None
Justification	N/A

For additional information on currency conversion refer to the *Single Message System Programs and Services* manual.

### **Usage**

This data element is mandatory whenever DE 4 is present in a message.

Following is the usage of DE 49 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	P	M
Financial Transaction Request Response/0210	M	P	M
Financial Transaction Advice/0220	M	P	M
Financial Transaction Advice/0220: Debit Mastercard Stand-In	M	P	M
Financial Transaction Advice Response/0230	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	.	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	.	X	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system Initiated	.	X	M

### Application notes

For multiple currency processing and settlement transactions, the value in DE 49 (Currency Code, Transaction), in an online message specifies the currency used for the transaction. DE 4 (Amount, Transaction) contains the amount in the currency designated by DE 49.

Acquirers must select all currency codes from the numeric ISO Standard Currency Codes provided in the *Quick Reference Booklet*.

Customers must not use alpha-currency codes.

## DE 50 (Currency Code, Settlement)

DE 50 (Currency Code, Settlement) is the code defining the currency of DE 5 (Amount, Settlement).

### Attributes

Attribute	Description
Data representation	n-3
Data element length	None
Data field	Fixed length, contents of positions 1-3
Subfields	None
Justification	N/A

For additional information on currency conversion refer to the *Single Message System Programs and Services* manual.

### Usage

Following is the usage of DE 50 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	.	X	M
Financial Transaction Request Response/0210	C	P	M
Financial Transaction Advice/0220	C	P	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	P	C
Financial Transaction Advice Response/0230	C	P	M
Acquirer Reversal Advice/0420: acquirer initiated	.	X	M

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<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	.	X	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	.	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	.	X	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M

### **Application notes**

This data element is mandatory whenever DE 5 is present in a message. For transactions where the Single Message System performs automatic currency conversion, the Single Message System automatically inserts this data element into the message.

When this field is present in a message, DE 9 (Conversion Rate, Settlement) and DE 16 (Date, Conversion) must also be present.

### **Values**

This field will be included with a valid currency code that is supported by the Single Message System.

For multiple currency processing and settlement transactions, the value in DE 50, (Currency Code, Settlement), in an online message specifies the settlement currency chosen by the message recipient. DE 5 (Amount, Settlement) contains the amount in the currency designated by DE 50.

### **Exceptions for acquirers**

If an acquirer-initiated message contains a format error, the message that the acquirer receives as a result will not contain the settlement currency code.

## DE 51 (Currency Code, Cardholder Billing)

DE 51 (Currency Code, Cardholder Billing) is the code defining the currency of DE 6 (Amount, Cardholder Billing) and DE 111 (Amount, Currency Conversion Assessment).

### Attributes

Attribute	Description
Data representation	n-3
Data element length	None
Data field	Fixed length, contents of positions 1-3
Subfields	None
Justification	N/A

### Usage

Following is the usage of DE 51 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	.	X	M
Financial Transaction Request Response/0210	C	P	M
Financial Transaction Advice/0220	.	X	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	X	M
Acquirer Reversal Advice/0420: acquirer initiated	.	X	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	.	X	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	.	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	C
Issuer Reversal Advice/0422: exception, issuer initiated	.	X	C
Acquirer Reversal Advice Response/0430: system initiated	.	X	C
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.

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Message	Org	Sys	Dst
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M

### Application notes

This data element is mandatory whenever DE 6 (Amount, Cardholder Billing) is present in a message. The Single Message System automatically inserts this data element into the message.

When this field is present in a message, DE 10 (Conversion Rate, Cardholder Billing) and DE 16 (Date, Conversion) must also be present.

For multiple currency processing and settlement transactions, the value of DE 51 in an online message contains the currency code that specifies the currency that the issuer uses to bill the cardholder.

DE 6 (Amount, Cardholder Billing) contains the amount in the currency designated by DE 51.

**NOTE:** The FIT currency that the Single Message System will use to populate the actual cardholder billing amount is the currency that is listed on the optional Addendum Record (FIT1) of the 80-byte FIT data file. Mastercard sends this file weekly from the Single Message System to customers.

For additional information on currency conversion refer to the *Single Message System Programs and Services* manual.

## DE 52 (Personal Identification Number [PIN] Data)

DE 52 (Personal Identification Number [PIN] Data) contains a number assigned to a cardholder intended to uniquely identify that cardholder at the point of interaction (POI).

### Attributes

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Attribute	Description
Data representation	b-64
Data element length	None
Data field	Fixed length, contents of bit positions 1–64 (8 bytes)
Subfields	None
Justification	N/A

### Usage

Following is the usage of DE 52 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	P	C

### **Application notes**

The Single Message System uses this data element to transmit a cardholder's PIN, in **encrypted form** for issuer verification or validation. It is required in all ATM Financial Transaction Request/0200 messages and in some POS Financial Transaction Request/0200 messages.

For chip transactions, DE 52 must be supplied at online capable terminals when online PIN is the appropriate Cardholder Verification Method. However, for chip transactions, if the PIN is validated offline, DE 52 is not required. Product rules define when this option is allowed. International ATM and international cash advance EMV transactions must always use online PIN.

**NOTE:** Full EMV refers to a transaction at a chip enable terminal on a chip card and processed with chip data (no magnetic stripe read data).

Acquirers must encrypt all PINs using the procedures identified in the Communication Protocols section of this document.

The Single Message System permits PINs from 4 to 12 characters in length. Regardless of the original PIN length, the encrypted PIN block is always 64 bits (8 bytes) in length.

Strict security requirements implemented within data communications with the Mastercard Network mandate that PINs are never transmitted in the clear as character data. PINs must always be encrypted into a 64-bit Encrypted PIN block. PIN Data is never included in online Financial Transaction Advice/0220 store-and-forward or other online messages.

## **DE 53 (Security Related Control Information)**

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As of the publication date of this document, the ISO 8583 organization has not determined the specific definition and usage requirements for DE 53 (Security Related Control Information).

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-16
Data element length	None
Data field	Fixed length, contents of positions 1-16
Subfields	None

<b>Attribute</b>	<b>Description</b>
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 54 (Additional Amounts)

DE 54 (Additional Amounts) provides information for a maximum of six amounts and related account data for which specific data elements have not been defined.

### Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	an...240; LLLVAR
Data element length	3 positions, value = integral multiple of 20, not to exceed 240
Data field	Variable length, contents of subfields 1-5
Subfields	5
Justification	See "Subfields"

### Usage

Following is the usage of DE 54 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	P	C
Financial Transaction Request Response/0210	C	X	C
Financial Transaction Advice/0220	C	P	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	P	C
Financial Transaction Advice Response/0230	C	P	C
Acquirer Reversal Advice/0420: acquirer initiated	C	P	C
Acquirer Reversal Advice/0420: acquirer initiated exception	M	P	C
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	C	P	C
Acquirer Reversal Advice/0420: time-out induced, system initiated	C	P	C

Message	Org	Sys	Dst
Acquirer Reversal Advice/0420: exception, system initiated	.	X	C
Issuer Reversal Advice/0422: exception, issuer initiated	M	P	C
Acquirer Reversal Advice Response/0430: system initiated	.	X	C

## Application notes

### Account balance information

Use of DE 54 subfields is optional within Financial Transaction Request Response/0210 messages. When present, they can contain account balance information that the acquirer may print on transaction receipts for the cardholder's benefit.

The terminal displays the account balance information on the receipt in the currency of the acquirer.

The Single Message System provides the account balance information in the Financial Transaction Request Response/0210 message in the acquirer's currency. The Single Message System performs a currency conversion from the issuer's currency to the acquirer's currency. Issuers send in the cardholder balance in the cardholder's currency and the Single Message System converts it to the acquirer's currency. The Single Message System returns the converted balance in the Financial Transaction Request Response/0210 message to the acquirer.

The Single Message System will always forward DE 54 when present in request or response messages when the transaction type is Balance Inquiry (DE 3 = "30xxxx"). Account Balance is DE 54, subfield 2 (Amount Type), value of 01 (Ledger Balance), 02 (Available Balance), 90 (Available Credit), or 91 (Credit Limit) for balance inquiries on credit cards.

The Single Message System will always remove DE 54 when present in Financial Transaction Request Response/0210 messages from the issuer

- for Maestro and Debit Mastercard POS purchase or purchase with cash back transactions (DE 3 = "00xxxx" or "09xxxx") except when the Account Balance is DE 54, subfield 2 (Amount Type) value of 01 (Ledger Balance) or 02 (Available Balance).
- for the following prepaid programs that are specific to payroll, government, and flex benefits
  - Mastercard Prepaid Payroll (MPA)
  - Mastercard Prepaid Government (MPV)
  - Mastercard Prepaid Flex Benefit (MPX), and
- when DE 54 is present in Financial Transaction Request Response/0210 messages from the issuer when the response code is not 00, 10, 85, or 87.

Please refer to the DE 110, subelement 8 section in this manual for a list of product codes.

### Cash back processing

A "purchase with cash back" Financial Transaction Request/0200 has the following requirements.

- DE 3 (Processing Code), positions 1 and 2 (Transaction Type) must be "09".
- DE 54 positions 1 and 2 (Account Type) must match what is present in DE 3 Processing Code, positions 3 and 4 (Account Type).
- Purchase with cash back transactions (DE 3 = "09xxxx"). Purchase with cash back is DE 54, subfield 2 (Amount Type), value of 40 (Cash back). The Single Message System allows global Purchase with Cash Back transactions in which the amount in DE 54, subfield 2 (Amount Type), value 40 (Cash Back) and subfield 5 (Amount), is equal to the amount in DE 4 (Amount, Transaction).
- DE 54 must contain the value 40 in positions 3 and 4 (Amount Type).
- DE 54, subfield 4, must contain a D (indicating a cash back transaction).

**NOTE:** Issuers must return the original cash back amount in DE 54, subfield 5 in the Financial Transaction Request Response/0210 message.

### Cash back reversal processing

A cash back reversal requires the following in DE 54.

- DE 54 will not contain the same amount as the original transaction message. For an Acquirer Reversal Advice/0420, DE 54 becomes the replacement amount (which contains the cash back amount).
- If the reversal is a partial reversal, the cash back amount in the Acquirer Reversal Advice/0420 message in DE 54 is the replacement amount. If the transaction is a full reversal then the cash amount is zeros in the Acquirer Reversal Advice/0420 message.
- DE 54 must be included in Acquirer Reversal Advice/0420 or Issuer Reversal Advice/0422 messages.
- DE 54 does not have to be returned in the Acquirer Reversal Advice Response/0430 or Issuer Reversal Advice Response/0432 messages.

### Healthcare substantiation

Prepaid flexible spending account (FSA) cards may be used for specified healthcare-related expenditures. Merchants and acquirers may indicate both the full transaction amount, as well as the amount of the transaction that is a healthcare expense only, in a Financial Transaction Request/0200 message.

Issuers can approve the entire transaction or only the portion of the transaction that is a healthcare expense. This determination will be based on the ability of the merchant terminal to support point-of-sale (POS) partial approval transactions. These transactions will also allow for the identification of different types of healthcare costs.

To participate in this service acquirers must be prepared to

- process partial approval transactions at merchant's/acquirer terminals
- send Financial Transaction Request/0200 messages containing DE 54, Additional Amounts, subfield 2, Amount Type, with a value of 10 (FSA Eligible Expenditure), 11 (Prescription Eligibility Amount), and 12 (Vision Prescription Eligibility Amount)

- send DE 54, Additional Amounts, subfield 2, Amount Type, with a value of 12 (Vision Prescription Eligibility Amount) as an independent field in a Financial Transaction Request/0200 message
- receive Financial Transaction Request Response/0210 messages containing DE 39, Response Code, with a value of 10 (Partial Approval), and
- use the new values in DE 48, Additional Data, subelement 61, POS Data, Extended Condition Codes, subfield 3 to indicate that the merchant supports Inventory Information Approval System (IIAS) validation.

Participating Issuers must be prepared to

- receive Financial Transaction Request/0200 messages containing DE 54, Additional Amounts, Subfield 2, Amount Type, with a value of **10 (FSA Eligible Expenditure), 11 (Prescription Eligibility Amount), and 12 (Vision Prescription Eligibility Amount)**
- receive DE 54, Additional Amounts, subfield 2, Amount Type, with a value of 12 (Vision Prescription Eligibility Amount) as an independent field in a Financial Transaction Request/0200 message, and
- use the new values in DE 48 (Additional Data), subelement 61 (POS Data, Extended Condition Codes), subfield 3 to determine if the FSA debit transaction was validated with the Inventory Information Approval System (IIAS) database at the merchant terminal.

### **PIN acceptance for healthcare cards**

To comply with the Durbin amendment to the Dodd–Frank Wall Street Reform and Consumer Protection Act of 2010, Mastercard is now certified for IIAS healthcare transactions with a PIN.

Mastercard is providing issuers with the ability to approve or decline purchases with cash back on unrestricted purses on healthcare cards with a PIN. Mastercard will continue to deny purchases with cash back for signature-based healthcare transactions. Mastercard will also deny purchase with cash back on healthcare transactions with a PIN, unless the issuer instructs Mastercard to send transactions for specific account ranges to them in order to leverage the new Mastercard purchase with cash back functionality.

Mastercard will allow purchase with cash back on PIN-based transactions if the issuer pre-registers the BIN. Purchase with cash back transactions should be identified as using DE 3 (Processing Code), subfield 1 (Cardholder Transaction Type Code), value 09 (Purchase with Cash back) with healthcare-related transactions, indicated in DE 54 (Additional Amounts), subfield 2 (Amount Type), value 10 (Healthcare Eligibility Amount) and, if appropriate, subfield 2, value 11 (Prescription Eligibility Amount), with subfield 2, value 40 (Cash Back), and if appropriate, subfield 2, value 12 (Vision Prescription Eligibility Amount).

Acquirers will send healthcare-related purchase with cash back transactions to Mastercard, and Mastercard will decline the transaction or send it to the issuer for the approval decision, depending on whether the issuer has registered for the new capability to allow Mastercard to pass purchases with cash back on unrestricted purses of healthcare cards with a PIN.

Acquirers must be prepared to receive DE 39 (Response Code), value 30 (Message format error) on purchase with cash back requests on a healthcare-related transaction with a PIN when the issuer has not registered for the new purchase with cash back capability.

**NOTE:** Mastercard strongly encourages acquirers to notify their SIGIS-certified merchants that they should review the SIGIS recommended testing that is available from the SIGIS Web site: [www.sig-is.org](http://www.sig-is.org).

### Partial approval amounts

DE 54 (Additional Amounts), subfield 2 (Amount Type) will contain value 57 (Original Amount) to indicate the original amount of the transaction.

DE 54 will contain the original requested amount from DE 4 of the Financial Transaction Request/0200 message.

The following layout is valid when the issuer provides DE 54 in the Financial Transaction Request Response/0210 message with DE 39 = 10, indicating partial approval. This format of DE 54 will be returned to acquirers.

**Table 54: Subfield 1 (Account Type)**

<b>Position(s)</b>	<b>Attribute</b>	<b>Value</b>
1-2	n-2	00 = no account specified

**Table 55: Subfield 2 (Amount Type)**

<b>Position(s)</b>	<b>Attribute</b>	<b>Value</b>
3-4	n-2	57 = original amount

**Table 56: Subfield 3 (Currency Code)**

<b>Position(s)</b>	<b>Attribute</b>	<b>Value</b>
5-7	n-3	Valid numeric Currency Code selected from the <i>Quick Reference Booklet</i> DE 49 Currency Code

**Table 57: Subfield 4 (Debit/Credit Indicator)**

<b>Position(s)</b>	<b>Attribute</b>	<b>Value</b>
8	a-1	Valid values are: <b>C</b> = Credit amount or positive balance <b>D</b> = Debit amount or negative balance

**Table 58: Subfield 5 (Amount)**

<b>Position(s)</b>	<b>Attribute</b>	<b>Value</b>
9-20	n-12	12 digits, right-justified with leading zero. Original DE 4 amount

**NOTE:** The Single Message System will provide one occurrence of original amount in DE 54, which is the original Transaction Amount represented in the acquirer's currency.

#### **POI currency conversion**

When POI currency conversion (also known as Dynamic Currency Conversion [DCC]) is performed, Mastercard suggests that acquirers provide the pre-conversion currency and amount in DE 54 with an amount type value of 58 (POI Amount) in subfield 2 for Financial Transaction Request/0200, Financial Transaction Advice/0220, and Acquirer Reversal Advice/0420 messages.

The processing criteria for DCC transactions are as follows.

- The transaction currency code in DE 49 (Currency Code, Transaction) must not be equal to the customer's local currency code in DE 54, subfield 3 (Currency Code).
- DE 54 must contain subfield 2 (Amount Type), value 58 (POI Amount), along with all other DE 54 subfields.
- The transaction amount provided in DE 54, subfield 5 (Amount) cannot contain all zeros.
- DE 54 subfield 3 must contain a valid currency code.
- Issuers are not required to return an occurrence of DE 54 with subfield 2, value 58 in Financial Transaction Request Response/0210 message. If it is returned by the issuer, it will be dropped before the response is forwarded to an acquirer.
- For a Purchase with Cash Back transaction to be subjected to DCC, it must contain two occurrences of DE 54 in Financial Transaction Request/0200 or Financial Transaction Advice/0220 messages: one occurrence with a subfield 2 value of 58 and another occurrence with a subfield 2 value of 40 (Amount Cash Back).

- Mastercard will allow acquirers to send one occurrence of DE 54 with a subfield 2 value of 58 in Acquirer Reversal Advice/0420 messages.
- Mastercard will forward an occurrence of DE 54 with subfield 2, value of 58 in Acquirer Reversal Advice/0420 messages to the issuers if the acquirer has provided an occurrence of DE 54 with subfield 2, value 58 in Financial Transaction Request/0200 or Acquirer Reversal Advice/0420 message, except when a Acquirer Reversal Advice/0420 message is sent to the issuer when an Financial Transaction Request Response/0210 message from the issuer is not delivered to the acquirer.

For partial Acquirer Reversal Advice/0420 messages subjected to DCC, acquirers may optionally supply the remainder of the transaction amount to be authorized in pre-conversion currency in DE 54, subfield 5 (Amount).

For non-same day adjustment records for transactions with DCC, DE 54 is included with the data from the original Financial Transaction/0200 message for Financial Transaction Advice/0220 and Acquirer Reversal Advice/0420 messages.

### **Real-time substantiation amounts**

The Financial Transaction Request/0200 or Financial Transaction Advice/0220 messages contain DE 54, subfield 2, value 10, 11, or 12 to indicate the healthcare, prescription, or vision Rx amounts. DE 54, subfield 2, value 10, 11, and 12 are sent only to the issuers that participate in Real-time Substantiation.

In addition to the Healthcare Eligibility Amount, Mastercard supports amount type DE 54, subfield 2, value 11 (Prescription Eligibility Amount), which allows the acquirer to indicate the portion of the healthcare eligibility amount that includes the amount spent for prescriptions.

DE 54, subfield 2, value 12 can be provided by itself in the Financial Transaction Request/0200 or Financial Transaction Advice/0220 messages or in combination with value 10 or values 10 and 11.

Values 10, 11, or 12 will not be returned to the acquirer in the Financial Transaction Request Response/0210 or the Financial Transaction Advice Response/0230 message.

### **Subfield 1 (Account Type)**

DE 54, subfield 1 contains the additional amounts type of account.

#### **Attributes**

Attribute	Description
Data representation	n-2
Data field	Contents of positions 1–2
Justification	N/A

### Values

Value	Description
00	No account specified
10	Savings account
20	Checking account
30	Credit card account

### Subfield 2 (Amount Type)

DE 54, subfield 2 contains the amount type.

### Attributes

Attribute	Description
Data representation	n-2
Data field	Contents of positions 3-4
Justification	N/A

### Values

Value	Description
01	Ledger balance
02	Available balance
10	Healthcare eligibility amount
11	Prescription eligibility amount
12	Vision Rx eligibility amount
17	Prepaid online bill pay fee amount
40	Cash back
44	Amount Gratuity
57	Original Amount
58	POI Amount
59	Limit/Balance available amount from Mastercard In Control
80	Co-pay Amount
90	Available Credit

Value	Description
91	Credit Limit

### Subfield 3 (Currency Code)

DE 54, subfield 3 contains the additional amounts currency code.

#### Attributes

Attribute	Description
Data representation	n-3
Data field	Contents of positions 5-7
Justification	N/A

#### Values

Valid numeric Currency Code selected from the *Quick Reference Booklet*.

### Subfield 4 (Debit or Credit Indicator)

DE 54, subfield 4 contains the additional amounts debit or credit indicator.

#### Attributes

Attribute	Description
Data representation	a-1
Data field	Contents of position 8
Justification	N/A

#### Values

Value	Description
C	Credit amount or positive balance
D	Debit amount or negative balance

## Subfield 5 (Amount)

DE 54, subfield 5 contains additional amount.

### Attributes

Attribute	Description
Data representation	n-12
Data field	Contents of positions 9-20
Justification	Right-justified with leading zeros

### Application notes

The Single Message System uses up to six additional amounts.

Acquirers not capable of printing/displaying negative balances should print/display a zero balance value.

Acquirers may see DE 54 (Additional Amounts), subfield 5 (Amount) with a value of zero in a Financial Transaction Request Response/0210 message when subfield 2 (Amount Type) is 01 (Ledger Balance) or 02 (Available Balance). The situation may occur when an issuer has provided the ledger or available balance amount with a value of zero in a Financial Transaction Request Response/0210 message.

## DE 55 (Integrated Circuit Card [ICC] System-Related Data)

DE 55 (Integrated Circuit Card [ICC] System-Related Data) contains chip data formatted in accordance with the Europay Mastercard Visa (EMV) specifications. EMV uses Basic Encoding Rules (BER). (Reference the EMV specifications for further details regarding the coding of BER-TLV [ID, Length, Value] data objects.)

### Attributes

Attribute	Description
Data representation	ISO Standard: ans..999; LLLVAR Mastercard Standard: b...255; LLLVAR
Data element length	3 positions, value = ...255
Data field	Contents of subelements
Subelements	Number of subelements depends on message type
Justification	N/A

**NOTE:**

ISO Standards define this data element as ans...999; LLLVAR however the Single Message System only uses only 255 bytes of binary data.

This data element is used only when the financial transaction card is equipped with an integrated circuit and when that mode is activated and selected by the cardholder for the transaction.

**Usage**

Following is the usage of DE 55 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	P	C
Financial Transaction Request Response/0210	C	P	C
Financial Transaction Advice/0220	C	P	C
Financial Transaction Advice/0220—Debit Mastercard stand-in	C	P	C

**Application notes**

The issuer and the payment application (on the chip) use DE 55 (Integrated Circuit Card [ICC] System related data) in the Financial Transaction Request/0200 and Financial Transaction Request Response/0210 messages to communicate with each other.

DE 55 includes cryptogram information that only the issuer or issuer agent and the ICC card are able to use.

The provided functionality is known as Online Mutual Authentication (OMA). The chip is able to authenticate itself to the issuer in the Financial Transaction Request/0200 and the issuer is able to authenticate itself to the chip in the Financial Transaction Response/0210 message.

After initial designation of the overall data-element length (LLL), the remaining binary data consists of a series of subelement ID-length-value (TLV) segments up to a total of 255 bytes. The subelement tags can be from one to two bytes long, which are followed by a one-byte designation of the length, and the subelement data, respectively.

OMA-Card Application Data is included in Financial Transaction Request/0200 messages inbound to an issuer and in Financial Transaction Response/0210 messages outbound to an acquirer. DE 55 contains binary data that only the issuer or the issuer agent can process. The chip in a smart card uses it locally at a chip-capable terminal. The Single Message System does not edit the contents of this data element.

If DE 55 is present in a Financial Transaction Request/0200 message, the DE 22 (POS Entry Mode), subfield 1 (POS Terminal PAN Entry Mode) must equal 05, 07, 09, or 81. Otherwise, the Single Message System rejects the message with a format error.

DE 55 is mandatory in Financial Transaction Request/0200 messages that are related to a chip full grade transaction (transactions carrying chip data to the issuer).

Depending on issuer host processing capabilities (chip grade or magnetic stripe grade processing), the issuer or issuer agent may send DE 55 in the Financial Transaction Request Response/0210 message. Refer to M/Chip Requirements for a definition and further details about chip grade and magnetic stripe grade issuers.

DE 55 can also be present in a Digital Secure Remote Payment transaction. Refer to *Mastercard Cloud-Based Payments Product Description* for more information.

**NOTE:** If an issuer receives DE 55 on a card that is not chip-enabled, they should not return DE 55 in the Financial Transaction Request Response/0210 message.

For MDES tokenized transactions, issuers may opt in through MDES Manager to receive DE 55 data on Single Message System transactions.

When the issuer sends DE 55 in the Financial Transaction Request Response/0210 message, Mastercard will validate DE 55, only allowing tag values 91, 71, and 72. Mastercard will pass the DE 55 related tag values in the Financial Transaction Request Response/0210 message to the acquirer.

If other tag values are present, the Financial Transaction Request Response/0210 message will receive an edit error on DE 55 and the issuer will receive an Acquirer Reversal Advice/0420 message with DE 60 (Advice Reason Code) containing 454 0000 (Network advice, invalid data) indicating a problem with the Financial Transaction Request Response/0210 message.

The following three tables indicate the differences between the contents of DE 55 in the Financial Transaction Request/0200 message and the contents of DE 55 in the Financial Transaction Request Response/0210 message.

The Single Message System will ensure that DE 55 data received in the Financial Transaction Request Response/0210 message does not match the DE 55 data received in an associated Financial Transaction Request/0200 message.

If the issuer or the issuer agent returns DE 55 unaltered, the transaction will be considered an issuer format error.

The Single Message System will add DE 55 to the transmission of a Financial Transaction Advice/0220 message to an issuer that does not participate in On-behalf services for Chip.

The Single Message System will decline Financial Transaction Advice/0220 messages for offline chip card transactions at an ATM.

**NOTE:** On-behalf service 02 (M/Chip Cryptogram Pre-Validation Service) or 03 (M/Chip Cryptogram Validation in Stand-In Processing) will only be performed when the first two positions of DE 22 (PAN Entry Mode) are 05 or 07. PAN Entry mode of 81x is not supported for On-behalf Service 02 or 03.

### **Required Subelements for DE 55 in Financial Transaction Request/0200 and Financial Transaction Advice/0220 messages**

The following table conveys current chip specification requirements for subelements in DE 55 for Financial Transaction Request/0200 and Financial Transaction Advice/0220 messages. These subelements are mandatory.

<b>Subelement name</b>	<b>ID value<sup>a</sup></b>	<b>Length<sup>b</sup></b>
Application Cryptogram (AC)	9F26	8
Cryptogram Information Data	9F27	1
Issuer Application Data (IAD) <sup>c</sup>	9F10	1–32
Cardholder Verification Method (CVM) Results <sup>d</sup>	9F34	3
Terminal Capabilities <sup>d</sup>	9F33	3
Unpredictable Number	9F37	4
Application Transaction Counter	9F36	2
Terminal Verification Result (TVR)	95	5
Transaction Date	9A	3
Transaction Type	9C	1
Amount Authorized	9F02	6

<sup>a</sup> Hexadecimal representation: two characters = one byte binary

<sup>b</sup> This column shows the actual character length of the data for the subelement. The actual length designator in the TLV is the one-byte binary designation of the data that follows.

<sup>c</sup> The acquirer must provide this data element if the corresponding data object (EMV ID 9F10) is provided by the card to the terminal.

The 9F10 format is chip card application dependent. Please refer to the M/Chip Card Application Specifications on Mastercard Connect for more details.

<sup>d</sup> The presence of 9F34 is mandatory for all Financial Transaction Request/0200 messages containing DE 55 that are transmitted from acquirer chip systems certified by Mastercard on or after 13 April 2012.

For the U.S. region, the presence of 9F33, 9F34, and 84 is mandatory for all Financial Transaction Request/0200 messages on or after 17 April 2016.

The presence of 9F34 is mandatory for all Financial Transaction Request/0200 messages containing DE 55 effective 1 April 2017.

<sup>e</sup> When the product rules do not allow cash back, then 9F03 must be absent, or zero-filled.

When the product rules allow cash back:

**Cash back Amount**—9F03 will carry the cash back amount and this data element is mandatory.

**No Cash back Amount**—The value of 9F03 will be zero, in which case 9F03 may be absent or present with a zero value.

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<b>Subelement name</b>	<b>ID value<sup>a</sup></b>	<b>Length<sup>b</sup></b>
Transaction Currency Code	5F2A	2
Application Interchange Profile	82	2
Dedicated File Name <sup>d</sup>	84	5-16
Terminal Country Code	9F1A	2
Amount Other <sup>e</sup>	9F03	6

**Optional subelements for DE 55 in Financial Transaction Request/0200 and Financial Transaction Advice/0220 messages**

The following table conveys current chip specification requirements for subelements in DE 55 for Financial Transaction Request/0200 and Financial Transaction Advice/0220 messages. These subelements are optional.

<b>Subelement Name</b>	<b>ID Value</b>	<b>Length</b>
Terminal Type	9F35	1
Interface Device (IFD) Serial Number	9F1E	8
Transaction Category Code	9F53	1
Terminal Application Version Number	9F09	2
Transaction Sequence Counter	9F41	2-4
Application Selection Registered Proprietary Data	9F0A	Variable up to 255
Application Primary Account Number (PAN) Sequence Number	5F34	1
Third-Party Data	9F6E	5-32

**Optional subelements for DE 55 in a Financial Transaction Request Response/0210**

The following table conveys current chip specification requirements for subelements in DE 55 for a Financial Transaction Request Response/0210. These subelements are optional.

<b>Subelement description</b>	<b>ID value</b>	<b>Length</b>
Issuer Script Template 1  (Allows the issuer to provide a post-issuance command for transmission to the card; present if issuer sends commands to ICC; acquirer network must support a subfield length up to 127 bytes.)  Mastercard allows one occurrence of the EMV ID 71 in the Financial Transaction Request Response/0210 message.	71	1-127
<b>NOTE:</b> Either ID value 71 or ID value 72 should be included in any single Financial Transaction Request Response/0210 message but not both.		
Issuer Script Template 2  (Allows the issuer to provide a post-issuance command for transmission to the card; present if issuer sends commands to ICC; acquirer network must support a subfield length up to 127 bytes.)  Mastercard allows one occurrence of the EMV ID 72 in the Financial Transaction Request Response/0210 message.	72	1-127
<b>NOTE:</b> Either ID value 71 or ID value 72 should be included in any single Financial Transaction Request Response/0210 message but not both.		
Issuer Authentication Data  (Provides data to be transmitted to the card for issuer authentication.)	91	8-16

#### **Required subelements for DE 55 in a Financial Transaction Advice/0220: Debit Mastercard stand-in message**

For Debit Mastercard completion messages (stemming from chip-based authorizations) acquired from the batch system and sent to the issuer in the form of Financial Transaction Advice/0220 messages, the Single Message System uses DE 55 for supplying transaction certificate chip data to the issuer.

**NOTE:** For transactions acquired on the Dual Message System, it is assumed that PAN, PAN Sequence Number, and Expiration Date are present in the clearing message.

Transaction certificate data is defined in the EMV specification and consists of the mandatory subelements defined for the Financial Transaction Request/0200.

## DE 56 (Payment Account Data)

DE 56 (Payment Account Data) contains unique, non-financial reference information associated with the PAN or token used to initiate the transaction.

### Attributes

Attribute	Description
Data representation	an...37; LLLVAR
Data element length	3
Data field	Contents of subelements
Subelements	1
Justification	See "Subelements"

### Usage

Following is the usage of DE 56 (Payment Account Reference) (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	.	X	C
Financial Transaction Request/0200: account status inquiry (merchant initiated message and MDES pre-digitization message)	.	X	C
Financial Transaction Request/0200: tokenization complete notification*	.	X	C
Financial Transaction Request Response/0210	C	X	C
Financial Transaction Request Response/0210: tokenization authorization request response*	C	X	C
Financial Transaction Request Response/0210: account status inquiry*	C	X	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	.	X	C
Financial/Non-Financial Transaction Advice/0220	.	X	C
Financial Transaction Advice Response/0230	.	X	C
Acquirer Reversal Advice/0420: acquirer initiated	.	X	C
Acquirer Reversal Advice/0420: time-out-induced, acquirer initiated	.	X	C

\* These are MDES pre-digitization messages.

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<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Acquirer Reversal Advice/0420: exception, system initiated	.	X	C
Issuer Reversal Advice/0422: exception, system initiated	.	X	C
Acquirer Reversal Advice Response/0430: system initiated	.	X	C
Administrative Advice/0620: issuer token notification advice for tokenization complete notification*	.	X	C

### **Subelement 01 (Payment Account Data)**

DE 56, subelement 01 (Payment Account Data) contains the applicable subfields to carry the unique Payment Account Data specifically associated with the PAN or token used to initiate the transaction.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	01
Subelement length	n-2	...33
Data representation	an...33; LLVAR	
Data field		Contents of positions 1-2
Number of subfields	1	Payment account reference

#### **Subfield 01 (Payment Account Reference [PAR])**

DE 56, subelement 01, subfield 01 (Payment Account Reference) contains the assigned PAR value. A PAR is a unique value associated with a single PAN and attributed to all tokens associated with that PAN. A PAR can be used to link transactions containing PANs or tokens associated with the same underlying payment account.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subfield ID	n-2	01
Subfield length	n-2	...29
Data representation	an...29; LLVAR	
Justification	N/A	

## Values

Position	Description
1–4	BIN Controller Identifier—A four-character value assigned by EMVCo
5–29	A unique 25-character alphanumeric uppercase value generated by the BIN Controller and linked to a PAN

## Application notes

Mastercard supports PAR for all acquirers and issuers for MDES, MDES Lite, and non-MDES transactions in DE 56, subfield 01, subelement 01.

PAR is not added to Mastercard ATM transactions.

Mastercard also supports PAR in detokenization responses from Visa for Maestro-branded transactions containing a Visa token. If PAR is sent by Visa, Mastercard will include the PAR value in DE 56 in the financial messages sent to the issuer and acquirer. The Visa-provided PAR value will be included in DE 56, subfield 01, subelement 01 in the following messages sent to acquirers:

- Financial Transaction Request Response/0210
- Financial Transaction Advice Response/0230
- Issuer Reversal Advice/0422: exception, system initiated
- Issuer Reversal Advice/0422: exception, issuer initiated
- Acquirer Reversal Advice Response/0430: system initiated

In the following messages sent to issuers:

- Financial Transaction Request/0200
- Financial Transaction Advice/0220
- Acquirer Reversal Advice/0420: acquirer initiated
- Acquirer Reversal Advice/0420: time-out-induced, acquirer initiated
- Acquirer Reversal Advice/0420: time-out-induced, system initiated
- Acquirer Reversal Advice/0420: exception, system initiated
- Acquirer Reversal Advice/0420: acquirer initiated exception

If no PAR value is provided by Visa for this type of transaction, then Mastercard will not include DE 56 in the related messages sent to the issuer or acquirer.

Mastercard will not populate the PAR value from Visa for a transaction originating with a PAN rather than a token.

## DE 57 (Reserved for National Use)

ISO reserved this data element for future definition and use.

### Attributes

Attribute	Description
Data representation	ans...999; LLLVAR
Data element length	3 positions
Data field	Variable length
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 58 (Authorizing Agent Institution ID)

DE 58 (Authorizing Agent Institution ID) is the institution identifier of the card issuer.

### Attributes

Attribute	Description
Data representation	ISO Standard: ans...999; LLLVAR Mastercard Standard: n...009; LLLVAR
Data element length	3 positions, value = ...9
Data field	Variable length, contents of positions 001–999 Variable length, contents of positions 001–009
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** ISO Standards define this data element as ans...999; LLLVAR however the Single Message System uses it as n...009; LLLVAR.

### **Usage**

Following is the usage of DE 58 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C
Financial Transaction Advice/0220	.	X	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	.	X	C
Acquirer Reversal Advice/0420: acquirer initiated	.	X	C
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	.	X	C
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	C
Acquirer Reversal Advice/0420: exception, system initiated	.	X	C
Acquirer Reversal Advice/0420: acquirer initiated exception	.	X	C
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	C

### **Application notes**

For customers using the Enhanced Issuer Identification (EII) service, this data element contains the issuing processor's financial institution routing and transit number. The Single Message System retrieves this data from configured data of the issuer and supplies it to the IPS in the outbound Financial Transaction Request/0200 message and in any subsequent acquirer reversal advice sent to the issuer.

The Single Message System does not send DE 58 in Issuer Reversal Advice/0422 messages to acquirers that participate in the EII service.

## **DE 59 (Reserved for National Use)**

ISO reserved this data element for future definition and use.

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans...999; LLLVAR
Data element length	3 positions
Data field	Variable length
Subfields	None

Attribute	Description
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 60 (Advice Reason Code)

The Single Message System uses DE 60 (Advice Reason Code) to indicate the specific purpose of an advice message.

### Attributes

Attribute	Description
Data representation	ISO Standard: ans...999; LLLVAR Mastercard Standard: ans...100; LLLVAR
Data element length	3 positions, value = 003-100
Data field	Contents of Subfields 1-4
Subfields	4
Justification	See "Subfields"

**NOTE:** ISO Standards define this data element as ans...999; LLLVAR however the Single Message System defines it as ans...100; LLLVAR.

### Usage

Following is the usage of DE 60 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Advice/0220	M	P	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Acquirer Reversal Advice/0420: acquirer initiated exception	M	P	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	M	P	M
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M
Administrative Advice/0620: single message system initiated	.	X	M
Administrative Advice/0620: processor initiated	M	X	.
Administrative Advice/0620: processor initiated time-based exception	M	P	M
Administrative Advice/0644	.	X	M

### **Application notes**

DE 60 is present in all advice messages, with the exception of network management advice (0820 message type). The data element has one or more of the following subfields.

The value and meaning of the contents of the Advice Reason data element vary according to the advice message type (for example, 02xx, 04xx, or 06xx), card product type, and whether the advice message is coming to or going from the Single Message System.

### **Subfield 1 (Advice Reason Code)**

DE 60, subfield 1 contains the advice reason code.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-3
Data field	Contents of positions 1-3
Justification	N/A

#### **Values**

This subfield is mandatory for all advice messages and indicates the general purpose of the advice message.

The following table displays the general values for subfields 1 and 2 based on message type for all products, though each code does not pertain to all products. To determine whether the processor or the Single Message System will include DE 60, refer to the Message Flow chapter for descriptions and diagrams for advice messages.

The Single Message System will perform system edits for DE 60 (Advice Reason Code) on transaction messages that do not contain the appropriate codes in DE 60, subfield 1 (Advice Reason Code) and subfield 2 (Advice Reason Detail Code) for the following message types:

<b>Message type</b>	<b>Brand impacted</b>
Financial Transaction Advice/0220	Cirrus, Maestro
Acquirer Reversal Advice/0420	Cirrus, Maestro
Issuer Reversal Advice/0422	Cirrus, Maestro, Debit Mastercard

### **Subfield 2 (Advice Reason Detail Code)**

DE 60, subfield 2 contains the advice reason detail code.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-4
Data field	Contents of positions 4-7
Justification	N/A

#### **Values**

Refer to the Message Type tables for listing of applicable Advice Reason Detail Codes.

This subfield usage may be conditionally required; it provides additional, specific information as to the exact nature of the advice message.

If a hyphen is shown in subfield 2, the field must be space-filled or left blank.

#### **Usage notes DE 60, Subfield 2**

The advice detail code (subfield 2) description above has certain special meanings and the code has some special applications as indicated below:

- In the column for Advice Detail Code, a hyphen indicates no data will be present in subfield 2.
- The first two digits of subfield 2 (Advice Detail Code) are normally "00"; common practice for acquirers designating "card retained" in an incoming 0420 reversal is to use "10" in these positions.

The Single Message System has a facility for determining whether an incoming exception advice is a possible duplicate. When positions 4 and 5 of DE 60 (positions 1 and 2 of subfield 2) in an exception message outbound from the Single Message System have the value "02", this indicates the advice is a possible duplicate.

For deposit transactions, issuers can only process a chargeback if the acquirer first processed an adjustment. Issuers cannot process a chargeback against the original transaction. The interchange fees will not be returned to the issuer.

Acquirers can process adjustments up to USD 10,000 above the original transaction amount for ATM Deposit Sharing transactions using Single Message Transaction Manager.

When the Single Message System processes partial and full chargebacks, partial and full adjustments, and non-same day reversals for Mexico domestic transactions at an ATM, the interchange amount and value-added tax (VAT) are not returned to the acquirer. The interchange amount will be returned to the acquirer when a same day reversal is processed for Mexico Domestic ATM transactions.

Reversal messages sent after the current settlement cycle will be forwarded to the issuer containing DE 60 (Advice Reason Code), subfield 1 (Advice Reason Code), code 490 (Adjustment) and subfield 2 (Advice Reason Detail Code), code 0010 (Adjustment).

For Maestro refund transactions acquired on the Dual Message system, Mastercard will generate a Financial Transaction Advice/0220 (force post) message allowing each refund to be sent directly to the issuer. The Financial Transaction Advice/0220 (force post) message will contain DE 60, subfield 1 (Advice Reason Code), value 260 and subfield 2 (Advice Reason Detail Code), value 0092 (Refund).

Issuers globally must not use DE 60 (Advice Reason Code), subfield 2 (Advice Reason Detail Code), value 0050 (Credit posted as purchase) when processing credit-related chargebacks for the Mastercard® credit or Debit Mastercard® brand. Message Reason code 0060 (Chargeback-Credit not processed [Debit Mastercard only]) is to be used instead.

Issuers participating in MDES: receive Financial Transaction Advice/0220 messages with reason code 141 in DE 60 (Advice Reason Code), subfield 1 (Advice Reason Code) and new value 0216 (Reject: DTVC Invalid/Expired) in DE 60, subfield 2 (Advice Detail Code) when a static or cloud token transaction is declined to the acquirer due to an invalid DTVC.

### **Subfield 3 (Advice Reason Detail Text)**

DE 60, subfield 3 contains the advice reason detail text.

#### **Attributes**

Attribute	Description
Data representation	ans...53
Data field	Contents of positions 8–60
Justification	N/A

#### **Values**

This optional subfield contains textual information supplementary to the Advice detail code.

### **Usage notes DE 60, Subfield 3**

A Debit Mastercard issuer **must** provide subfield 3, as defined in the following table, when sending an online exception (chargeback) Issuer Reversal Advice/0422 message to the Single Message System through the issuer's online facility.

**Table 59: DE 60, Subfield 3 for Debit Mastercard /0422 from issuer**

<b>DE 60 position</b>	<b>Subfield name and values</b>
8	<p>Usage Code</p> <p>1 = Issuer disputing initial presentment</p> <p>2 = Acquirer sending a second presentment</p> <p>3 = Arbitration chargeback</p> <p>6 = Retrieval Request</p> <p>7 = Presentment</p>
	<p><b>NOTE:</b> For chargebacks submitted through an Issuer Reversal Advice/0422 message, DE 60, subfield 3, position 8 must be a value of 1 or 3.</p>
9	<p>Documentation Indicator</p> <p>0 = No documentation (default)</p> <p>1 = Documentation will follow</p>
10-11	Condition Code, reference only, generated by the Single Message System to batch
12-49	<p>Message Block, message text that may be conditionally required based on the reason code.</p> <p>For more information regarding message block formatting, refer to the Message Reason Code section of the <i>Chargeback Guide</i>. Message Reason code formats vary depending on the reason code submitted. Please contact your Customer Implementation Specialist for specific format and testing information</p>
50-51	Chargeback Flag, reference only, generated by the Single Message System to batch
52-53	Future use—space fill
54	Reject Code—space fill
55-60	Future use—space fill

Maestro and Cirrus processors **must** provide the contact information (in the following table) to the Single Message System in the online exception 042x advice DE 60, subfield 3. Similar

information may be sent from the processor's terminal entry on a Single Message Transaction Manager exception advice.

**Table 60: DE 60, subfield 3, Advice Reason Text (Maestro and Cirrus)**

Position	Description
8–28	Contact name
29–44	Contact phone
45–60	Contact fax

**NOTE:**

In the following tables, a hyphen in the Advice Detail Code column indicates the field is not applicable and no data will be present in subfield 2. The field must be space-filled or left blank.

Also in the tables that follow, IPS refers to an issuer processing system.

The tables show Advice Reason Codes for subfields 1 and 2.

#### **Subfield 4 (Advice Reason Additional Text)**

DE 60, subfield 4 (Advice Reason Additional Text) is a conditional subfield that contains additional information on the documentation indicator.

##### **Attributes**

**NOTE:** This subfield is applicable for Maestro® and Cirrus® only.

Attribute	Description
Data representation	ans...040
Data field	Contents of positions 61–100
Justification	N/A

## Values

Table 61: DE 60, subfield 4 position

DE 60, subfield 4 position	Position name and values
61	Documentation Indicator  0 = Supporting documentation is not required.  1 = Supporting documentation will follow.
62-100	Reserved for future use.

## Usage notes

Maestro and Cirrus acquirers **must** provide subfield 4, when sending an online exception (representment) for reason code 53 (Cardholder Dispute—Defective/Not as Described) and 70 (Chip Liability Shift) in an Acquirer Reversal Advice/0420 message to the Single Message System through the acquirer's online facility.

Maestro and Cirrus issuers **must** provide subfield 4, when sending an online exception (chargeback) Issuer Reversal Advice/0422 message to the Single Message System through the issuer's online facility.

Issuers and acquirers **must** submit DE 60, subfield 4 populated with value zero when documentation is not supported for the chargeback or representment transaction.

### NOTE:

For Chargeback reason codes 53 (U.S. region and its territories only) and 70 and representment reason code 13, the Single Message System will expect DE 60, subfield 4 to be present and to contain a valid documentation indicator. If the documentation indicator is incorrect or not present for the above reason codes, the online exception transaction will be rejected.

For any other Chargeback reason codes, the Single Message System does not expect DE 60, subfield 4 to be present and will not reject the transaction if it is not present. However, the documentation indicator DE 60, subfield 4 may be present on chargeback reason codes other than 53, 70, and representment code 13.

## Message type 0220: financial transaction advice

The advice reason and detail codes in the table below may be returned for Financial Transaction Advice/0220 messages, sent by the Single Message System to the issuer.

The Single Message System forwards a Financial Transaction Advice/0220 message to an affected issuer when

- an authorization of a Maestro® or Cirrus® transaction request occurs during stand-in processing

- 
- a Debit Mastercard® force post transaction message is received from an acquirer
  - a Maestro® preauthorization completion message is received from an acquirer
  - a correction is processed to reverse Cirrus or Maestro representment adjustments (valid for Mastercard initiated adjustments only), or
  - a Maestro® refund is initiated in Europe.

Issuers will no longer receive DE 60, value 451 (Advice Reason Code), 0010 (Advice Reason Detail Code), Partial Dispense: card returned in Financial Transaction Advice/0220 messages for a partial completion.

Issuers will receive value 251 0010 (APS approved transaction; card returned; partial dispense) in Financial Transaction Advice/0220 messages for Maestro preauthorization with partial completion.

**NOTE:**

A value of 2 in the second position indicates that this 0220 message has been determined by the Single Message System to be a Network Advice: Possible Duplicate of a previous 0220 message. The reason code and the other positions of the detail code are from the original advice message display in the following format:

Format: x2yy where x=card disposition of previous message, 1 = retain, 0 = return, and yy=detail code (position 3, 4) of previous message.

If the Advice Detail Code of the original advice message is not present or contains zeros, the Advice Detail Code of this possible duplicate message is 0200.

### **Message type 0220: Financial Transaction Advice**

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#### **Message type 0220: financial transaction advice**

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**Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
-	0042	CVC 3 unable to process
-	0043	CVC 3 ATC outside allowed range
-	0044	CVC 3 invalid
-	0045	CVC 3 unpredictable number mismatch
-	0046	CVC 3 ATC replay
115	0032	Reject: chip data processing error
115	0034	Reject: invalid chip cryptogram
115	0035	Reject: TVR/CVR validation failed

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**Message type 0220: financial transaction advice**

**Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
115	0037	Reject: no matching key file for this PAN, PAN expiry date and KDI combination. Validation of ARQC and CVR/TR not performed, status unknown  Reject: No matching key file for this PAN, PAN expiry date, and KDI combination
115	0038	Reject: security platform time out
115	0039	Reject: application cryptogram is valid but not an ARQC nor a TC; status of TVR/CVR unknown
115	0040	Reject: security platform processing error  Reject: Security platform system error
115	0043	Reject: ATC outside allowed range
115	0046	Reject: ATC replay
115	0059	Reject: DE 55 format error
120	0005	Transaction blocking: ATM
120	0009	Transaction blocking: issuer
140	0201	Unable to convert contactless or virtual account number
141	0009	Reject: invalid time validation
141	0032	Chip technical failure (Mastercard Digital Enablement Service)
141	0034	Chip validation failed (Mastercard Digital Enablement Service)
141	0035	TVR/CVR validation failed (Mastercard Digital Enablement Service)
141	0037	Reject: no matching key file for this PAN, PAN expiry date, and KDI combination
141	0038	Reject: security platform time out
141	0039	Cryptogram not ARQC (Mastercard Digital Enablement Service)
141	0040	Reject: security platform system error
141	0042	CVC 3 unable to process (Mastercard Digital Enablement Service)
141	0043	ATC outside allowed range (Mastercard Digital Enablement Service)
141	0044	CVC 3 invalid (Mastercard Digital Enablement Service)

**Message type 0220: financial transaction advice**

**Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
141	0045	CVC 3 unpredictable number mismatch (Mastercard Digital Enablement Service)
141	0046	ATC replay (Mastercard Digital Enablement Service)
141	0201	Invalid token/primary account number mapping relationship (Mastercard Digital Enablement Service device token).  Invalid token requestor ID/token relationship (Mastercard Digital Enablement Service card on file token).
141	0202	Token in suspended status (Mastercard Digital Enablement Service)
141	0203	Token deactivated (Mastercard Digital Enablement Service)
141	0204	Reject: ATC invalid. Not in list of currently active single-use keys
141	0205	Reject: ATC replay
141	0206	Reject: invalid MD AC and UMD AC (invalid mobile PIN)  For Maestro processing of Visa debit tokens, value 0206 = Reject: invalid cryptogram.
141	0207	Reject: valid MD AC; invalid UMD AC (mobile PIN try counter max limit not reached, token not suspended)
141	0208	Reject: invalid MDAC; valid UMD AC
141	0209	Reject: valid MD AC; invalid UMD AC (Mobile PIN try counter max limit reached, token suspended)
141	0210	Reject: unpredictable number length indicator mismatch
141	0211	Reject: TVR/CVR validation failed
141	0212	Reject: unable to process
141	0213	Reject: invalid token
141	0215	Reject: declined by transaction analysis
141	0216	Reject: DTVC Invalid/Expired
141	0217	Reject: channel not authorized by cardholder
141	0250	Activation code notification
141	0251	Tokenization complete notification
141	0252	Tokenization event notification
150	0064	Reject: transaction amount limit check

**Message type 0220: financial transaction advice**

**Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
150	0065	Reject: cumulative amount limit check
150	0067	Reject: merchant ID limit
150	0071	Reject: decline other
150	0072	Reject: geographic restriction
150	0076	Reject: sanctions score restriction
150	0077	Reject: transaction count check
151	0064	Reject: Transaction Limit Check
151	0065	Reject: cumulative limit check
151	0072	Reject: geographic restriction
160	0078	M/Chip data not present
180	-	CAT Risk Level 3
192	0078	M/Chip data not present
200	-	Network stand-in: IPS selected option
201	0043	Network stand-in: IPS signed out; ATC outside allowed range
202	-	Network stand-in: Maestro stand-in approved transaction
202	0043	Network stand-in: IPS timed out; ATC outside allowed range
203	0043	Network stand-in: IPS unavailable; ATC outside allowed range
201	0000	Network stand-in: IPS signed out; Valid ARQC, valid TVR/CVR
202	0000	Network stand-in: IPS timed out; Valid ARQC, valid TVR/CVR
203	0000	Network stand-in: IPS unavailable; Valid ARQC, valid TVR/CVR
201	0032	Network Stand-In: IPS signed out; Invalid input data to ESP/Result Code 50 from ESP or ESP device timeout

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**Message type 0220: financial transaction advice**

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**Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
202	0032	Network stand-in: IPS timed out; Invalid input data to ESP/Result Code 50 from ESP or ESP device timeout
203	0032	Network stand-in: IPS unavailable; Invalid input data to ESP/Result Code 50 from ESP or ESP device timeout
201	0034	Network stand-in: IPS signed out; Chip validation failed
202	0034	Network stand-in: IPS timed out; Chip validation failed
203	0034	Network stand-in: IPS unavailable; Chip validation failed
201	0035	Network stand-in: IPS signed out; TVR/CVR validation failed
202	0035	Network stand-in: IPS timed out; TVR/CVR validation failed
203	0035	Network stand-in: IPS unavailable; TVR/CVR validation failed
201	0039	Network stand-in: IPS signed out; Cryptogram not ARQC
202	0039	Network Stand-In: IPS timed out; Cryptogram not ARQC
203	0039	Network stand-in: IPS unavailable; Cryptogram not ARQC
201	0046	Network stand-in; IPS signed out; ATC replay
202	0046	Network stand-in; IPS signed out; ATC replay
203	0046	Network stand-in; IPS signed out; ATC replay

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**Message type 0220: financial transaction advice**

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**Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
201	0018	Network stand-in: IPS signed out; preauthorization completion, zero completion/completion for an amount greater than amount originally requested
202	0018	Network stand-in: IPS timed out; preauthorization completion, zero completion/completion for an amount greater than amount originally requested
203	0018	Network stand-in: IPS unavailable; preauthorization completion, zero completion/completion for an amount greater than amount originally requested
201	0010	Network stand-in: IPS signed out; partial preauthorization completion
202	0010	Network stand-in: IPS timed out; partial preauthorization completion
203	0010	Network stand-in: IPS unavailable; partial preauthorization completion
251	0010	APS approved transaction; card returned; partial dispense
<p><b>NOTE: This value is sent by the Single Message System for Maestro pre-auth with partial completion transactions.</b></p>		
251	1010	APS approved transaction; card retained; partial dispense
260	0000	Offline chip clearing
260	0091	Clear chip
260	0092	Refund

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**Message type 0220: financial transaction advice****Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
270	0000	Adjustment to original settlement amount in Financial Transaction Advice/220 message ( <i>for Maestro transactions only</i> )
270	0007	Correction processed by the Single Message System to reverse Cirrus or Maestro representment adjustments. Code valid on Mastercard initiated adjustments only.
270	0014	Exception item: for Mastercard use only
<b>NOTE: Mastercard will not send advice reason code 270 0014 in a Financial Transaction Advice/0220 to issuers unless the issuer has requested Mastercard to send Mastercard-initiated adjustments sent on a customer's behalf as a Financial Transaction Advice/0220 and the issuer is prepared to receive them.</b>		
280	-	APS approved transaction
280	0000	Outbound from the Single Message System, APS approved transaction
290	-	APS approved transaction; pre-authorized by issuer
290	1403	Previously approved authorization: partial amount, multi-clearing.
290	1404	Previously approved authorization: partial amount, final clearing.
291	-	APS approved transaction; network timeout
293	-	APS approved transaction; APS system error
294	-	PIN translation unsuccessful

**Message type 0220: Debit Mastercard stand-in-financial transaction advice**

The advice reason and detail codes in the table below may be contained in Financial Transaction Advice/0220—Debit Mastercard Stand-In messages, sent by the Single Message System to the issuer.

The Single Message System forwards a Financial Transaction Advice/0220: Debit Mastercard stand-in message to an affected issuer when an authorization of a Debit Mastercard transaction request occurs during Stand-In processing.

**NOTE:**

A value of 2 in the second position of the Advice Reason Detail Code indicates that this 0220 message has been determined by the Single Message System to be a Network Advice: Possible Duplicate of a previous 0220 message. The reason code and the other positions of the detail code are from the original advice message displayed in the following format:

Format: x2yy where x=card disposition of previous message, 1 = retain, 0 = return, and yy=detail code (position 3, 4) of previous message.

If the Advice Reason Detail Code of the original advice message is not present or contains zeros, the Advice Reason Detail Code of this possible duplicate message is 0200.

### **Message type 0220: Debit Mastercard stand-in-financial transaction advice**

#### **Message type 0220: Debit Mastercard stand-in-financial transaction advice**

**Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
-	0042	CVC 3 unable to process
-	0043	CVC 3 ATC outside allowed range
-	0044	CVC 3 invalid
-	0045	CVC 3 unpredictable number mismatch
-	0046	CVC3 ATC replay
100	-	Alternate issuer route: Issuer selected option (Debit Mastercard Stand-In Only)
101	-	Alternate issuer route: Issuer processing system (IPS) signed out (Debit Mastercard stand-in only)
102	-	Alternate issuer route: IPS timed out (Debit Mastercard stand-in only)
	0000	Accept
	0001	Reject: negative file
	0006	Reject: transaction limit test
	0007	Reject: Premium listing cumulative limit test
	0010	Reject: Stand-In Monitoring Rule
	0011	Reject: day number 1/number of transactions
	0012	Reject: day number 2/number of transactions
	0013	Reject: day number 3/number of transactions

**Message type 0220: Debit Mastercard stand-in-financial transaction advice****Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
	0014	Reject: day number 4/number of transactions
	0015	Reject: day number 1/amount
	0017	Reject: day number 3/amount
	0028	Reject: invalid CVC 1
	0029	Reject: expired card/MIP-generated risk advice transactions
	0036	Reject: CVC 1 unable to process
	1511	Reject: transaction limit test Customer-defined limits caused transaction to fail; card not present at point of interaction
	1600	Reject: transaction limit test Mastercard default limits caused transaction to fail; card present at point of interaction
	1601	Reject: transaction limit test Mastercard default limits caused transaction to fail; card not present at point of interaction
	1610	Reject: transaction limit test Customer-defined limits caused transaction to fail; card present at point of interaction
	1611	Reject: transaction limit test Customer-defined limits caused transaction to fail; card not present at point of interaction
	9999	Reject: failed validation test because transaction type or authorization method was invalid
103	-	Alternate issuer route: IPS unavailable (Debit Mastercard stand-in only)
105	-	Transaction processed via X-Code (Debit Mastercard stand-in only)
107	-	PIN processing error (Debit Mastercard stand-in only)
108	-	Alternate issuer route: DIU error (Debit Mastercard stand-in only)
109	-	Alternate issuer route: Issuer edit response error (Debit Mastercard stand-in only)

**Message type 0220: Debit Mastercard stand-in-financial transaction advice****Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
111	-	Alternate issuer route: Issuer host system error (Debit Mastercard stand-in only)
	0000	Accept
	0001	Reject: negative file
	0006	Reject: transaction limit test
	0007	Reject: Premium listing cumulative limit test
	0010	Reject: Stand-in Monitoring Rule
	0011	Reject: day number 1/number of transactions
	0012	Reject: day number 2/number of transactions
	0013	Reject: day number 3/number of transactions
	0015	Reject: day number 1/amount
	0020	Reject: card number in blocked range
	0028	Reject: invalid CVC 1
	0029	Reject: expired card
	0036	Reject: CVC 1 unable to process
	1511	Reject: transaction limit test Customer-defined limits caused transaction to fail; card not present at point of interaction
	1600	Reject: transaction limit test Mastercard default limits caused transaction to fail; card present at point of interaction
	1601	Reject: transaction limit test Mastercard default limits caused transaction to fail; card not present at point of interaction
	1610	Reject: transaction limit test Customer-defined limits caused transaction to fail; card present at point of interaction
	1611	Reject: transaction limit test Customer-defined limits caused transaction to fail; card not present at point of interaction

**Message type 0220: Debit Mastercard stand-in-financial transaction advice****Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
	9999	Reject: failed validation test because transaction type or authorization method was invalid
112	-	Alternate issuer route: Network not dispatched error (Debit Mastercard stand-in only)
113	-	Alternate issuer route: Issuer undelivered (Debit Mastercard stand-in only)
114	-	Alternate issuer route: Direct down option (Debit Mastercard stand-in only)
115	-	Transaction processed via DIU on-behalf service decision (Debit Mastercard stand-in only)
121	-	Account lookup service (Debit Mastercard stand-in only)
121	0041	Account lookup service (Reject: payment cancellation Service)
140	-	Unable to convert contactless account number or virtual account number
141	0032	Chip technical failure (Mastercard Digital Enablement Service)
141	0034	Chip validation failed (Mastercard Digital Enablement Service)
141	0035	TVR/CVR validation failed (Mastercard Digital Enablement Service)
141	0039	Cryptogram not ARQC (Mastercard Digital Enablement Service)
141	0042	CVC 3 Unable to process (Mastercard Digital Enablement Service)
141	0043	ATC outside allowed range (Mastercard Digital Enablement Service)
141	0044	CVC 3 Invalid (Mastercard Digital Enablement Service)
141	0045	CVC 3 Unpredictable number mismatch (Mastercard Digital Enablement Service)
141	0046	ATC Replay (Mastercard Digital Enablement Service)
141	0201	Invalid device account number-funding account number mapping relationship (Mastercard Digital Enablement Service)
141	0215	Reject: declined by transaction analysis
141	0250	Activation code notification
141	0251	Tokenization complete notification

**Message type 0220: Debit Mastercard stand-in-financial transaction advice****Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
141	0252	Tokenization event notification
150	-	Decline notice for Mastercard In Control service
	0060	Reject: Virtual card number (expiration date does not match)
	0061	Reject: Virtual card number (expiration date expired)
	0062	Reject: Virtual CVC 2 does not match
	0063	Reject: Validity period limit: In Control
	0064	Reject: Transaction amount limit check
	0065	Reject: Cumulative amount limit check
	0066	Reject: Transaction number usage
	0067	Reject: Merchant ID limit
	0068	Reject: Invalid virtual card number (real card number mapping relationship)
	0069	Reject: MCC limit
	0070	Reject: Database status bad
	0071	Reject: Decline other
	0072	Reject: Geographic restriction
	0073	Reject: Transaction type restriction
160	-	Authorization to issuer
	0028	Reject: Invalid CVC 1
	0036	Reject: Invalid CVC 1 unable to process
	0047	Reject: CVC 1 No matching key file for this PAN, PAN expiry date combination; status unknown
151	0075	Reject: Transaction time/date restriction
	0076	Reject: Sanctions score restriction
	0077	Reject: Transaction count check
190	-	Acquirer processing system (APS) approved (Debit Mastercard stand-in only)
450	0018	Over dispense; card returned.

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#### Message type 0220: Debit Mastercard stand-in-financial transaction advice

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**Advice reason code: Advice reason detail**

Subfield 1	code: Subfield 2	Advice reason detail text description: Subfield 3
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650	-	Administrative textual message transmittal (reference applicable user manual for Administrative message delivery capabilities within each program and service) (Debit Mastercard stand-in only)
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#### Message type 0220: non-financial transaction advice

The advice reason and detail codes in the table below may be returned for Non-Financial Transaction Advice/0220 messages, sent by the Single Message System to the issuer.

The Single Message System forwards a Financial Transaction Advice/0220 message to an affected issuer when:

#### Message type 0220: non-financial transaction advice

**Advice reason code: Advice reason detail**  

Subfield 1	code (Subfield 2)	Detail text description (Subfield 3)
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140	0201	Unable to convert contactless account number or virtual account number
192	0078	M/Chip data not present

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#### Message type 0420: acquirer reversal advice

Reverses (partially or wholly) an earlier Authorization/01xx or Financial Transaction/02xx message. The acquirer processing system usually generates this message upon detection of a malfunction at the point-of-interaction (POI).

The Single Message System sends this message to an issuer upon receipt of a reversal or upon receipt of an adjustment from the acquirer.

The Acquirer Reversal Advice/0420 message has four uses:

- **Standard reversal advice** (before settlement)—most commonly used to correct or cancel the amount dispensed or authorized from the original terminal request.
- **Time-out-induced reversal advice** (before settlement)—available to acquirers when the Financial Transaction Request Response/0210 does not arrive back to the acquirer in the required time.
- **Acquirer reversal advice (exception, system initiated)** (after settlement)—Authorized representatives of an acquirer, an issuer, or the Mastercard Network use Single Message Transaction Manager to submit an adjustment, chargeback, or representment, which the

Single Message System passes on to the issuer in the form of an Acquirer Reversal Advice/0420 message.

- **Online exception** (after settlement)—available to acquirers to submit adjustments and representations after the settlement day of the original transaction. This abbreviated Acquirer Reversal Advice/0420 message may be submitted to the Single Message System through the acquirer's online processing facility, which the Single Message System will pass to the issuer as an Acquirer Reversal Advice/0420 message.

The advice reason and detail codes in the table below may be returned for

- Acquirer Reversal Advice/0420: acquirer initiated
- Acquirer Reversal Advice/0420: time-out induced, acquirer initiated
- Acquirer Reversal Advice/0420: time-out induced, system initiated
- Acquirer Reversal Advice/0420: exception, system initiated, and
- Acquirer Reversal Advice/0420: acquirer initiated exception messages.

**NOTE:**

A value of 2 in the second position of Advice Reason Detail Code indicates that this 0420 message has been determined by the Single Message System to be a Network Advice: Possible Duplicate of a previous 0420 message. The reason code and the other positions of the detail code are from the original advice message display in the following format:

Format: x2yy where x=card disposition of previous message, 1 = retain, 0 = return, and yy=detail code (position 3, 4) of previous message.

If the Advice Reason Detail Code of the original advice message is not present or contains zeros, the Advice Reason Detail Code of this possible duplicate message is 0200.

### **Message type 0420: acquirer reversal advice**

#### **Message type 0420: acquirer reversal advice)**

<b>Advice reason code: Subfield 1</b>	<b>Advice reason detail code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
400	-	Network advice: APS error; unable to deliver response (for Single Message System use only)
400	0000	Network advice: Late response from issuer (for Single Message System use only)
401	0080	Network advice: APS error (for Single Message System use only)

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**Message type 0420: acquirer reversal advice)**

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**Advice reason code: Advice reason detail**

**Subfield 1**

**code: Subfield 2**

**Advice reason detail text description: Subfield 3**

402	0090	Network advice: IPS timeout error not acceptable from acquirer (for Single Message System use only)
450	0011	Zero dispense: card returned; no receipt issued
450	0018	Zero dispense/Over dispense; card returned; POI failure. For the Timeout-Induced Reversal/0420 message, this code indicates a 0210 timeout at the acquirer.
450	0019	Zero dispense: card returned, POI time out
450	0021	Suspect Fraud
450	0040	Zero dispense: card returned; cardholder timeout
450	1011	Zero dispense: card retained; no receipt issued
450	1018	Zero dispense: card retained; POI failure
450	1019	Zero dispense: card retained; POI timeout
450	1040	Zero dispense: card retained; cardholder timeout

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**Message type 0420: acquirer reversal advice)**

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**Advice reason code: Advice reason detail**

**Subfield 1                    Subfield 2                    Advice reason detail text description: Subfield 3**

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451	0010	Partial dispense: card returned
451	1010	Partial dispense: card retained
453	0041	Financial transaction cancellation: card returned
453	1041	Financial transaction cancellation: card retained
454	-	APS unable to deliver response
454	0000	Network advice, invalid data (for Single Message System use only)
455	0090	APS timeout; card returned
456	0015	Debit Mastercard preauthorization received after settlement cutoff.
455	1090	APS timeout; card retained
487	0005	Retrieval request: cardholder does not agree
487	0021	Retrieval request: transaction not recognized
487	0023	Retrieval request: need for personal records
487	0041	Retrieval request fraud investigation
487	0042	Retrieval request: potential chargeback
488	-	Fulfillment

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**Message type 0420: acquirer reversal advice)**

**Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
489	0001	Chargeback: requested transaction information not received (Debit Mastercard only)
489	0002	Chargeback: requested/required item illegible or missing (Debit Mastercard only)
489	0003	Correction processed by the Single Message System to reverse a Cirrus or Maestro chargeback with fees
489	0007	Chargeback: warning bulletin file (Debit Mastercard only)
489	0008	Chargeback: requested/required authorization not obtained (Debit Mastercard only)
489	0012	Chargeback: account number not on file (Debit Mastercard only)
489	0017	Chargeback: cardholder dispute (ATM only)
489	0030	Chargeback: cardholder disputed amount (deposits only)
489	0031	Chargeback: transaction amount differs (Debit Mastercard only)
489	0034	Chargeback: duplicate processing (Debit Mastercard only)
489	0037	Chargeback: no cardholder authorization (Debit Mastercard only)
489	0040	Chargeback: fraudulent processing of transactions (Debit Mastercard only)
489	0041	Chargeback: canceled recurring transaction (Maestro and Debit Mastercard only)
489	0042	Chargeback: late presentation (Debit Mastercard only)
489	0046	Chargeback: correct transaction currency code not provided (Debit Mastercard only)
489	0049	Chargeback: questionable merchant activity (Debit Mastercard only)
489	0053	Chargeback: not as described (Debit Mastercard only)
489	0054	Chargeback: cardholder dispute not elsewhere classified (U.S. Region, Debit Mastercard only)
489	0055	Chargeback–Non-receipt of merchandise (Debit Mastercard only)
489	0059	Chargeback–Services not rendered (RS3 = ATM dispute) (Debit Mastercard only)
489	0060	Chargeback–Credit not posted/posted as a purchase
489	0063	Chargeback–Cardholder does not recognize – potential fraud (Debit Mastercard only)

**Message type 0420: acquirer reversal advice)**

**Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
489	0070	Chargeback–Chip Liability Shift (POS and ATM)
489	0071	Debit Mastercard: Chargeback–Chip Liability Shift (POS and ATM)  Maestro: Chargeback–Disputed Amount (POS only)
489	0073	Chargeback–Duplicate Transaction (POS and ATM)
489	0074	Chargeback–Missing or Illegible Signature (POS only)
489	0075	Chargeback–Credit not Received (POS only)
489	0078	Chargeback–Documentation not legible on retrieval request (POS only)
489	0079	Chargeback–Goods or services not delivered (e-commerce only)
489	0080	Chargeback–for late presentment (offline)
490	0001	Arbitration chargeback–Requested transaction information not received (Debit Mastercard only)
490	0002	Arbitration chargeback–Requested/required item illegible or missing (Debit Mastercard only)
490	0006	Correction processed by the Single Message System to reverse a Cirrus or Maestro representment with fees
490	0007	Correction processed by the Single Message System to reverse Cirrus or Maestro representment adjustment, or chargeback
490	0008	Requested/Required Authorization Not Obtained.
490	0010	Adjustment
490	0012	Arbitration chargeback–Account number not on file (Debit Mastercard only)
490	0014	Exception Item–For Mastercard use only
490	0019	Reversal of a representment–no documentation fulfillment
490	0020	Adjustment–Returned Item (Deposits only)
490	0024	Adjustment–Empty deposit envelope (Deposits only)
490	0025	Adjustment–Error in addition (Deposits only)
490	0026	Adjustment–Error in settlement (Deposits only)
490	0027	Adjustment–Customer keyed wrong amount (Deposits only)
490	0028	Adjustment–Non-cash item deposited (Deposits only)

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**Message type 0420: acquirer reversal advice)**

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**Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
490	0029	Adjustment–Foreign/Counterfeit currency deposited (Deposits only)
490	0031	Arbitration chargeback–Transaction amount differs (Debit Mastercard only)
490	0034	Arbitration chargeback–Duplicate processing (Debit Mastercard only)
490	0037	Arbitration chargeback–No cardholder authorization (Debit Mastercard only)
490	0040	Arbitration chargeback–Fraudulent processing of transactions (Debit Mastercard only)
490	0041	Arbitration chargeback–Canceled Recurring Transaction (Maestro and Debit Mastercard only)
490	0042	Arbitration chargeback–Late Arbitration chargeback (Debit Mastercard only)
490	0046	Arbitration chargeback–Correct transaction currency code not provided (Debit Mastercard only)
490	0049	Arbitration chargeback–Questionable merchant activity (Debit Mastercard only)
490	0053	Arbitration chargeback–Not as described (Debit Mastercard only)
490	0054	Arbitration chargeback–Cardholder dispute—not elsewhere classified (U.S. Region only—Debit Mastercard only)
490	0055	Arbitration only–Non-receipt of merchandise (Debit Mastercard only)
490	0059	Arbitration only–Services not rendered (RS3 = ATM dispute) (Debit Mastercard only)
490	0060	Arbitration only–Credit not processed (Debit Mastercard only)
490	0063	Arbitration only–Cardholder does not recognize – potential fraud (Debit Mastercard only)
490	0085	Adjustment–Self-correcting Adjustment Reversal
491	0001	Representment–Requested transaction information not received (Debit Mastercard only)
491	0002	Representment–Requested/required item illegible or missing (Debit Mastercard only)
491	0007	Representment–Warning bulletin file (Debit Mastercard only)

**Message type 0420: acquirer reversal advice)**

**Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
491	0008	Representment-Requested/required authorization not obtained (Debit Mastercard only)
491	0012	Representment-Account number not on file (Debit Mastercard only)
491	0013	Representment
491	0031	Representment-Transaction amount differs (Debit Mastercard only)
491	0034	Representment-Duplicate processing (Debit Mastercard only)
491	0037	Representment-No cardholder authorization (Debit Mastercard only)
491	0040	Representment-Fraudulent processing of transactions (Debit Mastercard only)
491	0041	Representment-Canceled Recurring Transaction (Maestro and Debit Mastercard only)
491	0042	Representment-Late presentment (Debit Mastercard only)
491	0046	Representment-Correct transaction currency code not provided (Debit Mastercard only)
491	0049	Representment-Questionable merchant activity (Debit Mastercard only)
491	0053	Representment-Not as described (Debit Mastercard only)
491	0054	Representment-Cardholder dispute—not elsewhere classified (U.S. Region Only) (Debit Mastercard only)
491	0055	Representment-Non-receipt of merchandise (Debit Mastercard only)
491	0059	Representment-Services not rendered (RS3 = ATM dispute) (Debit Mastercard only)
491	0060	Representment-Credit not posted/posted as a purchase
491	0063	Representment-Cardholder does not recognize — potential fraud (Debit Mastercard only)
491	0086	Invalid chargeback for IPM, dollar amount does not match original transaction
491	0088	Invalid chargeback for IPM, rejection of adjustment due to a duplicate request

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**Message type 0420: acquirer reversal advice)**

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**Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
491	0089	Invalid chargeback for IPM, adjustment over 180 days
491	0099	Invalid chargeback for IPM, unable to locate transaction in Cirrus file

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<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
491	0089	Invalid chargeback for IPM, adjustment over 180 days
491	0099	Invalid chargeback for IPM, unable to locate transaction in Cirrus file

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**NOTE:**

For system-initiated message types the Single Message System inserts the Advice Reason Detail Text (subfield 3).

For Debit Mastercard transactions, 04xx message types, a number of additional advice detail codes, such as the 06xx message types are valid. Please refer to the *Chargeback Guide* for a listing of valid values.

### **Message type 0422: issuer reversal advice**

Reverses (partially or wholly) an earlier transaction. The Single Message System generates this message upon notice of an adjustment, chargeback, or representment for the acquirer.

For settlement purposes, this message contains "force-post" information. Thus, the reversal will be processed regardless of message receipt acknowledgement.

The ISO 8583 Issuer Reversal Advice/0422 message has two uses:

- **Issuer reversal advice exception, system initiated** (after settlement): Authorized representatives of an acquirer, an issuer, or the Mastercard Network use Single Message Transaction Manager to submit an adjustment, chargeback, or representment, which the Single Message System passes on to the acquirer in the form of a Issuer Reversal Advice/0422 message.
- **Online exception** (after settlement): available to issuers to submit chargebacks after the settlement day of the original transaction. This abbreviated Issuer Reversal Advice/0422 message may be submitted to the Single Message System through the issuer's online processing facility, which the Single Message System will pass to the acquirer as an Issuer Reversal Advice/0422 message.

The advice reason and detail codes in the table below may be returned for

- Issuer Reversal Advice/0422: exception, system initiated and
- Issuer Reversal Advice/0422: exception, issuer initiated messages.

**NOTE:**

A value of 2 in the second position of Advice Reason Detail Code indicates that this 0422 message has been determined by the Single Message System to be a Network Advice: Possible Duplicate of a previous 0422 message. The reason code and the other positions of the detail code are from the original advice message display in the following format:

Format: x2yy where x=card disposition of previous message, 1 = retain, 0 = return, and yy=detail code (position 3, 4) of previous message.

If the Advice Reason Detail Code of the original advice message is not present or contains zeros, the Advice Reason Detail Code of this possible duplicate message is "0200".

**Message type 0422: issuer reversal advice**

**Message type 0422: issuer reversal advice**

<b>Advice reason code: Subfield 1</b>	<b>Advice reason detail code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
487	0005	Retrieval request: cardholder does not agree
487	0021	Retrieval request: transaction not recognized
487	0023	Retrieval request: need for personal records
487	0041	Retrieval request: fraud investigation
487	0042	Retrieval request: potential chargeback
488	-	Fulfillment
489	0001	Chargeback: requested transaction information not received (Debit Mastercard only)
489	0002	Chargeback: requested/required item illegible or missing (Debit Mastercard only)
489	0007	Chargeback: warning bulletin file (Debit Mastercard only)
489	0008	Chargeback: requested/required authorization not obtained (Debit Mastercard only)  Note: The time frame to initiate a chargeback using this reason code is 90 days from the date the financial transaction was processed.
489	0012	Chargeback: account number not on file (Debit Mastercard only)  Terminal Non-Compliance (India Only)
489	0017	Chargeback: cardholder dispute (ATM only)
489	0030	Chargeback: cardholder disputed amount (Deposits only)
489	0031	Chargeback: transaction amount differs (Debit Mastercard only)

**Message type 0422: issuer reversal advice**

**Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
489	0034	Chargeback: duplicate processing (Debit Mastercard only)
489	0037	Chargeback: no cardholder authorization (Debit Mastercard only)
489	0040	Chargeback: fraudulent processing of transactions (Debit Mastercard only)
489	0041	Chargeback: canceled recurring transaction (Debit Mastercard only)
489	0042	Chargeback: late presentment (Debit Mastercard only)
489	0046	Chargeback: correct transaction currency code not provided (Debit Mastercard only)
489	0049	Chargeback: questionable merchant activity (Debit Mastercard only)
489	0053	Chargeback: defective/not as described
<b>NOTE: DE 60, subfield 4 (Advice Reason Additional Text) is required with this reason code.</b>		
489	0054	Chargeback: cardholder dispute not elsewhere classified (U.S. Region Only) (Debit Mastercard only)
489	0055	Chargeback: non-receipt of merchandise (Debit Mastercard only)
489	0059	Chargeback: services not rendered (RS3 = ATM dispute) (Debit Mastercard only)
489	0060	Chargeback: credit not posted/posted as a purchase
489	0063	Chargeback: cardholder does not recognize; potential fraud (Debit Mastercard only)
489	0070	Chargeback–chip liability shift (POS and ATM)
<b>NOTE: DE 60, subfield 4 (Advice Reason Additional Text) is required with this reason code.</b>		
489	0071	Chargeback: disputed amount (POS only)
489	0073	Debit Mastercard: chargeback; chip liability Shift (POS and ATM) Maestro: chargeback; disputed Amount (POS only)
489	0074	Chargeback: missing or illegible Signature (POS only)
489	0075	Chargeback: credit not received (POS only)
489	0077	ChargebackL goods or services not delivered (e-commerce only)

**Message type 0422: issuer reversal advice**

**Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
489	0078	Chargeback: documentation not legible on retrieval request (POS only)
489	0079	Chargeback: goods or services not delivered (e-commerce only)
489	0080	Chargeback: for late presentment (Offline)
489	0082	Chargeback reversal (Debit Mastercard® only)
489	0095	Invalid adjustment (Closed account)
489	0096	Invalid adjustment (NSF)
490	0003	Correction processed by the Single Message System to reverse a chargeback with fees
490	0006	Correction processed by the Single Message System to reverse a Cirrus or Maestro representment with fees
490	0007	Correction processed by the Single Message System to reverse adjustment, chargeback or representment
490	0008	Requested/required authorization not obtained.
490	0010	Adjustment
490	0014	Exception item: for Mastercard use only
490	0019	Reversal of a representment: no documentation fulfillment
491	0002	Representment: requested/required item illegible or missing (Debit Mastercard only)
491	0007	Representment: warning bulletin file (Debit Mastercard only)
491	0008	Representment: requested/required authorization not obtained (Debit Mastercard only)

**NOTE: The time frame to initiate a chargeback using this reason code is 90 days from the date the financial transaction was processed.**

491	0012	Representment: account number not on file (Debit Mastercard only)
491	0013	Representment
491	0031	Representment: transaction amount differs (Debit Mastercard only)
491	0034	Representment: duplicate processing (Debit Mastercard only)
491	0037	Representment: no cardholder authorization (Debit Mastercard only)

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**Message type 0422: issuer reversal advice**

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**Advice reason code: Advice reason detail**

<b>Subfield 1</b>	<b>code: Subfield 2</b>	<b>Advice reason detail text description: Subfield 3</b>
491	0040	Representment: fraudulent processing of transactions (Debit Mastercard only)
491	0041	Representment: canceled Recurring Transaction (Debit Mastercard only)
491	0042	Representment: late presentment (Debit Mastercard only)
491	0046	Representment: correct transaction currency code not provided (Debit Mastercard only)
491	0049	Representment: questionable merchant activity (Debit Mastercard only)
491	0053	Representment: not as described (Debit Mastercard only)
491	0054	Representment: cardholder dispute; not elsewhere classified (U.S. Region Only) (Debit Mastercard only)
491	0055	Representment: non-receipt of merchandise (Debit Mastercard only)
491	0059	Representment: services not rendered (RS3 = ATM dispute) (Debit Mastercard only)
491	0060	Representment: credit not posted/posted as a purchase
491	0063	Representment: Cardholder does not recognize - potential fraud (Debit Mastercard only)
491	0086	Invalid chargeback for IPM, dollar amount does not match original transaction
491	0088	Invalid chargeback for IPM, rejection of adjustment due to a duplicate request
491	0089	Invalid chargeback for IPM, adjustment over 180 days
491	0099	Invalid chargeback for IPM, unable to locate transaction in Cirrus file

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**NOTE:** For system-initiated message types the Single Message System inserts the Advice Reason Detail Text (subfield 3).

## Message type 0620: administrative advice

This message type is used to transmit administrative or informational messages for various reasons, as indicated in the Advice Reason Code of the message. It is routed between Mastercard and a card payment system, or between any two processors participating on the Single Message System.

The advice reason and detail codes in the table below may be returned for

- Administrative Advice/0620: Single Message System initiated
- Administrative Advice/0620: processor initiated, and
- Administrative Advice/0620: processor initiated, time-based exception messages.

**NOTE:** For system-initiated message types the Single Message System inserts the Advice Reason Detail Text (subfield 3).

## Message type 0620: administrative advice

### Message type 0620: administrative advice

#### Advice reason code: Advice reason detail

Subfield 1	code: Subfield 2	Advice reason detail text description: Subfield 3
600	-	Message unreadable/indecipherable/contains invalid data; (Advice Detail Code field may contain bit map number of data element where message scanning was aborted)
601	-	Retrieval request (not used by the Single Message System)
602	-	Fulfillment notification (Not used by the Single Message System)
603	-	Message unreadable/indecipherable/contains invalid data
603	0091	Duplicate transaction

## Message type 0644: administrative advice

This message type **must** be sent in response to an Administrative Advice/0620 message to acknowledge receipt of that message. It is routed from the receiver to the originator of the related Administrative Advice.

The advice reason and detail codes in the table below may be returned for

- Administrative Advice/0644 for virtual private network-connected acquirers and
- Administrative Advice/0644 for virtual private network-connected issuers messages.

### Message type 0644: administrative advice

#### Message type 0644: administrative advice

Advice reason code: Advice detail code:

Subfield 1	Subfield 2	Advice reason detail text description (Subfield 3)
650	6904	Message not dispatched from remote MIP
650	6905	Message not dispatched to remote MIP
650	6906	Message not delivered to remote MIP
650	6907	Message not delivered from remote MIP
650	6908	No confirmation 0210 message was delivered to the remote MIP

### DE 61 (Point of Service [POS] Data)

DE 61 (Point-of-Service [POS] Data) indicates the conditions that exist at the point of service at the time of the transaction. Note that DE 61 supersedes and replaces the ISO-specified DE 25 (Point-of-Service [POS] Condition Code) which is not used in the Single Message System Specifications.

#### Attributes

Attribute	Description
Data representation	ISO Standard: ans...999; LLLVAR Mastercard Standard: ans...026; LLLVAR
Data element length	3 positions, value = ...026
Data field	Contents of subfields 1–14
Subfields	14
Justification	See "Subfields"

**NOTE:** ISO Standards define this data element as ans...999; LLLVAR however the Single Message System defines it as ans...026; LLLVAR.

#### Usage

Following is the usage of DE 61 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

---

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	P	M
Financial Transaction Advice/0220	C	P	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	P	M
Acquirer Reversal Advice/0420: Acquirer initiated	.	X	O
Acquirer Reversal Advice/0420: Time-out induced, acquirer initiated	.	X	O
Acquirer Reversal Advice/0420: Time-out induced, system initiated	.	X	O
Acquirer Reversal Advice/0420: Exception, system initiated	.	X	O
Acquirer Reversal Advice/0420: Acquirer initiated exception	.	X	O

### **Application notes**

Issuers of Debit Mastercard require the 26 characters of DE 61 in the request message, and acquirers must supply this information in the request message in accordance with the following table. Maestro and Cirrus issuers must be prepared to accept the full 26 characters of DE 61 in the request message. Acquirers should supply at least the first 11 bytes of this information in the request message in accordance with the following table.

#### **NOTE:**

The Single Message System does not perform edits on the contents of this data element in the Financial Transaction Request/0200 message it receives from the acquirer. The Single Message System passes the data element contents to the issuer in the outbound request message to the issuer.

The Financial Transaction Request/0200 message must contain a value of "4" in position 7 of DE 61 for Debit Mastercard and Maestro preauthorization transactions. The Financial Transaction Advice/0220 message will contain a value of "0" in position 7 of DE 61 for a Debit Mastercard preauthorization completion.

The Financial Transaction Advice/0220: Debit Mastercard stand-in message will contain a value of "5" in position 7 of DE 61 to indicate a Debit Mastercard Stand-In transaction.

Issuers will receive DE 61 (Point of Service [POS] Data), subfield 7 (POS Transaction Status Indicator), value of 0 (Normal request) in the Financial Transaction Advice/0220—Debit Mastercard messages when a transaction has been declined by In Control.

## Subfield 1 (POS Terminal Attendance)

DE 61, subfield 1 (POS Terminal Attendance) indicates if the card acceptor is attending the terminal.

### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of position 1
Justification	N/A

### Values

Value	Description
0	Attended terminal
1	Unattended terminal (cardholder-activated terminal [CAT], home PC, mobile phone, PDA)
2	No terminal used (voice/audio response unit [ARU] authorization); server
9	Unknown data not available (Single Message System use only)

## Subfield 2 (Reserved for Future Use)

DE 61, subfield 2 (Reserved) is reserved.

### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of position 2
Justification	N/A

### Values

Zero-filled

### Subfield 3 (POS Terminal Location)

DE 61, subfield 3 (POS Terminal Location) indicates the terminal location.

#### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of position 3
Justification	N/A

#### Values

Value	Description
0	On premises of card acceptor facility
1	Off premises of card acceptor facility (merchant terminal—remote location)
2	Off premises of card acceptor facility (cardholder terminal including home PC, mobile phone, and PDA)
3	No terminal used (voice/ARU authorization); server
4	On premises of card acceptor facility (cardholder terminal including home PC, mobile phone, PDA)
6	Off cardholder premises, unattended (Single Message System Use Only)
8	Additional POS terminal locations
9	Unknown data not available (Single Message System Use Only)

### Subfield 4 (POS Cardholder Presence)

DE 61, subfield 4 (POS Cardholder Presence) indicates whether the cardholder is present at the point of service and explains the condition if the cardholder is not present.

#### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of position 4
Justification	N/A

---

## Values

Value	Description
0	Cardholder present
1	Cardholder not present (unspecified)
2	Cardholder not present (mail/facsimile order)
3	Cardholder not present (phone or Automated Response Unit [ARU])
4	Standing order/recurring transactions
5	Cardholder not present (Electronic order [home PC, Internet, mobile phone, PDA])
9	Unknown data not available (Single Message System Use Only)

## Subfield 5 (POS Card Presence)

DE 61, subfield 5 (POS Card Presence) indicates if the card is present at the point of service.

### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of position 5
Justification	N/A

## Values

Value	Description
0	Card present
1	Card not present
9	Unknown data not available (Single Message System Use Only)

## Subfield 6 (POS Card Retention)

DE 61, subfield 6 (POS Card Capture Capabilities) indicates whether the terminal has card capture capabilities.

### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of position 6
Justification	N/A

### Values

Value	Description
0	Terminal/operator does not have card capture capability
1	Terminal/operator has card capture capability
9	Unknown data not available (Single Message System use only)

## Subfield 7 (POS Transaction Status)

DE 61, Subfield 7 (POS Transaction Status) indicates the purpose or status of the request.

### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of position 7
Justification	N/A

### Values

Value	Description
0	Normal request (original presentment)
1	Deferred authorization
2	Identity check phone order
3	Time based payment authorization request or CDC inquiry request

---

<b>Value</b>	<b>Description</b>
4	Preaduthorization request
5	Debit Mastercard stand-in
6	ATC update
7	Purchase with cash back
8	Account status inquiry service
9	Tokenization request/notification

---

### **For account status inquiry service transactions**

When DE 61 (Point of Service [POS] Data, subfield 7 (POS Transaction Status Indicator) contains value 8 (Account Status Inquiry Service) and DE 3 (Processing Code) contains a value other than 28 (Payment) and 00 (Purchase), the Single Message System will decline the transaction with DE 39 (Response Code), value 30 (Message format error) and DE 44 (Additional Response Data), value 003.

When DE 61, subfield 7 contains value 8 and DE 4 contains a value greater than zero and DE 3 (Processing Code), subfield 1 (Cardholder Transaction Type Code) contains a value of 00 (Purchase), the Single Message System will decline the transaction where DE 39 contains value 30 (Message format error) and DE 44 (Additional Response Data), value 004 (data element in error).

If the acquirer sends a Reversal Request/0420 message where DE 61 (Point of Service [POS] Data), subfield 7 (POS Transaction Status) contains value 8 (Account Status Inquiry Service), the Single Message System sends the acquirer an Acquirer Reversal Advice Response/0430 message where DE 39 (Response Code) contains value 30 (Message format error).

### **Subfield 8 (POS Transaction Security)**

DE 61, subfield 8 (POS Transaction Security) indicates the card acceptor's confidence in the transaction security level.

#### **Attributes**

---

<b>Attribute</b>	<b>Description</b>
Data representation	n-1
Data field	Contents of position 8
Justification	N/A

---

### Values

Value	Description
0	No security concern
1	Suspected fraud
2	Identification verified

### Subfield 9 (Reserved for Future Use)

DE 61, Subfield 9 (Reserved) is reserved.

### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of position 9
Justification	N/A

### Values

Zero-filled

### Subfield 10 (Cardholder-Activated Terminal Level)

DE 61, subfield 10 (Cardholder-Activated Terminal Level) indicates the type of cardholder activated terminal used by the cardholder to initiate the transaction.

### Attributes

Attribute	Description
Data representation	n-1
Data field	Contents of position 10
Justification	N/A

### Values

Value	Description
0	Not a CAT transaction
1	Authorized Level 1 CAT: automated dispensing machine with PIN

---

<b>Value</b>	<b>Description</b>
2	Authorized Level 2 CAT: self-service terminal
3	Authorized Level 3 CAT: limited amount terminal
4	Authorized Level 4 CAT: in-flight commerce
5	Scrip device
6	Authorized Level 6 CAT: electronic commerce transactions
7	Authorized Level 7 CAT: transponder
8	Reserved for future use
9	MPOS acceptance device

**NOTE:** Mobile POS are always attended devices and not cardholder activated.

---

### **Application notes**

When the recipient of the money transfer (Payment Transaction; DE 3 subfield 1=09) is not present, the transaction is not considered a CAT level transaction. In that case the CAT level = 0.

### **Subfield 11 (POS Card Data Terminal Input Capability)**

DE 61, subfield 11 indicates the set of methods supported by the terminal for the input of account number, card, or mobile device data.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-1
Data field	Contents of position 11
Justification	N/A

#### **Values**

<b>Value</b>	<b>Description</b>
0	Input capability unknown or unspecified.
1	No terminal used (voice/ARU authorization); server.
2	Terminal supports magnetic stripe input only.

---

<b>Value</b>	<b>Description</b>
3	Terminal supports contactless EMV input. The terminal may also support one or more other card input types, including contactless magstripe input, EMV contact chip input, magnetic stripe input and key entry input.
4	Contactless mag stripe (proximity chip)  Terminal supports contactless magstripe input but not contactless EMV input. The terminal also may support one or more other card input types, including EMV contact chip input, magnetic stripe input, and key entry input.
5	Terminal supports EMV contact chip input and magnetic stripe input.
6	Terminal supports key entry input only.
7	Terminal supports magnetic stripe input and key entry input.
8	Terminal supports EMV contact chip input, magnetic stripe input and key entry input.
9	Terminal supports EMV contact chip input only.

---

### **Application notes**

DE 61, subfield 11 values 3, 4 (contactless related), 5, 8, and 9 (chip contact related) can ONLY be used if the terminal is chip certified by Mastercard.

DE 61, subfield 11 is used in conjunction with DE 22 (Point of Service [POS] Entry Mode), subfield 1 (POS Terminal PAN Entry Mode). DE 22, subfield 1 values indicate the method by which the PAN was entered.

DE 61, subfield 11 indicates the terminal data input capabilities and not the specific manner in which the terminal captured the card data for a given transaction.

For example, values 5 and 8 could be used for a magnetic stripe transaction originating from an EMV contact chip capable terminal when the contact magnetic stripe reader was used.

Similarly, value 3 would be used for a contact chip transaction originating from a contactless EMV capable terminal when the EMV contact chip reader was used.

### **Subfield 12 (POS Authorization Life Cycle)**

DE 61, subfield 12 (POS Authorization Life Cycle) indicates the number of days a preauthorization will remain in effect.

### **Attributes**

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<b>Attribute</b>	<b>Description</b>
Data representation	n-2
Data field	Contents of positions 12–13

---

---

<b>Attribute</b>	<b>Description</b>
Justification	N/A

**Values**

Indicates the number of days preauthorization stays in effect (ATM and Maestro POS transactions should use 01).

**Subfield 13 (POS Country Code [or Sub-Merchant Information, if applicable])**

DE 61, subfield 13 (POS Country Code) indicates the country of the POS location (not the acquirer location) using ISO-specified codes.

**Attributes**


---

<b>Attribute</b>	<b>Description</b>
Data representation	n-3
Data field	Contents of positions 14-16
Justification	N/A

**Values**

Indicates the country of the terminal location (use valid three digit ISO numeric country code).

**Subfield 14 (POS Postal Code [or Sub-Merchant Information, if applicable])**

DE 61, subfield 14 (POS Postal Code) indicates the geographic code of the POS (merchant) location (not the acquirer's location).

**Attributes**


---

<b>Attribute</b>	<b>Description</b>
Data representation	ans-10
Data field	Contents of positions 17-26
Justification	Left-justified with trailing spaces

**Values**

Subfield 14 must be present if postal codes are available in the acquiring country. If data is unknown or unavailable, acquirers may populate this field with the value UNKNOWN, all nines, or all zeros followed by trailing spaces. However, subfield 14 may be omitted if the postal code does not exist in the acquiring country.

For postal codes that are less than 10 digits, should be left-justified with trailing spaces.

## DE 62 (Intermediate Network Facility [INF] Data)

DE 62 (Intermediate Network Facility [INF] Data) is provided for use by acquiring network processors (Customer Processor system [CPS] or INF) to contain acquiring network trace information that is useful for routing chargeback or adjustment transactions to the original acquiring institution.

### Attributes

Attribute	Description
Data representation	ISO Standard: ans...999; LLLVAR Mastercard Standard: ans...050; LLLVAR
Data element Length	3 positions, value =...050
Data field	Variable length, contents of positions 1-999 Variable length, contents of positions 1-050
Subfields	None
Justification	N/A

**NOTE:** ISO Standards define this data element as ans...999; LLLVAR however the Single Message System defines it as ans...050; LLLVAR.

### Usage

Following is the usage of DE 62 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	O	P	C
Financial Transaction Request Response/0210	C	P	C
Financial Transaction Advice/0220	C	P	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	P	C
Financial Transaction Advice Response/0230	C	P	C
Acquirer Reversal Advice/0420: acquirer initiated	C	P	C
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	C	P	C

Message	Org	Sys	Dst
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	C
Acquirer Reversal Advice/0420: exception, system initiated	.	X	C
Acquirer Reversal Advice/0420: acquirer initiated exception	O	X	C
Issuer Reversal Advice/0422: exception, system initiated	.	X	C
Issuer Reversal Advice/0422: exception, issuer initiated	O	X	C
Acquirer Reversal Advice Response/0430: system initiated	.	X	C
Acquirer Reversal Advice Response/0430: issuer initiated	C	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	C	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	C

### Application notes

INF data is an optional data element within any originating Financial Transaction Request/0200 or Financial Transaction Advice/0220 message originated by an acquiring CPS or INF. Subsequently, this data element (if present within an original transaction) is returned without alteration in any chargeback or adjustment related to the original transaction.

This data element is provided to assist acquiring processor facilities directly-connected to the Single Message System. It allows these processors to maintain sufficient data within a message to facilitate online routing of chargebacks and adjustment messages without maintaining an online database of original transaction routing data.

### Values

INF data is a free-format, variable length alphanumeric field that may be used to store unique acquiring processor ID codes, acquiring network linking data, or other information useful to processors in routing online chargeback and adjustment messages. The Single Message System does not edit or modify the field.

## DE 63 (Network Data)

DE 63 (Network Data) is a mandatory switch-generated data element composed of subelements that contain various descriptive and identifying attributes of the transaction.

### Attributes

Attribute	Description
Data representation	ISO Standard: ans...999; LLLVAR Mastercard Standard: ans...049; LLLVAR

<b>Attribute</b>	<b>Description</b>
Data element length	3 positions, value = ..049
Data field	Contents of subfields 1–6
Subfields	6
Justification	See "Subfields"

**NOTE:** ISO Standards define this data element as ans...999; LLLVAR however the Single Message System defines it as ans...049; LLLVAR.

### Usage

Following is the usage of DE 63 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	M
Financial Transaction Request Response/0210	M	P	M
Financial Transaction Advice/0220	M	X	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	M	X	M
Financial Transaction Advice Response/0230	M	X	M
File Update Request Response/0312	M	P	M
Acquirer Reversal Advice/0420: acquirer initiated	M	X	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	X	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	M	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: Exception, Issuer Initiated	M	X	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M
Administrative Advice/0620: Single Message System initiated	.	X	M
Administrative Advice/0620: processor initiated	.	X	.

Message	Org	Sys	Dst
Administrative Advice/0620: Processor initiated time-based exception	.	X	M
Administrative Advice Response/0630: processor initiated to Single Message System	M	X	.
Administrative Advice Responses/0630: processor initiated	M	X	M
Administrative Advice/0644	.	X	M
Network Management Request/0800: acquirer or issuer initiated	O	X	.
Network Management Request/0800: system-initiated	.	X	M
Network Management Request Response/0810: acquirer or issuer initiated	M	X	.
Network Management Request Responses/0810: system initiated	.	X	M
Network Management Advice/0820	.	X	M

The Single Message System generates this data element for each originating message routed to the Single Message System. The receiver must retain and use this data element in any response or acknowledgement message associated with the originating request or advice message.

**NOTE:** The Single Message System will supply a new Network Reference Number in DE 63 of the 0820 message it sends to debit processors. The Network Reference Number supplied in the 0820 message to credit customer will remain the same value as sent in the original 0800 message.

The Single Message System determines the appropriate financial network code for all transactions routed through the Single Message System, based upon customer-established product configuration tables, customer parameter tables, and Single Message System routing priority tables.

**NOTE:**

The issuer processor must use the switch serial number contained in this data element to match an online, same day Acquirer Reversal Advice/0420 message for issuer late response to the original Financial Transaction Request/0200 message.

Issuers may use the Banknet reference number contained in this data element to match the Financial Transaction Advice/0220 message to the Financial Transaction Request/0200 (preauthorization) message for Debit Mastercard transactions.

### Application notes

Online same day reversals contain the original switch serial number of the 0200 message. The Single Message System generated (such as Single Message Transaction Manager) exception items will be assigned a unique switch serial number.

The batch record will contain both switch serial numbers (the original switch serial number of the 0200 and the switch serial number of the Single Message Transaction Manager processed exception item).

The online reversal/04xx message will contain only the new switch serial number.

For Debit Mastercard file updates, the File Update Request Response/0312 messages returning to the Single Message System from the Mastercard Account Management Service (AMS) contain a unique Dual Message System identifier in DE 63.

For 0312 messages returned to the issuer by Single Message System, the data conforms to the Subfields in DE 63, Network Data" on the following pages.

In those 0312 messages, the following values are used:

- Financial network code = CI, MS, or MD
- Interchange rate indicator = 0 (U.S. region) and = 1 (Canada region)
- Network reference identifier = Nine digits, generated by the internal Mastercard file update process for Cirrus or Maestro
- Banknet reference number = Nine alphanumeric characters, received from AMS by the Single Message System for Debit Mastercard updates
- The acquirer reference number is not applicable to 0312 messages

For Single Message System generated Network Management/08xx messages, the first three positions of DE 63 will contain the value "CI0". For Acquirer or Issuer initiated Network Management/08xx messages, the Single Message System will overwrite the first three positions of DE 63 with the value "CI0".

## **Subfield 1 (Financial Network Code)**

DE 63, subfield 1 identifies the financial bank card product associated with the transaction.

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	a-2
Data field	Contents of positions 1-2
Justification	N/A

### **Values**

<b>Values</b>	<b>Description</b>
MC	Mastercard®
CI	Cirrus®
MS	Maestro®

---

<b>Values</b>	<b>Description</b>
MD	Debit Mastercard®
PL	Plus®
PV(L)	Private Label
VI	Visa®

### **Subfield 2 (Interchange Rate Indicator)**

DE 63, subfield 2 identifies the transaction as domestic (within the U.S. region) and International (Canada, Asia Pacific, Europe, Latin America/Caribbean and Middle East/Africa), or Intra-country (within a country where an intracurrency transaction agreement is in effect).

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-1
Data field	Contents of position 3
Justification	N/A

#### **Values**

<b>Value</b>	<b>Description</b>
0	U.S. region
1	Canada, Asia Pacific, Europe, Latin America/Caribbean and Middle East/Africa regions
2	Intra-country

### **Subfield 3 (Network Reference Number)**

This subfield describes a transaction identification number (switch serial number) generated (or assigned) by the Single Message System.

#### **Attributes**

The originating processor (acquirer or issuer) must send the Switch Serial Number from the original response message/0210 in the online exception 04xx message. The Single Message System will provide an Adjustment Switch Serial Number in the online exception 04xx message sent to the receiving processor (acquirer or issuer).

Attribute	Description
Data representation	n-9
Data field	Contents of positions 4-12
Justification	N/A

### Values

A Single Message System-generated Adjustment Switch Serial Number value is provided in this subfield for

- same-day Financial Transaction Advice/0220 multiple completion messages to the issuer
- non-same day Acquirer Reversal Advice/0420 messages to the issuer from the Single Message Transaction Manager
- same-day Acquirer Reversal Advice/0420 messages to the issuer
- non-same day Issuer Reversal Advice/0422 messages to the acquirer from the Single Message Transaction Manager
- non-same day Acquirer Reversal Advice/0420 messages to the issuer from the Single Message System during online exception processing, and
- non-same day Issuer Reversal Advice/0422 messages to the acquirer from the Single Message System during online exception processing.

### Subfield 4 (Banknet Reference Number)

DE 63, subfield 4 contains the Banknet Reference Number.

### Attributes

Attribute	Description
Data representation	an-9
Data field	Contents of positions 13-21
Justification	N/A

### Values

A unique identifier assigned to Debit Mastercard authorizations and is present in both Financial Transaction Request/0200 authorization and Financial Transaction Advice/0220 clearing messages. Only present in Debit Mastercard transactions.

## Subfield 5 (Acquirer's Reference Number)

DE 63, subfield 5 contains the acquirer's reference number.

### Attributes

Attribute	Description
Data representation	n-23
Data field	Contents of positions 22–44
Justification	N/A

### Values

A unique identifier assigned by the acquirer of Debit Mastercard transactions. Only present in Debit Mastercard Financial Transaction Advice/0220 clearing messages.

## Subfield 6 (GCMS Processing Date and Cycle Number)

DE 63, subfield 6 contains the Global Clearing Management System (GCMS) processing date and cycle number.

### Attributes

Attribute	Description
Data representation	n-5
Data field	Contents of positions 45–49
Justification	N/A

### Values

Contains the Global Clearing Management System's business processing date and cycle number (PDS 0158 subfield 5 and subfield 6 of the GCMS 1240 message).

Only present in Debit Mastercard Financial Transaction Advice/0220 clearing messages.

Valid value; mmdd# (where # = cycle number).

## DE 64 (Message Authentication Code [MAC])

DE 64 (Message Authentication Code [MAC]) validates the source and the text of the message between the sender and the receiver.

### Attributes

Attribute	Description
Data representation	b-64
Data element length	None
Data field	Fixed length, contents of positions 1–64
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

### Application notes

The Single Message System reserves the last bit position within any bit map for DE 64. If the customer uses authentication on a message, the final bit of the final bit map of that message indicates the MAC information. The final bit of all preceding bit maps shall contain 0; for example, there shall be only one DE 64 per message and that DE 64 must be the last data element of the message.

## DE 65 (Bit Map, Extended)

DE 65 (Bit Map, Extended) is a series of 64 bits used to identify the presence, with a value of "1", or absence, with a value of "0" of each data element in an extended (third) message segment.

### Attributes

Attribute	Description
Data representation	ISO Standard: b-1 Mastercard Standard: b-64
Data element length	None
Data field	Contents of positions 1–64
Subfields	None

Attribute	Description
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

#### Usage

The Single Message System defines only two message segments, the presence or absence of which is indicated by Primary and Secondary bit maps. DE 65 would indicate the presence of a "third" message segment, and must never be present in a Single Message System message. The corresponding bit (number 65) must always be "0" in the Secondary Bit Map.

Refer to the Primary and Secondary Bit Maps subsection.

**NOTE:** ISO Standards define this data element as b-1 however the Single Message System uses an expanded definition of b-64.

## DE 66 (Settlement Code)

DE 66 (Settlement Code) is a code indicating the result of a reconciliation request.

#### Attributes

Attribute	Description
Data representation	n-1
Data element length	None
Data field	Fixed length, contents of position 1
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not support this data element.

## DE 67 (Extended Payment Code)

DE 67 (Extended Payment Code) indicates the number of months that the cardholder prefers to pay for an item (the item purchased during the course of this transaction), if permitted by the card issuer.

### Attributes

Attribute	Description
Data representation	n-2
Data element length	None
Data field	Fixed length, contents of positions 1-2
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 68 (Receiving Institution Country Code)

DE 68 (Receiving Institution Country Code) is the code of the country where the receiving institution is located.

### Attributes

Attribute	Description
Data representation	n-3
Data element length	None
Data field	Fixed length, contents of positions 1-3
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 69 (Settlement Institution Country Code)

DE 69 (Settlement Institution Country Code) is the code of the country where the settlement institution is located.

### Attributes

Attribute	Description
Data representation	n-3
Data element length	None
Data field	Fixed length, contents of positions 1-3
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 70 (Network Management Information Code)

The Single Message System uses DE 70 (Network Management Information Code) to identify network status. The Customer Processing System (CPS) may use Additional Data (DE 48) in conjunction with DE 70 to provide network status or control information.

### Attributes

Attribute	Description
Data representation	n-3
Data element length	None
Data field	Fixed length, contents of positions 1-3
Subfields	None
Justification	N/A

### Usage

This data element indicates the specific classification and purpose of network management (08xx) messages. It must be present in all network management (08xx) messages.

Following is the usage of DE 70 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Network Management Request/0800: acquirer or issuer initiated	M	X	.
Network Management Request/0800: PEK exchange and network Management Request	M	X	.
Network Management Request/0800: system-initiated	.	X	M
Network Management Request Response/0810: acquirer or issuer initiated	M	X	.
Network Management Request Response/0810: PEK exchange and network management response	M	X	.
Network Management Request Responses/0810: System initiated	.	X	M
Network Management Advice/0820	.	X	C
Network Management Advice/0820: PEK exchange	.	X	C

### **Values**

This table lists all Network Management Information Codes valid on the Single Message System.

<b>Value</b>	<b>Description</b>
060	Processor-initiated store-and-forward (SAF) session request
061	General sign-on by the processor
062	General sign-off by the processor
065	Issuer sign-off, directing the Single Message System to begin stand-in processing for the issuer
066	Issuer sign-on, directing the Single Message System to cease stand-in processing for the issuer
161	Encryption key exchange
162	Solicitation for encryption key exchange
163	Solicitation for encryption key exchange: TR-31 keyblock
164	Encryption key exchange confirmation of success
165	Encryption key exchange advice of failure
270	Echo test
363	End-of-file (EOF) encountered for SAF traffic. SAF complete.

## DE 71 (Message Number)

DE 71 (Message Number) is a sequential, cyclical number the message initiator assigns to a message. The Message Number monitors the integrity of interchange.

### Attributes

Attribute	Description
Data representation	n-4
Data element length	None
Data field	Fixed length, contents of positions 1-4
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 72 (Message Number Last)

DE 72 (Message Number Last) is a sequential, cyclical number the message initiator assigns to a message. The Message Number monitors the integrity of interchange.

### Attributes

Attribute	Description
Data representation	n-4
Data element length	None
Data field	Fixed length, contents of positions 1-4
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 73 (Date, Action)

DE 73 (Date, Action) specifies the date (year, month, and day) of a future action. In addition, the customer may use it as a static time such as a birth date.

### Attributes

Attribute	Description
Data representation	n-6; YYMMDD
Data element length	None
Data field	Fixed length, contents of positions 1-6
Subfields	None
Justification	None

**NOTE:** The Single Message System does not use this data element.

## DE 74 (Credits, Number)

DE 74 (Credits, Number) are the number of transactions that the Single Message System processes as credits (to the CPS) during the daily settlement reporting period.

### Attributes

Attribute	Description
Data representation	n-10
Data element length	None
Data field	Fixed length, contents of positions 1-10
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 75 (Credits, Reversal Number)

DE 75 (Credits, Reversal Number) are the number of transactions that the Single Message System processes as credit reversals (to the CPS) during the daily settlement reporting period.

### Attributes

Attribute	Description
Data representation	n-10
Data element length	None
Data field	Fixed length, contents of positions 1-10
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 76 (Debits, Number)

DE 76 (Debits, Number) includes the number of transactions that the Single Message System processes as debits (to the CPS) during the daily settlement reporting period.

### Attributes

Attribute	Description
Data representation	n-10
Data element length	None
Data field	Fixed length, contents of positions 1-10
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 77 (Debits, Reversal Number)

DE 77 (Debits, Reversal Number) are the number of transactions that the Single Message System processes as reversal debits (to the CPS) during the daily settlement reporting period.

### Attributes

Attribute	Description
Data representation	n-10
Data element length	None
Data field	Fixed length, contents of positions 1-10
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:**

## DE 78 (Transfers, Number)

DE 78 (Transfers, Number) is the number of transactions that the Single Message System processes as transfer transactions (to the CPS) during the daily settlement reporting period.

### Attributes

Attribute	Description
Data representation	n-10
Data element length	None
Data field	Fixed length, contents of positions 1-10
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 79 (Transfers, Reversal Number)

DE 79 (Transfers, Reversal Number) are the number of transactions that the Single Message System processes as transfer reversals (to the CPS) during the daily settlement reporting period.

### Attributes

Attribute	Description
Data representation	n-10
Data element length	None
Data field	Fixed length, contents of positions 1-10
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 80 (Inquiries, Number)

DE 80 (Inquiries, Number) are the number of transactions that the Single Message System processes as inquiries (to the CPS) during the daily settlement reporting period.

### Attributes

Attribute	Description
Data representation	n-10
Data element length	None
Data field	Fixed length, contents of positions 1-10
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 81 (Authorizations, Number)

DE 81 (Authorizations, Number) is the number of transactions that the Single Message System processes as Authorization Request/100 and Authorization Advice/0120 messages (to the CPS) during the daily settlement reporting period.

### Attributes

Attribute	Description
Data representation	n-10
Data element length	None
Data field	Fixed length, contents of positions 1-10
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 82 (Credits, Processing Fee Amount)

DE 82 (Credits, Processing Fee Amount) are the amount that the Single Message System processes as processing fees (to the CPS) during the daily settlement reporting period.

### Attributes

Attribute	Description
Data representation	n-12
Data element length	None
Data field	Fixed length, contents of positions 1-12
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 83 (Credits, Transaction Fee Amount)

DE 83 (Credits, Transaction Fee Amount) are the amount that the Single Message System processes as interchange transactions (to the CPS) during the daily settlement reporting period.

### Attributes

Attribute	Description
Data representation	n-12
Data element length	None
Data field	Fixed length, contents of positions 1-12
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 84 (Debits, Processing Fee Amount)

DE 84 (Debits, Processing Fee Amount) is the amount that the Single Message System processes as processing fees dealing with handling and routing (to the CPS) during the daily settlement reporting period.

### Attributes

Attribute	Description
Data representation	n-12
Data element length	None
Data field	Fixed length, contents of positions 1-12
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 85 (Debits, Transaction Fee Amount)

DE 85 (Debits, Transaction Fee Amount) is the amount that the Single Message System processes as processing fees of interchange transactions (to the CPS) during the daily settlement reporting period.

### Attributes

Attribute	Description
Data representation	n-12
Data element length	None
Data field	Fixed length, contents of positions 1-12
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 86 (Credits, Amount)

DE 86 (Credits, Amount) are the amount that the Single Message System processes as cardholder credits (to the CPS) during the daily settlement reporting period.

### Attributes

Attribute	Description
Data representation	n-16
Data element length	None
Data field	Fixed length, contents of positions 1-16
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 87 (Credits, Reversal Amount)

DE 87 (Credits, Reversal Amount) is the amount that the Single Message System processes as reversal credits (to the CPS) during the daily settlement reporting period.

### Attributes

Attribute	Description
Data representation	n-16
Data element Length	None
Data field	Fixed length, contents of positions 1-16
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 88 (Debits, Amount)

DE 88 (Debits, Amount) are the amount that the Single Message System processes as debits (to the CPS) during the daily settlement reporting period.

### Attributes

Attribute	Description
Data representation	n-16
Data element length	None
Data field	Fixed length, contents of positions 1-16
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 89 (Debits, Reversal Amount)

DE 89 (Debits, Reversal Amount) are the amount that the Single Message System processes as reversal debits (to the CPS) during the daily settlement reporting period.

### Attributes

Attribute	Description
Data representation	n-16
Data element length	None
Data field	Fixed length, contents of positions 1-16
Subfields	None
Justification	Right-justified with leading zeros

**NOTE:** The Single Message System does not use this data element.

## DE 90 (Original Data Elements)

DE 90 (Original Data Elements) are data elements contained in an original message that may identify a transaction for correction or reversal.

### Attributes

Attribute	Description
Data representation	n-42
Data element length	None
Data field	Fixed Length, contents of subfields 1-5
Subfields	5
Justification	See "Subfields"

### Usage

Following is the usage of DE 90 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Advice/0220	M	P	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	P	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	O	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	O	X	M
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M

### **Application notes**

DE 90 must be present in the following messages as a reference to an original transaction being affected by a new message or transaction:

- Acquirer Reversal Advice/0420
- Issuer Reversal Advice/0422
- Financial Transaction Advice/0220
- Financial Transaction Advice/0220—Debit Mastercard Stand-In

If the Single Message System invokes Stand-In processing for a Debit Mastercard transaction (for example, there is no response from the issuer), then the timestamp from the original message (for example, a Debit Mastercard Financial Transaction Request/0200) is stored in the Store-and-Forward (SAF) file. When the issuer becomes available, the Single Message System sends a Store-and-Forward (SAF) Financial Transaction Advice/0220 message to the issuer, and DE 90 is updated with the timestamp contained in the /0220 message, and not the timestamp from the original message.

### **Special notes**

Debit Mastercard Financial Transaction Request/0200 messages (preauthorization) and Financial Transaction Advice/0220 messages (force post) are treated as two separate transactions.

The Single Message System will not receive DE 11 (Systems Trace Audit Number) in Financial Transaction Advice/0220—Debit Mastercard Stand-In messages (force post). Therefore, DE 11 will always match DE 90, subfield 2 (System Trace Audit Number) in Financial Transaction Advice/0220—Debit Mastercard Stand-In (force post) messages.

The value for the System Trace Audit Number in Financial Transaction Advice/0220—Debit Mastercard Stand-In (force post) messages will always be one of the following:

- 999998 Enhanced Delivery
- 999999 Store and Forward

For transactions processed by the Single Message System, please refer to DE 63 (Network Data), subfield 3 (Network Reference Number), as the key data element to match online same day acquirer and issuer reversal advices.

For Maestro refund transactions (DE 3, subfield 1 = 20), originated from a dual message acquirer, DE 11 (Systems Trace Audit Number) and DE 90 (Original Data Elements) will be present in the Financial Transaction Advice/0220 to the issuer, however the values for the trace number, transmission date and time in these data elements may contain all zero values. This is due to the rules which do not require an original authorization for a refund transaction acquired on the Dual Message System. Issuers can also identify these types of refund transactions with the DE 60 (Advice Reason Code) value of 260 0092. The zero values may also apply in the event of a reversal of these refund transactions when the Financial Transaction Advice/0220 message contains DE 3, subfield 1 = 00 (Purchase) and DE 60 = 260 0092.

### **Subfield 1 (Message Type Identifier)**

DE 90, subfield 1 contains the message type identifier for the original data elements.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-4
Data field	Contents of positions 1–4
Justification	N/A

#### **Values**

Original MTI, Message Type Identifier.

### **Subfield 2 (System Trace Audit Number)**

DE 90, subfield 2 contains the system trace audit number for the original data elements.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-6
Data field	Contents of positions 5–10

Attribute	Description
Justification	N/A

### Values

Original DE 11, System Trace Audit Number.

### Subfield 3 (Transmission Date and Time)

DE 90, subfield 3 contains the transmission date and time for the original data elements.

#### Attributes

Attribute	Description
Data representation	n-10
Data field	Contents of positions 11–20
Justification	N/A

### Values

Original DE 7, Transmission Date and Time.

### Subfield 4 (Acquiring Institution ID Code)

DE 90, subfield 4 contains the acquiring institution ID code for the original data elements.

#### Attributes

Attribute	Description
Data representation	n-11
Data field	Contents of positions 21–31
Justification	N/A

### Values

Original DE 32, Acquiring Institution ID Code.

## Subfield 5 (Forwarding Institution ID Code)

DE 90, subfield 5 contains the forwarding institution ID code for the original data elements.

### Attributes

Attribute	Description
Data representation	n-11
Data field	Contents of positions 32–42
Justification	N/A

### Values

Original DE 33, Forwarding Institution ID Code.

## DE 91 (File Update Code)

DE 91 (File Update Code) is used in File Update Request/0302 messages. It indicates, to the Single Message System or to the Mastercard Account Management System (AMS), the action to perform to the file named in DE 101 (File Name).

### Attributes

Attribute	Description
Data representation	an-1
Data element length	None
Data field	Fixed length, contents of position 1
Subfields	None
Justification	N/A

### Usage

Following is the usage of DE 91 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
File Update Request/0302	M	P	M
File Update Request Response/0312	M	P	M

### Application notes

For File Update Request/0302 messages, the value of this data element indicates the execution of a specific file update action. The File Update Request Response/0312 message must return the same value as was sent in the 0302 message.

### Values

This table describes the File Update Code values for DE 91.

Code	Description
1	Add record
2	Change record
3	Delete record
5	Inquiry

### Valid Updates by File Type

This table lists valid update codes for each of the files identified in DE 101.

File name (DE 101)	Add (DE 91 = 1)	Change (DE 91 = 2)	Delete (DE 91 = 3)	Inquiry (DE 91 = 5)
MCC102	.	.	.	.
MCC103	.		.	
MCC105	.	.	.	.
MCC106	.	.	.	
MCC109	.			.

## DE 92 (File Security Code)

DE 92 (File Security Code) is a file update security code that indicates a message originator is authorized to update a file.

### Attributes

Attribute	Description
Data representation	n-2

Attribute	Description
Data element length	None
Data field	Fixed length, contents of positions 1–2
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 93 (Response Indicator)

DE 93 (Response Indicator) indicates the update action a POS system takes.

### Attributes

Attribute	Description
Data representation	an-5
Data element length	None
Data field	Fixed length, contents of positions 1–5
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 94 (Service Indicator)

DE 94 (Service Indicator), in some systems, is an indication of the type of support service required by the recipient of a File Update Request/0302 message.

### Attributes

Attribute	Description
Data representation	an-7
Data element length	None
Data field	Fixed length, contents of positions 1–7
Subfields	None

<b>Attribute</b>	<b>Description</b>
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 95 (Replacement Amounts)

DE 95 (Replacement Amounts) are the new actual amount data elements necessary to perform a partial or full reversal of a financial transaction or a partial completion amount. This data element can also be used for the completed amount in a Maestro Financial Transaction Advice/0220 completion message for automated fuel transactions.

### Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	ISO Standard: an-42 Mastercard Standard: n-42
Data element length	None
Data field	Fixed Length, contents of subfields 1-4
Subfields	4
Justification	See "Subfields"

**NOTE:** ISO Standards define this data element as an-42, however the Single Message System uses it as n-42.

### Usage

Following is the usage of DE 95 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Advice/0220: subfield 1	C	P	M
Financial Transaction Advice/0220: subfields 2-4	.	X	M
Financial Transaction Advice Response/0230: subfield 1	C	P	M
Financial Transaction Advice Response/0230: subfield 2-4	.	X	M
Acquirer Reversal Advice/0420: acquirer Initiated	M	X	M

Message	Org	Sys	Dst
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	M	X	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	M	P	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	M	P	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M

### Application notes

The Customer Processing System (CPS) must use DE 95 in

- Financial Transaction Advice/0220 (acquirer-generated only) except Debit Mastercard and Debit Mastercard stand-in messages
- Acquirer Reversal Advice/0420 messages, and
- Issuer Reversal Advice/0422 messages

when the original transaction amounts are being modified.

### Values

This data element is composed of four fixed-length subfields. Each subfield is encoded as alphanumeric, right-justified with leading zeros, as described below.

Subfield 1 must contain valid numeric data. The message initiator must zero-fill all other subfields. Currency conversion of actual amount DE 4 (Amount, Transaction) into actual amount DE 5 (Amount, Settlement) will be performed by the Single Message System, when required.

For additional information on currency conversion refer to the *Single Message System Programs and Services* manual.

### Special notes

For partial approval and purchase with cash back transactions, when DE 95 is present in the 0220, 0420, and 0432 messages and DE 95, subfield 1 contains a value other than zeros, DE 95 will be provided to the issuer as follows:

- DE 95, subfield 1 will contain the same value as received from the transaction initiator (acquirer/Single Message System).

- DE 95, subfield 2 will contain the actual amount in the issuer settlement currency.
- DE 95, subfield 3 will contain the actual amount in the cardholder billing currency based on the currency in DE 51.
- DE 95, subfield 4 will contain zeros.

When DE 95 is present in the 0220, 0420, and 0432 message with a non-format error denial code and DE 95, subfield 1 contains a value other than zeros, DE 95 will be provided to the issuer as follows:

- DE 95, subfield 1 will contain the same value as received from the transaction initiator (acquirer/Single Message System).
- DE 95, subfield 2 will contain the actual amount in the issuer settlement currency.
- DE 95, subfield 3 will contain the actual amount in the cardholder billing currency based on the currency in DE 51.
- DE 95, subfield 4 will contain zeros.

When DE 95 is sent to the acquirer in the 0230, 0422, and 0430 messages and DE 95, subfield 1 contains a value other than zeros; DE 95 will be provided to the acquirer as follows:

- DE 95, subfield 1 will contain the same value as received in the request message from the acquirer.
- DE 95, subfield 2 will contain the actual amount in the acquirer settlement currency.
- DE 95, subfield 3 will contain zeros.
- DE 95, subfield 4 will contain zeros.

When DE 95 is sent from the Single Message System to the acquirer in the 0230 and 0430 messages or from the Single Message System to the issuer in a 0432 response message with a denial code and DE 95, subfield 1 contains a value other than zeros, DE 95 will be provided to the acquirer or issuer as follows:

- DE 95, subfield 1 will contain the same value as received in the request message from the acquirer/issuer.
- DE 95, subfield 2 will contain zeros.
- DE 95, subfield 3 will contain zeros.
- DE 95, subfield 4 will contain zeros.

### **Subfield 1 (Actual Amount, Transaction)**

This subfield identifies the actual amount associated with the transaction.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-12
Data field	Contents of positions 1-12
Justification	Right-justified with leading zeros

### Values

Actual Amount, Transaction. For full reversals, this field contains all zeros.

### Subfield 2 (Actual Amount, Settlement)

DE 95, subfield 2 identifies the actual settlement amount associated with the transaction.

### Attributes

Attribute	Description
Data representation	n-12
Data field	Contents of positions 13-24
Justification	Right-justified with leading zeros

### Values

Actual Amount, Settlement (provided by the Single Message System). For full reversals or responses containing a denial code, this field contains all zeros.

### Subfield 3 (Actual Amount, Cardholder Billing)

DE 95, subfield 3 identifies the actual cardholder billing amount associated with the transaction.

### Attributes

Attribute	Description
Data representation	n-12
Data field	Contents of positions 25-36
Justification	Right-justified with leading zeros

### Values

Actual Amount, Cardholder Billing (provided by the Single Message System). For full reversals or responses containing a denial code, this field contains all zeros.

## Subfield 4 (Zero-filled)

DE 95, subfield 4 is zero-filled.

### Attributes

Attribute	Description
Data representation	n-6
Data field	Contents of positions 37–42
Justification	N/A

### Values

Zero-filled.

## DE 96 (Message Security Code)

DE 96 (Message Security Code) is a binary 8-byte field. In the Single Message System it contains a "password" security code in packed binary format. This code is used to verify that the originator of the sign-on request is allowed access to the requested functions.

### Attributes

Attribute	Description
Data representation	ISO: b-64 Mastercard: n-8
Data element length	None
Data field	Fixed length, contents of positions 1–64
Subfields	None
Justification	N/A

### Usage

Following is the usage of DE 96 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
File Update Request/0302	C	P	C

Message	Org	Sys	Dst
File Update Request Response/0312	C	P	C
Network Management Request/0800: acquirer or issuer initiated	C	X	.

## DE 97 (Amount, Net Settlement)

DE 97 (Amount Net Settlement) is the net value of all gross settlement amounts including fees.

### Attributes

Attribute	Description
Data representation	x+n-16
Data element length	17 (x + 16)
Data field	Fixed length, contents of positions 1–17
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 98 (Payee)

DE 98 (Payee) is the third party beneficiary in a payment transaction.

### Attributes

Attribute	Description
Data representation	ans-25
Data element length	None
Data field	Fixed length, contents of positions 1–25
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 99 (Settlement Institution Identification Code)

DE 99 (Settlement Institution Identification Code) is a code identifying a settlement institution or its agent.

### Attributes

Attribute	Description
Data representation	n...11; LLVAR
Data element length	2 positions, value = ...11
Data field	Variable length, contents of positions 1-11
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 100 (Receiving Institution Identification Code)

DE 100 (Receiving Institution Identification Code) identifies the receiver of the message.

### Attributes

Attribute	Description
Data representation	n...11; LLVAR
Data element length	2 positions, value = ...11
Data field	Variable length, contents of positions 1-11
Subfields	None
Justification	N/A

### Usage

Following is the usage of DE 100 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	.	X	C

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request Response/0210	C	X	C
Financial Transaction Advice/0220	.	X	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	.	X	C
Financial Transaction Advice Response/0230	C	X	C
Acquirer Reversal Advice/0420: acquirer initiated	.	X	C
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	.	X	C
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	C
Acquirer Reversal Advice/0420: exception, system initiated	.	X	C
Acquirer Reversal Advice/0420: acquirer initiated exception	.	X	C
Issuer Reversal Advice/0422: exception, system initiated	.	X	C
Issuer Reversal Advice/0422: exception, issuer initiated	.	X	C
Acquirer Reversal Advice Response/0430: system initiated	.	X	C
Acquirer Reversal Advice Response/0430: issuer initiated	C	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	C	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	C
Administrative Advice/0620: Single Message System initiated	.	X	M
Administrative Advice/0620: Processor initiated	O	X	.
Administrative Advice/0620: Processor initiated time-based exception	O	P	M
Administrative Advice Response/0630: Processor initiated to the Single Message System	M	X	.
Administrative Advice Responses/0630: processor initiated	M	P	M
Administrative Advice/0644	.	X	M

### **Application notes**

For processors using Enhanced Issuer Identification (EII), the Single Message System retrieves the issuer processor ID from configured data and sends it in the Financial Transaction Request/0200 to the issuer. The issuer must return the issuer processor ID in the 0210 response, which the Single Message System will include in the Financial Transaction Request Response/0210 message to the acquirer.

The Single Message System uses DE 100 (Receiving Institution Identification Code) to determine the destination routing of administrative/06xx messages. For these messages, DE 33 (Forwarding Institution ID) identifies the sender of the message; the receiver of the message is identified by DE 100 (Receiving Institution ID).

### Values

The processor ID is a ten-digit number in the format of "9000xxxxxx" where the Mastercard-assigned processor ID will be up to the last six digits "xxxxxx".

### Special notes

Processing systems must not exchange the contents of the Forwarding and Receiving Institution ID Code data elements in response messages; the contents must remain the same for accurate response message routing.

## DE 101 (File Name)

DE 101 (File Name) is the actual or abbreviated name of a referenced file that is updated in accordance with DE 91 (File Update Code) of a File Update Request/0302 message.

### Attributes

Attribute	Description
Data representation	ans...17; LLVAR
Data element length	2 positions, value = 06
Data field	Variable length, contents of positions 1-17
Subfields	None
Justification	N/A

### Usage

Following is the usage of DE 101 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
File Update Request/0302	M	P	M
File Update Request Response/0312	M	P	M

### Application notes

This data element is used to identify the specific name of a Network data file, program parameter table, or Stand-In processing database that is being updated via a File Update Request/0302 message. The File Update Request Response/0312 message contains the same value in DE 101 that was sent in the 0302 message.

### Values

This table shows the valid values and the allowable file update actions for the file name.

<b>File name</b> <b>(DE 101)</b>	<b>Description</b>	<b>Add</b> <b>(DE 91 = 1)</b>	<b>Change</b> <b>(DE 91 = 2)</b>	<b>Delete</b> <b>(DE 91 = 3)</b>	<b>Inquiry</b> <b>(DE 91 = 5)</b>
MCC102	Stand-in account file	.	.	.	.
MCC103	Electronic warning bulletin file	.		.	
MCC105	Payment cancellation service file	.	.	.	.
MCC106	Mastercard Digital Enablement Service (MDES) PAN mapping file	.	.	.	
MCC109	Application transaction counter (ATC) file	.			.
MCC111	PAN-PAR (payment account reference) mapping file		.		

## DE 102 (Account Identification 1)

DE 102 (Account Identification-1) is a series of digits used to identify a customer account or relationship. It is primarily used to identify the **from account** in a transaction.

### Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	ISO Standards: ans...28; LLVAR Mastercard Standard: n...28; LLVAR
Data element length	2 positions, value =...28
Data field	Variable length, contents of positions 1–28
Subfields	None
Justification	N/A

**NOTE:** ISO Standards define this data element as ans...28; LLVAR however the Single Message System uses it as n...28; LLVAR.

### Usage

Following is the usage of DE 102 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request Response/0210	C	P	C
Financial Transaction Advice/0220	C	P	C

### Application notes

Issuers may use DE 102 in Financial Transaction Response/0210 messages to identify the specific cardholder "from" account number affected by a transaction. Acquirers may use DE 102 for printing on cardholder transaction receipts.

The "from" account is the account specified by the third and fourth digits of the DE 3 (Processing Code).

### Values

The Single Message System restricts the values of this data element to be numeric only, and it cannot contain all zeros.

**NOTE:** If non-numeric data is received in DE 102 from an issuer, then DE 102 will not be included in the Financial Transaction Request Response/0210 message.

## DE 103 (Account Identification 2)

DE 103 (Account Identification-2) is a series of digits used to identify a customer account or relationship. It is primarily used to identify the **to account** in a transaction.

### Attributes

Attribute	Description
Data representation	ISO Standard: ans...28; LLVAR Mastercard Standard: n...28; LLVAR
Data element length	2 positions, value = ...28
Data field	Variable length, contents of positions 1-28

Attribute	Description
Subfields	None
Justification	N/A

**NOTE:** ISO Standards define this data element as ans...28; LLVAR however the Single Message System uses it as n...28; LLVAR.

### Usage

Following is the usage of DE 103 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request Response/0210	C	P	C
Financial Transaction Advice/0220	C	P	C

### Application notes

Issuers may use DE 103 in Financial Transaction Response/0210 messages to identify the specific cardholder to account number affected by a transaction. Acquirers may use DE 103 for printing on cardholder transaction receipts. The "to" account is the account specified by the fifth and sixth digits of the DE 3 (Processing Code).

### Values

The Single Message System restricts the values of this data element to be numeric only, and it cannot contain all zeros.

**NOTE:** If non-numeric data is received in DE 103 from an issuer, then DE 103 will not be included in the Financial Transaction Request Response/0210 message.

## DE 104 (Digital Payment Data)

DE 104 (Digital Payment Data) is used in Financial Transaction Request/0200 messages to send digital payment data for ecommerce transactions.

### Attributes

Attribute	Description
Data representation	ans...999; LLLVAR

---

<b>Attribute</b>	<b>Description</b>
Data element length	3
Data field	Contents of subelements
Subelements	001: Digital Payment Cryptogram 002: Estimated Amount 003: Remote Commerce Acceptor Identifier 004: Additional Digital Data
Justification	See "Subelements"

---

### Usage

Following is the usage of DE 104 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	X	C

### Values

Transaction specific. Refer to the *Digital Secure Remote Payments—UCAF Formats* manual for detailed information on the formats supported by Mastercard, which continue to be applicable to the new Digital Payment Data field.

### DE 104 encoding scheme

#### DE 104: Encoding Scheme

Mastercard organizes DE 104 into a group of encoded subelements and subfields. The following table illustrates the structure of DE 104 subelements.

<b>"VAR" - maximum length varies</b>						
3 bytes	3 bytes	3 bytes	Variable length	3 bytes	3 bytes	Variable length
Total Length	First Subelement (SE) Data			Second subelement (SE) data		
	SE ID	SE length	SE Variable Length Data	SE ID	SE length	SE Variable Length Data

<b>Number of Bytes</b>	<b>Attribute</b>	<b>Value</b>
3	Total data element Length	The "LLL" portion of the data element
3	Subelement ID	In the range 001-099
3	Subelement length	Variable
1...nnn	Subelement variable Length Data	Contents of subfields

The following table illustrates the structure of DE 104 Subfields within a Subelement.

<b>"VAR" - maximum length varies</b>					
3 bytes	3 bytes	Variable length	3 bytes	3 bytes	Variable length
First Subfield (SF) Data		Second subfield (SF) Data			
SF ID	SF length	SF variable length data	SF ID	SF Length	SF variable length data

<b>Number of Bytes</b>	<b>Attribute</b>	<b>Value</b>
3	Subfield ID	In the range 001-099
3	Subfield length	Variable
1...nnn	Subfield variable Length Data	Contents of subfields

### **Subelement 001 (Digital Payment Cryptogram)**

DE 104, subelement 001 (Digital Payment Cryptogram) is where the DSRP Cryptogram will be sent to be processed and verified.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	001
Subelement length	n-3	028
Data representation	ans-28; (base 64 encoded)	
Data field		Contains cryptogram
Number of subfields	N/A	

---

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Justification	Left	

### Usage

Following is the usage of subelement 001 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	X	C

### Values

Transaction specific. Refer to the *Digital Secure Remote Payments—UCAF Formats* manual for detailed information on the formats supported by Mastercard, which continue to be applicable to the new Digital Payment Data field.

### Application notes

To be included by the acquirer for MDES electronic commerce transactions in Financial Transaction Request/0200 messages.

To be received by the issuer when included by the acquirer in non-MDES transactions in Financial Transaction Request/0200 messages.

If DE 104, subelement 001 is included on any other message type it will be ignored.

**NOTE:** Issuer will not receive DE 104, subelement 001 on MDES transactions.

### Subelement 002 (Estimated Amount)

DE104, subelement 002 (Estimated Amount) contains the estimated purchase amount of the transaction when the payment request is presented to the consumer during checkout. This amount may not always be the final amount. The estimated amount is encoded and included within the new cryptogram.

### Attributes

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	002
Subelement length	n-3	012
Data representation	n-12	
Data field		Contains the estimated amount

---

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Number of subfields	N/A	
Justification	Right with leading zeros	

### **Usage**

Following is the usage of subelement 002 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C

### **Application notes**

The Single Message System inserts this subelement into Financial Transaction Request/0200 messages when the issuer has opted-in to receive.

This subelement is expected to be present in remote commerce transactions initiated via wallets or remote commerce programs that support the new cryptogram.

## **Subelement 003 (Remote Commerce Acceptor Identifier)**

DE 104, subelement 003 (Remote Commerce Acceptor Identifier) contains a merchant identifier such as the merchant business website URL or reverse domain name as presented to the consumer during checkout. The merchant identifier is provided encoded as Base64.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	003
Subelement length	n-3	...150
Data representation	ans...150	(Base64 encoded)
Data field		Contains the remote commerce acceptor identifier
Number of subfields	N/A	
Justification	Left	

### **Usage**

Following is the usage of subelement 003 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	X	C

### **Application notes**

This subelement should be included by the acquirer for tokenized remote commerce transactions with the new cryptogram in Financial Transaction Request/0200 messages.

To be received by the issuer (when opted-in to receive it). Issuers electing to use a Third Party Token Service Provider for device based wallet programs will receive the subelement in the authorization request. Applicable to Financial Transaction Request/0200 messages.

This subelement is expected to be present in remote commerce transactions initiated via wallets or remote commerce programs that support the new cryptogram. If present, it must be encoded as Base64.

### **Subelement 004 (Additional Digital Data)**

DE 104, subelement 004 (Additional Digital Data) is reserved for specific digital programs and services. It is a free-format, variable-length subelement that may be used for multiple purposes

#### **Attributes**

	<b>Attribute</b>	<b>Value</b>
Subelement ID	n-3	004
Subelement length	n-3	
Data representation	ans...250; LLLVAR	
Data field		Contents of subfield
Number of subfields	001	Subfield 001 (Digital Service Provider ID)
Justification		See subfields

#### **Usage**

Following is the usage of subelement 004 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C

### Application Notes

The Single Message System inserts this subelement into Financial Transaction Request/0200 messages when the issuer has opted-in to receive it.

### Subfield 001 (Digital Service Provider ID)

DE 104, subelement 004 (Additional Digital Data), subfield 001 (Digital Service Provider ID) contains the alphanumeric value assigned to the consumer facing entity that facilitated the consumer authentication in remote commerce transactions.

#### Attributes

Attribute	Value
Subfield ID	n-3
Subfield Length	n-3
Data Representation	an-5
Data Field	Contents of subfield 001
Justification	Left

#### Example: Formatted DE 104, subelement 004, subfield 001

10422500201200000000400003150d3d3Lm1hc3RlcmNhcmQuY29t...00401100100511111

## DE 105 (Enhanced Identification Data)

DE 105 (Enhanced Identification Data) contains the data required to support the external verification of the Unique Identification Number (UID).

#### Attributes

Attribute	Description
Data representation	ans...999; LLLVAR
Data element length	3 positions, value = 001–999
Data field	Variable Length
Subelements	19
Justification	See "Subfields"

## Usage

Following is the usage of DE 105 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	X	C
Financial Transaction Request Response/0210	.	X	C

## Application notes

DE 105 is conditionally mandated to be provided only for India UID transactions in India in Financial Transaction Request/0200 messages. It is not required on other India domestic transactions.

If the issuer processor does not support DE 105, Mastercard will remove DE 105 from the Financial Transaction Request/0200 message.

For a Financial Transaction Request/0200 message containing DE 105, if a subelement fails a system edit the transaction will not be sent for UIDAI authentication and subelements indicated below will not be sent to the issuer.

For a Financial Transaction Request/0200 message containing DE 105, if Mastercard is unable to communicate with the UID vendor, or a time-out occurs, then Mastercard forwards the Financial Transaction Request/0200 message to the issuer with the following subelements included.

Subelement ID	Subelement name
5	Transaction identifier
12	Product code
13	Return value
14	Authenticator code
15	Time stamp
16	Meta information
17	Error code

The following subelements will not be sent to the issuer in the Financial Transaction Request/0200 message and they will not be returned to the acquirer in the Financial Transaction Request Response/0210 message.

<b>Subelement ID</b>	<b>Subelement Name</b>
1	AUA code
2	Sub-AUA code
3	UID terminal device ID
4	Version
6	Unique device code
7	Fingerprint device code
9	Certificate identifier
10	PID block type
11	Primary biometric type

### **Subelement 1 (AUA Code)**

Subelement 1 contains the unique code for the Authentication User Agency (ac attribute) as assigned by the UIDAI.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	001
Subelement length	n-3	010
Data representation	an...010; LLLVAR	

#### **Usage**

Following is the usage of subelement 1 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	X	.

## **Subelement 2 (Sub-AUA Code)**

Subelement 2 contains the unique code for the subset of an Authentication User Agency (sa attribute) as assigned by the UIDL. This may contain the same value as subelement 1.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	002
Subelement length	n-3	010
Data representation	n...010; LLLVAR	

### **Usage**

Following is the usage of subelement 2 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	X	.

## **Subelement 3 (Terminal Device ID)**

Subelement 3 contains the value of the terminal device ID (tid attribute). This may be a unique value for registered devices or "public" for a public device.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	003
Subelement length	n-3	012
Data representation	a...012; LLLVAR	

### **Usage**

Following is the usage of subelement 3 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	X	.

## Values

Value	Description
public	Public device. Terminal devices which are not registered with the UIDAI and which use their own encryption key and generation scheme.
	Registered device number. Terminal devices which are registered with the UIDAI for encryption key management.

## Application notes

If subelement 3 is missing or contains invalid data, the Single Message System will decline the transaction with DE 39 (Response Code), value 30 (Decline, Message format error) in the Financial Transaction Request Response/0210 message to the acquirer. The transaction is not sent to the issuer.

## Subelement 4 (Version)

Subelement 4 contains the API version number (ver attribute).

## Attributes

Attribute	Description	Value
Subelement ID	n-3	004
Subelement length	n-3	005
Data representation	ans...005; LLLVAR	

## Usage

Following is the usage of subelement 4 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	M	X	.

## Values

Value	Description
1.6	Current version number

## **Subelement 5 (Transaction Identifier)**

Subelement 5 contains the transaction identifier (txn attribute) reflecting the AUA specific transaction identifier.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	005
Subelement length	n-3	050
Data representation	an...050; LLLVAR	

### **Usage**

Following is the usage of subelement 5 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	X	.
Financial Transaction Request Response/0210	.	X	M

## **Subelement 6 (Unique Device Code)**

Subelement 6 contains the unique device code (udc attribute) for the authentication device.

The UIDAI recommended format is:

- Vendor code
- Date of deployment
- Serial number

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	006
Subelement length	n-3	020
Data representation	an...020; LLLVAR	

### **Usage**

Following is the usage of subelement 6 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	X	.

### **Subelement 7 (Fingerprint Device Code)**

Subelement 7 contains the unique code (fdc attribute) provided for the fingerprint sensor-extractor combination.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	007
Subelement length	n-3	010
Data representation	an...010; LLLVAR	

#### **Usage**

Following is the usage of subelement 7 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	X	.

#### **Values**

<b>Value</b>	<b>Description</b>
NC	The code is unknown.
000000000-9999999999	Device code number.

### **Subelement 8 (Reserved for future use)**

Subelement 8 is reserved for future use.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	008

---

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement length	n-3	001
Data representation	an-1	

### **Usage**

Following is the usage of subelement 8 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	.	.

### **Subelement 9 (Certificate Identifier)**

Subelement 9 contains the Public Key certificate expiration date (ci attribute).

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	009
Subelement length	n-3	008
Data representation	n-8	

### **Usage**

Following is the usage of subelement 9 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	X	.

#### **Values**

<b>Value</b>	<b>Description</b>
Public Key certificate expiration date	Format: YYYYMMDD

## Subelement 10 (PID Block Type)

Subelement 10 (type attribute) identifies the format of the PID block transmitted in DE 106 (Private Data).

### Attributes

Attribute	Description	Value
Subelement ID	n-3	010
Subelement length	n-3	001
Data representation	a-1	

### Usage

Following is the usage of subelement 10 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	M	X	.

### Values

Value	Description
P	The format of the PID Block data is Protobuf binary.
X	The format is PID Block data XML.

### Application notes

Mastercard highly recommends protobuf technology rather than XML format to compress the fingerprint data that is transmitted in DE 106 (Private Data), subelement 1 (Private Biometric Data).

## Subelement 11 (Primary Biometric Type)

Subelement 11 contains the value for the biometric type (bt attribute).

### Attributes

Attribute	Description	Value
Subelement ID	n-3	011

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<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement length	n-3	003 or 007
Data representation	ans...007; LLLVAR	

### Usage

Following is the usage of subelement 11 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	X	.

### Values

<b>Value</b>	<b>Description</b>
FMR	The biometric data is of type "Fingerprint Minutiae Record".  <b>Mastercard only supports biometric type fingerprint for the processing of authentication transactions.</b>
FIR	The biometric data is of type "Fingerprint Image Record".  <b>This value not currently supported.</b>
IIR	The biometric data is of type "Iris Image Record".  <b>This value not currently supported.</b>

### Application notes

If the acquirer sends value IIR in DE 105, subelement 11, Mastercard will decline the transaction with DE 39 (Response Code), value 05 (Decline, do not honor) in the Financial Transaction Request Response/0210 message. The transaction is not sent to the issuer.

If DE 105, subelement 11 is present, but the transaction does not contain DE 106 (Private Data), subelement 1 (Private Biometric Data), Mastercard will decline the transaction with DE 39 (Response Code), value 30 (Decline, Message format error) in the Financial Transaction Request Response/0210 message. The transaction is not sent to the issuer.

## **Subelement 12 (Product Code)**

Subelement 12 contains the value of the Product Code.

### **Attributes**

Attribute	Description	Value
Subelement ID	n-3	012
Subelement length	n-3	003
Data representation	an-3	

### **Usage**

Following is the usage of subelement 12 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	.	X	C
Financial Transaction Request Response/0210	.	X	C

### **Values**

Value	Description
UID	Product code for the Unique Identification Number product for India.

### **Application notes**

The value of subelement 12 is populated by the Single Message System.

## **Subelement 13 (Return Value)**

Subelement 13 contains the value of the return code (ret attribute). For transactions with missing or incorrect UIDAI data, the Single Message System will insert a value of n (lowercase) and send to the issuer for decisioning bypassing UIDAI authentication.

### **Attributes**

Attribute	Description	Value
Subelement ID	n-3	013
Subelement length	n-3	001

---

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Data representation	a-1	

### **Usage**

Following is the usage of subelement 13 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	M
Financial Transaction Request Response/0210	.	X	M

### **Values**

<b>Value</b>	<b>Description</b>
y	Yes. UIDAI data is present and correct.
n	No. UIDAI data is missing, incorrect, biometric data was not successfully authenticated, or service could not be performed.
	When the UIDAI sets subelement 13 to value n, there will be a value in subelement 17 (Error Code).

## **Subelement 14 (Authenticator Code)**

Subelement 14 contains the response authentication code (code attribute) in the Authentication Response from UIDAI.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	14
Subelement length	n-3	40
Data representation	an...040; LLLVAR	

### **Usage**

Following is the usage of subelement 14 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C
Financial Transaction Request Response/0210	.	X	C

### **Application notes**

Subelement 14 will only be present if the transaction was routed to and a response received from the UIDAI.

### **Subelement 15 (Time Stamp)**

Subelement 15 contains the time stamp value (ts attribute) in the Authentication Response from UIDAI.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	015
Subelement Length	n-3	029
Data Representation	n-29	

### **Usage**

Following is the usage of subelement 15 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C
Financial Transaction Request Response/0210	.	X	C

### **Application notes**

Subelement 15 will only be present if the transaction was routed to and a response received from the UIDAI.

Acquirers and issuers should refer to the UIDAI specifications for the format.

## **Subelement 16 (Meta Information)**

Subelement 16 contains the meta data information (info attribute) in the Authentication Response from UIDAI.

Acquirers and issuers should refer to the UIDAI specifications for layout.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	016
Subelement length	n-3	142
Data representation	ans...142; LLLVAR	

### **Usage**

Following is the usage of subelement 16 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C
Financial Transaction Request Response/0210	.	X	C

### **Application notes**

Subelement 16 will only be present if the transaction was routed to and a response received from the UIDAI.

## **Subelement 17 (Error Code)**

Subelement 17 contains the value of the error code (err attribute) in the Authentication Response from UIDAI indicating an authentication failure. DE 105, subelement 13 (Return Value) will contain value n (No. UIDAI data is missing or incorrect).

Acquirers and issuers should refer to the UIDAI specifications for layout.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	017
Subelement length	n-3	003
Data representation	n-3	

### **Usage**

Following is the usage of subelement 17 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	X	C
Financial Transaction Request Response/0210	.	X	C

### **Application notes**

Subelement 17 will only be present if the transaction was routed to and a response received from the UIDAI.

If subelement 17 contains error code value 812 returned from UIDAI, Mastercard will decline the transaction with DE 39 (Response Code), value 05 (Decline, Do not honor) in the Financial Transaction Request Response/0210 message to the acquirer. The transaction is not sent to the issuer.

## **Subelement 18 (Internal Mastercard Use)**

Subelement 18 is reserved for internal Mastercard use only.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	018
Subelement length	n-3	008
Data representation	n-8	

### **Usage**

Following is the usage of subelement 18 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	.	.	.

## Subelement 71 (Internal Mastercard Use)

Subelement 71 is reserved for internal Mastercard use only.

### Attributes

Attribute	Description	Value
Subelement ID	n-3	071
Subelement length	n-3	004
Data representation	n-4	

### Usage

Following is the usage of subelement 71 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	.	.	.

## DE 106 (Private Data)

DE 106 (Private Data) contains the biometric data used to validate the cardholder's identification for the transaction.

### Attributes

Attribute	Description
Data representation	ans...999; LLLVAR
Data element length	3 positions, value = 003-993
Data field	Variable Length
Subelements	1
Justification	See "Subelements"

### Usage

Following is the usage of DE 106 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	X	.

### **Application notes**

DE 106 is conditionally mandated to be provided only for India UID transactions in India in Financial Transaction Request/0200 messages. It is not required on other India domestic transactions.

DE 106 is never included in the Financial Transaction Request/0200 message forwarded to the issuer.

DE 106 is never included in the Financial Transaction Request Response/0210 message forwarded to the acquirer.

### **Subelement 1 (Private Biometric Data)**

Subelement 1 contains the private biometric data (pid element) used to validate the cardholder's identification for the transaction.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	001
Subelement length	n-3	001-993
Data representation	ans...993; LLLVAR (Base64 encoded)	

#### **Usage**

Following is the usage of subelement 1 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	X	.

## Values

Value	Description
Biometric Data	Encrypted data that contains biometric and one time token timestamp data. May contain parts of two different biometric data types

## Application notes

For acquirers in India the encrypted pid block contained in DE 106, subelement 1 may not exceed a total length of 999 bytes (993 bytes plus 3 bytes for subelement number and 3 bytes for subelement length). If the maximum length is greater than 999 bytes, the transaction will be declined.

Base64 is a group of similar binary-to-text encoding schemes that represent binary data in an ASCII string format by translating it into a radix-64 representation.

## DE 107 (India On-Soil Data)

DE 107 (India On-Soil Data) contains data unique to the on-soil requirements.

## Attributes

Attribute	Description
Data representation	ans...999; LLLVAR
Data element length	3 positions, value = 003–993
Data field	Variable Length
Subelements	8
Justification	See "Subfields"

## Usage

Following is the usage of DE 107 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	X	.

### Application notes

DE 107 is conditionally mandated to be provided only for India UID transactions in India in Financial Transaction Request/0200 messages. It is not required on other India domestic transactions.

DE 107 is never included in the Financial Transaction Request/0200 message forwarded to the issuer.

DE 107 is never included in the Financial Transaction Request Response/0210 message forwarded to the acquirer.

### Subelement 1 (Accountholder UID Number)

Subelement 1 contains the resident Unique Identification (UID) number (uid attribute).

#### Attributes

Attribute	Description	Value
Subelement ID	n-3	001
Subelement length	n-3	012
Data representation	n-12	

#### Usage

Following is the usage of subelement 1 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	M	X	.

### Application notes

If subelement 1 is not present or not correctly formatted, Mastercard will decline the transaction with DE 39 (Response Code), value 30 (Decline, Message format error) in the Financial Transaction Request Response/0210 message to the acquirer. The transaction is not sent to the issuer.

## **Subelement 2 (License Key)**

Subelement 2 contains the license key (lk attribute) assigned to the AUA.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	002
Subelement length	n-3	064
Data representation	an...064; LLLVAR	

### **Usage**

Following is the usage of subelement 2 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	X	.

## **Subelement 3 (Public IP Address)**

Subelement 3 contains the public IP address (pip attribute) of the terminal device.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	003
Subelement length	n-3	015
Data representation	an...015; LLLVAR	

### **Usage**

Following is the usage of subelement 3 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	X	.

### **Values**

<b>Value</b>	<b>Description</b>
NA	This value indicates no public IP is available.
0000000000000000-	Public IP address number.
9999999999999999	

### **Subelement 4 (Key Identifier)**

Subelement 4 contains the advanced data Synchronized Session Key (ki attribute).

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	004
Subelement length	n-3	036
Data representation	n...036; LLLVAR	

### **Usage**

Following is the usage of subelement 4 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	O	X	.

### **Subelement 5 (HMAC Value)**

Subelement 5 contains the HMAC (Hashing-based Message Authentication Code) value (hmac element).

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	005
Subelement length	n-3	256
Data representation	ans...256; LLLVAR (Base64 encoded)	

### **Usage**

Following is the usage of subelement 5 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	X	.

### **Subelement 6 (Encryption Key)**

Subelement 6 contains the value of the encrypted AES Session key (skey element).

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	006
Subelement length	n-3	048
Data representation	ans...048; LLLVAR (Base64 encoded)	

### **Usage**

Following is the usage of subelement 6 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	X	.

#### **Application notes**

If subelement 6 is not present or not correctly formatted, Mastercard will decline the transaction with DE 39 (Response Code), value 30 (Decline, Message format error) in the Financial Transaction Request Response/0210 message to the acquirer. The transaction is not sent to the issuer.

## **Subelement 7 (Location Type)**

Subelement 7 contains the location type (lot attribute) passed from the terminal device.

### **Attributes**

Attribute	Description	Value
Subelement ID	n-3	007
Subelement length	n-3	001
Data representation	an-1	

### **Usage**

Following is the usage of subelement 7 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	M	X	.

### **Values**

Value	Description
G	Geo-coding
P	Postal pin code

## **Subelement 8 (Location Value)**

Subelement 8 contains the location value (lov attribute) passed from the terminal device.

- If subelement 7 contains the value G, subelement 8 will contain the latitude, longitude, and altitude coordinates.
- If subelement 7 contains the value P, subelement 8 will contain the six-digit postal code.

Acquirers should refer to the Unique Identification Authority of India (UIDAI) specifications for layout.

### **Attributes**

Attribute	Description	Value
Subelement ID	n-3	008
Subelement length	n-3	039

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<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Data representation	ans...039; LLLVAR	

### **Usage**

Following is the usage of subelement 8 (whether it is mandatory, conditional, optional, system-provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	M	X	.

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## **DE 108 (Additional Transaction Reference Data)**

DE 108 (Additional Transaction Reference Data) provides the capability for acquirers to send sender, receiver, and transaction-level data to the issuer in Mastercard Send Transactions (Funding Transactions, MoneySend Payment Transactions, and Gaming and Gambling Payments Transactions), and Mastercard Merchant Presented QR Transactions.

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans...999; LLLVAR
Data element length	3
Data field	Contents of subelements
Subelements	6
Justification	See "Subelements"

### **Usage**

Following is the usage of DE 108 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	.	C
Financial Transaction Request Response/0210	C	.	C
Financial Transaction Advice/0220	.	C	C

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Advice/0220: Debit Mastercard stand-in	.	C	C
Acquirer Reversal Advice/0420: acquirer initiated	O	.	C

### **Application notes**

For Financial Transaction Request Response/0210, if DE 108 is submitted but the acquirer is not ready to receive, the Mastercard Send Transaction (Funding Transactions, MoneySend Payment Transactions, and Gaming and Gambling Payments Transactions), may fail on the acquirer side.

For MoneySend Payment and Gaming and Gambling Payments, acquirers that process transactions must send and receive DE 108 (Additional Transaction Reference Data). Issuers must receive and return DE 108 (Additional Transaction Reference Data) for all MoneySend Payment and Gaming and Gambling Payments.

For Funding Transactions, acquirers that process transactions must send and be prepared to receive if sending DE 108 (Additional Transaction Reference Data) for all Funding Transactions. Issuers must prepare to receive and return DE 108 (Additional Transaction Reference Data) on Funding Transactions.

The Financial Transaction Advice/0220 message generated for Mastercard blocking or issuer transaction controls will contain DE 108 and all of the subelement/subfield references submitted to the acquirer. However, acquirer-submitted data within the subelement/subfield will not be available except subelement 03 data.

Please see the *Mastercard MoneySend and Funding Transactions Program Standards* for the most up-to-date details.

### **Use of Data Element 108 by message type and card type**

<b>Message type</b>	<b>Debit MC</b>		<b>Maestro</b>		<b>Cirrus</b>	
	<b>Acquirer</b>	<b>Issuer</b>	<b>Acquirer</b>	<b>Issuer</b>	<b>Acquirer</b>	<b>Issuer</b>
0200	N/A	Mastercard to ISS	ACQ to Mastercard	Mastercard to ISS	ACQ to Mastercard	Mastercard to ISS
0210	N/A	ISS to Mastercard	Mastercard to ACQ	ISS to Mastercard	Mastercard to ACQ	ISS to Mastercard
0220 <sup>5</sup>	N/A	Mastercard to ISS	ACQ to Mastercard	Mastercard to ISS	ACQ to Mastercard	Mastercard to ISS
0420	ACQ to Mastercard	Mastercard to ISS	ACQ to Mastercard	Mastercard to ISS	ACQ to Mastercard	Mastercard to ISS

<sup>5</sup> The acquirer can send a different value in the 0220 message than it received in the 0210 message.

## **Subelement 01 (Receiver/Recipient Data)**

This subelement contains the receiver name, address, phone number, date of birth, and account details.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	01	Receiver/Recipient Data
Subelement length	3	
Data representation	ans...358; LLLVAR	

---

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Number of subfields	18	Subfield 01: Receiver/Recipient First Name Subfield 02: Receiver/Recipient Middle Name Subfield 03: Receiver/Recipient Last Name Subfield 04: Receiver/Recipient Street Address Subfield 05: Receiver/Recipient City Subfield 06: Receiver/Recipient State/Province Code Subfield 07: Receiver/Recipient Country Subfield 08: Receiver/Recipient Postal Code Subfield 09: Receiver/Recipient Phone Number Subfield 10: Receiver/Recipient Date of Birth Subfield 11: Receiver/Recipient Account Number Subfield 12: Receiver/Recipient Identification Type Subfield 13: Receiver/Recipient Identification Number Subfield 14: Receiver/Recipient Identification Country Code Subfield 15: Receiver/Recipient Identification Expiration Date Subfield 16: Receiver/Recipient Nationality Subfield 17: Receiver/Recipient Country of Birth Subfield 18: Receiver/Recipient Account Number Type

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### **Subfield 01 (Receiver/Recipient First Name)**

DE 108, subelement 01, subfield 01 (Receiver/Recipient First Name) contains the Recipient/Receiver first name.

#### **Attributes**

Attribute	Description
Subfield ID	01
Subfield length	2
Data representation	ans...35; LLVAR
Justification	N/A

#### **Values**

If present, cannot contain all spaces or all numeric values.

#### **Application notes**

Subfield 01 must be present for cross-border MoneySend Payment and Gaming and Gambling Payments transactions and must be properly formatted.

Subfield 01 is optional for domestic MoneySend Payment and Gaming and Gambling Payments transactions and Funding transactions.

The Mastercard Network does not enforce system edits on this field. It is therefore optional; however, per program rules noted in the *Mastercard MoneySend and Funding Transactions Program Standards guide*, it is a required field for domestic and cross-border Funding Transactions and must be provided. Not providing required data in this field per standards may result in compliance assessments.

The first name (Consumer/Business) of the recipient/receiver is included in this subelement.

The table that follows describes the correct submission of business names.

#### **Application notes: Mastercard Merchant Presented QR transactions**

Subfield 01 is optional for Mastercard Merchant Presented QR Payment Transactions. It is not edited and will be forward to destination.

Subfield 01 is not applicable for Mastercard Merchant Presented QR Refund Payment or Funding Transactions.

Business name	First name	Last name
XYZ	XYZ	XYZ
XYZ International	XYZ	International

---

<b>Business name</b>	<b>First name</b>	<b>Last name</b>
XYZ DBA MA	XYZ	DBA MA

### **Subfield 02 (Receiver/Recipient Middle Name)**

DE 108, subelement 01, subfield 02 (Receiver/Recipient Middle Name) contains the middle name of the Recipient/Receiver.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	02
Subfield length	2
Data representation	ans-1
Justification	N/A

#### **Values**

Valid value will consist of the middle name initial of the Receiver.

#### **Application notes**

Subfield 02 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions) according to the published standards. Refer to the *Mastercard MoneySend and Funding Transactions Program Standards* for the full listing of required fields and subelements.

### **Subfield 03 (Receiver/Recipient Last Name)**

DE 108, subelement 01, subfield 03 (Receiver/Recipient Last Name) contains the last name of the Recipient/Receiver.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	03
Subfield length	2
Data representation	ans...35; LLVAR
Justification	N/A

## Values

If present cannot contain all spaces or all numeric values.

## Application notes

Subfield 03 must be present for cross-border MoneySend Payment and Gaming and Gambling Payments transactions and must be properly formatted.

Subfield 03 is optional for domestic MoneySend Payment and Gaming and Gambling Payments transactions and Funding transactions.

The Mastercard Network does not enforce system edits on this field. It is therefore optional; however, per program rules noted in the *Mastercard MoneySend and Funding Transactions Program Standards guide*, it is a required field for domestic and cross-border Funding Transactions and must be provided. Not providing required data in this field per standards may result in compliance assessments.

The last name (Consumer/Business) of the recipient/receiver is included in this subelement.

The table that follows describes the correct submission of business names.

## Application notes: Mastercard Merchant Presented QR transactions

Subfield 03 is optional for Mastercard Merchant Presented QR Payment Transactions. It is not edited and will be forward to destination.

Subfield 03 is not applicable for Mastercard Merchant Presented QR Refund Payment or Funding Transactions.

Business name	First name	Last name
XYZ	XYZ	XYZ
XYZ International	XYZ	International
XYZ DBA MA	XYZ	DBA MA

## Subfield 04 (Receiver/Recipient Street Address)

DE 108, subelement 01, subfield 04 (Receiver/Recipient Street Address) contains the Street Address of the Recipient/Receiver.

## Attributes

Attribute	Description
Subfield ID	04
Subfield length	2
Data representation	ans...50; LLVAR

Attribute	Description
Justification	N/A

### Values

Valid value will consist of the street address of the Receiver.

### Application notes

Subfield 04 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### Subfield 05 (Receiver/Recipient City)

DE 108, subelement 01, subfield 05 contains the city of the Recipient/Receiver.

### Attributes

Attribute	Description
Subfield ID	05
Subfield length	2
Data representation	ans...25; LLVAR
Justification	N/A

### Values

Valid location city name of the Recipient/Receiver.

### Application notes

Subfield 05 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### Subfield 06 (Receiver/Recipient State/Province Code)

DE 108, subelement 01, subfield 06 contains the state/province code of the Recipient/Receiver.

### Attributes

Attribute	Value
Subfield ID	06
Subfield length	2
Data representation	ans...3; LLVAR

Attribute	Value
Justification	N/A

### Values

Valid location state code of the Recipient's/Receiver.

### Application notes

Subfield is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions). If submitted, it cannot contain spaces or invalid code when the country is U.S. or Canada.

#### NOTE:

Data representation must be alpha (a-3) for Mastercard Send Transactions. For the U.S. and Canada, Data representation must be (a-2) for State/Province. Refer to the *Quick Reference Booklet* for valid State/Province code

### Subfield 07 (Receiver/Recipient Country)

DE 108, subelement 01, subfield 07 (Receiver/Recipient Country) contains the country of the Recipient/Receiver.

### Attributes

Attribute	Value
Subfield ID	07
Subfield length	2
Data representation	ans-3
Justification	N/A

### Values

If present must be a valid ISO country code and must not be part of blocked country list.

### Application notes

Subfield 07 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

#### NOTE:

Data representation must be alpha (a-3) for Mastercard Send transactions. Refer to the *Quick Reference Booklet* for valid (a-3) Country code

Transaction will be declined if the sender country is subject to comprehensive geographic sanctions published by the Office of Foreign Assets Control (OFAC), <http://www.treasury.gov/resource-center/sanctions/Pages/default.aspx>. The current list of countries subject to such sanctions is Cuba, Iran, North Korea, Sudan, and Syria; however, this list is subject to change.

**Subfield 08 (Receiver/Recipient Postal Code)**

DE 108, subelement 01, subfield 08 (Receiver/Recipient Postal Code) contains the postal code of the Recipient/Receiver.

**Attributes**

Attribute	Description
Subfield ID	08
Subfield length	2
Data representation	ans...10; LLVAR
Justification	N/A

**Values**

Valid location Postal Code of the Recipient's/Receiver.

**Application notes**

Subfield 08 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

**Subfield 09 (Receiver/Recipient Phone Number)**

DE 108, subelement 01, subfield 09 (Receiver/Recipient Phone Number) contains the phone number of the Recipient/Receiver.

**Attributes**

Attribute	Description
Subfield ID	09
Subfield length	2
Data representation	ans...20; LLVAR
Justification	N/A

**Values**

Valid phone number of the Recipient/Receiver.

### Application notes

Subfield 09 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### Application notes: Mastercard Merchant Presented QR transactions

Subfield 09 is not applicable for Mastercard Merchant Presented QR Refund Payment or Funding Transactions.

### Subfield 10 (Receiver/Recipient Date of Birth)

DE 108, subelement 01, subfield 10 contains the date of birth of the Recipient/Receiver.

### Attributes

Attribute	Description
Subfield ID	10
Subfield length	2
Data representation	n-8
Justification	N/A

### Values

Valid date of birth of the Recipient/Receiver in the format MMDDYYYY.

### Application notes

Subfield 10 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### Subfield 11 (Receiver/Recipient Account Number)

DE 108, subelement 01, subfield 11 (Receiver/Recipient Account Number) contains the account number of the Recipient/Receiver.

### Attributes

Attribute	Description
Subfield ID	11
Subfield length	2
Data representation	ans...50; LLVAR
Justification	N/A

## Values

Valid Account Number of the Receiver/Recipient.

## Application notes

Subfield 11 is optional Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

The Mastercard network does not enforce system edits on this field. It is therefore optional; however, per program rules noted in the *Mastercard MoneySend and Funding Transactions Program Standards* guide, it is a required field for domestic and cross-border Funding and must be provided. Not providing required data in this field per standards may result in compliance assessments

When subfield 11 contains a combination of information as specified in subfield 18 [for example, Bank account number (BAN) + Bank Identification Code (BIC)], the data must be separated by '+' and in the order specified for MoneySend and Funding Transactions.

## Application Notes (Mastercard Merchant Presented QR Transactions)

Subfield 11 is optional for Mastercard Merchant Presented QR Payment Transactions. It is not edited and will be forward to destination.

Subfield 11 is not applicable for Mastercard Merchant Presented QR Refund Payment or Funding Transactions.

The above enhancement introduced within DE 108, subelement 01, subfield 11 (Receiver/Recipient Account Number) does not apply for MCQR transactions. If MCQR transactions are processed with data in DE 108, subelement 01, subfield 11 (Receiver/Recipient Account Number) exceeding the current supported length, Mastercard MCQR edits will decline the transaction.

## Subfield 12 (Receiver/Recipient Identification Type)

DE 108, subelement 01, subfield 12 (Receiver/Recipient Identification Type) contains the identification type of the Recipient/Receiver.

## Attributes

Attribute	Description
Subfield ID	12
Subfield length	2
Data representation	n-2
Justification	N/A

### Values

If present on MoneySend Payment and Gaming and Gambling Payments, it must contain one of the following valid values:

00 = Passport

01 = National Identification Card

02 = Driver's License

03 = Government Issued

04 = Other

05–10 = Reserved

### Application notes

Subfield 12 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### Subfield 13 (Receiver/Recipient Identification Number)

DE 108, subelement 01, subfield 13 (Receiver/Recipient Identification Number) contains the identification number of the Recipient/Receiver.

### Attributes

Attribute	Description
Subfield ID	13
Subfield length	2
Data representation	ans...25; LLVAR
Justification	N/A

### Values

Valid identification number of the Receiver/Recipient.

### Application notes

Subfield 13 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### **Subfield 14 (Receiver/Recipient Identification Country Code)**

DE 108, subelement 01, subfield 14 (Receiver/Recipient Identification Country Code) contains the identification country code of the Recipient/Receiver.

#### **Attributes**

Attribute	Description
Subfield ID	14
Subfield length	2
Data representation	ans-3
Justification	N/A

#### **Values**

Valid identification country code of the Receiver/Recipient.

#### **Application notes**

Subfield 14 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### **Subfield 15 (Receiver/Recipient Identification Expiration Date)**

DE 108, subelement 01, subfield 15 (Receiver/Recipient Identification Expiration Date) contains the identification expiration date of the Recipient/Receiver.

#### **Attributes**

Attribute	Description
Subfield ID	15
Subfield length	2
Data Representation	n-8
Justification	N/A

#### **Values**

Valid identification expiration date of the Receiver/Recipient in the format MMDDYYYY.

#### **Application notes**

Subfield 15 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### **Subfield 16 (Receiver/Recipient Nationality)**

DE 108, subelement 01, subfield 16 (Receiver/Recipient Nationality) contains the nationality of the Recipient/Receiver.

#### **Attributes**

Attribute	Description
Subfield ID	16
Subfield length	2
Data representation	ans-3
Justification	N/A

#### **Values**

Nationality of the Receiver/Recipient as defined by a valid country code for the country of citizenship.

#### **Application notes**

Subfield 16 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### **Subfield 17 (Receiver/Recipient Country of Birth)**

DE 108, subelement 01, subfield 17 (Receiver/Recipient Country of Birth) contains the country of birth of the Recipient/Receiver.

#### **Attributes**

Attribute	Description
Subfield ID	17
Subfield length	2
Data representation	ans-3
Justification	N/A

#### **Values**

Valid Country of birth of the Receiver/Recipient.

#### **Application notes**

Subfield 17 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### **Subfield 18 (Receiver/Recipient Account Number Type)**

DE 108, subelement 01, subfield 18 (Receiver/Recipient Account Number Type) contains the account number type of the Receiver/Recipient.

<b>Attribute</b>	
Subfield ID	18
Subfield length	2
Data representation	n-2
Justification	n/a

---

### **Values**

- 00 - Other
  - 01 - RTN + Bank Account
  - 02 - IBAN
  - 03 - Card Account
  - 04 - Email
  - 05 - Phone Number
  - 06 - Bank account number (BAN) + Bank Identification Code (BIC)
  - 07 - Wallet ID
  - 08 - Social Network ID
- 

### **Funding Transaction**

Subfield 18 is optional for Funding Transactions. The Mastercard network does not enforce system edits on this field. It is therefore optional; however, per program rules noted in the *Mastercard MoneySend and Funding Transactions Program Standards* guide, it is a required field for Funding Transactions and must be provided. Not providing required data in this field per standards may result in compliance assessments

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### **Payment Transaction**

Subfield 18 is optional for MoneySend Payment and Gaming and Gambling Payment Transactions.

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### **Application notes**

Acquirers are expected per participation requirements to supply Subfield 18 if the related Subfield 11 is provided. Subfield is expected to be one of the valid values for the field.

Subfield 18 is not required for Mastercard QR Transactions and if submitted will be disregarded and not be forwarded to destination.

---

## **Subelement 02 (Sender Data)**

This subelement contains the sender name, address, phone number, date of birth, and account details.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	02	Sender Data
Subelement length	3	
Data representation	ans...358; LLLVAR	
Number of subfields	18	Subfield 01–Sender First Name Subfield 02 (Sender Middle Name) Subfield 03 (Sender Last Name) Subfield 04 (Sender Street Address) Subfield 05 (Sender City) Subfield 06 (Sender State/Province Code) Subfield 07 (Sender Country) Subfield 08 (Sender Postal Code) Subfield 09 (Sender Phone Number) Subfield 10 (Sender Date of Birth) Subfield 11 (Sender Account Number) Subfield 12 (Sender Identification Type) Subfield 13 (Sender Identification Number) Subfield 14 (Sender Identification Country Code) Subfield 15 (Sender Identification Expiration Date) Subfield 16 (Sender Nationality) Subfield 17 (Sender Country of Birth) Subfield 18 (Sender Account Number Type)

---

### **Subfield 01 (Sender First Name)**

DE 108, subelement 02, subfield 01 (Sender First Name) contains the first name of the Sender.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	01
Subfield Length	2
Data Representation	ans...35; LLVAR
Justification	N/A

#### **Values**

If present, cannot contain all spaces or all numeric values.

#### **Application Notes**

Subfield 01 must be present for MoneySend Payment and Gaming Payment Transactions and must be properly formatted. Subfield 01 is optional for Funding Transactions.

The first name (Consumer/Business/Government/Non-Government Organization) of the sender is included in this subelement.

The table that follows describes the correct submission of business names.

#### **Application Notes—Mastercard Merchant Presented QR Transactions**

Subfield 01 is optional for Mastercard Merchant Presented QR Payment Transactions. It is not edited and will be forward to destination.

Subfield 01 is not applicable for Mastercard Merchant Presented QR Refund Payment or Funding Transactions.

<b>Business Name</b>	<b>First Name</b>	<b>Last Name</b>
XYZ	XYZ	XYZ
XYZ International	XYZ	International
XYZ DBA MA	XYZ	DBA MA

### **Subfield 02 (Sender Middle Name)**

DE 108, subelement 02, subfield 02 (Sender Middle Name) contains the middle name initial of the Sender.

#### **Attributes**

Attribute	Description
Subfield ID	02
Subfield length	2
Data representation	ans-1
Justification	N/A

#### **Values**

Valid value will consist of the middle name initial of the Sender.

#### **Application notes**

Subfield 02 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### **Subfield 03 (Sender Last Name)**

DE 108, subelement 02, subfield 03 (Sender Last Name) contains the last name of the Sender.

#### **Attributes**

Attribute	Description
Subfield ID	03
Subfield length	2
Data representation	ans...35; LLVAR
Justification	N/A

#### **Values**

If present, cannot contain all spaces or numeric values.

#### **Application notes**

Subfield 03 must be present for MoneySend Payment and Gaming and Gambling Payment Transactions and must be properly formatted. Subfield 03 is optional for Funding Transactions.

The last name (Consumer/Business/Government/Non-Government Organization) of the sender is included in this subelement.

The table that follows describes the correct submission of business names.

#### **Application notes: Mastercard Merchant Presented QR transactions**

Subfield 03 is optional for Mastercard Merchant Presented QR Payment Transactions. It is not edited and will be forward to destination.

Subfield 03 is not applicable for Mastercard Merchant Presented QR Refund Payment or Funding Transactions.

<b>Business Name</b>	<b>First Name</b>	<b>Last Name</b>
XYZ	XYZ	XYZ
XYZ International	XYZ	International
XYZ DBA MA	XYZ	DBA MA

#### **Subfield 04 (Sender Street Address)**

DE 108, subelement 02, subfield 04 (Sender Street Address) contains the street address of the Sender.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	04
Subfield length	2
Data representation	ans...50; LLVAR
Justification	N/A

#### **Values**

Valid values will consist of street address of the Sender.

#### **Application notes**

Subfield 04 is mandatory for MoneySend Payment and Gaming and Gambling Payments Transactions and optional for funding transactions.

### **Subfield 05 (Sender City)**

DE 108, subelement 02, subfield 05 (Sender City) contains the city of the Sender.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	05
Subfield length	2
Data representation	ans...25; LLVAR
Justification	N/A

#### **Values**

Valid location city name of the Sender.

#### **Application notes**

Subfield 05 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

The Mastercard Network does not enforce system edits on this field. The field is therefore optional; however, per program rules noted in the *Mastercard MoneySend and Funding Transactions Program Standards* guide, it is a required field for MoneySend Payment Transactions and must be provided. Not providing required data in this field per standards may result in compliance assessments.

### **Subfield 06 (Sender State/Province Code)**

DE 108, subelement 02, subfield 06 contains the state/province code of the Sender.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	06
Subfield length	2
Data representation	ans...3; LLVAR
Justification	N/A

#### **Values**

Valid location State code of the Sender. Cannot contain spaces or invalid code when country is U.S. or Canada.

### Application notes

Subfield 06 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions). If submitted on MoneySend Payment or Gaming and Gambling Payment Transactions, subfield 06 cannot contain spaces or invalid code when country is U.S. or Canada.

**NOTE:** Data representation must be alpha (a-3) for Mastercard Send Transactions. For U.S. and Canada, Data representation must be (a-2) for State/Province. Refer to the *Quick Reference Booklet* for valid list of State/Province codes.

### Subfield 07 (Sender Country)

DE 108, subelement 02, subfield 07 (Sender Country) contains the country code of the Sender.

#### Attributes

Attribute	Description
Subfield ID	07
Subfield length	2
Data representation	an-3
Justification	N/A

#### Values

If present must contain the Mastercard 3-digit alphabetic country code and must not be part of blocked country list.

### Application notes

Subfield 07 is mandatory for MoneySend Payment and Gaming Payment Transactions and optional for Funding Transactions.

Transaction will be declined if the sender country is subject to comprehensive geographic sanctions published by the Office of Foreign Assets Control (OFAC), <http://www.treasury.gov/resource-center/sanctions/Pages/default.aspx>. The current list of countries subject to such sanctions is Cuba, Iran, North Korea, Sudan, and Syria; however, this list is subject to change.

### Subfield 08 (Postal Code)

DE 108, subelement 02, subfield 08 contains the postal code of the Sender.

#### Attributes

Attribute	Description
Subfield ID	08

Attribute	Description
Subfield length	2
Data representation	ans...10; LLVAR
Justification	N/A

### Values

Valid location Postal Code of the Sender.

### Application notes

Subfield 08 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### Subfield 09 (Sender Phone Number)

DE 108, subelement 02, subfield 09 (Sender Phone Number) contains the phone number of the Sender.

### Attributes

Attribute	Description
Subfield ID	09
Subfield length	2
Data representation	ans...20; LLVAR
Justification	N/A

### Values

Valid phone number of the Sender.

### Application notes

Subfield 09 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### Subfield 10 (Sender Date of Birth)

DE 108, subelement 02, subfield 10 contains the date of birth of the Sender.

### Attributes

Attribute	Description
Subfield ID	10

---

<b>Attribute</b>	<b>Description</b>
Subfield length	2
Data representation	n-8
Justification	N/A

### **Values**

Valid values will consist of the date of birth of the Sender in the format MMDDYYYY.

### **Application notes**

Subfield 10 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### **Subfield 11 (Sender Account Number)**

DE 108, subelement 02, subfield 11 (Sender Account Number) contains the account number of the Sender.

### **Attributes**

---

<b>Attribute</b>	<b>Description</b>
Subfield ID	11
Subfield length	2
Data representation	n...50; LLVAR
Justification	N/A

### **Values**

Valid account number of the Sender.

The account number that was used to fund the money transfer (for example, the sender used a credit, debit, or other account to fund the money transfer). When cash is used to fund the money transfer, this field should be populated with a unique transaction reference number or an account number from the Ol. This information will assist in identifying the sender if the receiving institution requires additional information from the originating institution for the money transfer.

### **Application notes: MoneySend transactions**

Subfield 11 must be present for MoneySend Payments and Gaming and Gambling Payments Transactions and must be properly formatted. Subfield 11 is optional for Funding Transactions.

### **Application notes: Mastercard Merchant Presented QR transactions**

#### **Payment Transaction usage:**

- Authorization Request/0100—Mandatory. Edit must validate. Forward to destination
- Reversal Advice/0420—Value from Authorization Request/0100 forwarded to destination

#### **Refund payment transaction usage:**

- Reversal Advice/0420: value from Authorization Request/0100 forwarded to destination

#### **Funding Transaction usage:**

- Subfield 11 is not applicable

### **Subfield 12 (Sender Identification Type)**

DE 108, subelement 02, subfield 12 (Sender Identification Type) contains the identification type of the Sender.

#### **Attributes**

Attribute	Description
Subfield ID	12
Subfield length	2
Data representation	n-2
Justification	N/A

#### **Values**

If present on all MoneySend Payment and Gaming Payment transactions, it must contain one of the following valid values:

00 = Passport

01 = National identification card

02 = Driver's license

03 = Government issued

04 = Other

05–10 = Reserved

#### **Application notes**

Subfield 12 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### **Subfield 13 (Sender Identification Number)**

DE 108, subelement 02, subfield 13 (Sender Identification Number) contains the identification number of the Sender.

#### **Attributes**

Attribute	Description
Subfield ID	13
Subfield length	2
Data representation	ans...25; LLVAR
Justification	N/A

#### **Values**

Valid identification number of the Sender.

#### **Application notes**

Subfield 13 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### **Subfield 14 (Sender Identification Country Code)**

DE 108, subelement 02, subfield 14 (Sender Identification Country Code) contains the identification country code of the Sender.

#### **Attributes**

Attribute	Description
Subfield ID	14
Subfield length	2
Data representation	ans-3
Justification	N/A

#### **Values**

Valid identification country code of the Sender.

#### **Application notes**

Subfield 14 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### **Subfield 15 (Sender Identification Expiration Date)**

DE 108, subelement 02, subfield 15 (Sender Identification Expiration Date) contains the identification expiration date of the Sender.

#### **Attributes**

Attribute	Description
Subfield ID	15
Subfield length	2
Data representation	n-8
Justification	N/A

#### **Values**

Valid identification expiration date of the Sender in the format MMDDYYYY.

#### **Application notes**

Subfield 15 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### **Subfield 16 (Sender Nationality)**

DE 108, subelement 02, subfield 16 (Sender Nationality) contains the nationality of the Sender.

#### **Attributes**

Attribute	Description
Subfield ID	16
Subfield length	2
Data representation	ans-3
Justification	N/A

#### **Values**

Nationality of the sender as defined by a valid country code for the country of citizenship.

#### **Application notes**

Subfield 16 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### **Subfield 17 (Sender Country of Birth)**

DE 108, subelement 02, subfield 17 (Sender Country of Birth) contains the country of birth of the Sender.

#### **Attributes**

Attribute	Description
Subfield ID	17
Subfield length	2
Data representation	ans-3
Justification	N/A

#### **Values**

Valid country of birth of the Sender.

#### **Application notes**

Subfield 17 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### **Subfield 18 (Sender Account Number Type)**

DE 108, subelement 02, subfield 18 (Sender Account Number Type) contains the account number type of the Sender.

Attribute
Subfield ID
Subfield length
Data representation
Justification

---

### Values

---

- 00: Other
  - 01: RTN + Bank Account
  - 02: IBAN
  - 03: Card Account
  - 04: Email
  - 05: Phone Number
  - 06: Bank account number (BAN) + Bank Identification Code (BIC)
  - 07: Wallet ID
  - 08: Social Network ID
- 

### Funding Transaction

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Subfield 18 is optional for Funding Transactions.

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### Payment and Gaming Payment Transaction

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Subfield 18 is optional for MoneySend Payment and Gaming Payment Transactions.

The Mastercard Network does not enforce system edits on this field. The field is therefore optional; however, per program rules noted in the *Mastercard MoneySend and Funding Transactions Program Standards* guide, it is a required field for MoneySend Payment Transactions and must be provided. Not providing required data in this field per standards may result in compliance assessments.

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### Application notes

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Acquirers are expected per participation requirements to supply Subfield 18 if the related Subfield 11 is provided. Subfield is expected to be one of the valid values for the field.

Subfield 18 is not required for Mastercard QR Transactions and if submitted will be disregarded and not be forwarded to destination.

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## Subelement 03 (Transaction Reference Data)

DE 108 (Additional Transaction Reference Data), subelement 03 (Transaction Reference Data) contains the transaction reference number, funding source, participation ID, and additional data related to MoneySend payment transactions, funding transactions, funding transaction refunds, Gaming and Gambling payment transactions, and Mastercard Merchant Presented QR transactions.

### Attributes

Attribute	Description	Value
Subelement ID	03	Transaction Reference Data

---

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement length	3	
Data representation	ans...138; LLLVAR	
Number of subfields	5	Subfield 01—Unique Transaction Reference Subfield 02 (Additional Message) Subfield 03 (Funding Source) Subfield 04 (Participation ID) Subfield 05 (Transaction Purpose)

---

### **Subfield 01 (Unique Transaction Reference)**

DE 108, subelement 03, subfield 01 (Unique Transaction Reference) contains the Unique Transaction Reference number for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions) and for Mastercard Merchant Presented QR funding transactions.

#### **Attributes**

---

<b>Attribute</b>	<b>Description</b>
Subfield ID	01
Subfield length	2
Data representation	ans-19
Justification	N/A

---

#### **Values for customers who do not need to process beyond 99 transactions per second**

Unique Transaction Reference Number (ans-19).

Valid value string will contain a leading zero (0), followed by:

- ICA (n-6)
- Year (n-1)
- Julian Date (n-3)
- Time hhmmss (n-6)
- Transaction Sequence Number for customers who do not need to process beyond 99 transactions: (01-99) (n-2)

Example: 0555555801215305401

#### **Values for customers who need to process beyond 99 transactions per second**

Unique Transaction Reference Number (ans-19).

Valid value string will contain:

- ICA (n-6)
- Year (n-1)
- Julian Date (n-3)
- Time hhmmss (n-6)
- Transaction Sequence Number for customers who need to process beyond 99 transactions: (01-999) (n-3)

Example: 5555558012153054001

### **Application notes**

Subfield 01 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

The Mastercard Network does not enforce system edits on this field. The field is therefore optional; however, per program rules noted in the *Mastercard MoneySend and Funding Transactions Program Standards* guide, it is a required field for Funding Transactions (coded with a TTI) and MoneySend Payment and Gaming and Gambling Payments Transactions and must be provided. Not providing required data in this field per standards may result in compliance assessments.

### **Application notes: Mastercard Merchant Presented QR transactions**

#### **Payment Transaction usage:**

- Financial Transaction Request/0200: Optional. If present, edit must validate. Forward to destination if edit validates
- Reversal Advice/0420: Optional. If present, value from Authorization Request/0100 forwarded to destination

#### **Refund payment transaction usage:**

- Financial Transaction Request/0200: Optional. If present, edit must validate. Forward to destination if edit validates
- Reversal Advice/0420: Value from Authorization Request/0100 forwarded to destination

#### **Funding Transaction usage:**

- Financial Transaction Request/0200: Mandatory. If present, edit must validate. Forward to destination if edit validates
- Financial Transaction Advice/0220: Optional. If present, edit must validate. Forward to destination if edit validates
- Reversal Request/0400: Optional. If present, edit must validate. Forward to destination if edit validates
- Reversal Advice/0420: Value from Authorization Request/0100 forwarded to destination

### **Subfield 02 (Additional Message)**

DE 108, subelement 03, subfield 02 (Additional Message) contains the additional message.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	02
Subfield length	2
Data representation	ans...65; LLVAR
Justification	N/A

#### **Application notes**

Subfield 02 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

#### **Application Notes: Mastercard Merchant Presented QR transactions**

##### **Payment Transaction usage:**

- Financial Transaction Request/0200: optional. If present, edit must validate. Forward to destination if edit validates
- Reversal Advice/0420: optional. If present, value from Authorization Request/0100 forwarded to destination

##### **Refund payment transaction usage:**

- Subfield 02 is not applicable

##### **Funding Transaction usage:**

- Financial Transaction Advice/0220: optional. If present, edit must validate. Forward to destination if edit validates
- Reversal Request/0400: optional. If present, edit must validate. Forward to destination if edit validates
- Reversal Advice/0420: value from Authorization Request/0100 forwarded to destination

### **Subfield 03 (Funding Source)**

DE 108, subelement 03, subfield 03 (Funding Source) contains the information representing the MoneySend transaction funding source.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	03

Attribute	Description
Subfield length	2
Data representation	n-2
Justification	N/A

### Values

When present, it must contain one of the following valid values:

- 01 = Credit
- 02 = Debit
- 03 = Prepaid
- 04 = Deposit Account
- 05 = Mobile Money Account
- 06 = Cash
- 07 = Other

### Application notes

Subfield 03 is optional for Funding transactions, MoneySend Payment Transactions, and Gaming and Gambling Payments Transactions. Mastercard will not perform a valid values check on subfield 03 within the Financial Transaction Request/0200 message. Acquirers must send DE 108, subelement 03, subfield 03 on MPQR payment Financial Transaction Request messages.

### Application notes: Mastercard Merchant Presented QR transactions

#### Payment Transaction usage:

- Financial Transaction Request/0200: Mandatory.
- Reversal Advice/0420: Value from Authorization Request/0100 forwarded to destination

#### Refund payment transaction usage:

- Reversal Advice/0420: Value from Financial Transaction Request/0200 forwarded to destination

#### Funding transaction usage:

- Subfield 03 is not applicable

### **Subfield 04 (Participation ID)**

DE 108, subelement 03, subfield 04 (Participation ID) contains participation ID details of the Sender.

#### **Attributes**

Attribute	Description
Subfield ID	04
Subfield length	2
Data representation	ans...30; LLVAR
Justification	N/A

#### **Values**

Contains the participation ID of the Sender.

#### **Application notes**

Subfield 04 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### **Subfield 05 (Transaction Purpose)**

DE 108, subelement 03, subfield 05 (Transaction Purpose) contains transaction purpose details.

#### **Attributes**

Attribute	Description
Subfield ID	05
Subfield length	2
Data representation	n-2
Justification	N/A

#### **Values**

00 = Family support

01 = regular labor transfers (expatriates)

02 = travel and tourism

03 = Education

04 = Hospitalization and medical treatment

05 = Emergency need

06 = Savings  
07 = Gifts  
08 = Other  
09 = Salary  
10 = Crowd lending  
11 = Crypto currency  
12 = Refund to original card  
13 = Refund to new card  
14-15 = Reserved

#### **Application notes**

Subfield 05 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions) and MPQR transactions. Mastercard will not perform a valid values check on subfield 05 within the Financial Transaction Request/0200 message.

### **Subelement 04 (Language Description)**

This subelement contains additional language details supported by the customer.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	04	Language Description
Subelement Length	3	
Data representation	ans...061; LLLVAR	
Number of subfields	2	Subfield 01 (Language Identification) Subfield 02 (Language Data)

#### **Subfield 01 (Language Identification)**

DE 108, subelement 04, subfield 01 (Language Identification) contains information about the language selected by the customer.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	01
Subfield length	2

---

<b>Attribute</b>	<b>Description</b>
Data representation	ans-3
Justification	N/A

### **Application notes**

Subfield 01 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### **Subfield 02 (Language Data)**

DE 108, subelement 04, subfield 02 (Language Data) contains additional MoneySend information in the language selected by the customer.

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Subfield ID	02
Subfield length	2
Data representation	b...50; LLVAR
Justification	N/A

### **Application notes**

Subfield 02 is optional for Mastercard Send Transactions (MoneySend Payment Transactions, Funding Transactions, and Gaming and Gambling Payments Transactions).

### **Subelement 05 (Digital Account Information)**

This subelement contains data specific to Mastercard Merchant Presented QR transactions.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	05
Subelement length	3	
Data representation	ans...99; LLVAR	

---

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Number of subfields	1	Subfield 01 (Digital Account Reference Number)
		Subfield 02 (Mastercard Merchant Presented QR receiving account number)

---

### **Application Notes**

Subelement 05 is used only for Mastercard Merchant Presented QR transactions.

#### **Subfield 01 (Digital Account Reference Number)**

DE 48, subelement 05, Subfield 01 (Digital Account Reference Number) is provided in a Mastercard Merchant Presented QR payment transaction to allow Receiving Institutions the ability to initiate a refund to the consumer via the Originating Institution.

#### **Attributes**

---

<b>Attribute</b>	<b>Description</b>
Subfield ID	01
Subfield length	2
Data representation	n...19; LLVAR
Justification	N/A

---

#### **Subfield 02 (Mastercard Merchant Presented QR receiving account number)**

DE 108, subelement 05, subfield 02 (Mastercard Merchant Presented QR Receiving Account Number) provided in a Mastercard Merchant Presented QR Funding Transaction contains the receiving account number.

#### **Attributes**

---

<b>Attribute</b>	<b>Description</b>
Subfield ID	02
Subfield length	2
Data representation	ans...34; LLVAR
Justification	NA

---

### Values

Valid account number of the receiver.

#### Application notes: Mastercard Merchant Presented QR transactions

##### Payment Transaction usage:

- Financial Transaction Advice/0220: Mastercard populates with value from PDS 0028 (Mastercard Merchant Presented QR Receiving Account Number)
- Financial Transaction Advice/0220: Debit Mastercard stand-in; Mastercard populates with value from Financial Transaction Request/0200 or Authorization Advice/0120

##### Refund payment transaction usage:

- Financial Transaction Advice/0220: Mastercard populates with value from PDS 0028
- Financial Transaction Advice/0220: Debit Mastercard stand-in; Mastercard populates with value from Financial Transaction Request/0200 or Authorization Advice/0120

##### Funding transaction usage:

- Financial Transaction Request/0200: optional. Edit must validate. Forward to destination if edit validates
- Financial Transaction Advice/0220: Mastercard populates with value from PDS 0028
- Financial Transaction Advice/0220: Debit Mastercard stand-in; Mastercard populates with value from Financial Transaction Request/0200 or Authorization Advice/0120

### Subelement 06 (QR Dynamic Code Data)

This subelement is available for regional data with limited Mastercard editing or data validation.

### Attributes

Attribute	Description	Value
Subelement ID	06	QR Dynamic Code Data
Subelement length	3	
Data representation	ans...237; LLLVAR	
Justification	Left	
Number of subfields	N/A	

### Values

If present, must be alphanumeric or special characters and a valid length.

#### Application notes: Mastercard Merchant Presented QR transactions

##### Payment Transaction usage:

- Financial Transaction Request/0200: optional. Edit must validate. Forward to destination if edit validates
- Financial Transaction Advice/0220: Mastercard populates with value from PDS 0029 (QR Dynamic Code Data)
- Financial Transaction Advice/0220: Debit Mastercard Stand-In—Mastercard populates with value from Financial Transaction Request/0200 or Authorization Advice/0120

**Refund payment transaction usage:**

- Financial Transaction Advice/0220—Mastercard populates with value from PDS 0029
- Financial Transaction Advice/0220—Debit Mastercard Stand-In—Mastercard populates with value from Financial Transaction Request/0200 or Authorization Advice/0120

**Funding transaction usage:**

- Financial Transaction Request/0200: optional. Edit must validate. Forward to destination if edit validates
- Financial Transaction Advice/0220: Mastercard populates with value from PDS 0029
- Financial Transaction Advice/0220: Debit Mastercard stand-In; Mastercard populates with value from Financial Transaction Request/0200 or Authorization Advice/0120

## DE 109 (Reserved for ISO Use)

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ISO reserves these data elements for future definition and use.

**Attributes**

Attribute	Description
Data representation	ans...999; LLLVAR
Data element length	3 positions, value =...999
Data field	Variable length, contents of positions 1–999
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 110 (Additional Data 2)

DE 110 (Additional Data-2) is reserved for use based on product type.

### Attributes

Attribute	Description
Data representation	ISO Standard: ans...999; LLLVAR Mastercard Standard: ans...999; LLLVAR
Data element length	3 positions, value =...999
Data field	Contents of subelements 1–10
Subelements	10
Justification	See "Subelements"

**NOTE:** ISO Standards define this data element as ans...999; LLLVAR however the Single Message System uses it as ans...100; LLLVAR.

### Usage

Following is the usage of DE 110 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	P	C
Financial Transaction Request Response/0210	C	X	C
Financial Transaction Advice/0220	C	X	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	.	X	C
Acquirer Reversal Advice/0420: acquirer initiated	C	P	C
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	C	P	C
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	C
Acquirer Reversal Advice/0420: acquirer initiated exception	C	P	C
Network Management Request/0800: PEK exchange and network management request	C	.	M
Network Management Request Response/0810: PEK exchange and network management response	C	M	M

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<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Network Management Advice/0820: PEK exchange	C	.	M

### **Application notes**

DE 110 provides supplemental data in a message when a specific ISO-designated data element is not available. It is a free-format, variable-length alphanumeric data element that may be used for multiple purposes. This data element's content may vary by program and service.

The following tables provide formats and descriptions for the subelements in DE 110. Currently, there are ten subelements but as subelements are added, the subelement sequence will not have to be in the order of ID value.

### **Subelement 1 (Merchant ID)**

Acquirers send this subelement to identify a specific merchant for tiered interchange calculations. Mastercard assigns the specific merchant ID value.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	01
Subelement length	n-2	06
Data representation	n-1	
Data field	Contents of subfield 1	
Justification	N/A	

### **Subfield 1 (Tiered Merchant ID)**

**Table 62: Attributes**

<b>Attribute</b>	<b>Value</b>
n-6	Contains the merchant ID.

### **Subelement 2 (Program Registration ID)**

The Program Registration ID monitors and tracks a participant's activity in special promotion programs, such as Quick Payment Service (QPS), Supermarket, Service Industries, Payment Transactions, and Warehouse Club programs.

This subelement is optionally received in the Financial Transaction Advice/0220 messages (Debit Mastercard Force Post messages).

## Attributes

Attribute	Description	Value
Subelement ID	n-2	02
Subelement length	n-2	03
Data representation	an-3	
Data field	Contents of subfield 1	
Justification	N/A	

## Subfield 1 (Promotional ID indicator)

**Table 63: Attributes**

Attribute	Value
an-3	<p>Valid values are:</p> <p>PAA = Prestigious Hotel (PH) transaction</p> <p>QXX = QPS transaction</p> <p>RXX = Service Industries transactions</p> <p>SXX = Supermarket transaction</p> <p>WXX = Warehouse Club transaction</p> <p>PAY = Payment Transaction</p> <p>The <b>xx</b> is an alphanumeric ID unique to each participant that is assigned by Mastercard.</p>

## Subelement 3 (PLUS Acquirer ID)

When Mastercard receives a Tier 1 acquirer ID in DE 110, subelement 3 in a Financial Transaction Request/0200 message, Mastercard will include DE 125, field 1 in the PLUS 0200 and 0420 messages.

## Attributes

Attribute	Description	Value
Subelement ID	n-2	03
Subelement length	n-2	11
Data representation	an-11	
Data field	Contents of subfield 1	

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<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Justification	Left-justified, blank-filled	

### **Subfield 1 (PLUS Acquirer ID)**

**Table 64: Attributes**

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<b>Attribute</b>	<b>Value</b>
an-11	Contains the value of the PLUS assigned acquirer ID; 11 bytes EBCDIC, left-justified, and blank-filled.

### **Subelement 4 (Visa International Fee Indicator)**

When Mastercard receives the PLUS supplied Visa Fee Indicator in the Financial Transaction Request/0200 message, and the issuer chooses to receive it, Mastercard will forward the information to the issuer in subfield 4.

In addition, the Visa Fee Indicator may be present in the Financial Transaction/0220 and the Acquirer Reversal Advice/0420 messages.

#### **Attributes**

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<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	04
Subelement length	n-2	01
Data representation	n-1	
Data field	Contents of subfield 1	
Justification	N/A	

### Subfield 1 (Visa International Fee Indicator)

Table 65: Attributes

Attribute	Value
n-1	Fixed length international fee indicator. Valid values are: 0 = No international fee 1 = International fee debited 2 = International fee credited

### Subelement 5 (Additional Card Information)

When available, this subelement provides Debit Mastercard issuers additional information about conditions surrounding the transaction.

This information may include

- how the cardholder was authenticated
- who authenticated the card
- what card data output capability was available
- the terminal data output capability, and
- what the PIN capture capability was at the time of the transition.

#### Attributes

Attribute	Description	Value
Subelement ID	n-2	05
Subelement length	n-2	12
Data representation	an-12	
Data field	Contents of subfields 1-12	
Justification	See "Subfields"	

## Values

**Table 66: Subfield 1 (Terminal Data: Card Data Input Capability)**

<b>Position</b>	<b>Attribute</b>	<b>Value</b>
1	an-1	<p>Valid values are:</p> <p>0 = Unknown; Data not available</p> <p>1 = Manual; no terminal</p> <p>2 = Magnetic stripe reader capability</p> <p>4 = Optical character reader (OCR) capability</p> <p>5 = Integrated circuit card (ICC) capability</p> <p>6 = Key entry-only capability</p> <p>A = PAN auto-entry via contactless magnetic stripe</p> <p>B = Magnetic stripe reader and key entry capability</p> <p>C = Magnetic stripe reader, ICC, and key entry capability</p> <p>D = Magnetic stripe reader and ICC capability</p> <p>E = ICC and key entry capability</p> <p>M = PAN auto-entry via contactless M/Chip</p> <p>V = Other capability</p>

**Table 67: Subfield 2 (Terminal Data: Cardholder Authentication Capability)**

<b>Position</b>	<b>Attribute</b>	<b>Value</b>
2	n-1	<p>Valid values are:</p> <p>0 = No electronic authentication capability</p> <p>1 = PIN entry capability</p> <p>2 = Electronic signature analysis capability</p> <p>5 = Electronic authentication capability is inoperative</p> <p>6 = Other</p> <p>9 = Unknown; data unavailable</p>

**Table 68: Subfield 3 (Terminal Data: Card Capture Capability)**

<b>Position</b>	<b>Attribute</b>	<b>Value</b>
3	n-1	Valid values are: 0 = No capture capability 1 = Card capture capability 9 = Unknown; data unavailable

**Table 69: Subfield 4 (Terminal Operating Environment)**

<b>Position</b>	<b>Attribute</b>	<b>Value</b>
4	n-1	Valid values are: 0 = No terminal used 1 = On card acceptor premises; attended terminal 2 = On card acceptor premises; unattended terminal 3 = Off card acceptor premises; attended 4 = Off card acceptor premises; unattended 5 = On cardholder premises; unattended 6 = Off cardholder premises; unattended 7 = Private use (Future use) 9 = Unknown; data unavailable

**Table 70: Subfield 5 (Cardholder Present Data)**

<b>Position</b>	<b>Attribute</b>	<b>Value</b>
5	an-1	Valid values are: 0 = Cardholder present 1 = Cardholder not present (unspecified) 2 = Cardholder not present (mail/facsimile transaction) 3 = Cardholder not present (phone order or from automated response unit [ARU]) 4 = Cardholder not present (standing order/recurring transactions) 5 = Cardholder not present (electronic order [PC, Internet, mobile phone, or PDA]) 9 = Unknown; data unavailable

**Table 71: Subfield 6 (Card Present Data)**

<b>Position</b>	<b>Attribute</b>	<b>Value</b>
6	n-1	Valid values are: 0 = Card not present 1 = Card present 9 = Unknown; data unavailable

**Table 72: Subfield 7 (Card Data: Input Mode)**

<b>Position</b>	<b>Attribute</b>	<b>Value</b>
7	an-1	<p>Valid values are:</p> <p>0 = Unspecified; data unavailable</p> <p>1 = Manual input; no terminal</p> <p>2 = Magnetic stripe reader input</p> <p>6 = Key entered input</p> <p>A = PAN auto-entry via contactless magnetic stripe</p> <p>B = Magnetic stripe reader input; track data captured and passed unaltered.</p> <p>C = Online Chip</p> <p>F = Offline Chip</p> <p>M = PAN auto-entry via contactless M/Chip</p> <p>N = Contactless input. PAN Mapping Service applied (This value is visible only to issuers; acquirers use value A or M.)</p> <p>S = Electronic commerce</p>

**Table 73: Subfield 8 (Cardholder Authentication Method)**

<b>Position</b>	<b>Attribute</b>	<b>Value</b>
8	an-1	<p>Valid values are:</p> <p>0 = Not authenticated</p> <p>1 = PIN</p> <p>2 = Electronic signature analysis</p> <p>5 = Manual signature verification</p> <p>6 = Other manual verification (such as a driver's license number)</p> <p>9 = Unknown; data unavailable</p> <p>S = Other systematic verification</p>

**Table 74: Subfield 9 (Cardholder Authentication Entity)**

<b>Position</b>	<b>Attribute</b>	<b>Value</b>
9	n-1	Valid values are: 0 = Not authenticated 1 = ICC—Offline PIN 2 = Card acceptance device (CAD) 3 = Authorizing agent: online PIN 4 = Merchant/card acceptor: signature 5 = Other 9 = Unknown; data unavailable

**Application notes: Subfield 8 and Subfield 9**

For chip transactions, the Cardholder Verification Method (CVM) used for that transaction will be specified using the following combination of values for subfield 8 and subfield 9.

<b>CVM</b>	<b>Subfield 8</b>	<b>Subfield 9</b>
Offline PIN	1	1
Online PIN	1	3
Signature	5	4
NO CVM	0	0

**Table 75: Subfield 10 (Card Data Output Capability)**

<b>Position</b>	<b>Attribute</b>	<b>Value</b>
10	an-1	Valid values are: 0 = Unknown; data unavailable 1 = None 2 = Magnetic stripe write 3 = ICC S = Other

**Table 76: Subfield 11 (Terminal Data Output Capability)**

<b>Position</b>	<b>Attribute</b>	<b>Value</b>
11	n-1	Valid values are: 0 = Unknown; data unavailable 1 = None 2 = Printing capability only 3 = Display capability only 4 = Printing and display capability

**Table 77: Subfield 12 (PIN Capture Capability)**

<b>Position</b>	<b>Attribute</b>	<b>Value</b>
12	an-1	Valid values are: 0 = No PIN capture capability 1 = Unknown; data unavailable 2 = Reserved 3 = Reserved 4 = PIN capture capability, 4 characters maximum 5 = PIN capture capability, 5 characters maximum 6 = PIN capture capability, 6 characters maximum 7 = PIN capture capability, 7 characters maximum 8 = PIN capture capability, 8 characters maximum 9 = PIN capture capability, 9 characters maximum A = PIN capture capability, 10 characters maximum B = PIN capture capability, 11 characters maximum C = PIN capture capability, 12 characters maximum

### **Subelement 6 (Business Service Arrangement)**

This subelement identifies for the Debit Mastercard issuer the business arrangement applied to this transaction. This includes information about the applicable card program identifier for the

transaction, the business relationship between the acquirer and issuer, and the interchange rules governing all participants in the transaction.

### Attributes

Attribute	Description	Value
Subelement ID	n-2	06
Subelement length	n-2	12
Data representation	ans-12	
Data field	Contents of subfields 1-4	
Justification	See "Subfields"	

### Values

**Table 78: Subfield 1 (Card Program Identifier)**

Attribute	Value
ans-3	Valid values are: DMC = Debit Mastercard

**Table 79: Subfield 2 (Business Service Arrangement Type Code)**

Attribute	Value
ans-1	Valid values are: 1 = Interregional 2 = Intraregional 3 = Intercountry 4 = Intracountry 8 = Member to member

**Table 80: Subfield 3 (Business Service ID Code)**

<b>Attribute</b>	<b>Value</b>
ans-6	<p>Identifies the business service to which the transaction is assigned for reconciliation and rules basis.</p> <p>For Interregional—FFTTnn</p> <ul style="list-style-type: none"> <li>• FF from region TT to regionnnunique number assigned to each interregional business service</li> </ul> <p>For Intraregional—RRnnnn</p> <ul style="list-style-type: none"> <li>• RR business regionnnnnunique number assigned to each intraregional business service</li> </ul> <p>For Intercountry—nnnnnn</p> <ul style="list-style-type: none"> <li>• nnnnnn—unique ID assigned to each intraregional business service</li> </ul> <p>For Intracountry—CCCnnn</p> <ul style="list-style-type: none"> <li>• CCC—ISO numeric country codenn—unique number assigned to each intracountry business service</li> </ul> <p>The two-digit billing and clearing region codes used in this subfield denoted with FF, TT, and RR above are defined as follows:</p> <p>01 = United States</p> <p>02 = Canada</p> <p>03 = Latin America/Caribbean, Central America, Mexico, South America</p> <p>04 = Asia Pacific</p> <p>05 = Europe</p> <p>06 = Middle East/Africa</p>

**Table 81: Subfield 4 (Interchange Rate Designator)**

<b>Attribute</b>	<b>Value</b>
ans-2	<p>The interchange rate designator is a two-position code that indicates the interchange rate and editing rules applied to the transaction.</p> <p>For more information on interchange rate designators refer to the <i>Interchange Manual</i>.</p>

## Subelement 7 (Settlement Service)

This subelement provides Debit Mastercard issuers additional information about the settlement of the transaction.

### Attributes

Attribute	Description	Value
Subelement ID	n-2	07
Subelement length	n-2	19
Data representation	ans-19	
Data field	Contents of subfields 1-4	
Justification	See "Subfields"	

### Subfield 1 (Settlement Service Level Code)

Attribute	Value
ans-1	1 = Regional
	2 = Intraregional

### Subfield 2 (Settlement Service ID Code)

Attribute	Value
ans-10	The settlement service ID code uniquely identifies the settlement service. The settlement service is included based on the settlement service ID selected by the receiving customer.

### Subfield 3 (Settlement Date)

Attribute	Value
ans-6	YYMMDD format  This date may be different from the date in DE 63 if the Debit Mastercard issuer's settlement bank is closed on the date that the transaction is received. If the issuer's settlement bank is closed, this date will be the next open date for the settlement bank.

### **Subfield (Settlement Cycle)**

<b>Attribute</b>	<b>Value</b>
ans-2	<p>Value 01: Cycle 1</p> <p>The settlement cycle is a two-digit field that identifies the settlement cycle of the transaction.</p>

### **Subelement 8 (Product ID)**

DE 110, subelement 8 (Product ID) provides issuers additional information about Product ID, also known as product code. This subelement is used to indicate the product code associated with a cardholder's account. This subelement is sent by the Single Message System to the issuer in a Financial Transaction Request/0200 message.

Using this subelement, issuers have the ability to update product code information by changing the value in DE 110, subelement 8 with the appropriate product code ID when generating a Financial Transaction Request Response/0210 message sent to the acquirer. Updating the value in subelement 8 is optional for issuers. Issuers can only change the product code value on certain debit Mastercard product codes; issuers are never able to update the product code on Maestro- or Cirrus-branded transactions.

Single Message acquirers should be prepared to receive DE 110, subelement 8 in the Financial Transaction Request Response/0210 message. Acquirers will see DE110, subelement 8 (when processor is enabled) on all transactions, not just those where the issuer has changed the value.

On transactions that have a Single Message System acquirer and issuer, the value of DE 110, subelement 8 sent to the issuer in the Financial Transaction Request/0200 message is also populated on the 80-byte Financial Institution Table file (either MS-PRODUCT-ID if branded Maestro or PRODUCT-ID if branded otherwise).

On transactions that have a Dual Message System acquirer and Single Message System issuer, the value of DE 110, subelement 8 sent to the issuer in the Financial Transaction Request/0200 message is populated from CIS DE 63 (Network Data), subfield 1 (Financial Network Code).

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	08
Subelement length	n-2	03
Data representation	an-3	
Data field	Contents of subfield 1	
Justification	See "Subfields"	

### **Subfield 1 (Product ID)**

<b>Attribute</b>	<b>Value</b>
an-3	Valid Mastercard and Maestro product ID.

The Single Message System provides specific Maestro product codes to more accurately track and process transactions conducted with Mastercard and non-Mastercard branded debit cards enabled with Maestro functionality.

<b>Maestro-enabled card product codes</b>	<b>Description</b>
OLR	Prepaid Maestro® Consumer Reloadable Card  Product code OLR is for Brazil domestic only and is not included in the <i>IPM Clearing Formats</i> manual.

### **DE 110, Subelement 8, product identifier values**

Immediate Debit products begin with "T" in the GCMS Product Identifier and have "immediate" in the description.

<b>Licensed product identifier</b>	<b>Licensed product identifier description</b>	<b>Product category</b>
ACS	Digital Debit	Debit
BPD	Business Premium Debit	Debit
CIR	CIRRUS®	Debit
DAG	Gold Debit Mastercard® Salary	Debit
DAP	Platinum Debit Mastercard® Salary	Debit
DAS	Standard Debit Mastercard® Salary	Debit
DLG	Debit Mastercard® Gold—Delayed Debit	Debit
DLH	Debit Mastercard® World Embossed—Delayed Debit	Debit
DLI	Debit Mastercard® Standard ISIC Student Card—Delayed Debit	Debit
DLP	Debit Mastercard® Platinum—Delayed Debit	Debit
DLS	Debit Mastercard® Card—Delayed Debit	Debit
DLU	Debit Mastercard® Unembossed—Delayed Debit	Debit

<b>Licensed product identifier</b>	<b>Licensed product identifier description</b>	<b>Product category</b>
DOS	Standard Debit Mastercard® Social	Debit
DWF	Debit Mastercard® Humanitarian Prepaid	Prepaid
MAB	World Elite™ Mastercard® for Business Card	Credit
MAC	Mastercard® World Elite™ Corporate Card	Credit
MBB	Mastercard Prepaid Consumer	Prepaid
MBC	Mastercard Prepaid Voucher	Prepaid
MBD	Mastercard® Professional Debit BusinessCard Card	Credit
MBD	Mastercard® Professional Debit BusinessCard Card	Credit
MBE	Mastercard Electronic™ Business Card	Credit
MBF	Mastercard® Alimentação (Food) (MBF–Prepaid Mastercard Food)	Prepaid
MBK	Mastercard Black™ Card	Credit
MBM	MBM Mastercard® Refeição (Meal) (MBM–Prepaid Mastercard Meal)	Prepaid
MBP	Mastercard Corporate Prepaid	Prepaid
MBS	Mastercard® B2B Product	Credit
MBT	Mastercard Corporate Prepaid Travel	Prepaid
MBW	World Mastercard® Black Edition—Debit	Debit
MCA	Mastercard Electronic™ Card	Credit
MCB	Mastercard® BusinessCard Card	Credit
MCC	Mastercard® Credit Card (mixed BIN)	Credit
MCD	Debit Mastercard® Card	Debit
MCE	Mastercard Electronic™ Card	Credit
MCF	Mastercard® Fleet Card	Credit
MCG	Gold Mastercard® Card	Credit
MCH	Mastercard® Premium Charge	Credit
MCI	Mastercard Select Debit	Debit
MCM	Mastercard Corporate Meeting Card	Credit

<b>Licensed product identifier</b>	<b>Licensed product identifier description</b>	<b>Product category</b>
MCO	Mastercard Corporate Card®	Credit
MCP	Mastercard® Purchasing Card	Credit
MCS	Standard Mastercard Card	Credit
MCT	Titanium Mastercard® Card	Credit
MCU	Unembossed Mastercard Card	Credit
MCV	Merchant-Branded Program	Credit
MCW	World Mastercard® Card	Credit
MDB	Debit Mastercard® BusinessCard Card	Credit
MDG	Gold Debit Mastercard® Card	Debit
MDH	Debit Other Embossed Mastercard Card	Debit
MDI	World Debit™ Mastercard® Card	Debit
MDJ	Debit Mastercard® (Enhanced)	Debit
MDK	Debit Other 2 Unembossed	Debit
MDL	Business Debit Other Embossed	Credit
MDM	Middle Market Fleet Card	Credit
MDN	Middle Market Purchasing Card	Credit
MDO	Debit Other	Debit
MDP	Platinum Debit Mastercard® Card	Debit
MDQ	Middle Market Corporate Card	Credit
MDR	Debit Brokerage <sup>6</sup>	Debit
MDS	Debit Mastercard® Card	Debit
MDT	Commercial Debit Mastercard® Card	Debit
MDU	Debit Unembossed Mastercard Card	Debit
MDW	MDW—( World Elite Debit Mastercard®)	Debit

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<sup>6</sup> Brokerage accounts will not be defined as debit if the account is swept in 14 or more days. Brokerage accounts swept under 14 days are considered debit accounts.

<b>Licensed product identifier</b>	<b>Licensed product identifier description</b>	<b>Product category</b>
MDW	MDW—(Mastercard Black™ Debit [LAC region excluding Mexico and Puerto Rico])	Debit
MEB	Mastercard Executive BusinessCard® Card	Credit
MEC	Mastercard Electronic™ Commercial	Credit
MED	Debit Mastercard® Electronic Card (Non-U.S.)	Credit
MEF	Mastercard Electronic™ Payment Account	Credit
MEO	Mastercard Corporate Executive Card®	Credit
MEP	Premium Debit Mastercard® Card	Debit
MET	Titanium Debit Mastercard Card	Debit
MFB	World Reserved	Credit
MFD	Flex Platinum	Credit
MFE	Flex Charge World Elite	Credit
MFH	Flex World	Credit
MFL	Flex Charge Platinum	Credit
MFR	Mastercard® Commercial Reward Funding	Debit
MFW	Flex Charge World	Credit
MGF	Mastercard® Government Commercial Card	Credit
MGP	Mastercard® Prepaid Gold Payroll	Prepaid
MGS	Platinum Mastercard® Prepaid General Spend	Prepaid
MHA	Mastercard® Healthcare Prepaid Non-tax	Prepaid
MHB	Mastercard® HSA Substantiated	Prepaid
MHC	Mastercard® Healthcare Credit Non-Substantiated	Credit
MHH	Mastercard® HSA Non-Substantiated	Prepaid
MIA	Prepaid Mastercard Unembossed Student Card	Prepaid
MIB	Mastercard Electronic™ Student Card	Credit
MIC	Mastercard® Student Card	Credit
MID	Debit Unembossed Mastercard Student Card	Debit

<b>Licensed product identifier</b>	<b>Licensed product identifier description</b>	<b>Product category</b>
MIG	Unembossed Mastercard Student Card	Credit
MIH	Debit Mastercard® Electronic Student Card	Credit
MIJ	Debit Mastercard® Unembossed Non-U.S. Student Card	Credit
MIK	Mastercard Electronic™ Prepaid Student Card	Prepaid
MIL	Prepaid Unembossed Mastercard Student Card (Non-U.S.)	Prepaid
MIP	Mastercard® Prepaid Student Card	Prepaid
MIP	Prepaid Debit Mastercard® Student Card	Prepaid
MIS	Debit Mastercard® Student Card	Debit
MIU	Debit Mastercard® Unembossed (Non-U.S.)	Credit
MKA	Digital Gold Debit	Debit
MKB	Digital Platinum Debit	Debit
MKC	Digital World Debit	Debit
MKD	Digital World Elite Debit	Debit
MKE	Digital Platinum	Credit
MKF	Digital World	Credit
MKG	Digital World Elite	Credit
MKH	Digital World Elite Exclusive	Credit
MLA	Mastercard® Central Travel Solutions Air Card	Credit
MLC	Mastercard® Micro-Business Card	Credit
MLD	Mastercard® Distribution Card	Credit
MLE	Mastercard® Pedágio Prepaid Card (MLE-Mastercard Brazil General Benefits)	Prepaid
MLL	Mastercard® Central Travel Solutions Land Card	Credit
MNF	Mastercard® Public Sector Commercial Card	Credit
MNW	Mastercard® World Card	Credit
MOC	Standard Maestro® Social	Debit

<b>Licensed product identifier</b>	<b>Licensed product identifier description</b>	<b>Product category</b>
MOG	Maestro® Gold Card	Debit
MOP	Maestro® Platinum	Debit
MOW	World Maestro®	Debit
MPA	Mastercard® Prepaid Debit Standard—Payroll	Prepaid
MPB	Mastercard® Preferred Business Card	Credit
MPC	Mastercard® Professional Card	Credit
MPD	Mastercard® Flex Prepaid	Prepaid
MPE	Name for GCMS Product ID MPE	Credit
MPF	Mastercard® Prepaid Debit Standard—Gift	Prepaid
MPG	Debit Mastercard® Standard Prepaid—General Spend	Prepaid
MPH	Mastercard® Cash	Debit
MPJ	Prepaid Mastercard Debit Voucher Meal/Food Card	Prepaid
MPK	Mastercard® Prepaid Government Commercial Card	Prepaid
MPL	Platinum Mastercard® Card	Credit
MPM	Mastercard® Prepaid Debit Standard—Consumer Incentive	Prepaid
MPN	Mastercard® Prepaid Debit Standard—Insurance	Prepaid
MPO	Mastercard® Prepaid Debit Standard—Other	Prepaid
MPP	Mastercard® Prepaid Card	Prepaid
MPQ	Mastercard® Prepaid Debit Standard—Government Disaster Relief	Prepaid
MPR	Mastercard® Prepaid Debit Standard—Travel	Prepaid
MPT	Mastercard® Prepaid Debit Standard—Teen	Prepaid
MPV	Mastercard® Prepaid Debit Standard—Government	Prepaid
MPW	Debit Mastercard® Business Card Prepaid Workplace Business to Business	Prepaid
MPX	Mastercard® Prepaid Debit Standard—Flex Benefit	Prepaid

<b>Licensed product identifier</b>	<b>Licensed product identifier description</b>	<b>Product category</b>
MPY	Mastercard® Prepaid Debit Standard—Employee Incentive	Prepaid
MPZ	Mastercard® Prepaid Debit Standard—Government Consumer	Prepaid
MRB	Mastercard® Prepaid Electronic Business Card (Non-U.S.)	Prepaid
MRC	Prepaid Mastercard Electronic™ Card (Non-U.S.)	Prepaid
MRD	Platinum Debit Mastercard® Prepaid General Spend	Prepaid
MRF	European Regulated Individual Pay	Credit
MRG	Mastercard® Prepaid Card (Non-U.S.)	Prepaid
MRH	Mastercard® Platinum Prepaid Travel Card	Prepaid
MRJ	Prepaid Mastercard Voucher Meal/Food Card	Prepaid
MRK	Prepaid Mastercard® Public Sector Commercial Card	Prepaid
MRL	Prepaid Mastercard Electronic Commercial Card (Non-U.S.)	Prepaid
MRO	Mastercard® Rewards Only	Credit
MRP	Standard Retailer Centric Payments	Credit
MRS	Prepaid Mastercard® ISIC Student Card	Prepaid
MRW	Prepaid Mastercard BusinessCard® (Non-U.S.)	Prepaid
MSA	Prepaid Maestro® Payroll Card	Prepaid
MSB	Maestro® Small Business Card	Debit
MSD	Mastercard Deferred Debit Consumer	Credit
MSF	Prepaid Maestro® Gift Card	Prepaid
MSG	Prepaid Maestro® Consumer Reloadable Card	Prepaid
MSI	Maestro® Card	Debit
MSJ	Maestro® Prepaid Voucher Meal and Food Card	Prepaid
MSM	Maestro® Prepaid Consumer Promotion Card	Prepaid
MSN	Maestro® Prepaid Insurance Card	Prepaid

<b>Licensed product identifier</b>	<b>Licensed product identifier description</b>	<b>Product category</b>
MSO	Maestro® Prepaid Other Card	Prepaid
MSP	Muse Mastercard®	Credit
MSQ	Reserved for Future Use	N/A
MSR	Prepaid Maestro® Travel Card	Prepaid
MSS	Maestro® Student Card	Debit
MST	Prepaid Maestro® Teen Card	Prepaid
MSV	Prepaid Maestro® Government Benefit Card	Prepaid
MSW	Prepaid Maestro® Corporate Card	Prepaid
MSX	Prepaid Maestro® Flex Benefit Card	Prepaid
MSY	Prepaid Maestro® Employee Incentive Card	Prepaid
MSZ	Prepaid Maestro® Emergency Assistance Card	Prepaid
MTP	Mastercard® Platinum Prepaid Travel Card	Prepaid
MUP	Premium Debit Unembossed Mastercard Card	Debit
MUS	Prepaid Unembossed Mastercard Card	Prepaid
MUW	Mastercard® World Domestic Affluent	Credit
MVA	Mastercard B2B VIP 1	Credit
MVB	Mastercard B2B VIP 2	Credit
MVC	Mastercard B2B VIP 3	Credit
MVD	Mastercard B2B VIP 4	Credit
MVE	Mastercard B2B VIP 5	Credit
MVF	Mastercard B2B VIP 6	Credit
MVG	Mastercard B2B VIP 7	Credit
MVH	Mastercard B2B VIP 8	Credit
MVI	Mastercard B2B VIP 9	Credit
MVJ	Mastercard B2B VIP 10	Credit
MVK	Mastercard B2B VIP 11	Credit

<b>Licensed product identifier</b>	<b>Licensed product identifier description</b>	<b>Product category</b>
MWB	World Mastercard® for Business Card	Credit
MWD	World Deferred	Credit
MWE	World Elite™ Mastercard® Card	Credit
MWF	Mastercard® Humanitarian Prepaid	Prepaid
MWO	World Elite™ Mastercard® Corporate Card	Credit
MWP	Mastercard® World Prepaid	Prepaid
MWR	World Retailer Centric Payments	Credit
MXB	Debit Card X Code	Credit
MXG	Gold Debit Mastercard® Card	Debit
MXO	Debit Card Other	Debit
MXP	Platinum Debit Mastercard® Card	Debit
MXR	Debit Card Brokerage	Debit
MXS	StandardDebit Mastercard® Card	Debit
OLB	Maestro® Small Business—Delayed Debit	Debit
OLG	Maestro® Gold—Delayed Debit	Debit
OLI	ISIC Maestro® Student Card—Delayed Debit	Debit
OLP	Maestro® Platinum—Delayed Debit	Debit
OLS	Maestro®—Delayed Debit	Debit
OLW	World Maestro® Delayed Debit	Debit
PMC	Proprietary Credit Card (Sweden domestic)	N/A
PMD	Proprietary Debit Card (Sweden domestic)	N/A
PSC	Common Proprietary Swedish Credit Card	N/A
PSD	Common Proprietary Swedish Debit Card	N/A
PVA	Private Label A	N/A
PVB	Private Label B	N/A
PVC	Private Label C	N/A

<b>Licensed product identifier</b>	<b>Licensed product identifier description</b>	<b>Product category</b>
PVD	Private Label D	N/A
PVE	Private Label E	N/A
PVF	Private Label F	N/A
PVG	Private Label G	N/A
PVH	Private Label H	N/A
PVI	Private Label I	N/A
PVJ	Private Label J	N/A
PVL	Private Label L	N/A
SAG	Gold Mastercard® Salary—Immediate Debit	Debit
SAL	Standard Maestro® Salary	Debit
SAP	Platinum Mastercard® Salary—Immediate Debit	Debit
SAS	Standard Mastercard Salary—Immediate Debit	Debit
SBP	Small business prepaid	Debit
SOS	Standard Mastercard Social—Immediate Debit	Debit
SUR	Prepaid Unembossed Mastercard Card (Non-U.S.)	Prepaid
TBE	Mastercard Electronic™ Business—Immediate Debit	Credit
TCB	Mastercard Executive BusinessCard®—Immediate Debit	Credit
TCC	Mastercard® (mixed BIN)—Immediate Debit	Debit
TCE	Mastercard Electronic™—Immediate Debit	Debit
TCF	Mastercard® Fleet Card—Immediate Debit	Credit
TCG	Gold Mastercard® Card—Immediate Debit	Debit
TCO	Mastercard® Corporate—Immediate Debit	Credit
TCP	Mastercard® Purchasing Card—Immediate Debit	Credit
TCS	Mastercard® Standard Card—Immediate Debit	Debit
TCW	World Signia Mastercard Card—Immediate Debit	Debit
TDN	Middle Market Mastercard Purchasing Card— Immediate Debit	Credit

Licensed product identifier	Licensed product identifier description	Product category
TEB	Mastercard Executive BusinessCard®	Credit
TEC	Mastercard Electronic™ Commercial—Immediate Debit	Credit
TEO	Mastercard® Corporate Executive Card—Immediate Debit	Credit
TIB	Mastercard Electronic™ Student Card—Immediate Debit	Debit
TIC	Mastercard Student Card—Immediate Debit	Debit
TIU	Mastercard® Unembossed—Immediate Debit	Debit
TLA	Mastercard® Central Travel Solutions Air—Immediate Debit	Credit
TNF	Mastercard® Public Sector Commercial Card—Immediate Debit	Credit
TNW	Mastercard® New World—Immediate Debit	Debit
TPB	Mastercard® Preferred Business Card—Immediate Debit	Credit
TPC	Mastercard® Professional Card—Immediate Debit	Credit
TPL	Platinum Mastercard®—Immediate Debit	Debit
TWB	World Mastercard® Black Edition—Immediate Debit	Debit
WBE	World Mastercard® Black Edition	Credit
WDR	World Debit Mastercard Rewards	Debit
WMR	World Mastercard Rewards	Credit
WPD	World Prepaid Debit	Prepaid

**Subelement 9 (ANSI X9 TR-31 Key Block Key [128-bit Key Block Protection Key])**

DE 110, subelement 9 (ANSI X9 TR-31 Key Block Key [128-bit Key Block Protection Key]) contains the attributes provided in a Network Management Request/0800 message.

**Attributes**

Attribute	Description	Value
Subelement ID	n-2	09

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement length	n-3	080
Data representation	an-80	

### **Usage**

Following is the usage of subelement 09 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Network Management Request/0800 (PEK Exchange)	.	M	M
Network Management Request Response/0810 (PEK Exchange)	O	C	.
Network Management Request Advice/0820 (PEK Exchange)	.	.	.

**NOTE:** For additional information customers should refer to the X9 TR-31 Interoperable Secure Key Exchange Key Block Specification for Symmetric Algorithms specifications.

### **Subelement 9 (ANSI X9 TR-31 Key Block Key [192-bit Key Block Protection Key])**

DE 110, subelement 9 (ANSI X9 TR-31 Key Block Key [192-bit Key Block Protection Key]) contains the attributes provided in a Network Management Request/0800 message.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-2	09
Subelement length	n-3	096
Data representation	an-96	

### **Usage**

Following is the usage of subelement 09 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Network Management Request/0800: PEK exchange	.	M	M
Network Management Request Response/0810: PEK exchange	O	C	.

---

Message	Org	Sys	Dst
Network Management Request Advice/0820: PEK exchange	.	.	.

### **Subelement 10 (Key Check Value)**

DE 110, subelement 10 (Key Check Value) contains the attributes in a Network Management Request/0800 message.

#### **Attributes**

Attribute	Description	Value
Subelement ID	n-2	10
Subelement length	n-3	006
Data representation	an-6	

#### **Usage**

Following is the usage of subelement 10 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

Message	Org	Sys	Dst
Network Management Request/0800: PEK exchange	.	M	M
Network Management Request Response/0810: PEK exchange	O	C	.
Network Management Request Advice/0820: PEK exchange	C	.	C

## **DE 111 (Amount, Currency Conversion Assessment)**

DE 111 (Amount, Currency Conversion Assessment) is the amount calculated by the Single Message System that is the result of the currency conversion assessment being applied to qualifying transactions.

#### **Attributes**

Attribute	Description
Data representation	ISO Standard: ans...999; LLLVAR Mastercard Standard: n...012; LLLVAR
Data element length	3 positions, value = ...012

---

<b>Attribute</b>	<b>Description</b>
Data field	Variable length, contents of positions 1-999
	Variable length, contents of positions 1-12
Subfields	None
Justification	Right-justified with leading zeros

---

**NOTE:** ISO Standards define this data element as ans...999; LLLVAR however the Single Message System uses it as n...012; LLLVAR.

### Usage

Following is the usage of DE 111 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	•	X	C
Financial Transaction Advice/0220	•	X	C
Acquirer Reversal Advice/0420: acquirer initiated	•	X	C
Acquirer Reversal Advice/0420: Time-out induced, acquirer initiated	•	X	C
Acquirer Reversal Advice/0420: time-out induced, system initiated	•	X	C
Acquirer Reversal Advice/0420: exception, system initiated	•	X	C

### Application notes

The Single Message System automatically inserts this data element into all originating 0200 (request), 0220 (force post), and 0420 (reversal) online messages, only when Currency Conversion Assessment has been applied to the transaction. The currency code for data element 111 must be expressed in DE 51 (Cardholder Billing Currency).

Amounts are expressed without a decimal separator. For currencies that support exponents, users and systems are responsible for placing the decimal separator appropriately.

Refer to the *Single Message System Programs and Services* manual for additional information on currency conversion and to the *Quick Reference Booklet* for a listing of currencies and their exponents.

**NOTE:** DE 111 (Amount, Currency Conversion Assessment) will not be present in Financial Transaction Advice/0220: Debit Mastercard stand-in messages.

## DE 112 (Additional Data [National Use])

DE 112 (Additional Data [National Use]) is reserved for national organizations to define data unique to specific networks or specific programs and services.

### Attributes

Attribute	Description
Data Representation	ISO Standard: ans...999; LLLVAR Mastercard Standard: ans...248; LLLVAR
Data Element Length	3 positions, value = ...248
Data Field	Contents of subelements 1–27
Subelements	19
Justification	See "Subelements"

**NOTE:** ISO Standards define this data element as ans...999; LLLVAR however the Single Message System uses it as ans...248; LLLVAR.

### Usage

Following is the usage of DE 112 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	P	C
Financial Transaction Request Response/0210	C	P	C
Financial Transaction Advice/0220	C	P	C
Financial Transaction Advice Response/0230	C	P	C
Acquirer Reversal Advice/0420: acquirer initiated	.	X	C
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	.	X	C
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	C
Acquirer Reversal Advice/0420: exception, system initiated	.	X	C
Acquirer Reversal Advice/0420: acquirer initiated exception	.	X	C
Administrative Advice/0620: processor initiated time-based exception	C	P	C

### Application notes

The Single Message System uses this data element to support the Parcelas, CDC (time-based transactions), Post Dated, and Installment Transaction products. Parcelas provides acquirers and issuers with the ability to support a recurring payment option at the point of service.

**NOTE:**

**Parcelas, CDC, Post Dated, and Installment support are presently limited to Maestro® intracurrency transactions in Brazil.**

**The ATM Credit Card Cash Advance Installments Service is limited to regions/countries that have agreed to participate.**

The Single Message System supports Parcelas, CDC, Post Dated, ATM Credit Card Cash Advance, and Installment Transaction products.

- **CDC:** Consumers at the point of interaction can make an "inquiry" requesting time pay options for a major purchase. The issuer can respond, providing up to four financing plans for the consumer to choose. The consumer can then select one of the options and the merchant submits the "purchase" request in another transaction. The consumer is then billed monthly for the installment payment.
- **Parcelas with interest:** Under this option, the length of repayment installments ranges from two to six months. The transaction is billed monthly to the cardholder. The authorization returned to the acquirer includes the amount of interest over the total installment value and taxes on interest.
- **Post Dated:** A transaction is authorized in real time with the associated payment due to the issuer up to sixty (60) days from the date of the original authorization. No settlement occurs at transaction time. A merchant may pay a "warranty fee" to guarantee funds availability once the issuer authorizes the transaction. Warranty fees are collected at the time of settlement.
- **Installment:** A transaction is authorized in real time with payments to the merchant spread over a predetermined number of months with monthly installments on the balance. A merchant may pay a "warranty fee" to guarantee funds availability for each installment.
- **Merchant-generated installment:** Time-based payments are known locally as *crediario loja*, and enable merchants and customers to negotiate the timing of cardholder debits for a purchase. The merchant is paid on day one, while the cardholder may be debited by the issuer at a later date. Payment can be split into several installments. These transactions display under the Maestro POS brand.
- **ATM credit card cash advance installments:** For participating region/countries, a cardholder at an ATM can make an inquiry requesting a credit card cash advance with payments extending over a scheduled number of installments. The issuer responds and accepts the cardholder's installment schedule, offers an alternate installment schedule, or declines the transaction. The cardholder can accept or reject the issuer's terms. If accepted, the acquirer submits the withdrawal transaction.

**NOTE: The ATM Credit Card Cash Advance Installments Service is limited to regions/countries that have agreed to participate.**

**NOTE:**

CDC Inquiry transactions must include DE 61 (Point of Service [POS] Data) where position 7 equals 3.

If the acquirer sends a transaction type other than "50" in subelement 1 and the issuer returns a transaction type "50", the Single Message System will create a 0420 reversal message to the issuer with a DE 60 value of 4540000 to indicate a format error in the Financial Transaction Request Response/0210 message. The Single Message System will return the Financial Transaction Request Response/0210 to the acquirer with a DE 39 value of "91".

For customers in Brazil that participate in Merchant Generated Installment Payments, if the acquirer sends a transaction type of 70 in DE 112, subelement 1, the Single Message System will include DE 112, DE 112, subelement 1 in Reversal Advice/0420 messages.

An ATM Credit Card Cash Advance Installments Withdrawal transaction, in which Point of Service (POS) Data (DE 61) position 7 equals 0, cannot occur without a preceding ATM Credit Card Cash Advance Installments Inquiry transaction in which DE 61, position 7 equals 3.

**Values**

The overall length of DE 112 is restricted to 251 bytes.

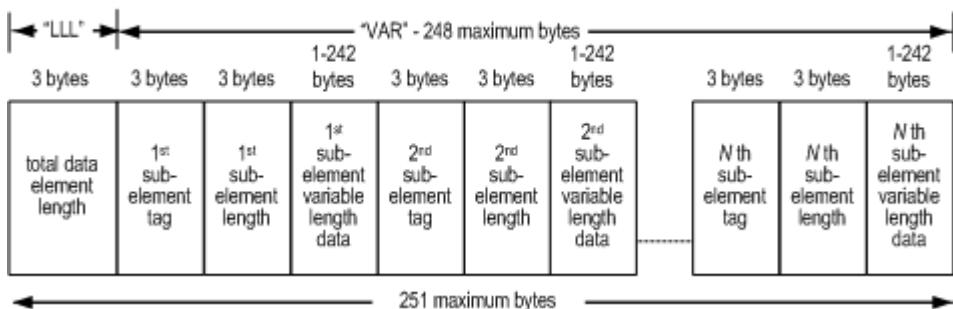
The Single Message System organizes DE 112 into a group of encoded subelements. A three-byte ID and an associated three-byte length indicator identify each subelement.

The first three bytes of each subelement must contain an ID in the range 000–999 to specify the type of DE 112 subelement. Individual requirements define the use and content of the DE 112 subelement.

The second three bytes of each subelement must contain a length indicator in the range 000–999.

The following diagram reflects the construction of DE 112 as well as the subelements it may contain.

## DE 112 (Subelement Contents)



The following table details which DE 112 subelements are required and optional for each message type.

<b>Subelements</b>		<b>1</b>	<b>2</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>18</b>	<b>19</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>
<b>Message</b>	<b>Type</b>																			
Parcelas	M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
0200																				
Parcelas	M	M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
0210																				
CDC Inquiry	M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
0200																				
CDC Inquiry	M	.	.	.	.	.	M	O	O	O	O	.	.	.	.	.	.	.		
0210																				
CDC Purchase	M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
0200																				
CDC Purchase	M	.	.	.	.	.	M	O	.	.	.	.	.	.	.	.	.	.		
0210																				
Post Dated	M	.	.	.	.	.	.	.	.	.	.	O	.	.	.	.	.	.	.	
0200																				
Post Dated	M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
0210																				
Completion	M	.	.	.	.	.	M	.	.	.	.	.	.	.	.	.	.	.	.	
—Post																				
Dated 0200																				
Completion	M	.	.	.	.	.	M	.	.	.	.	.	.	.	.	.	.	.	.	
—Post																				
Dated 0220																				
Completion	M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
—Post																				
Dated 0230																				
Installment	M	.	.	.	.	.	.	.	.	.	.	.	M	.	.	.	.	.	.	
0200																				
Installment	M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
0210																				
Completion	M	.	.	.	.	.	.	.	.	.	.	.	M	.	.	.	.	.	.	
—																				
Installment																				
0200																				

<b>Subelements</b>		1	2	4	5	6	11	12	13	14	15	16	18	19	22	23	24	25	26	27
<b>Message</b>	<b>Type</b>																			
Completion	M	.	.	.	.	.	.	.	.	.	.	.	.	M	.	.	.	.	.	
—																				
Installment																				
0220																				
Completion	M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
—																				
Installment																				
0230																				
Merchant	M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	M	.	.	
Generated																				
Installment																				
Payment																				
0200																				
Merchant	M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	M	O	.	.	
Generated																				
Installment																				
Payment																				
0210																				
Merchant	M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
Generated																				
Installment																				
Payment																				
0420																				
Positive ID	M	.	.	.	.	.	.	.	.	.	.	.	.	.	M	.	.	.	.	
0200																				
Positive ID	M	.	.	.	.	.	.	.	.	.	.	.	.	.	C	.	.	.	.	
0210																				
Construcar	O	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
d 0200																				
Construcar	M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
d 0210																				
Trishop	M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
0200																				
Trishop	M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
0210																				
Time Based	M	.	.	.	.	.	.	.	.	.	.	.	.	M	.	.	M	.	.	
post -dated																				
0620																				

<b>Subelements</b>		<b>1</b>	<b>2</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>18</b>	<b>19</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>
<b>Message</b>																				
<b>Type</b>		<b>1</b>	<b>2</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>18</b>	<b>19</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>
Time Based installment data 0620		M	.	.	.	.	.	.	.	.	.	.	M	.	.	M	.	.	.	
ATM CCCA Inquiry 0200		M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	M	
ATM CCCA Inquiry 0210		M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	M	
ATM CCCA Withdrawal 0200		M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	M	
ATM CCCA Withdrawal 0210		M	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	M	
ATM CLUF Mexico Domestic 0210/0420		.	.	O	O	O	.	.	.	.	.	.	.	.	.	.	.	.	.	

## Additional Data (National Use) Subelements

These subelements are available in DE 112.

### Subelement 1 (Time Payment Options)

This subelement defines the type of time payment option for Financial Transaction Request/0200 and Financial Transaction Request Response/0210 messages.

**Table 82: Subelement 1**

<b>Subelement 1</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1-3	n-3	001
Subelement length	4-6	n-3	008

<b>Subelement 1</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Transaction type	7-8	an-2	Valid values are: 10 = CDC Purchase 11 = CDC Inquiry 21 = Parcelas Purchase 30 = Post dated with guarantee 31 = Post dated without guarantee 40 = Installment with guarantee 41 = Installment without guarantee 50 = Construcard 60 = Trishop 70 = Merchant-generated installment 80 = ATM credit card cash advance Installments Inquiry 81 = ATM credit card cash advance installments withdrawal
Number of installments	9-10	n-2	Number of installments for the specified transaction type.
Installment Date	11-14	n-4	Format: DDMM

### **Application notes**

Brazil installment payment data sent in a Financial Transaction Request/0200 message will be validated through system edits.

### **Maestro installment transactions**

<b>When...</b>	<b>Then the Single Message System...</b>
DE 112 (Additional Data [National Use]), subelement 1 (Time Payment Options), positions 7-8 contains value 40 (Installment with Guarantee) or 41 (Installment without Guarantee), and	declines the transaction in the Financial Transaction Request Response/0210 message where <ul style="list-style-type: none"> <li>• DE 39 (Response Code) contains value 30 (Format error)</li> <li>• DE 44 (Additional Response Data) contains value 112 (indicating the data element in error)</li> </ul>
DE 112, subelement 19 (Maestro Installment Transactions [preauthorization and completion]) is not present	

### **Merchant-generated installment payments transactions**

<b>When...</b>	<b>Then the Single Message System...</b>
DE 112 (Additional Data [National Use]), subelement 1 (Time Payment Options), positions 7–8 contains value 70 (Merchant Generated Installment), And DE 112, subelement 25 (Merchant Generated Installment Payments Transactions [preauthorization and completion]) is not present	declines the transaction in the Financial Transaction Request Response/0210 message where: <ul style="list-style-type: none"> <li>• DE 39 contains value 30</li> <li>• DE 44 contains value 112</li> </ul>

### **ATM Credit Card Cash Advance Installments**

<b>WHEN...</b>	<b>THEN the Single Message System...</b>
DE 112 (Additional Data [National Use]), subelement 1 (Time Payment Options), positions 7–8 contains value 81 (ATM Credit Card Cash Advance Installments Withdrawal), And DE 112, subelement 27 (ATM Credit Card Cash Advance Installments) is not present	Declines the transaction in the Financial Transaction Request Response/0210 message where: <ul style="list-style-type: none"> <li>• DE 39 contains value 30</li> <li>• DE 44 contains value 112</li> </ul>

### **Subelement 2 (Parcelas Transaction)**

This subelement contains all the data that is related to a Parcelas transaction for Financial Transaction Request Response/0210 messages.

**Table 83: Subelement 2**

<b>Subelement 2</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1–3	n-3	002
Subelement length	4–6	n-3	032
Transaction type	7–8	an-2	Valid values are: 21 = Parcelas transaction
Number of installments	9–10	n-2	Number of chosen installments, from inquiry requests.
Installment interest	11–22	n-12	Estimated installment amount with interest.

<b>Subelement 2</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Purchase plus interest amount	23–34	n-12	Total amount of transactions with interest.
Annual interest rate	35–38	n-4	Annual interest rate for the installment.

#### **Subelement (Credit Line Usage Fee [CLUF])**

This subelement contains the CLUF and its associated currency code for credit card cash advance (CCCA) ATM transactions.

**Table 84: Subelement 4**

<b>Subelement 4</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1–3	n-3	004
Subelement Length	4–6	n-3	011
Currency code	7–9	n-3	Contains the currency code associated with the CLUF
Fee amount	10–17	n-8	Contains the fee amount of the CLUF Right-justified with leading zeros

#### **Subelement 5 (Issuing Bank Name [AKA Doing Business As {DBA}])**

This subelement contains the issuing bank name (DBA) for CCCA ATM transactions where the CLUF applies.

**Table 85: Subelement 5**

<b>Subelement 5</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1–3	n-3	005
Subelement length	4–6	n-3	020
Issuing bank Name (DBA)	7–26	ans-20	Contains the issuing bank name (DBA). Left-justified with trailing spaces.

### **Subelement 6 (Financial Institution ID [FIID])**

DE 112, subelement 006 (Financial Institution ID [FIID]) is used in Credit Line Usage Fee (CLUF) transactions on ATM credit card cash advances in a Financial Transaction Request Response/0210 message.

**Table 86: Subelement 6**

<b>Subelement 6</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1–3	n-3	006
Subelement length	4–6	n-3	004
Financial Institution ID	7–10	ans-4	Contains the Financial Institution ID Left-justified with trailing spaces.

### **Subelement 11 (CDC Inquiry and Purchase)**

This subelement contains all of the data for a CDC (time-based transactions) Inquiry and Purchase in a Financial Transaction Request Response/0210 message.

**Table 87: Subelement 11**

<b>Subelement 11</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1–3	n-3	011
Subelement Length	4–6	n-3	041
Installment amount for YY installments	7–17	n-11	Installment amount for the number of installments chosen; two decimal positions
Total amount of transaction with interest and tax	18–28	n-11	Total amount to be repaid via installments with interest and tax; two decimal positions
Monthly interest rate	29–33	n-5	Monthly interest rate for the amount to be repaid through installments; two decimal positions
Tax amount	34–41	n-8	Tax Amount (IOF: Tax on Financial transactions—"imposto sobre Operações Financeiras") calculated by the issuer; two decimal positions

---

<b>Subelement 11</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
CET: total annual effective cost	42-47	n-6	CET: Total annual effective cost—"Custo Efetivo Total" (including interest amount, taxes and fees charged to the cardholder), two decimal positions. This amount is mandated by Local Law — Resolucao 3517 by Central Bank do Brasil.

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#### **Subelement 12 (CDC Inquiry)**

**For CDC (time-based transactions) inquiry Financial Transaction Request Response/0210 messages.**

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<b>Subelement 12</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1-3	n-3	012
Subelement Length	4-6	n-3	002
Additional Installment Options	7-8	n-2	nn = number of additional installment options the issuer is offering (detailed in subtags 13 through 16, if applicable)

---

**For CDC purchase Financial Transaction Request Response/0210 messages.**

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<b>Subelement 12</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1-3	n-3	012
Subelement Length	4-6	n-3	181
Not used	7	ans-1	Space filled
Not used	8-12	n-5	Filled with zeros
Not used	13-16	n-4	Filled with zeros
Not used	17-20	n-4	Filled with zeros
Free text	21-188	ans-168	Text available to issuer to send terms of responsibility of the cardholder to the issuer to be printed on the purchase receipt and marketing messages.

---

### **Subelement 13-16 (CDC Inquiry)**

For CDC Inquiry Financial Transaction Request Response/0210 messages.

**Table 88: Subelement 13-16**

<b>Subelement 13-16</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1-3	n-3	013
Subelement length	4-6	n-3	037
Number of installments	7-10	a-4	Number of total installments for the CDC transaction. Format is XXYY XX = 20 installment with interest YY = option 2 number of installments
Installment amount for YY installment	11-21	n-11	Installment amount for the specific number of installments chosen; two decimal positions
Total amount of transaction with interest and tax	22-32	n-11	Total transaction amount to be repaid through installments, with interest and tax; two decimal positions
Not used	33-37	n-5	Filled with zeros
CET—total annual effective cost	38-43	n-6	CET—total annual effective cost "Custo Efetivo Total" (including interest amount, taxes, and fees charged to the cardholder); two decimal positions. This amount is mandated by Local Law—Resolucao 3517 by Central Bank of Brazil.

### **Subelement 18 (Post-Dated Transactions [preauthorization and completion])**

For Post Dated Transactions (preauthorization and completion). Values supplied by the acquirer.

#### **Subelement 18**

<b>Subelement 18</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1-3	n-3	018
Subelement length	4-6	n-3	045
Guarantee	7	a-1	The status of the transaction. Valid values are: Y = Yes (Guaranteed) N = No (Not guaranteed)

<b>Subelement 18</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Guarantee amount	8-15	n-8	The amount of the guarantee in local currency; zero if no guarantee; assumed to be a credit to the issuer
Proposed settlement date	16-21	n-6	Proposed settlement date (expected date for completion message arrival) Format: MMDDYY
Original Mastercard settlement date	22-27	n-6	Mastercard settlement date of original preauthorization; contains zeros for preauthorization message Format: MMDDYY
Original Mastercard switch serial number	28-36	n-9	Original switch serial number assigned by the Dual Message System to original preauthorization request; contains zeros on preauthorization message
Interchange amount DR/CR indicator	37	a-1	Indicates if the value is a credit or debit to the receiver. Valid values are: C = Credit D = Debit
Interchange amount	38-45	n-8	Interchange amount associated with completion message with debit/credit indicator; contains zeros on preauthorization message; two decimal positions
Authorization code	46-51	n-6	Contains the online authorization code provided by the issuer on the original preauthorization response

**Subelement 19 (Maestro Installment Transactions [preauthorization and completion])**

For Maestro Installment Transactions (preauthorization and completion). Values supplied by acquirer.

**Subelement 19**

<b>Subelement 19</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1-3	n-3	019
Subelement length	4-6	n-3	049

<b>Subelement 19</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Guarantee	7	a-1	Indicates the status of the transaction. Valid values are: Y = Yes (Guaranteed) N = No (Non-Guaranteed)
Guarantee Amount	8-15	n-8	The amount of guarantee in local currency; zero if no guarantee; assumed to be a credit to the issuer
Number of installments	16-17	n-2	Number of requested installments; typically value between 2 and 6; not edited
Number of this installment	18-19	n-2	Number in sequence of this completion transaction; zero for preauthorization request
Date of first installment	20-25	n-6	Contains zeros for completion messages Format: MMDDYY
Original Mastercard transaction date	26-31	n-6	Mastercard settlement date of original preauthorization; contains zeros on preauthorization message Format: MMDDYY
Original Mastercard switch serial number	32-40	n-9	Assigned by Dual Message System to original preauthorization request; contains zeros on preauthorization message
Interchange amount DR/CR indicator	41	a-1	Indicates if the value is a credit or debit to the receiver. Valid values are: C = Credit D = Debit
Interchange amount	42-49	n-8	Associated with completion message with debit/credit indicator; contains zeros on preauthorization message; two decimal position
Authorization code	50-55	n-6	Contains the online authorization code provided by the issuer on the original preauthorization response

### **Subelement 22 (Positive ID Transactions)**

DE 112, subelement 22 contains positive ID data for Positive ID transactions.

#### **Subelement 22**

<b>Subelement 22</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1–3	n-3	022
Subelement length	4–6	n-3	016
Terminal PID capable	7	a-1	<p>Used in the Brazil Redeshop program to indicate that the customer can handle Positive ID encryption processing. The default value for this field is N. Valid values are:</p> <p>Y = Yes, the customer can handle Positive ID encryption processing.</p> <p>N = No, the customer can not handle Positive ID encryption processing.</p>
PID requested	8	a-1	<p>Valid values are:</p> <p>Y = Yes</p> <p>N = No</p>
Information ID Code 1: day of birth	9	1 byte hex	01 to 0C
Information length 1	10	1 byte hex	01 to 0C
Information ID code 2: month of birth	11	1 byte hex	01 to 0C
Information length 2	12	1 byte hex	01 to 0C
Information ID code-3 (year of birth)	13	1 byte hex	01 to 0C
Information length 3	14	1 byte hex	01 to 0C
Positive ID	15–22	64 bit = 8 bytes	concatenated response in ANSI PIN block format

### **Subelement 23 (Positive ID Translation/Validation error code)**

DE 112, subelement 23 contains the positive ID translation/validation error code for the positive ID transaction.

#### **Subelement 23**

<b>Subelement 23</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1–3	n-3	023
Subelement Length	4–6	n-3	001
Positive ID error code	7	an-1	Valid values are:
		A	If DE 39 contains a 57 and "A" in this field; indicates "Settlement date must be a business day".
		B	If DE 39 contains a 57 and "B" in this field; indicates "Completion date must be equal or greater than Settlement Date".
		C	If DE 39 contains a 57 and "C" in this field; indicates "Reference number must be equal to Associate number".
		D	If DE 39 contains a 57 and "D" in this field; indicates "Number of days must be equal or less than allowed by the Distributor".
		E	If DE 39 contains a 57 and "E" in this field; indicates "Transaction amount must be equal or less than allowed by the Distributor".
		G	If DE 39 contains a 57 and "G" in this field; indicates "Time frame to receive completion is not correct".
		H	If DE 39 contains a 57 and "H" in this field; indicates "Transaction can only be settled by Boleto".
		I	If DE 39 contains a 57 and "I" in this field; indicates "Translation can not be cancelled".
		K	If DE 39 contains a 57 and "K" in this field; indicates "Completion amount must be equal to Pre-Auth amount".

Data element definitions  
Subelement 23 (Positive ID Translation/Validation error code)

<b>Subelement 23</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
	L		If DE 39 contains a 57 and "L" in this field indicates "Settlement date must be greater than Pre-Auth date".
	M		If DE 39 contains a 57 and "M" in this field—indicates "Completion date must be equal or less than Settlement date plus number of days".
	N		If DE 39 contains 05, 51, 57, or 62 and "N" is in this field; indicates "Transaction was declined due to cash back amount".
	O		If DE 39 contains 05, 51, 57, or 62 and "O" is in this field' indicates "Transaction was declined due to purchase amount".
	P		If DE 39 contains a 57 and "P" in this field—indicates "Number of Installments is not correct".
	Q		If DE 39 contains a 57 and "Q" in this field; indicates "Installment amount is not correct".
	R		If DE 39 contains a 57 and "R" in this field; indicates "Total amount is not correct".
	S		If DE 39 contains a 51 or 57 and "S" in this field; indicates "Purchase limit is not available".
	T		If DE 39 contains a 57 and "T" in this field; indicates "Invalid rate".
	U		If DE 39 contains a 57 and "U" in this field; indicates "Product/Functionality not permitted to cardholder".
	1		If a Single Message System translation error occurred on the PIN block, 0210 message DE 39 response code "63".
	2		If a Single Message System translation error occurred on Positive ID, 0210 message DE 39 response code "63".

<b>Subelement 23</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
		3	If the issuer validation error occurred on the PIN block, 0210 message DE 39 response code "55".
		4	If the issuer validation error occurred on Positive ID, 0210 message DE 39 response code "55".

#### **Subelement 24 (Time-Based Transactions)**

For Time-Based Transactions (Administrative Advice/0620). Values supplied by the originator.

#### **Subelement 24**

<b>Subelement 24</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1-3	n-3	024
Subelement length	4-6	n-3	025
Admin. message text	7-31	ans 25	Free form text supplied by the originator.

#### **Subelement 25 (Merchant-Generated Installment Payments Transactions [preauthorization and completion])**

For Merchant Generated Installment Payments transactions (preauthorization and completion). Values supplied by originator.

#### **Subelement 25**

<b>Subelement 25</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1-3	n-3	025
Subelement length	4-6	n-3	093
IOF indicator	7	a-1	Brazil tax applied to the amount of the sale. This tax is paid by the merchant or the cardholder depending on the IOF indicator in the transaction. In both cases, the issuer pays the tax to the Brazilian government. Valid values are:  Y = If the IOF is included in the installment amount  N = If the IOF is not included in the installment amount

Data element definitions

Subelement 25 (Merchant-Generated Installment Payments Transactions [preauthorization and completion])

<b>Subelement 25</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Posting cycle	8	n-1	<p>Valid values are:</p> <p>1 = First payment within 30 days</p> <p>2 = First payment within 60 days</p> <p>3 = First payment within 90 days</p>
Installment Amount	9-17	n-9	Installment amount of the transactions; two decimal positions.
Remuneration percent amount	18-20	n-3	<p>A fee the issuer pays to the acquirer. This fee is given to the acquirer from the issuer.</p> <p>Installment amount of the transaction; two decimal positions</p>
Tax Y percent	21-24	n-4	The merchant discount resulting from an agreement between the acquirer and the merchant. This amount is passed from the acquirer to the merchant. Tax Y equals acquirer fee; two decimal positions
Tax X monthly Percent	25-28	n-4	Tax X is the tax applied to the price of the purchase. The merchant informs the cardholder of the amount of Tax X. This tax is passed on to the cardholder. Tax-X monthly interest rate; two decimal positions
Tax X annual Percent	29-33	n-5	Tax X annual interest rate; two decimal positions
Mora tax percent	34-37	n-4	A penalty to the cardholder if the payments are not made on time. This tax is passed on to the cardholder if payments are not made on time; two decimal positions
VPL bruto	38-48	n-11	Net present value; two decimal positions
IOF amt	49-54	n-6	Amount of IOF; two decimal positions
CPMF	55-60	n-6	<p>A Brazil tax applied to the cardholder or merchant for taking the funds from the account. This tax exists when the tax X &lt; tax Y. This tax is passed on to the cardholder.</p> <p>Two decimal positions.</p>
TAC	61-66	n-6	A tax that the issuer charges the cardholder when credit is given to the cardholder. This tax is passed on to the cardholder; Two decimal positions amount value
Remuneration amount	67-72	n-6	The fee amount passed from the acquirer to the issuer.

<b>Subelement 25</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
First installment date	73–78	n-6	Date of First Installment; Format MMDDYY
Financed amount	79–89	n-11	If tax X = 0, financed amount = transaction amount  If tax X > 0, financed amount = (installment amount X number of installments) + IOF
Remuneration tax amount	90–93	n-4	Income tax applied to remuneration amount
Remuneration net amount	94–99	n-6	Remuneration amount less IR (Brazil Income Tax)

**Subelement 26 (Merchant-Generated Installment Payments: Receipt Information)**

For Merchant Generated Installment Payments this subelement is free-form and is not edited or logged. This subelement allows the issuer to pass information to the merchant to be printed on the cardholder receipt.

**Subelement 26**

<b>Subelement 26</b>	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1–3	n-3	026
Subelement length	4–6	n-3	001–037
Cardholder data	7–43	ans 1–37	Consists of data between 1 to 37 bytes in length to be printed on the cardholder's receipt.

**Subelement 27 (ATM Credit Card Cash Advance Installments)**

This subelement contains all of the data for an ATM credit card cash advance installment payment transaction.

**Subelement 27**

Subfields 1, 2, and 4–7 will be contained in the Financial Transaction Request/0200 message, and in the Financial Transaction Request Response/0210 message.

Subfield 3 will be contained in the Financial Transaction Request Response/0210 message.

Subfields 8–11 are available to send optional data as required by a specific region/country to support an ATM Credit Card Cash Advance Installments transaction or to send supporting informational messages between the acquirer and issuer.

**Table 89: Subelement 27**

<b>Subelement 27</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	n-3	027
Subelement Length	n-3	137

**Table 90: Subfield 1 (Transaction Type)**

<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
7-8	an-2	Valid values are: 80 = ATM cash advance installments inquiry 81 = ATM cash advance installments withdrawal

**Table 91: Subfield 2 (Requested Number of Installments)**

<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
9-10	n-2	The number of installments requested by the cardholder.  Valid values are 01–99.

**Table 92: Subfield 3 (Approved Number of Installments)**

<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
11-12	n-2	The number of installments to which the issuer will agree.  Valid values are 01–99.

**Table 93: Subfield 4 (Installment Amount)**

<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
13-24	n-12	The monthly payment amount to be billed to the cardholder.

**Table 94: Subfield 5 (Total Transaction Amount)**

<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
25–36	n-12	The cash advance amount plus interest.

**Table 95: Subfield 6 (Interest Rate)**

<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
37–40	n-4	The yearly interest rate being charged to the cardholder by the issuer.

**Table 96: Subfield 7 (Currency Code)**

<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
41–43	n-3	The currency code of the installment amount value the issuer will charge the cardholder for repayment.

**Table 97: Subfield 8 (Member Defined Data)**

<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
44–68	an-25	Optional field. Valid values: <ul style="list-style-type: none"> <li>• 25 characters defined by region/country</li> <li>• Blank (default)</li> </ul>

**Table 98: Subfield 9 (Member Defined Data)**

<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
69–93	an-25	Optional field. Valid values: <ul style="list-style-type: none"> <li>• 25 characters defined by region/country</li> <li>• Blank (default)</li> </ul>

**Table 99: Subfield 10 (Member Defined Data)**

<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
94-118	an-25	<p>Optional field.</p> <p>Valid values:</p> <ul style="list-style-type: none"> <li>• 25 characters defined by region/country</li> <li>• Blank (default)</li> </ul>

**Table 100: Subfield 11 (Member Defined Data)**

<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
119-143	an-25	<p>Optional field.</p> <p>Valid values:</p> <ul style="list-style-type: none"> <li>• 25 characters defined by region/country</li> <li>• Blank (default)</li> </ul>

### **Subelement 28 (Merchant Fraud Score Data)**

This subelement contains the merchant fraud score data in Financial Transaction Request/0200 messages.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	028
Subelement length	n-3	004
Data representation	ns-4	-999 to +999

#### **Usage**

Following is the usage of subelement 28 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	O	.	C
Financial Transaction Request Response/0210	.	X	C

## Values

Acquirers may perform merchant fraud scoring either by themselves or through payment gateways. Acquirers in Brazil can forward the merchant fraud scoring information to issuers using this subelement. Issuers can use this data to know that merchant fraud scoring is done by the acquirer and use the data to make approval decision for CNP transaction. Merchant Fraud Score data provided by acquirers in Brazil should be in the range -999 to +999. Merchant fraud score should be right justified with leading zeros if the value is less than three digits.

## Application notes

Issuers are not expected to echo DE 112, subelement 028 (Merchant Fraud Score Data) in the Financial Request Response/0210 message. Mastercard will echo DE 112, subelement 028 (Merchant Fraud Score Data) from the Financial Transaction Request/0200 message back to the acquirers in the Financial Transaction Request Response/0210 message.

## Subelement 29 (Brazil Merchant Tax ID)

DE 112, subelement 29 (Brazil Merchant Tax ID) contains the merchant tax ID provided by acquirers in Brazil. Using this, either the personal tax IDs or commercial tax IDs of merchants can be sent by all acquirers in Brazil.

## Attributes

Subelement 29	Position	Attribute	Value
Subelement ID	1-3	n-3	029
Subelement length	4-6	n-3	011 or 014
Data Representation	n-11, n-14		
Data Field	Variable Length; Contents of either 11 positions or 14 positions		
Number of Subfields	N/A		
Justification	Left		

## Usage

Following is the usage of subelement 29 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	.	O

### **Subelement 035 (Issuer Fee Inquiry Indicator)**

DE 112, subelement 035 (Issuer Fee Inquiry Indicator) is populated by the acquirer and passed to the issuer to indicate that a transaction qualifies as an Issuer Fee Inquiry.

#### **Attributes**

Attribute	Description
Subelement ID	035
Subelement length	n-3
Data representation	n-2
Data field	Contents of positions 1–2
Subfields	N/A
Justification	N/A

#### **Usage**

Following is the usage of subelement 035 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	.	C

#### **Values**

Value	Description
01	Indicates issuer fee inquiry request

### **Subelement 036 (Issuer Fee Amount)**

DE 112, subelement 036 (Issuer Fee Amount) is populated by the issuer with the fee amount that would be associated with the intended ATM transaction withdrawal.

#### **Attributes**

Attribute	Description
Subelement ID	036
Subelement length	n-3
Data representation	n-12

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<b>Attribute</b>	<b>Description</b>
Data field	Contents of positions 1-12
Subfields	N/A
Justification	Right-justified with leading zeros

### Usage

Following is the usage of subelement 036 (whether it is mandatory, conditional, optional, or system provided) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request Response/0210	C	.	C

### Values

<b>Value</b>	<b>Description</b>
Valid numeric data	Ex: 000000000123

**NOTE:** Amounts are expressed without a decimal separator. For currencies that support exponents, users and systems are responsible for placing the decimal separator appropriately. Currently only for use in Colombia, where currency exponent = 2.

### Subelement 042 (Card Acceptor Tax ID)

Subelement 042 (Card Acceptor Tax ID) will be used in the Single Message Platform to support DE 112 in any received Financial Transaction Request/0200, Financial Transaction Advice/0220, or Acquirer Reversal Advice/0420 message.

### Attributes

<b>Attributes</b>	<b>Description</b>
Subelement ID	042
Length field	3
Length value	Variable length, 001-012 positions
Data representation	an...012; LLLVAR
Data field	Contents of subelement 042
Justification	N/A
Description	Tax ID

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<b>Attributes</b>	<b>Description</b>
Base ID	n-11 (no dots nor dashes), left filled with zeros
Check digit	an-1

### Usage

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	X	.
Financial Transaction Advice/0220	C	X	.
Acquirer Reversal Advice/0420	C	X	.

### Application notes

This field is required when purchase, purchase with cash back, and refund transactions are submitted by acquirers for merchants in Chile and Paraguay

The length value is defined as variable length for all markets. However, Chile and Paraguay should use 12 positions exclusively with leading zeros as shown in the examples.

**Table 101: Examples**

<b>Tax ID</b>	<b>Format required</b>
18.638.773-K	00018638773K
7.932.677-1	000079326771
763.567-4	000007635674

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## DE 113 to DE 119 (Reserved for National Use)

The National Standards Organization uses and defines these data elements.

### Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	ans...999; LLLVAR

<b>Attribute</b>	<b>Description</b>
Data element length	3 positions, value ...999
Data field	Variable length, contents of positions 1–999
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

## DE 120 (Record Data)

DE 120 (Record Data) is a free-format variable-length data field used for transmitting file record data or textual character string data in various message types.

### Attributes

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Data representation	ans...999; LLLVAR	
Data element length	3 positions, value ...999	
Data field	Variable length, contents of positions 1–999	
Subelements	1	Subelement 3—AVS Usage
Justification	See file contents	

### Usage

Following is the usage of DE 120 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	P	C
Financial Transaction Request Response/0210	C	P	C
File Update Request/0302	M	P	M
File Update Request Response/0312	M	P	M
Administrative Advice/0620: Single Message System initiated	.	X	C
Administrative Advice/0620: processor initiated	C	X	.

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<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Administrative Advice/0620: processor initiated time-based exception	C	P	C
Administrative Advice/0644	.	X	C

### **Application notes**

When used in Administrative Advice/0620 messages having an Advice Reason Code set to "600" (Invalid message; rejected by Network), this data element contains the original (rejected) message.

### **Data Element 120 structure for File Update Request/0302 and File Update Request Response/0312 messages**

Issuers use the File Update Request/0302 message to request and update an individual account file based on the file name specified in DE 101 (File Name). DE 91 (File Update Code), provides the file update action to be taken such as an addition, inquiry, change, or deletion.

Information required in DE 120 is dependent on the type of the file update requested usually depicted by a file name beginning with MCC. DE 120 contains the new, actual file record data used in a change or add file update.

Similar functionality is available using Single Message Transaction Manager.

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<b>File Name</b>	<b>Description</b>
MCC102	Stand-in account file
MCC103	Electronic warning bulletin file
MCC105	Payment cancellation service file
MCC106	Mastercard Digital Enablement Service (MDES) PAN mapping service file
MCC109	ATC file
MCC111	PAN-PAR (payment account reference) mapping file

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### **Stand-in account file MCC102**

An update request with the file name of MCC102 will update the Mastercard Account file. This functionality is available to Debit Mastercard issuers.

The MCC102 update request is equivalent to the existing functionality in the Single Message Transaction Manager under the **Mastercard Debit Hotcard Facility** option on the Single Message Transaction Manager home page.

### **Stand-in account file MCC102 DE 120: File Update Request/0302**

When an MCC102 update request is successfully completed, an MDS Stand-In Account exception file update will generate automatically for any issuer that participates in the Mastercard Stand-In program.

Only PAN and issuer ICA are required for delete and inquiry requests.

**Table 102: Stand-in account file MCC102 DE 120: File Update Request/0302**

<b>Subfield</b>	<b>Position</b>	<b>Attribute</b>	<b>Description</b>
PAN	1-19	n-19	Primary account number to be updated by this request.  Right-justified with leading zeros. PANs must be a minimum of 12 digits.
Issuer ICA	20-25	n-6	Mastercard assigned member ID.
Entry reason	26	an-1	Must be one of the following codes:  C = Credit F = Fraud G = ATM Premium List L = Lost O = Other P = Capture card S = Stolen card U = Unauthorized use V = Premium X = Counterfeit
Date last update	27-32	n-6	Returned in inquiry, ignored on add, update, and delete. Format is MMDDYY.
Time last update	33-36	n-5	Retained in inquiry, ignored on add, update, and delete. Format is HHMM.
PIN length	37-38	n-2	Always has a value of "00".
Premium limit	39-50	n-12	Amount, whole dollars. Zero except for Entry Reason = V, Right-justified with leading zeros.
Premium currency code	51-53	n-3	Currency code, only valid for Entry Reason = V.

### **Stand-in account file MCC102 DE 120–File Update Request Response/0312**

When MCC102 updates create an add, change, or delete, the File Update Request Response/0312 echoes back in DE 120, Record Data, the same information that was received in DE 120 of the File Update Request/0302 message. For MCC102 acquirers, the 0312 response in DE 120 contains the full record of the database that was requested.

### **Electronic warning bulletin file MCC103**

An update request with the file name of MCC103 Electronic Warning Bulletin File will update the Mastercard Account Management File.

This functionality is available to Debit Mastercard issuers. The MCC103 update request is equivalent to the existing functionality in the Single Message Transaction Manager under the **Mastercard Debit Hotcard Facility** option on the Single Message Transaction Manager home page.

### **Electronic warning bulletin file MCC103 DE 120: File Update Request/0302**

When an MCC103 update request is successfully completed, an MDS Stand-In Account exception file update will generate automatically for any issuer that participates in the Mastercard Stand-In program.

Only PAN and issuer ICA are required for delete requests.

**NOTE:** If an MCC103 is sent for a cardholder account number already on file, the information on file will be replaced with the contents of the add request.

**Table 103: Electronic warning bulletin file MCC103 DE 120: File Update Request/0302**

<b>Subfield</b>	<b>Position</b>	<b>Attribute</b>	<b>Description</b>
PAN	1-19	n-19	Primary account number to be updated by this request.  Right-justified with leading zeros. PANs must be a minimum of 12 digits.
Issuer ICA	20-25	n-6	Mastercard assigned member ID.
Card program	26-28	an-3	Must be a valid Debit Mastercard product code.  For a complete list of product codes refer to the <i>IPM Clearing Formats</i> manual.
Response code	29-30	n-2	Valid value is:  04 = Capture card.

<b>Subfield</b>	<b>Position</b>	<b>Attribute</b>	<b>Description</b>
Entry reason	31	an-1	Must be one of the following codes:  C = Credit  F = Fraud  O = Other  X = Counterfeit
Filler	32-56	an-25	Reserved for future AMS enhancements.
Regional Information			Nonpositional, may occur up to six times in ascending order.
Indicator	57	an-1	Valid regions are the following:  1 = United States  A = Canada  B = Latin America/Caribbean  C = Asia/Pacific  D = Europe  E = Middle East/Africa
Purge date	58-63	n-6	The customer-requested purge date. Format is YYMMDD.

### **Electronic warning bulletin file MCC103 DE 120: File Update Request Response/0312**

When MCC103 updates create an add, change, or delete, the File Update Request Response/0312 echoes back in DE 120 the same information that was received in DE 120 of the File Update Request/0302 message. Corresponding to the contents of DE 120 in the MCC103 add/change 0312 message responses DE 122 will contain the effective dates and purge dates for each region on the file for the account.

Only PAN and Issuer ICA are required for delete requests.

### **Payment cancellation file MCC105**

Payment Cancellation File MCC105 supports the Mastercard Payment Cancellation for card-not-present and recurring payment transactions.

Participating issuers submit blocking criteria to MCC105 using Issuer File Update Request/0302 messages or Mastercard Account Management on eService.

This is valid only for Debit Mastercard cards. Issuers may submit payment cancellation requests using the Single Message Transaction Manager under **HotCard Facility** (click **Payment Cancellation Service File**).

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### Payment cancellation file MCC105 DE 120: File Update Request/0302

<b>Subfield</b>	<b>Position</b>	<b>Attribute</b>	<b>Description</b>
Primary account number (PAN)	1-19	an-19	<p>Number that is embossed, encoded, or both on the card. Customers may only input account numbers for BINs assigned to the associated customer ID that Mastercard assigned.</p> <p>Format: Left justified with trailing spaces.</p>
Entry reason	20	an-1	<p>Reason for listing this card. Valid value: A = Payment Cancellation Service</p>
Issuer-defined purge date	21-28	n-8	<p>The issuer-defined purge date must be no more than 15 months beyond the account list date.</p> <p>Format: YYYYMMDD</p>
Acquirer ID	29-34	n-6	Valid acquirer ICA.
Card acceptor ID code	35-49	ans-15	Must be unique per acquirer ICA. Must be a value other than spaces.
<b>NOTE: This field is case sensitive.</b>			
Transaction amount (low)	50-61	n-12	<p>Optional field. Right justified with leading zeros.</p> <p>Indicates a single transaction amount or the start of a transaction amount range.</p> <p>Transaction amount must be stated in the transaction currency and not the cardholder billing currency.</p>
Transaction amount (high)	62-73	n-12	<p>Optional field. Right justified with leading zeros.</p> <p>Indicates the end of a transaction amount range. Do not use this field if specifying a single amount.</p> <p>If used, must be greater than Transaction Amount (low).</p> <p>Transaction amount must be stated in the transaction currency and not the cardholder billing currency.</p>

## PAN mapping file MCC106

PAN Mapping File MCC106 provides issuers with the ability to enter and maintain entries in the PAN Mapping database through File Update/03xx messages.

### PAN mapping service MCC106 DE 120: File Update Request/0302

The following information provides technical details of DE 120 when DE 101 (File Name) contains MCC106 in File Update Request/0302 messages.

Subfield	Position	Attribute	Description
Contactless account number	1-19	an-19	<p>Number that is assigned to the contactless card or device and transmitted from the card or device to the contactless terminal.</p> <p>Format: Left justified with trailing spaces.</p>
PAN	20-38	an-19	<p>Number that is embossed, encoded, or both on the card. Customers may only input account numbers for BINs assigned to the associated customer ID that Mastercard assigned.</p> <p>Format: Left justified with trailing spaces.</p>
Card expiration date (PAN)	39-42	n-4	<p>Expiration date that is embossed, encoded, or both on the card that represents the cardholder primary account number.</p> <p>Format: YYMM</p>
Contactless account number (Replacement)	43-61	an-19	<p>Replacement account number that is assigned to the contactless card or device and transmitted from card or device to the contactless terminal.</p> <p>Format: Left justified with trailing spaces.</p>
PAN (replacement)	62-80	an-19	<p>Number that is embossed, encoded, or both on the replacement card. Customers may only input account numbers for BINs assigned to the associated customer ID that Mastercard assigned.</p> <p>Format: Left justified with trailing spaces.</p>

**NOTE:** Refer to chapter 5 (Programs and Services, Mastercard Digital Enablement Service) in this manual for the MDES-specific DE 120 layout that applies to Issuer File Update/0302 messages (DE 120 Layout for MCC106 Mastercard Digital Enablement Service (PAN Update—Deactivate/Suspend/Resume Token)).

### PAN mapping file MCC106 DE 120: File Update Request Response/0312

Data provided in MCC106 DE 120 in File Update Request/0302 messages may be echoed back in File Update Request Response/0312 messages. All seven (7) subfields are returned in the response message; fields without data will contain spaces.

Subfield	Position	Attribute	Description
Contactless account number	1-19	an-19	Number that is assigned to the contactless card or device and transmitted from the card or device to the contactless terminal.  Format: Left justified with trailing spaces.
PAN	20-38	an-19	Number that is embossed, encoded, or both on the card. Customers may only input account numbers for BINs assigned to the associated customer ID that Mastercard assigned.  Format: Left justified with trailing spaces.
Card expiration date (PAN)	39-42	n-4	Expiration date that is embossed, encoded, or both on the actual card.  Format: YYMM (Year, Month)
Contactless account number (replacement)	43-61	an-19	Replacement number that is assigned to the contactless card or device and transmitted from the card or device to the contactless terminal.  Format: Left justified with trailing spaces.
PAN (replacement)	62-80	an-19	Number that is embossed, encoded, or both on the replacement card. Customers may only input account numbers for BINs assigned to the associated customer ID that Mastercard assigned.  Format: Left justified with trailing spaces.
Date last update activity	81-86	n-6	Last date information was added to the record.  Format: MMDDYY  Date-Last-Update-Activity is not present in File Update Request/0302 messages.
Time Last update activity	87-90	n-4	Last time on the day that information was added to the record.  Format: HHMM  Time-Last-Update-Activity is not present in File Update Request/0302 messages.

**NOTE:** When the PAN Mapping Service is performed for contactless magnetic stripe transactions, issuers can expect to leverage data provided in DE 120—MCC109, ATC File.

### Online file maintenance

<b>DE 91 (Issuer File Update Code)</b>				
<b>DE 101 (File Name)</b>	<b>1 Add</b>	<b>2 Change</b>	<b>3 Delete</b>	<b>5 Inquiry</b>
MCC109 (Application Transaction Counter [ATC] File)	√			√

### Application transaction counter (ATC) file MCC109

Application Transaction Counter (ATC) File MCC109 provides issuers with the ability to enter and maintain entries in the ATC database through File Update/03xx messages.

#### ATC MCC109 DE 120: File Update Request /0302

The following provides technical details of DE 120 when DE 101 contains MCC109 in File Update Request/0302 messages.

<b>Subfield</b>	<b>Position</b>	<b>Attribute</b>	<b>Description</b>
Account number	1-19	an-19	Number that is assigned to the card or device and transmitted from the card or device to the terminal.  Format: Left justified with trailing spaces.
Card sequence number	20	n-1	PPAN sequence number, valid values between 0 and 9.
Card expiration date (PPAN)	21-24	n-4	Expiration date of the PPAN  Format: YYMM.
Application transaction counter (ATC) value	25-29	n-5	Right justified with leading zeros. Ignored on inquiry.
Customer ID	30-35	n-6	Mastercard assigned ID number.

#### ATC file MCC109 DE 120: File Update Request Response/0312

Data provided in MCC109 DE 120 in File Update request/0302 messages may be echoed back in File Update Request Response/0312 messages. All ten (10) subfields are returned in the response messages; fields without data will contain spaces.

<b>Subfield</b>	<b>Position</b>	<b>Attribute</b>	<b>Description</b>
Account number (PPAN)	1-19	an-19	Number assigned to the card or device and transmitted from the card or device to the terminal.  Format: Left justified with trailing spaces.
Card sequence number	20	n-1	PPAN sequence number, valid values between 0 and 9.
Account expiration date (PPAN)	21-24	n-4	Expiration date of the PPAN;  Format: YYMM.
Application transaction counter (ATC) Value	25-29	n-5	Right justified with leading zeros. Ignored on inquiry.
Filler	30	an-1	Mastercard Internal Use Only.
Issuer Customer ID	31-36	n-6	Mastercard assigned ID number.
Date/time last update activity	37-48	n-12	The last date and time that the ATC was updated on the record.  Format: MMDDYYHHMMSS
Entry change indicator	49	a-1	Indicates how the ATC value was last changed. Must be one of the following codes:  B = Batch Entry O = Online Entry T = Transaction
Creation date/time stamp	50-63	n-14	Original date and time the record was created.  Format: MMDDCCYYHHMMSS
Last transaction time	64-67	n-4	Last transaction time for valid ATC.  Format: HHMM

### **PAN-PAR (Payment Account Reference) mapping file MCC111**

DE 120 (Record Data) contains PAN to PAR Mapping File data when DE 101 (File Name) contains MCC111.

Only PAN replacement and PAR record deletion actions are allowed. Both are handled as a "change".

Following are the MCC111 data fields that should be included in DE 120 depending on the combination of values in DE 91 (Issuer File Update Code) and DE 120 subfield 1 (Action Required).

<b>When DE 91 contains...</b>	<b>Include these Subfields in DE 120...</b>
2 = Change  This is the only valid Issuer File Update Code value for MCC111	<p>Subfield 1 is mandatory</p> <ul style="list-style-type: none"> <li>When subfield 1 = 2 (Change), subfield 2 must contain a replacement PAN</li> <li>When subfield 1 = 3 (Delete), all other DE 120 subfields must contain spaces</li> </ul>

The following DE 120 layout applies to Issuer File Update Request/0302 messages requesting the replacement of a PAN associated with a PAR value in the MCC111 PAN-PAR Mapping File. This action should be performed when the issuer is replacing the consumer's current PAN with a new PAN.

<b>Subfield ID</b>	<b>Subfield name</b>	<b>Attributes</b>	<b>Comments/valid values</b>
1	Action Required	an-1	2 = Change the PAN-PAR mapping record
2	Replacement PAN	an-19	<p>Number that is embossed, encoded, or both on the replacement card. Customers may only input account numbers for BINs assigned to the associated customer ID assigned by Mastercard.</p> <p>Format: Left justified, with trailing spaces</p>

The following DE 120 layout applies to Issuer File Update Request/0302 messages requesting the deletion of a PAN-PAR mapping record in the MCC111 PAN-PAR Mapping File. This action should be performed only when the issuer has permanently closed/canceled the consumer's PAN.

<b>Subfield ID</b>	<b>Subfield name</b>	<b>Attributes</b>	<b>Comments/valid values</b>
1	Action Required	an-1	3 = Delete the PAN-PAR mapping record associated with the PAN in DE 2 (Primary Account Number)

## **DE 120 Usage for Address Verification Service**

DE 120 is used in authorization requests to contain billing address data for the Mastercard Address Verification Service (AVS).

When the Mastercard Network receives an authorization request with this data present, the Dual Message System submits DE 120 within a Financial Transaction Request/0200 message to the issuing processor and the issuer must respond with the same data in DE 120 that it received from the Dual Message System. Mastercard then returns the DE 120 to the acquirer.

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The AVS condensed format begins with the left-most position and uses up to five numeric values that appear before the first alphabetic character or space. Once AVS finds a space or an alphabetic character, it stops interrogating the cardholder billing address, and constructs the condensed AVS key.

For example: 223 NW 31st Street, Apartment #3, in this case the match is 223.

The following table describes the Record Data values for DE 120 for the AVS usage.

**Table 104: DE 120 Subfields for AVS Usage**

<b>Subelement 3</b>	<b>Position</b>	<b>Attribute</b>	<b>Value</b>
Subelement ID	1–2	n-2	03
Subelement length	3–4	n-2	14
Cardholder postal/zip code	5–13	an-9	Cardholder postal zip code (left-justified, blank-filled)
Cardholder address	14–18	an-5	Cardholder billing address (left-justified, blank-filled)

**NOTE:** To receive a complete match, the issuer must base its keys using the AVS condensed algorithm logic.

## **DE 121 (Authorizing Agent Identification Code)**

DE 121 (Authorizing Agent Identification Code) identifies the actual processing facility that approved or declined a Transaction Request message.

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ISO Standard: ans...999; LLLVAR Mastercard Standard: ans...011; LLLVAR
Data element length	3 positions, value = ...011
Data field	Variable length, contents of positions 1–999 Variable length, contents of positions 1–11
Subfields	None
Justification	N/A

**NOTE:**

The Single Message System does not use this data element, however, if it is included in a Financial Transaction Request Response/0210 message, it will be included in any subsequent reversal activity.

ISO Standards define this data element as ans...999; LLLVAR however the Single Message System uses it as ans...011 LLLVAR.

## DE 122 (Additional Record Data)

By provision of the ISO 8583-1987 specification, Mastercard redefined this data element for use as **Additional Record Data**.

### Attributes

Attribute	Description
Data representation	ans...100; LLLVAR
Data element length	3 positions, value = ...100
Data field	Variable length, contents of positions 1-100
Subfields	None
Justification	N/A

**NOTE:** The length of this data element has been limited to 100 bytes for practical operational and system constraints.

### Usage

Following is the usage of DE 122 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
File Update Request Response/0312	C	P	C

### Application notes

DE 122 (Additional Record Data) is a free-format variable length data element used for transmitting file record data in various message types. In a File Update Request Response/0312 message, this data element is available to pass data sent to the issuer by the AMS in response to a File Update Request/0302 inquiry.

The following table indicates the data returned in DE 122 for accepted File Update Request/0302 updates.

**Table 105: Message type 0312 Data Element 122 structure**

<b>Subelement</b>	<b>Position</b>	<b>Attribute</b>	<b>Description</b>
Regional data on file			Non-positional, may occur up to six times in ascending order.
Indicator	1	an-1	Valid regions are as follows: 1 = United States A = Canada B = Latin America/Caribbean C = Asia/Pacific D = Europe E = Middle East/Africa
Effective date	2-7	yymmdd	Effective date of the listing within this region.
Purge date	8-13	yymmdd	Purge date of the regional listing.

## DE 123 (Mastercard Merchant Data Services)

DE 123 (Mastercard Merchant Data Services) is used for transmitting various types of merchant information to issuers.

### Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	ans...999; LLLVAR
Data element length	3 positions, value = ...999
Data field	Variable Length, contents of subelements 1-5
Subelements	5
Justification	See "Subelements"

### Usage

Following is the usage of DE 123 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

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<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Advice/0220: Debit Mastercard stand-in (force post)	•	X	C

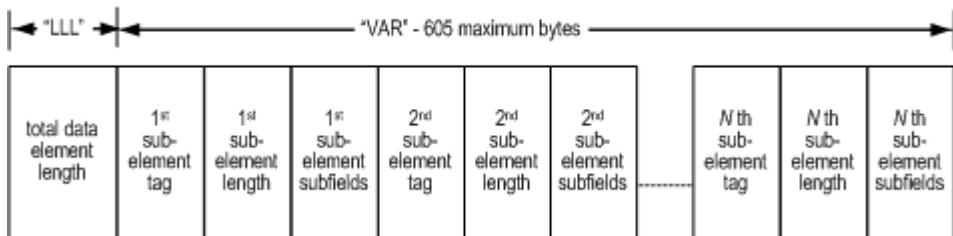
### **Application notes**

Data content of DE 123 will be provided by Mastercard and sent to the issuer only if the issuer has selected to receive DE 123 data components.

### **Subelement encoding scheme**

DE 123 consists of encoded subelements. Each subelement begins with a two-byte tag and an associated three-byte length indicator. The subelements do not need to be in any particular order or sequence within DE 123. Members must be able to receive all subelements available within DE 123.

**Figure 6: DE 123 subelement contents**



**NOTE:** For further information about the Merchant Data Cleansing suite of services, please refer to the *Single Message System Programs and Services* manual.

### **Subelement 1 (Merchant Data Services)**

DE 123 (Mastercard Merchant Data Services), subelement 1 (Merchant Data Services) will be populated by Mastercard with a service level indicator which represents the services the issuer has registered for and the response value.

### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	01
Subelement length	n-3	005
Data representation	an-5	

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<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Number of subfields	2	Subfield 1—Service Level Indicator
		Subfield 2—Response Code

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### **Subfield 1 (Service Level Indicator)**

The value associated to the services which the clearing account range is registered.

**Table 106: Subfield 1 attributes**

<b>Attribute</b>	<b>Description</b>
Data Representation	an-3
Data field	Contents of positions 1–3
Justification	N/A

**Table 107: Subfield 1 values**

<b>Value</b>	<b>Description</b>
077	Merchant data cleansing
078	Merchant data cleansing plus
079	Merchant data advance
080	Merchant data cleansing plus merchant data advance
081	Merchant data cleansing plus plus merchant data advance

### **Subfield 2 (Response Code)**

The action taken, if any, by Mastercard for the service indicated in DE 123, subelement 1 (Merchant Data Services), subfield 1 (Service Level Indicator).

**Table 108: Subfield 2 Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	an-2
Data field	Contents of positions 4–5
Justification	N/A

**Table 109: Subfield 2 Values**

<b>Value</b>	<b>Description</b>
AA	Cleansed merchant data found, but same merchant data as supplied by the acquirer, not replaced. Additional data fields for Merchant Data Advance are provided.
CR	Country restricted due to country regulations, not replaced.
FN	Location found, exception rules apply requiring that cleansed merchant fields not be returned. Merchant Data Cleansing Plus (additional data fields) and Merchant Data Advance are provided.
FR	DE 43 (Card Acceptor Name/Location), subfields 1–6 and PDS 0170 (Card Acceptor Inquiry Information), subfield 2 (Card Acceptor Phone Number) replaced, cleansed merchant data fields returned.
NF	Cleansed merchant data not found, not replaced. DE 43, subfields 1–6 and PDS 0170, subfield 2 will contain the merchant information as supplied by the acquirer.
NR	Cleansed merchant data found, same merchant data as supplied by the acquirer, not replaced. DE 43, subfields 1–6 and PDS 0170, subfield 2 will contain the merchant information as supplied by the acquirer.
PA	Location not found. Additional data fields for Merchant Data Advance are provided.
SU	Service unavailable.

### **Subelement 2 (Original Merchant Data)**

DE 123 (Mastercard Merchant Data Services), subelement 2 (Original Merchant Data) will contain acquirer submitted merchant data for DE 43 (Card Acceptor Name/Location), subfield 1, subfield 3, and subfield 5.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	02
Subelement length	n-3	038
Data representation	ans-38	
Number of subfields	3	Subfield 1 (POS Merchant Name) Subfield 2 (Merchant City) Subfield 3 (Merchant State, Province Code or Region Code)

### **Subfield 1—POS Merchant Name**

**Table 110: Subfield 1 Attributes**

<b>Attribute</b>	<b>Description</b>
Data Representation	ans-22
Data Field	Contents of positions 1–22
Justification	N/A

### **Subfield 1 Values**

Contains the information from acquirer in DE 43 (Card Acceptor Name/Location), subfield 1 (POS Merchant).

### **Subfield 2—Merchant City**

**Table 111: Subfield 2 Attributes**

<b>Attribute</b>	<b>Description</b>
Data Representation	ans-13
Data Field	Contents of positions 23–35
Justification	N/A

### **Subfield 2 Values**

Contains the information from acquirer in DE 43, subfield 3 (Merchant City)

### **Subfield 3—Merchant State, Province Code or Region Code**

**Table 112: Subfield 3 Attributes**

<b>Attribute</b>	<b>Description</b>
Data Representation	a-3
Data Field	Contents of positions 36–38
Justification	N/A

### **Subfield 3 Values**

Contains the information from acquirer in DE 43, subfield 5 (Merchant State, Province Code or Country Code).

### **Subelement 3 (Mastercard Merchant Data Cleansing Service)**

DE 123 (Mastercard Merchant Data Services), subelement 3 (Mastercard Merchant Data Cleansing Service) contains information about the additional data fields relative to the Mastercard Merchant Data Cleansing Service.

**Table 113: Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	03
Subelement length	n-2	077
Data representation	ans-77	
Number of subfields	4	Subfield 1 (Cleansed Merchant Street Address) Subfield 2 (Cleansed Merchant Postal Code) Subfield 3 (Cleansed Country Code) Subfield 4 (Cleansed Merchant Telephone Number)

#### **Subfield 1 (Cleansed Merchant Street Address)**

**Table 114: Subfield 1 attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-48
Data field	Contents of positions 1–48
Justification	N/A

#### **Subfield 1 Values**

Contains the cleansed merchant street address.

#### **Subfield 2 (Cleansed Merchant Postal Code)**

**Table 115: Subfield 2 attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-10

Attribute	Description
Data field	Contents of positions 49–58
Justification	N/A

### Subfield 2 values

Contains the cleansed merchant postal code.

### Subfield 3 (Cleansed Country Code)

**Table 116: Subfield 3 attributes**

Attribute	Description
Data representation	a-3
Data field	Contents of positions 59–61
Justification	N/A

### Subfield 3 Values

Contains the cleansed merchant country code.

### Subfield 4 (Cleansed Merchant Telephone Number)

**Table 117: Subfield 4 attributes**

Attribute	Description
Data representation	an-16
Data field	Contents of positions 62–77
Justification	N/A

### Subfield 4 values

Contains the cleansed merchant telephone number.

## Subelement 4 (Merchant Data Cleansing Plus)

DE 123 (Mastercard Merchant Data Services), subelement 4 (Merchant Data Cleansing Plus) contains Mastercard provided merchant data for members participating in the Mastercard Merchant Data Cleansing Plus Service.

**Table 118: Attributes**

Attribute	Description	Value
Subelement ID	n-3	04
Subelement length	n-3	99...354
Data representation	ans...354; LLLVAR	
Number of subfields	5	Subfield 1 (Cleansed Legal Corporate Name)  Subfield 2 (Sales Channel—Percentage Brick)  Subfield 3 (Sales Channel: Percentage Online)  Subfield 4 (Sales Channel: Percentage Other)  Subfield 5 (Cleansed Merchant URL)

### Subfield 1—Cleansed Legal Corporate Name

**Table 119: Subfield 1 Attributes**

Attribute	Description
Data Representation	ans-90
Data Field	Contents of positions 1-90
Justification	N/A

### Subfield 1 Values

Contains the cleansed legal corporate name.

## Subfield 2—Sales Channel—Percentage Brick

Table 120: Subfield 2 Attributes

Attribute	Description
Data Representation	n-3
Data Field	Contents of positions 91–93
Justification	N/A

## Subfield 2 Values

Contains the percentage of sales transactions made at the merchant's brick-and-mortar locations. All percentages will be supplied in whole numbers without any implied decimals.

## Subfield 3—Sales Channel—Percentage Online

Table 121: Subfield 3 Attributes

Attribute	Description
Data Representation	n-3
Data Field	Contents of positions 94–96
Justification	N/A

## Subfield 3 Values

Contains the percentage of sales transactions made at the merchant's online locations. All percentages will be supplied in whole numbers without any implied decimals.

## Subfield 4—Sales Channel—Percentage Other

Table 122: Subfield 4 Attributes

Attribute	Description
Data Representation	n-3
Data Field	Contents of positions 97–99
Justification	N/A

## Subfield 4 Values

Contains the percentage of sales transactions made at the merchant's other locations (e.g. telephone sales). All percentages will be supplied in whole numbers without any implied decimals.

### **Subfield 5—Cleansed Merchant URL**

**Table 123: Subfield 5 Attributes**

<b>Attribute</b>	<b>Description</b>
Data Representation	ans...255
Data Field	Contents of positions 100–354
Justification	N/A

### **Subfield 5 Values**

Contains the URL for the cleansed merchant web site, if available.

## **Subelement 5 (Mastercard Merchant Data Advance)**

DE 123 (Mastercard Merchant Data Services), subelement 5 (Mastercard Merchant Data Advance) contains Mastercard provided merchant data for members participating in the Mastercard Merchant Data Advance Service.

**Table 124: Attributes**

<b>Attribute</b>	<b>Description</b>	<b>Value</b>
Subelement ID	n-3	05
Subelement length	n-3	106
Data representation	ans...106; LLLVAR	
Number of subfields	8	Subfield 1—Aggregate Merchant ID Subfield 2 (Aggregate Merchant Name) Subfield 3 (Industry Code) Subfield 4 (Super Industry Code) Subfield 5 (Key Aggregate Merchant ID) Subfield 6 (Channel Distribution ID) Subfield 7 (NAICS Code) Subfield 8 (Parent Aggregate Merchant ID)

### **Subfield 1 (Aggregate Merchant ID)**

**Table 125: Subfield 1 attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-5
Data field	Contents of positions 1–5
Justification	N/A

### **Subfield 1 values**

Contains the aggregate merchant identifier assigned in the data warehouse in the aggregate merchant table.

### **Subfield 2 (Aggregate Merchant Name)**

**Table 126: Subfield 2 attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-75
Data field	Contents of positions 6–80
Justification	N/A

### **Subfield 2 values**

Contains the merchant chain, typically for multiple merchant locations, sometimes associated with a brand name.

### **Subfield 3 (Industry Code)**

Contains the industry code assigned to the merchant.

**Table 127: Subfield 3 attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-3
Data field	Contents of positions 81–83
Justification	N/A

**Table 128: Subfield 3 values**

<b>Value</b>	<b>Description</b>
AAC	Children's apparel
AAF	Family apparel
AAM	Men's apparel
AAW	Women's apparel
AAX	Miscellaneous apparel
ACC	Accommodations
ACS	Automotive new and used car sales
ADV	Advertising services
AFH	Agriculture/forestry/fishing/hunting
AFS	Automotive fuel
ALS	Accounting and legal services
ARA	Amusement, recreation activities
ART	Arts and craft stores
AUC	Automotive used only car sales
AUT	Automotive retail
BKS	Book stores
BMV	Music and videos
BNM	Newspapers and magazines
BTN	Bars/taverns/nightclubs
BWL	Beer/wine/liquor stores
CCR	Consumer credit reporting
CEA	Consumer electronics/appliances
CES	Cleaning and exterminating services
CGA	Casino and gambling activities
CMP	Computer/software stores
CNS	Construction services
COS	Cosmetics and beauty services
CPS	Camera/photography supplies
CSV	Courier services

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<b>Value</b>	<b>Description</b>
CTE	Communications, telecommunications equipment
CTS	Communications, telecommunications, cable services
CUE	College, university education
CUF	Clothing, uniform, costume rental
DAS	Dating services
DCS	Death care services
DIS	Discount department stores
DLS	Dry cleaning, laundry services
DPT	Department stores
DSC	Drug store chains
DVG	Variety/general merchandise stores
EAP	Eating places
ECA	Employment, consulting agencies
EHS	Elementary, middle, high schools
EQR	Equipment rental
ETC	Miscellaneous
FLO	Florists
FSV	Financial services
GHC	Giftware/houseware/card shops
GRO	Grocery stores
GSF	Specialty food stores
HBM	Health/beauty/medical supplies
HCS	Health care and social assistance
HFF	Home furnishings/furniture
HIC	Home improvement centers
INS	Insurance
IRS	Information retrieval services
JGS	Jewelry and giftware
LEE	Live performances, events, exhibits
LLS	Luggage and leather stores
MAS	Miscellaneous administrative and waste disposal services

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<b>Value</b>	<b>Description</b>
MER	Miscellaneous entertainment and recreation
MES	Miscellaneous educational services
MFG	Manufacturing
MOS	Miscellaneous personal services
MOT	Movie and other theatrical
MPI	Miscellaneous publishing industries
MPS	Miscellaneous professional services
MRS	Maintenance and repair services
MTS	Miscellaneous technical services
MVS	Miscellaneous vehicle sales
OBS	Obsolete
OPT	Optical
OSC	Office supply chains
PET	Pet stores
PFS	Photofinishing services
PHS	Photography services
PST	Professional sports teams
PUA	Public administration
RCP	Religious, civic, and professional organizations
RES	Real estate services
SGS	Sporting goods/apparel/footwear
SHS	Shoe stores
SND	Software production, network services, and data processing
SSS	Security, surveillance services
TAT	Travel agencies and tour operators
TEA	T+E airlines
TEB	T+E bus
TET	T+E cruise lines
TEV	T+E vehicle rental
TOY	Toy stores
TRR	T+E railroad

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<b>Value</b>	<b>Description</b>
TSS	Other transportation services
TTL	T+E taxi and limousine
UNK	Unknown
UTL	Utilities
VES	Veterinary services
VGR	Video and game rentals
VTB	Vocation, trade and business schools
WAH	Warehouse
WHC	Wholesale clubs
WHT	Wholesale trade

---

#### **Subfield 4 (Super Industry Code)**

Contains the industry code assigned to the merchant. Valid values are:

**Table 129: Subfield 4 attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-3
Data field	Contents of positions 84–86
Justification	N/A

**Table 130: Subfield 4 values**

<b>Value</b>	<b>Description</b>
AAP	Apparel and accessories
ACF	Accommodations and food services
AER	Arts, entertainment, recreation
AFH	Agriculture, forestry/fishing, hunting
AWS	Administrative support, waste management and remediation services
CEC	Consumer electronics and computers
CNS	Construction services
CTE	Communications, telecommunications equipment

---

<b>Value</b>	<b>Description</b>
EDS	Education services
ETC	Miscellaneous
FAI	Finance and insurance
GEN	General merchandise stores
GFR	Grocery and food stores
HCS	Health care and social assistance
HIC	Home improvement centers
HPC	Health and personal care stores
INF	Information
MFG	Manufacturing
MOS	Other services
MOV	Motor vehicles
OBS	Obsolete
PST	Professional, scientific, and technical services
PUA	Public administration
RLL	Real estate, rental, and leasing
SGH	Sporting goods and hobby
TWS	Transportation and warehousing
UNK	Unknown
UTL	Utilities
WHT	Wholesale trade

### **Subfield 5 (Key Aggregate Merchant ID)**

**Table 131: Subfield 5 attributes**

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<b>Attribute</b>	<b>Description</b>
Data representation	n-5
Data field	Contents of positions 87–91
Justification	N/A

### **Subfield 5 values**

Contains the aggregate merchant ID for a merchant chain which has other aggregate merchant IDs associated with it that are used to identify different channels of distribution for the same chain.

### **Subfield 6 (Channel Distribution ID)**

Contains the code determined by Mastercard and assigned to aggregate merchants. Valid values are:

**Table 132: Subfield 6 attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-1
Data field	Contents of position 92
Justification	N/A

**Table 133: Subfield 6 values**

<b>Value</b>	<b>Description</b>
B	Brick-and-mortar
O	Online
C	Catalog
N	Non-store mixed

### **Subfield 7 (NAICS Code)**

**Table 134: Subfield 7 attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-6
Data field	Contents of position 93–98
Justification	N/A

### **Subfield 7 values**

Contains the North America Industry Classifications System code. A code similar to the Mastercard defined merchant category code.

### Subfield 8 (Parent Aggregate Merchant ID)

Table 135: Subfield 8 attributes

Attribute	Description
Data representation	n-8
Data field	Contents of position 99-106
Justification	N/A

#### Subfield 8 values

Contains a unique number used to identify the company that owns the merchant.

## DE 124 (Member-Defined Data)

DE 124 (Member-defined Data) is available for processors to send and to receive private business-related data in selected messages.

**NOTE:** For detailed data layout requirements when using DE 124 with the Mastercard Digital Enablement Service, refer to the Mastercard Digital Enablement Service section in the Program and Service Formats chapter in this manual.

#### Attributes

Attribute	Description
Data representation	ISO Standard: ans...999; LLLVAR Mastercard Standard: ans...299; LLLVAR
Data element length	3 positions, value = ...299
Data field	Contents of subelement and subfields
Subelements	1
Subfields	43
Justification	See "Subelements" and "Subfields"

**NOTE:** ISO Standards define this data element as ans...999; LLLVAR however the Single Message System defines it as ans...299; LLLVAR.

## **Usage**

Following is the usage of DE 124 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

<b>Message</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>
Financial Transaction Request/0200	C	P	C
Financial Transaction Request Response/0210	C	P	C
Financial Transaction Advice/0220	C	P	C
Financial Transaction Advice/0220: Debit Mastercard stand-in	C	P	C
Acquirer Reversal Advice/0420: acquirer initiated	O	P	C

## **Application notes**

DE 124 enables processors to send private data to each other. Use of DE 124 depends on message type and product. The following sections provide a summary of this information. DE 124 is conditional unless stated as required.

If DE 124 contains all blanks, the Single Message System will decline the transaction with DE 39, value of 30. DE 44 (Additional Response Data), will indicate that DE 124 is blank.

Customers must select all State, Province, and Country Codes from the *Quick Reference Booklet*.

If a country code is used, it must be the ISO 3-character alphabetic (not numeric) Country Code. If used, a State or Province Code should be right-justified in this subfield with one leading blank space.

Customers must not use all zeros, all low values (binary zeros), or all high values (binary Fs) when formatting DE 124.

The Single Message System passes anything received in DE 124 from either acquirer or issuer to the other-end processor. The Single Message System will include the value in DE 124 received from the issuer in its 0210 message back to the acquirer, even if the issuer has declined the request. The Single Message System will not pass DE 124 to either processor if a message format error exists.

The Single Message System maintains a configuration record for each processor and uses a field in this configuration record to enable a processor to use DE 124.

## **Mastercard Send Funding and Payment transactions**

Acquirers and issuers are able to exchange DE 124 data in MoneySend (funding, refund, and payment), Gaming and Gambling, and MPQR payment transaction Financial Transaction Request/Response messages.

**NOTE:** For Single Message System acquirers and issuers, DE 124 is available in Financial Transaction Advice/0220 messages during clearing processing for Debit Mastercard and will contain the same information as presented in DE 108 (Additional Transaction Reference Data).

### Funding Transactions at the ATM

DE 124 is available for processors to send and to receive private business-related data in selected messages. For Funding transactions at the ATM, DE 124 is mandatory and contains biller information.

When DE 124 is not present in an acquired Financial Transaction Request/0200 message for intracountry transactions sent by the Single Message System to the Dual Message System (issued) interface, the transaction is declined with DE 39 (Response Code) containing a value of 30 (Format Error) and DE 44 (Additional Response Data) containing a value of 124 indicating the data element in error.

### IIAS healthcare transactions

To support the Inventory Information Approval System (IIAS) for auto-substantiation of healthcare-related transactions (such as FSA, HRA or HSA), merchants exempt from the IIAS rules identified as 90 percent merchants must include their Acquirer ID and Merchant ID in DE 124 when DE 48, subelement 61, subfield 3 (Real-time Substantiation Indicator) is = 2 (Merchant exempt from IIAS based on IRS 90 percent rule).

## Uses and formats of DE 124 ( Member-Defined Data)

These pages show the many uses, formats, and subfields available for DE 124.

### DE 124 subfields in a Financial Transaction Request/0200 message

These are the subfields available in a Financial Transaction Request/0200 message.

#### Subfield 1 (Unique Reference Number)

DE 124, subfield 1 contains the unique reference number in a Financial Transaction Request/0200 message.

#### Attributes

Attribute	Description
Data representation	ans-19
Data field	Contents of positions 1-19
Justification	Left-justified with trailing spaces

#### Values

Valid value string will contain a leading zero (0), followed by:  
ICA (n-6)

Year (n-1)

Julian Date (n-3)

HHMMSS (n-6)

Transaction Sequence number (01–99) (n-2)

Example: 0555555801215305401

### **Subfield 2 (Sender/Payer Name/User ID)**

DE 124, subfield 2 contains the Sender/Payer Name/User ID in a Financial Transaction Request/0200 message.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-24
Data field	Contents of positions 20–43
Justification	Left-justified with trailing spaces.

#### **Values**

Sender name, payer name, or user ID value up to 24 character spaces.

Sender business, government, and non-government names are included in this subelement.

### **Subfield 3 (Sender/Payer Address)**

DE 124, subfield 3 (Sender/Payer Address) contains sender/payer address data.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-91
Data field	Contents of positions 44–134
Justification	Left-justified with trailing spaces

**NOTE:** DE 124, subfield 3 is required and all values must be present according to message specifications defined below.

### **Values**

<b>Field</b>	<b>Data</b>	<b>Specifications</b>
Street address	ans-50	Must be present. Must not be all blanks or all zeros.
City	ans-25	Must be present if applicable.
State/province code	ans-3	Must be a present and valid state code for U.S. or valid province code for Canada. Must not be all blanks or all zeros. For all other countries, may contain all spaces or a state code if applicable.
Country code	ans-3	Must be present. Must not be all blanks or all zeros. Must be a valid country code. Must not be a blocked country.
Postal code	ans-10	Must be present if applicable.

**NOTE:** Transaction will be declined if the sender country is subject to comprehensive geographic sanctions published by the Office of Foreign Assets Control (OFAC), <http://www.treasury.gov/resource-center/sanctions/Pages/default.aspx>. The current list of countries subject to such sanctions is Cuba, Iran, North Korea, Sudan, and Syria; however, this list is subject to change.

### **Subfield 4 (Additional Sender Information)**

DE 124, subfield 4 contains additional sender information in the Financial Transaction Request/0200 message.

### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-65
Data field	Contents of positions 135-199
Justification	Left-justified with trailing spaces

### **Values**

Optional sender data up to 65 character spaces. Valid value will contain:

Telephone number (n-20)

Date of Birth (n-8) (MMDDYYYY)

Optional message (ans-37)

## **DE 124 subfields in a Financial Transaction Request Response/0210 message**

These are the subfields available in a Financial Transaction Request Response/0210 message.

### **Subfield 1 (Unique Reference Number)**

DE 124, subfield 1 contains the unique reference number in the Financial Transaction Request Response/0210 message.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-19
Data field	Contents of positions 1-19
Justification	Left-justified with trailing spaces

#### **Values**

Valid value string will contain a leading zero (0), followed by:

ICA (n-6)

Year (n-1)

Julian Date (n-3)

HHMMSS (n-6)

Transaction Sequence number (01-99) (n-2)

Example: 0555555801215305499

**NOTE:** For payment transaction processing, issuers have the option to return a value of 99 in the Transaction Sequence Number, along with recipient identification data in the Financial Transaction Request Response/0210 message.

### **Subfield 2 (Recipient)**

DE 124, subfield 2 contains the recipient name in the Financial Transaction Request Response/0210 message.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-24
Data field	Contents of positions 20-43

Attribute	Description
Justification	Left-justified with trailing spaces

### Values

Sender name, payer name, or user ID value up to 24 character spaces.

### Subfield 3 (Recipient Address)

DE 124, subfield 3 contains the recipient address in the Financial Transaction Request Response/0210 message.

### Attributes

Attribute	Description
Data representation	ans-91
Data field	Contents of positions 44–134
Justification	Left-justified with trailing spaces

### Values

Sender/payer address value up to 91 character spaces. Valid value will contain:

Street address (ans-50)

State/province code (ans-3)

City (ans-25)

Country code (ans-3)

Postal code (ans-10)

### Subfield 4 (Reserved Data)

DE 124, subfield 4 contains reserved data in the Financial Transaction Request Response/0210 message.

### Attributes

Attribute	Description
Data representation	ans-65
Data field	Contents of positions 135–199
Justification	Left-justified with trailing spaces

### Values

Optional sender data up to 65 character spaces. Valid value will contain:

Telephone number (n-20)

Date of birth (n-8) (MMDDYYYY)

Optional message (ans-37)

### DE 124 (Member-defined data: Mastercard Send)

Acquirers and issuers are able to exchange DE 124 data in MoneySend (funding, refund, and payment), Gaming and Gambling, and MPQR payment transaction Authorization Request/Response messages.

Acquirers and issuers must use DE 108 (Additional Transaction Reference Data) when sending and receiving Receiver and Sender information.

### DE 124 (Member-defined data [Argentina Domestic Use Only])

DE 124 (Member-defined Data) is available for processors to send and to receive private business-related data in selected messages. These layouts are for special usage of DE 124 member-defined data for use in Argentina.

### Attributes

Attribute	Description
Data representation	ISO Standard: ans...999; LLLVAR Mastercard Standard: ans...299; LLLVAR
Data element length	3 positions, value = ...299
Data field	Contents of subelement and subfields
Subelements	1
Subfields	43
Justification	See "Subelements" and "Subfields"

**NOTE:** ISO Standards define this data element as ans...999; LLLVAR however the Single Message System defines it as ans...299; LLLVAR.

### Usage

Following is the usage of DE 124 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Advice/0220	C	P	C

### Application notes

Subfields 1 and 2 are already defined for use in Argentina and are not impacted by this announcement. Subfields 1 and 2 are only used for domestic recurrent payment transactions. If the transaction is not a domestic recurrent payment transaction then subfields 1 and 2 are space-filled.

Subfields 1 and 2 have not previously been published in the *Single Message System Specifications* manual.

### DE 124 usage for Argentina domestic use only

These layouts are for special usage of DE 124 member-defined data **for use in Argentina Domestic use only**.

**Subfields 1–4** are used for Argentina domestic use only.

#### Subfield 1 (Billing Period)

DE 124, subfield 1 (Billing Period) describes the frequency that a cardholder is billed.

#### Attributes

Attribute	Description
Data representation	ans-5
Data field	Contents of positions 1–5
Justification	Left

#### Values

Acquirer populates this subfield with the month and year of the billing, for example Jun17 or 00617.

#### Subfield 2 (Recurrent Payment Reference Number)

DE 124, subfield 2 (Recurrent Payment Reference Number) contains the invoice number of the service that is being paid.

#### Attributes

Attribute	Description
Data representation	ans-12
Data field	Contents of positions 6–17

Attribute	Description
Justification	Left

### Values

The invoice number of the service being paid.

### Subfield 3 (Card Acceptor Tax ID)

DE 124, subfield 3 (Card Acceptor Tax ID) describes the card acceptor tax ID of the merchant in Argentina.

### Attributes

Attribute	Description
Data representation	ans-20
Data field	Contents of positions 18-37
Justification	Left justified with trailing spaces

### Values

Contains the CUIT (Clave Unica de Identificacion), a unique number used as a tax identifier for people or companies in Argentina.

### Subfield 4 (Legal Corporate Name)

DE 124, subfield 4 (Legal Corporate Name) describes the legal corporate name of the merchant in Argentina.

### Attributes

Attribute	Description
Data representation	ans-30
Data field	Contents of positions 38-67
Justification	Left justified with trailing spaces

### Values

The legal corporate name of the merchant in Argentina.

### **Subfield 5 (Cardholder Identification Method)**

DE 124, subfield 5 (Cardholder Identification Method) describes the cardholder identification method used by the merchant in Argentina.

#### **Attributes**

Attribute	Description
Data representation	n-1
Data field	Contents of positions: 68
Justification	None

#### **Usage**

Following is the usage of DE 124, subfield 5 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200: Maestro	C	P	C
Financial Transaction Advice/0220	.	X	C

#### **Values**

Value	Description
0 =	Unknown (default)
1 =	Signature
2 =	PIN
3 =	Unattended terminal
4 =	Mail/phone order

### **Subfield 6 (POS Invoice Number)**

DE 124, subfield 6 (POS Invoice Number) describes the POS Invoice Number of the merchant in Argentina.

#### **Attributes**

Attribute	Description
Data representation	an-20

Attribute	Description
Data field	Contents of positions: 69–88
Justification	Left justified with trailing spaces

### Usage

Following is the usage of DE 124, subfield 6 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200: Maestro	C	P	C
Financial Transaction Advice/0220	•	X	C

### Values

The POS Invoice Number of the merchant in Argentina.

### Application notes

DE 124, subfields 1 and 2 are already defined for use in Argentina and are not affected by this announcement. Subfields 1 and 2 are used only for domestic recurring payment transactions. If the transaction is not a domestic recurring payment transaction then subfields 1 and 2 are space-filled.

### DE 124 usage for Brazil only

These layouts are for special usage of DE 124, Member-defined data subfields **for use in Brazil only**.

#### **Credito Direto ao Consumidor (CDC) transactions with Maestro in Financial Transaction Request/0200 message**

These subfields are used with CDC transactions.

##### **Subfield 1 (Merchant CNPJ Number to Attend CDC [Timed-based transactions])**

DE 124, subfield 1 contains the registration number of the merchant in the IRS (Receita Federal) database of Brazil in the Financial Transaction Request/0200 message.

### Attributes

Attribute	Description
Data representation	ans-14
Data field	Contents of positions 1–14

Attribute	Description
Justification	N/A

### Values

The registration number of the merchant in the IRS (Receita Federal) database of Brazil.

### Subfield 2 (Not Used)

DE 124, subfield 2 is not currently used.

### Attributes

Attribute	Description
Data representation	ans-185
Data field	Contents of positions 15-199
Justification	N/A

### Values

Space filled.

## Other financed transactions with Maestro in Financial Transaction Request Response/0210 message

These subfields are used in other financed transactions in 0210 messages.

### Subfields 1–9 (Not Used)

DE 124, subfields 1–9 are not used in a Financial Transaction Request Response/0210 message.

### Attributes

Attribute	Description
Data Representation	ans-38
Data Field	Contents of positions 1–38
Justification	N/A

### Values

Space filled.

### **Subfield 10 (CET: Total Annual Effective Cost)**

DE 124, subfield 10 contains the total annual effective cost (including interest amount, taxes, and fees charged to the cardholder) in a Financial Transaction Request Response/0210 message.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-6
Data field	Contents of positions 39–44
Justification	N/A

#### **Values**

CET – Total annual effective cost (including interest amount, taxes, and fees charged to the cardholder). This amount is mandated by Local Law number 3517.

### **Subfield 11 (CET: Total Annual Effective Cost)**

DE 124, subfield 11 contains the total monthly effective cost (including interest amount, taxes, and fees charged to the cardholder) in a Financial Transaction Request Response/0210 message.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-5
Data field	Contents of positions 45–49
Justification	N/A

#### **Values**

CET – Total monthly effective cost (including interest amount, taxes, and fees charged to the cardholder). This amount is mandated by Local Law number 3517.

### **Subfield 12 (Not Used)**

DE 124, subfield 12 is not currently used in the Financial Transaction Request Response/0210 message.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-150

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<b>Attribute</b>	<b>Description</b>
Data field	Contents of positions 50–199
Justification	N/A

**Values**

Space filled.

**Distribution transactions with Maestro in Financial Transaction Request/0200 message**

Distribution transactions refer to companies that distribute and sell goods (such as snacks and beverages) to local merchants.

**Subfield 1 (Not Used)**

DE 124, subfield 1 is not currently used in the Financial Transaction Request/0200 message.

**Attributes**

<b>Attribute</b>	<b>Description</b>
Data Representation	ans-4
Data Field	Contents of positions 1–4
Justification	N/A

**Values****Subfield 2 (Distribution [Distributor Code])**

DE 124, subfield 2 contains the code of the distribution company in a Financial Transaction Request/0200 message.

**Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-13
Data field	Contents of positions 5–17
Justification	N/A

**Values**

The code of the distribution company.

### **Subfield 3 (Distribution [Distributor Code])**

DE 124, subfield 3 contains code of the customer from the distribution company in a Financial Transaction Request/0200 message.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-5
Data field	Contents of positions 18-22
Justification	N/A

#### **Values**

The code of the customer from the distribution company.

### **Subfield 4 (Distribution [Issuer Reference Code])**

DE 124, subfield 4 contains the issuer assigned reference number for the transaction in a Financial Transaction Request/0200 message.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-5
Data field	Contents of positions 23-27
Justification	N/A

#### **Values**

Issuer assigned reference number for the transaction.

### **Subfield 5 (Not Used)**

DE 124, subfield 5 is not currently used.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-172
Data field	Contents of positions 28-199
Justification	N/A

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**Values**

Issuer assigned reference number for the transaction.

**Purchase transaction with specific credit lines in Financial Transaction Request and Response/0200 and 0210 messages**

Subfields used with purchase transaction in Financial Transaction Request and Response/0200 and 0210 messages.

**Subfields 1–4 (Not Used)**

DE 124, subfields 1–4 are not currently used.

**Attributes**

Attribute	Description
Data representation	ans-27
Data field	Contents of positions 1–27
Justification	N/A

**Values**

Space filled.

**Subfield 5 (Issuer and Acquirer Reference Code)**

DE 124, subfield 5 contains the issuer and acquirer reference code.

**Attributes**

Attribute	Description
Data representation	ans-6
Data field	Contents of positions 28–33
Justification	N/A

**Values**

Specific Credit Lines reference code:

- AGRO26 – Agro Custeio
- AGRO27 – Agro Investimento
- AGRO28 – Agro Capital de Giro
- PROGER – Proger
- FCO001 – Material de Escritorio
- CCIVIL – Construção Civil
- CARRO1 – Financiamento Veículos

### **Subfield 6 (Not Used)**

DE 124, subfield 6 is not currently used.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-165
Data field	Contents of positions 34–199
Justification	N/A

#### **Values**

Space filled.

### **Custo Efetivo Total (CET) for ATM cash withdrawal with credit card in a Financial Transaction Request Response/0210 message**

These subfields are used with CET for ATM Cash withdrawal with credit card in a Financial Transaction Request Response/0210 message.

#### **Subfields 1–12 (Not Used)**

DE 124, subfields 1–12 are not currently used.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-49
Data field	Contents of positions 1–49
Justification	N/A

#### **Values**

Space filled.

### **Subfield 13 (CET: Total Annual Effective Cost)**

DE 124, subfield 13 contains the total annual effective cost in cash withdrawals with credit card (including interest amount, taxes, and fees charged to the cardholder).

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-6
Data field	Contents of positions 50–55

Attribute	Description
Justification	N/A

### Values

CET—Total annual effective cost in cash withdrawals with credit card (including interest amount, taxes, and fees charged to the cardholder). This amount is mandated by Local Law number 3517.

### Subfield 14 (Not Used)

DE 124, subfield 14 is not currently used.

### Attributes

Attribute	Description
Data representation	ans-144
Data field	Contents of positions 56–199
Justification	N/A

### Values

Space filled.

### Discretionary message on sales slip with Maestro in Financial Transaction Request/0200 message

These subfields used with Discretionary Message on Sales Slip with Maestro in Financial Transaction Request/0200 message.

### Subfields 1–5 (Not Used)

DE 124, subfields 1–5 are not currently used.

### Attributes

Attribute	Description
Data representation	ans-33
Data field	Contents of positions 1–33
Justification	N/A

### Values

Space filled.

### **Subfield 6 (Discretionary Message on Sales Slip Supported)**

DE 124, subfield 6 indicates whether the POS terminal supports the discretionary message on the sales slip.

#### **Attributes**

Attribute	Description
Data representation	ans-1

#### **Values**

Valid values are as follows.

Value	Description
0 =	no (Merchant terminal does not support the printing of messages sent by the issuer)
1 =	yes (Merchant terminal supports the printing of messages sent by the issuer)

### **Subfield 7 (Not Used)**

DE 124, subfield 7 is not currently used.

#### **Attributes**

Attribute	Description
Data representation	ans-164
Data field	Contents of positions 35–199
Justification	N/A

#### **Values**

Space filled.

---

**Discretionary message on sales slip with Maestro in Financial Transaction Request Response/  
0210 message**

These subfields used with Discretionary Message on Sales Slip with Maestro in Financial Transaction Request Response/0210 message.

**Subfields 1–6 (Not Used)**

DE 124, subfields 1–6 are not currently used.

**Attributes**

Attribute	Description
Data representation	ans-34
Data field	Contents of positions 1–34
Justification	N/A

**Values**

Space filled.

**Subfield 7 (Discretionary Message on Sales Slip Code)**

DE 124, subfield 7 indicates the number of the message to be printed on the sales slip.

**Attributes**

Attribute	Description
Data representation	an-3
Data field	Contents of positions 35–37
Justification	N/A

**Values**

Indicates the number of the message to be printed on the sales slip. For example, if value = 1, then value should be 001. If value is 10, it should be 010. If the value is 100, it should be 100.

**Subfield 8 (Discretionary Message on Sales Slip)**

DE 124, subfield 8 contains the variable part of the message to be printed on the sales slip.

**Attributes**

Attribute	Description
Data representation	an-10
Data field	Contents of positions 38–47

Attribute	Description
Justification	N/A

### Values

Contains the variable part of the message to be printed on the sales slip. This subfield can be used for a Promotion Code or another number (such as Balance).

### Subfield 9 (Not Used)

DE 124, subfield 9 is not currently used.

### Attributes

Attribute	Description
Data representation	ans-151
Data field	Contents of positions 48–199
Justification	N/A

### Values

Space filled.

### Subelement 023 (PIN Length Edit Error Message Code in a Financial Transaction Request Response/0210 Message)

These tables describe the attributes and values of subelement 023.

### Attributes

Subelement	Position	Attribute	Value
Subelement ID	1–3	n-3	023
Subelement length	4–6	n-3	001
PIN length edit error message code	7	an-1	

### Values

Value	Description
7	POS message: Invalid PIN. Use first four digits.
8	POS message: Card blocked today. Three failures in four digit PIN.

### **Maestro-branded (IIAS) healthcare transactions**

To properly identify those 90 percent merchants that are registered and certified with the Special Interest Group for IIAS Standards (SIGIS), acquirers must be prepared to send DE 124 with the following information.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-21
Data field	Contents of positions 1-21
Justification	Right justified, zero filled

#### **Values**

	<b>Positions</b>	<b>Attribute</b>	<b>Value</b>
Acquirer ID	1-6	n-6	Numeric only, right justify, zero fill to the left.

**NOTE:** Mastercard will assign and provide the Acquirer ID to the acquirer. Acquirers will provide the six-digit Acquirer ID to merchants to provide SIGIS during registration.

Merchant ID	7-21	n-15	Numeric only, right justify, zero-fill to the left.
-------------	------	------	---

Example: 006543000123456789123

**NOTE:** Acquirers will provide the 15-digit Merchant ID to merchants to provide SIGIS during registration.

#### **Application notes**

A 90 percent merchant is one who has generated 90 percent of its total sales from FSA/HSA/HRA-certified healthcare products in the previous fiscal year, and therefore is exempt from IIAS rules. The acquirer indicates this exemption by providing a value of **2** in DE 48, subelement 61, subfield 3.

**NOTE:** Mastercard strongly encourages acquirers to notify their SIGIS-certified merchants to review the SIGIS recommended testing that is available from the SIGIS website: [www.sig-is.org](http://www.sig-is.org)

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## DE 124 (Member-Defined Data [Colombia Domestic Use Only])

These layouts are for special usage of DE 124 member-defined data for use in Colombia.

**Subfields 1–16** are used for Colombia domestic activity.

### Subfield 1 (Card Issuer Data)

DE 124, subfield 1 (Card Issuer Data) defines the FIID and Logical Network associated with the card issuer.

#### Attributes

Attribute	Description
Data representation	ans-19
Data field	Contents of positions 1–19
Justification	Left-justified with trailing spaces

#### Values

FIID (1–4)

Logical Network ID (5–8) = PRO1, MDS, BNET, ASCR, PRO2

- PRO1 = Redeban Multicolor
- MDS or BNET = Mastercard
- ASCR = AScredbanco
- PRO2 = Credibanco

Constant Value (9–19) = 000000000000

### Subfield 2 (Tax [IVA])

DE 124, subfield 2 (Tax/IVA) defines the tax for Colombia domestic activity.

#### Attributes

Attribute	Description
Data Representation	n-12
Data Field	Contents of positions 20–31
Justification	Right-justified with leading zeros

#### Values

Amount is in Colombian pesos and carries an implied two position decimal.

### **Subfield 3 (Tax Amount Base)**

DE 124, subfield 3 (Tax Amount Base) defines the tax amount base for Colombia domestic activity.

#### **Attributes**

Attribute	Description
Data representation	n-12
Data field	Contents of positions 32–43
Justification	Right-justified with leading zeros

#### **Values**

Amount is in Colombian pesos and carries an implied two position decimal.

### **Subfield 4 (Retailer Data)**

DE 124, subfield 4 (Retailer Data) defines the local merchant ID for Colombia domestic activity.

#### **Attributes**

Attribute	Description
Data representation	ans-27
Data field	Contents of positions 44–70
Justification	Left-justified with trailing spaces

#### **Values**

Unique merchant ID (44–53)

Spaces (54–62)

Terminal Group (63–66)

Retailer Region (67–70)

### **Subfield 5 (Terminal Acquirer Data)**

DE 124, subfield 5 (Terminal Acquirer Data) identifies information about the terminal owner for Colombia domestic activity.

#### **Attributes**

Attribute	Description
Data representation	n-16

---

<b>Attribute</b>	<b>Description</b>
Data field	Contents of positions 71–86
Justification	Right-justified

### **Values**

- FIID (71–74)
- Logical Network (75–78)
- Constant Value (79–86)

### **Subfield 6 (Original Processing Code)**

DE 124, subfield 6 (Original Processing Code) contains the original processing code for Colombia domestic activity.

### **Attributes**

---

<b>Attribute</b>	<b>Description</b>
Data representation	n-6
Data field	Contents of positions 87–92
Justification	Right-justified

### **Values**

- 150000 = Public utilities
- 350000 = Billing payment
- 380000 = Cellular phone top up (recarga celular)
- 460000 = Tax payment
- 470000 = Tax payment refunds

### **Subfield 7 (Bill Payment/Top Up Data)**

DE 124, subfield 7 (Bill Payment/Top Up Data) provides information related to bill payment and top up transactions for Colombia domestic activity.

### **Attributes**

---

<b>Attribute</b>	<b>Description</b>
Data representation	ans-36
Data field	Contents of positions 93–128

---

<b>Attribute</b>	<b>Description</b>
Justification	Left-justified with trailing spaces

### Values

Service Code (93–96) = Number used to identify the provider company (for example: 0001= Bogota Power Light Company)

Service Description (97–126) = Service provider Bill ID (for example: Invoice number, additional billing information)

Originator Device (127) = Alphanumeric (for example, P)

Filler (128) = space

### Subfield 8 (Local POS Data)

DE 124, subfield 8 (Local POS Data) present when transaction is a Web payment or recurring payment.

### Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	n-1
Data field	Contents of position 129
Justification	N/A

### Values

<b>Value</b>	<b>Description</b>
6 =	Prauthorization/recurring payment
7 =	WebPayment, electronic orders

### Subfield 9 (Local Response Codes)

DE 124, subfield 9 (Local Response Codes) identifies unique response codes for Colombia domestic activity.

### Attributes

<b>Attribute</b>	<b>Description</b>
Data representation	ans-2
Data field	Contents of positions 130–131

Attribute	Description
Justification	Left-justified with trailing spaces

### Values

M2 = Invalid national customer identifier

### Subfield 10 (Original Transaction Data)

DE 124, subfield 10 (Original Transaction Data) is present for reversal messages to help uniquely identify the original message.

### Attributes

Attribute	Description
Data representation	ans-42
Data field	Contents of positions 132–173
Justification	Left-justified with trailing spaces

### Values

Original Message Type (132–135) = 0100 or 0200

Sequence Number (136–147)

Original Transaction Date (148–151) = MMDD

Original Transaction Time (152–157) = HHMMSS

Capture Date (158–161) = MMDD

Filler (162–173) = zeros

### Subfield 11 (Payment Indicator)

DE 124, subfield 11 (Payment Indicator) contains the payment indicator for Colombia domestic activity.

### Attributes

Attribute	Description
Data representation	ans-1
Data field	Contents of position 174
Justification	N/A
Usage	Optional

### Values

0 = Cash payment

1 = Check payment

### Subfield 12 (Interchange Code)

DE 124, subfield 12 (Interchange Code) contains the interchange code for Colombia domestic activity.

### Attributes

Attribute	Description
Data representation	ans-1
Data field	Contents of position 175
Justification	N/A
Usage	Optional

### Values

C = combined fixed/percentage value

F = fixed value

P = percentage value

### Subfield 13 (Interchange Fixed Amount)

DE 124, subfield 13 (Interchange Fixed Amount) contains the fixed amount of interchange applied to the transactions for Colombia domestic activity.

### Attributes

Attribute	Description
Data representation	n-5
Data field	Contents of positions 176-180
Justification	Right justified with leading zeros
Usage	Optional

### Values

Amount is in Colombian pesos and carries an implied two position decimal.

### **Subfield 14 (Interchange Percentage)**

DE 124, subfield 14 (Interchange Percentage) contains the interchange percentage applied to the transactions for Colombia domestic activity.

#### **Attributes**

Attribute	Description
Data representation	n-5
Data field	Contents of positions 181-185
Justification	Right justified with leading zeros

#### **Values**

Two implied decimals with no separation sign.

### **Subfield 15 (Local Interchange Group)**

DE 124, subfield 15 (Local Interchange Group) contains the local interchange grouping (MCC) for Colombia domestic activity.

#### **Attributes**

Attribute	Description
Data representation	ans-3
Data field	Contents of positions 186-188
Justification	Left-justified with trailing spaces

#### **Values**

This field is a market defined sub-grouping of merchant category codes.

### **Subfield 16 (IAC Tax Amount)**

DE 124, subfield 16 (IAC Tax Amount) defines the IAC Tax for Colombia domestic activity.

#### **Attributes**

Attribute	Description
Data representation	n-12
Data field	Contents of positions 189-200
Justification	Right-justified with leading zeros

## Values

Amount is in Colombian pesos and carries an implied two position decimal.

## DE 124 (Member Defined Data [Mexico rePower Use Only])

These layouts are for special usage of DE 124 member-defined data for use in Mexico only.

**Subfields 4–5** are used for Mexico domestic activity for Mastercard® *rePower*™.

## Application notes

DE 124 enables processors to send private data to each other. Use of DE 124 depends on message type and product. The following table provides a summary of this information. DE 124 is conditional unless stated as required.

### Specifications for POS cash out transactions (without purchase)

- The cash out transaction will be a POS cash back without purchase transaction.
- Acquirers in Mexico operating banking agent services on the Single Message System that choose to process cash back without purchase transactions initiated at a POS terminal must support the following requirements.
  - The Financial Transaction Request /0200 message will contain
    - DE 3 (Processing code), subfield 1 (Cardholder Transaction Type Code) with value 09 (Purchase with Cash Back)
    - DE 54 (Additional amounts), subfield 2 (Amount Type) with value 40 (Cash Back)
    - equal values in DE 4 (Amount, Transaction) and DE 54, subfield 5 (Amount), and
    - free-form DE 124 used to pass information to the issuer.
  - The cardholder will be authenticated using a PIN number.
  - The cash back without purchase transaction must be a Mexico intracountry transaction.
  - The acquirer may submit same-day reversals in online exceptions for a cash back without purchase transactions.

### Specifications for POS balance inquiry transactions

- Participation in POS balance inquiry is optional for acquirers in Mexico.
- To participate in POS balance inquiry, acquirers must
  - in a financial transaction Request/0200 message, provide
    - DE 3 (Processing Code), Subfield 1 (Cardholder Transaction Type Code), Value 30 (Balance Inquiry) and
    - free-form DE 124 used to pass information to the issuer; and
  - receive in a Financial Transaction Request Response/0210 message:
    - The balance information contained in DE54 (Additional Amounts).
    - Forward that balance information to the merchant.
- Be aware of a POS balance inquiry transaction that is not a Mexico intracountry transaction will be declined.
- Be aware that a POS balance inquiry transaction to a non participating issuer will be declined.

### **Mexico rePower Issuers**

Program qualification: Issuers with Mastercard's switch that provides bank agent services.

#### **POS cash out transactions (without purchase)**

Issuers in Mexico operating banking agent services on the Single Message System that participates in cash back without purchase transactions initiated at a POS terminal must support the following requirements.

- Issuers in Mexico must be able to receive the Financial Transaction Request/0200 message containing
  - DE 3, subfield 1, value 09
  - DE 54, subfield 2, value 40; and
  - equal amount values in DE 4 and DE 54, subfield 5.
- The cardholder will be authenticated using a PIN number.
- The cash back without purchase transactions must be a Mexico intracountry transaction.
- Issuers must be aware the acquirer may submit same-day reversals in online exceptions for a cash back without purchase transactions.
- Testing of cash back without purchase transactions is mandatory for all issuers in Mexico.

#### **POS balance inquiry transactions**

- Issuers in Mexico that choose to participate in POS balance inquiry must submit the Point of Sale (POS) and ATM Balance Inquiry Participation (Form 0771) to the Customer Operations Services team.
- Participating issuers in Mexico must
  - respond to a POS balance inquiry in a Financial Transaction Request Response/0210 message with the balance information contained in DE 54
  - be aware a POS balance inquiry transaction that is not a Mexico intracountry transaction will be declined, and
  - perform recommended testing of the POS balance inquiry.

#### **Subfield 4 (Reference Deposit Number)**

DE 124, subfield 4 (Reference Deposit Number) contains the reference used by the issuer to identify the beneficiary of a Reference Deposit.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-80
Data field	Contents of positions 61–140
Justification	Left-justified with trailing spaces

## Values

Bill payment reference ("linea de captura") or Reference for Deposit.

## Subfield 5 (Merchant Fee)

DE 124, subfield 5 (Merchant Fee) contains the fee collected by the merchant in cash at the point of service. Sent from the acquirer to the issuer for informative purposes.

## Attributes

Attribute	Description
Data representation	an-9
Data field	Contents of positions 141–149
Justification	N/A

## Values

D (debit) or C (credit) indicator followed by 8 digits. The last 2 digits are reserved for cents.

The fee is in Mexican peso currency code 484.

## DE 124 (Member Defined Data [Uruguay Domestic Maestro POS Transactions Use Only])

These layouts are for special usage of DE 124 member-defined data for use in Uruguay.

Absolute positioning of data in DE 124 subfields is required. Subfields not containing values will be populated with spaces when they are followed by subfields that contain values. If one or more subfields at the end of the data element do not contain a value, the subfield(s) will not be present, and the total length of DE 124 will be reduced by the subfield length(s).

Example: 00012345678900000027150000000022254101000000048959N

**NOTE:** If DE 124 contains more than 51 bytes of data, the data will be truncated.

**Subfields 1–6** are used for Uruguay Domestic Maestro POS Transaction activity.

**NOTE:** Mastercard recommends that the Merchant Tax ID (subfield 1) be sent by acquirers in all transactions with or without government incentivized discount information.

## Subfield 1 (Merchant Tax ID)

DE 124, subfield 1 (Merchant Tax ID) contains the merchant tax id for the domestic Maestro POS transaction in Uruguay.

## Attributes

Attribute	Description
Data representation	n-12

Attribute	Description
Data field	Contents of positions 01–12
Justification	right-justified with leading zeros

### Values

Must be numeric not exceeding twelve digits.

**NOTE:** This subfield can be sent with or without government incentivized discount information.

### Subfield 2 (Original Transaction Amount)

DE 124, subfield 2 (Original Transaction Amount) defines the original transaction amount of the domestic Maestro POS transaction in Uruguay.

### Attributes

Attribute	Description
Data representation	n-12
Data field	Contents of positions 13–24
Justification	right-justified with leading zeros

### Values

Amount should be in the currency of the transaction with the same implied decimal positions.

### Subfield 3 (Total Amount Applicable for Discount)

DE 124, subfield 3 (Total Amount Applicable for Discount) defines the total amount for the eligible items in the purchase that an acquirer in Uruguay will apply against the qualifying discount.

### Attributes

Attribute	Description
Data representation	n-12
Data field	Contents of positions 25–36
Justification	right-justified with leading zeros

### Values

Amount should be in the currency of the transaction with the same implied decimal positions.

### **Subfield 4 (Local Regulation Identifier)**

DE 124, subfield 4 (Local Regulation Identifier) defines the local regulation identifier established for the transaction.

#### **Attributes**

Attribute	Description
Data representation	n-2
Data field	Contents of positions 37–38
Justification	left-justified

#### **Values**

Local Regulation Law Number:

- 01—Ley 17934/Law 17934
- 02—Ley 18910/Law 18910
- 03—Ley 18999/Law 18999
- 04—Ley 19210/Law 19210
- 05—Ley 18083/Law 18083 (for merchants near Argentina border)
- 06—Ley 18083/Law 18083 (for merchants near Brazil border)

### **Subfield 5 (Discount Amount)**

DE 124, subfield 5 (Discount Amount) defines the government incentive discount amount owed on the domestic Maestro POS transaction in Uruguay.

#### **Attributes**

Attribute	Description
Data representation	n-12
Data field	Contents of position 39-50
Justification	right-justified with leading zeros

#### **Values**

Amount should be in the currency of the transaction with the same implied decimal positions.

### **Subfield 6 (Discount Cap Reached)**

DE 124, subfield 6 (Discount Cap Reached) identifies whether the discount cap amount has been reached or not for a law regulation applying to an individual transaction.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	a-1
Data field	Contents of position 51
Justification	left-justified

#### **Values**

- Y: Yes, discount cap amount reached.
- N: No, discount cap amount not reached by the acquirer in Uruguay during the calculation of the discount applied.

### **Use of Data Element 124 by message type and card type**

This table displays the use of DE 124.

<b>Message type</b>	<b>Debit MC</b>		<b>Maestro</b>		<b>Cirrus</b>	
	<b>Acquirer</b>	<b>Issuer</b>	<b>Acquirer<sup>e</sup></b>	<b>Issuer</b>	<b>Acquirer</b>	<b>Issuer</b>
0200	N/A	Mastercard to ISS	ACQ to Mastercard	Mastercard to ISS	ACQ to Mastercard	Mastercard to ISS
0210 <sup>a</sup>	N/A	ISS to Mastercard	Mastercard to ACQ	ISS to Mastercard	Mastercard to ACQ	ISS to Mastercard
0220 <sup>b</sup>	N/A	Mastercard to ISS	ACQ to Mastercard	Mastercard to ISS	ACQ to Mastercard	Mastercard to ISS

<sup>a</sup> The issuer may echo DE 124 to the Single Message System, send a different DE 124 value to the Single Message System, send DE 124 to the Single Message System without having received DE 124, or not send DE 124 at all. The Single Message System passes any value to the acquirer. If the issuer returns no value to the Single Message System, the Single Message System does not return DE 124 to the acquirer.

<sup>b</sup> The acquirer can send a different value in the 0220 message than it received in the 0210 message.

<sup>c</sup> If the issuer sends DE 124 in the 0230 message, the Single Message System does not pass DE 124 in the 0230 message to the acquirer.

<sup>d</sup> If the issuer sends DE 124 in an 0430 message, the Single Message System does not pass DE 124 in the 0430 message to the acquirer.

<sup>e</sup> DE 124 is not returned to the Maestro acquirer in the Canada Region.

Message type	Debit MC		Maestro		Cirrus	
	Acquirer	Issuer	Acquirer <sup>e</sup>	Issuer	Acquirer	Issuer
0230 <sup>c</sup>	N/A	ISS to Mastercard	N/A	ISS to Mastercard	N/A	ISS to Mastercard
0420	ACQ to Mastercard	N/A	ACQ to Mastercard	N/A	ACQ to Mastercard	N/A
0430 <sup>d</sup>	N/A	ISS to Mastercard	N/A	ISS to Mastercard	N/A	ISS to Mastercard

## DE 125 (New PIN Data)

DE 125 (New PIN Data) for the PIN change function will be passed in DE 125 (New PIN Data), a binary data block containing a derived encrypted value calculated from the new PIN introduced by the cardholder at an ATM offering PIN change. The Single Message System permits PINs from 4 to 12 characters in length. The encrypted PIN block is always 64 bits (8 bytes) in length, regardless of the original PIN length.

### Attributes

Attribute	Description
Data representation	b-64
Data element length	None
Data field	Fixed length, contents of positions 1–64
Subfields	None
Justification	N/A

**NOTE:** ISO Standards define this data element as ans...999; LLLVAR however the Single Message System defines it as b-64.

### Usage

Following is the usage of DE 125 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	C	X	C

### Application notes

DE 125 contains the new PIN, which is formatted into one of the supported PIN block formats and then encrypted. The PIN block format and encryption method used must be the same as the one used for the existing PIN that is stored in DE 52.

## DE 126 (Switch Private Data)

The Single Message System generates DE 126 (Switch Private Data) information to facilitate its own message processing.

### Attributes

Attribute	Description
Data representation	ISO Standard: ans...999; LLLVAR Mastercard Standard: ans...050; LLLVAR
Data element length	3 positions, value = ...050
Data field	Variable length, contents of subfields 1–7
Subfields	7
Justification	See "Subfields"

**NOTE:** ISO Standards define this data element as ans...999; LLLVAR however the Single Message System uses it as ans...050; LLLVAR.

### Usage

Following is the usage of DE 126 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	.	X	M
Financial Transaction Request Response/0210	M	P	M
Financial Transaction Advice/0220	.	X	M
Financial Transaction Advice/0220: Debit Mastercard stand-in	.	X	C
Financial Transaction Advice Response/0230	M	P	M
File Update Request Response/0312	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated	.	X	M

Message	Org	Sys	Dst
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	.	X	M
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	M
Acquirer Reversal Advice/0420: exception, system initiated	.	X	M
Acquirer Reversal Advice/0420: acquirer initiated exception	.	X	M
Issuer Reversal Advice/0422: exception, system initiated	.	X	M
Issuer Reversal Advice/0422: exception, issuer initiated	.	X	M
Acquirer Reversal Advice Response/0430: system initiated	.	X	M
Acquirer Reversal Advice Response/0430: issuer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	M	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	M
Administrative Advice/0620: Single Message System initiated	.	X	M
Administrative Advice/0620: Processor initiated	.	X	.
Administrative Advice/0620: Processor initiated time-based exception	.	X	M
Administrative Advice Response/0630: processor initiated to the Single Message System	M	X	.
Administrative Advice Responses/0630: processor initiated	M	P	M
Network Management Request/0800: system-initiated	.	X	M
Network Management Request Response/0810: acquirer or issuer Initiated	M	X	.
Network Management Request Responses/0810: system initiated	.	X	M
Network Management Advice/0820	.	X	M

### Application notes

The Single Message System uses DE 126 (Switch Private Data) to contain Network-generated private-use information. This data is composed of a specific Mastercard settlement service identifier and network symbolic information used by the Single Message System for internal system routing. DE 126 also contains the Cross-Border Transaction and Currency Indicators. When this data element is received in the online message, it must be returned unchanged in the response message from the processor.

**NOTE:** All processors are required to accept and return the entire contents of DE 126.

### **Subelement encoding scheme**

The overall length of the DE 126 is specified in its first three bytes (the "LLL" portion of the data element). The overall length of DE 126 is restricted to 050 bytes to accommodate practical operational limitations. Processors must be prepared to receive DE 126 with varying lengths.

### **Subfield 1 (Settlement Service Data)**

DE 126, subfield 1 contains settlement service data.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	n-3
Data field	Contents of positions 1–3
Justification	N/A

#### **Values**

<b>Value</b>	<b>Description</b>
000	Default cutoff/non-Debit Mastercard /non-Brazil intracurrency and Debit Mastercard Direct Settlement
001	Brazil intracurrency
002	Debit Mastercard transactions, except for Direct Settlement
003	Canada intracurrency
004	Australia intracurrency
005	Mexico intracurrency
007	U.S. Domestic PIN Debit Settlement

**NOTE:** The Single Message System may add settlement service values at any time. Processors must be prepared to receive any numeric three-digit value in this field.

### **Subfield 2 (Single Message System Private Data 1)**

DE 126, subfield 2 contains the Single Message System Private Data-1 information.

#### **Attributes**

<b>Attribute</b>	<b>Description</b>
Data representation	ans-10

Attribute	Description
Data field	Contents of positions 4-13
Justification	N/A

### Values

Reserved for future use.

## Subfield 3 (Cross-Border Transaction Indicator)

DE 126, subfield 3 contains the cross-border transaction indicator.

### Attributes

Attribute	Description
Data representation	ans-1
Data field	Contents of position 14
Justification	N/A

### Values

Value	Description
Y	Qualifies as a cross-border transaction.
N	Does not qualify as a cross-border transaction.

## Subfield 4 (Currency Indicator)

DE 126, subfield 4 contains the currency indicator.

### Attributes

Attribute	Description
Data representation	ans-1
Data field	Contents of position 15
Justification	N/A

### Values

Value	Description
X	Transaction does not qualify as a Cross-Border transaction.
Y	Transaction was submitted in the currency of the merchant's country.
N	Transaction was not submitted in the currency of the merchant's country.

### Subfield 5 (Fraud Score)

DE 126, subfield 5 contains the fraud score for the transaction.

### Attributes

Attribute	Description
Data representation	an-3
Data field	Contents of position 16–18
Justification	N/A

### Values

Valid value 000–999, XXX, or ZZZ.

Value	Description
000–999	Actual score (where 999 is more likely to be fraudulent than a score of 000)
XXX	Unable to return scores
ZZZ	Fraud server is unavailable

### Subfield 6 (Fraud Risk Indicator)

DE 126, subfield 6 indicates the fraud scoring risk contributing factor.

### Attributes

Attribute	Description
Data representation	an-6
Data field	Contents of position 19–24
Justification	N/A

### Values

Value	Description
00	No suspicious activity
01	Suspicious pattern of transaction amounts–cardholder
02	Suspicious pattern of account activity at device or merchant
03	Suspicious pattern of geographical distances between transaction locations
04	Unusual amount or number of transaction fees
05	Unusual transaction frequency–account
06	Suspicious geographic location of transactions
07	Suspicious pattern of transaction merchant categories–account
08	Unusual/Suspicious pattern of transaction amounts–device
09	High/Unusual transaction frequency–device
10	Suspicious pattern of transaction time
11	Unusual/abnormal transmitted data

### Subfield 7 (Single Message System Private Data 2)

DE 126, subfield 7 contains the Single Message System Private Data-2 information.

### Attributes

Attribute	Description
Data representation	ans...26
Data field	Contents of positions 25–50
Justification	N/A

### Values

Reserved for future use.

The length of Single Message System Private Data-2 may vary by transaction. Processors must be prepared to receive any combination of valid alpha, numeric or special characters in this field.

## DE 127 (Processor Private Data)

The Single Message System reserves DE 127 (Processor Private Data) for the proprietary use of customer processing systems (CPS) that connect directly to the Single Message System.

### Attributes

Attribute	Description
Data representation	ISO Standard: ans...999; LLLVAR Mastercard Standard: ans...100; LLLVAR
Data element length	3 positions, value = ...100
Data field	Variable length, contents of positions 1-999 Variable length, contents of positions 1-100
Subfields	None
Justification	N/A

**NOTE:** ISO Standards define this data element as ans...999; LLLVAR however the Single Message System uses it as ans...100; LLLVAR.

### Usage

Following is the usage of DE 127 (whether it is mandatory, conditional, optional, system provided, or not required) in applicable messages.

Message	Org	Sys	Dst
Financial Transaction Request/0200	O	X	.
Financial Transaction Request Response/0210	O	X	C
Financial Transaction Advice/0220	O	X	.
Financial Transaction Advice Response/0230	O	X	C
File Update Request/0302	O	X	.
File Update Request Response/0312	O	X	C
Acquirer Reversal Advice/0420: acquirer initiated	O	X	.
Acquirer Reversal Advice/0420: time-out induced, acquirer initiated	O	X	.
Acquirer Reversal Advice/0420: time-out induced, system initiated	.	X	.
Acquirer Reversal Advice/0420: exception, system initiated	.	X	C

Message	Org	Sys	Dst
Acquirer Reversal Advice/0420: acquirer initiated exception	O	X	.
Issuer Reversal Advice/0422: exception, system initiated	.	X	C
Issuer Reversal Advice/0422: exception, issuer initiated	O	X	C
Acquirer Reversal Advice Response/0430: system initiated	O	X	C
Acquirer Reversal Advice Response/0430: issuer initiated	O	X	.
Issuer Reversal Advice Response/0432: exception, acquirer initiated	O	X	.
Issuer Reversal Advice Response/0432: exception, system initiated	.	X	C
Administrative Advice/0620: processor initiated	O	X	.
Administrative Advice/0620: processor initiated time-based exception	O	X	.
Administrative Advice Response/0630: processor initiated to Single Message System	O	X	.
Administrative Advice Responses/0630: processor initiated	O	X	.
Administrative Advice/0644	.	X	C
Network Management Request/0800: acquirer or issuer initiated	O	X	.
Network Management Request Response/0810: acquirer or issuer initiated	O	X	.
Network Management Request Responses/0810: system initiated	.	X	C
Network Management Advice/0820	.	.	.

### Application Notes

Any message originator (for example, any CPS or INF facility communicating directly with the Single Message System) may use this data element to contain private-use data up to a maximum length of 100 characters. Data placed in this field is not passed through to the message receiver, but is stored temporarily by the Single Message System and returned to the message originator in any subsequent response or acknowledgement message.

Typically, this data element is used by a CPS or an INF to contain online transaction matching or queuing data that can be accessed readily upon receipt of the corresponding response to any originating request or advice message.

Use of this data element is optional.

If submitted, this data element can contain new data or data from original Financial Transaction Request/0200 or Financial Transaction Request Response/0210 message and will be included in the following messages:

- Same day Acquirer Reversal Advice/0420 messages to the issuer
- Same day Acquirer Reversal Advice Response/0430 messages to the acquirer

- Same day Financial Transaction Advice Response/0230 multiple completion messages to the acquirer
- Same day Financial Transaction Advice/0220 multiple completion messages to the issuer
- Non-same day Acquirer Reversal Advice/0420 messages to the issuer from the Single Message Transaction Manager
- Non-same day Issuer Reversal Advice/0422 messages to the acquirer from the Single Message Transaction Manager
- Non-same day Acquirer Reversal Advice/0420 messages to the Single Message System from the acquirer
- Non-same day Issuer Reversal Advice/0422 messages to the Single Message System from the issuer
- Non-same day Acquirer Reversal Advice/0420 messages to the issuer from the Single Message System during online exception processing
- Non-same day Issuer Reversal Advice/0422 messages to the acquirer from the Single Message System during online exception processing

**NOTE:** Processor Private Data (DE 127) will not be present in Financial Transaction Advice/0220: Debit Mastercard Stand-In messages.

The MDS does not return DE 127 in a Network Management Advice/0820 message when provided in the Network Management Request Response/0810 message.

### Values

The Single Message System does not perform edits on this data field.

## DE 128 (Message Authentication Code [MAC])

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DE 128 (Message Authentication Code [MAC]) validates the source and the text of the message between the sender and the receiver.

### Attributes

Attribute	Description
Data representation	b-64
Data element length	None
Data field	Fixed length, contents of positions 1–64
Subfields	None
Justification	N/A

**NOTE:** The Single Message System does not use this data element.

### **Application notes**

The last bit position within any bit map is reserved for DE 128. If a customer is using authentication on a message, the final bit of the final bit map of that message indicates the MAC information. The final bit of all preceding bit maps must contain "0". For example, there must be only one DE 128 per message and that DE 128 must be the last data element of the message.

# Chapter 5 Program and service formats

*This section provides program specific message information.*

Mastercard Digital Enablement Service.....	850
Message layouts: predigitization payment network messages.....	850
Financial Transaction Request/0200: tokenization eligibility.....	850
DE 124 subfields in Financial Transaction Request/0200: tokenization eligibility.....	851
Financial Transaction Request Response/0210: tokenization eligibility.....	854
DE 124 subfields for Financial Transaction Request Response/0210: tokenization eligibility..	855
Financial Transaction Request/0200: tokenization authorization.....	858
DE 124 subfields in Financial Transaction Request/0200: tokenization authorization.....	859
Financial Transaction Request Response/0210: tokenization authorization.....	864
DE 124 subfields in Financial Transaction Request Response/0210: tokenization authorization.....	865
Financial Transaction Request/0200: activation code notification.....	869
DE 124 subfields in Financial Transaction Request/0200: activation code notification.....	870
Financial Transaction Request Response/0210: activation code notification.....	872
Financial Transaction Request/0200: tokenization complete notification.....	872
DE 124 subfields in Financial Transaction Request/0200: tokenization complete notification.....	874
Financial Transaction Request Response/0210—Tokenization Complete Notification.....	875
Financial Transaction Request/0200: tokenization event notification.....	876
DE 124 subfields in Financial Transaction Request/0200: tokenization event notification.....	877
Financial Transaction Request Response/0210: tokenization event notification.....	879
Issuer File Update Request/0302: maintenance (token/PAN update).....	880
DE 120 layout for MCC106 Mastercard Digital Enablement Service (token update).....	880
DE 120 layout for MCC106 Mastercard Digital Enablement Service (PAN update: deactivate/suspend/resume token).....	882
Issuer file update request response/0312: issuer token maintenance response (token/PAN update).....	883
Administrative Advice/0620: issuer token notification advice.....	883
DE 120 layout for Administrative Advice/0620: issuer token notification advice for activation code notification.....	884
DE 120 layout for Administrative Advice/0620: issuer token notification advice for tokenization complete notification.....	887
DE 120 layout for Administrative Advice/0620: issuer token notification advice for tokenization event notification.....	890
Administrative Advice Response/0630: issuer token notification advice response.....	893

## Mastercard Digital Enablement Service

The Mastercard Digital Enablement Service (MDES) enhances payment security and reduces fraud risk via tokenization. The service generates a token (substitutes primary account number) that can be used in place of a PAN in transactions. Refer to the *MDES Issuer Implementation Guide* (MIIG) for more information.

### Message layouts: predigitization payment network messages

The following Single Message System message layouts support real-time messages for tokenization.

#### Financial Transaction Request/0200: tokenization eligibility

Following is a list of the data elements and values applicable to the Financial Transaction Request/0200 message type for Tokenization Eligibility. All mandatory Financial Transaction Request/0200 data elements apply.

Data Element ID and Name	Org	Sys	Dst	Values/Comments
DE 2 (Primary Account Number)	.	X	M	Cardholder's primary account number
DE 3 (Processing Code)	.	X	M	00 = Purchase
DE 4 (Amount, Transaction)	.	X	M	Will be zero
DE 14 (Date, Expiration)	.	X	C	Cardholder's primary account expiration date
DE 22 (Point of Service Entry Mode)	.	X	M	Subfield 1 (POS Terminal PAN Entry Mode) = 01 (PAN manual entry) Subfield 2 (POS Terminal PIN Entry Mode) = 0 (Unspecified or unknown)
DE 35 (Track 2 Data)	.	X	C	For Maestro tokenization messages, the Single Message System creates and provides Track 2 data.
DE 48 (Additional Data), subelement 23 (Payment Initiation Channel)	.	X	C	Value indicating the type of device for which the consumer is requesting tokenization of a primary account number.
DE 48, subelement 26 (Wallet Program Data), subfield 1 (Wallet Identifier)	.	X	C	Contains the identifier associated with the Wallet Provider.

<b>Data Element ID and Name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/Comments</b>
DE 48 (Additional Data—Private Use), subelement 33 (PAN Mapping File Information), subfield 1 (Account Number Indicator)	.	X	C	Subfield 1 contains the type of PAN mapping account. Possible values: <ul style="list-style-type: none"> <li>• C when MDES Secure Element Token</li> <li>• H when MDES Cloud-Based Payments Token</li> <li>• F when MDES Static Token</li> </ul>
DE 48 (Additional Data—Private Use), subelement 33 (PAN Mapping File Information), subfield 2	.	X	C	Subfield 2 indicates the PAN mapping account.
DE 48 (Additional Data—Private Use), subelement 33 (PAN Mapping File Information), subfield 6 (Token Requestor ID)	.	X	C	Subfield 6 contains the ID assigned by the Token Service Provider to the Token Requestor.
DE 48, subelement 33 (PAN Mapping File Information), subfield 8 (Storage Technology)	.	X	C	Contains a value indicating the storage technology of the requested token.
DE 61 (Point of Service [POS] Data), subfield 7 (POS Transaction Status)	.	X	M	9 = Tokenization Request/Notification
DE 124 (Member Defined Data)	.	X	M	See layout for DE 124.

#### **DE 124 subfields in Financial Transaction Request/0200: tokenization eligibility**

The following subfields are available in DE 124 for Financial Transaction Request/0200—Tokenization Eligibility.

Absolute positioning of data in DE 124 subfields is required. Subfields not containing values will be populated with spaces when they are followed by subfields that contain values. If one or more subfields at the end of the data element do not contain a value, the subfield(s) will not be present, and the total length of DE 124 will be reduced by the subfield length(s).

<b>Subfield Name</b>	<b>Attributes</b>	<b>Values/Comments</b>
Message type	an-2	TE = Tokenization Eligibility Request (TER)
correlation ID	an-14	Identifier assigned by Mastercard to associate related tokenization request/notification messages.
Primary account number source	an-1	Identifies the method by which the cardholder is attempting to tokenize a primary account number: <ul style="list-style-type: none"> <li>1 = Card on file</li> <li>2 = Card added manually</li> <li>3 = Card added via application</li> </ul>

<b>Subfield Name</b>	<b>Attributes</b>	<b>Values/Comments</b>
Payment application instance ID	ans-48, left-justified, padded with spaces	Identifier associated with the payment application instance installed onto a device
Number of active tokens for the primary account number	ans-2	Number of active or suspended tokens for the primary account number digitized to consumer devices (including the token requested). Space-filled when requested token provisioned to a server.

<b>Subfield Name</b>	<b>Attributes</b>	<b>Values/Comments</b>
Wallet provider account ID hash	ans-64	<p>When provided by the Wallet Provider, the issuer may use this hash value to match against known identifiers for the cardholder; for example, their email addresses on file. If the hash values match, this may aid an issuer's digitization decision by providing additional factors to help verify that the Wallet Provider account holder is indeed their cardholder, or to differentiate between primary and secondary cardholders. The Wallet Provider computes the hash over an email address; MDES receives this and includes it in the data sent to the issuer. The issuer computes the hash of the email address on file for the cardholder; if it matches the hash of the one received from the Wallet Provider, the comparison with the hash value received from the Wallet Provider may be used by the issuer to assist determining the digitization decision. Hashing is used to help the issuer verify the cardholder email (or other relevant identifiers that the issuer may have for the cardholder) without the Wallet Provider providing the full email for privacy and security reasons. When the Wallet Provider is Apple Pay, the hash is generated using the PBKDF2 algorithm (PKCS #5). PBKDF2 is performed using 10 iterations, a salt, and the lowercase account ID as the password. The salt is calculated by taking the lower case UTF-8 bytes from the account ID and performing a SHA-256. Hash calculation example:</p> <ul style="list-style-type: none"> <li>• Input (Password): <code>csharp@walletprovider.com</code></li> <li>• Salt: <code>41404d1bca85ddb59ab21466e277ac1ac5f6147 0be120c82a21b1e45b5 248123</code></li> <li>• Count: 10</li> <li>• Output: <code>7098014b646d44c6f3b454c5d54f7a32b3b46e2b 0c8e2367f3e5307e30 36dfe6</code></li> </ul> <p>For all other Wallet Providers, the field contains the hash resulting from the following "accountIdHash" algorithm, right-padded with spaces. "accountId" is the lower case UTF-8 bytes of the account ID:</p> <pre>public String accountIdHash (String accountId) {     String random8Bytes = 123CCB2F30BA420B     return random8Bytes +         lessSignificant24bytes(strongerHash(accountId +             random8Bytes)) }  public String strongerHash(String</pre>

<b>Subfield Name</b>	<b>Attributes</b>	<b>Values/Comments</b>
		<pre>dataToHash) {String currentHash = dataToHash; for (int i = 0; i &lt; 5000; i++) {currentHash = sha256(currentHash);} return sha256(sha256(dataToHash) + currentHash);}</pre> <p><b>NOTE:</b> String random8Bytes = 123CCB2F30BA420B" is a fixed value for all Wallet Providers.</p> <p>Hash calculation example:</p> <ul style="list-style-type: none"> <li>• email address: cardholdername@walletprovider.com</li> <li>• accountId: 63617264686F6C6465726E616D654077616C6 C657470726F7669646 5722E636F6D</li> <li>• random8Bytes: 123CCB2F30BA420B</li> <li>• output: 123CCB2F30BA420B17F837DF60E2FC9D6965A 74476849FCD43A640F 792A2B358</li> </ul>
Cardholder name	ans-27, left justified, padded with spaces	<p>This field may be present and contain the name of the cardholder. The format is either LASTNAME/FIRSTNAME with the names delimited by a slash "/" (Example: SMITH/JOE) or the format is FIRSTNAME LASTNAME (Example: JOE SMITH).</p> <p>If the cardholder's name is longer than 27 positions, the data will be truncated to the maximum length of 27.</p>
Token type	an-1	<p>Contains a value indicating the type of requested token.</p> <p>C = Mastercard Cloud-Based Payments F = Static S = Embedded Secure Element</p>

#### **Financial Transaction Request Response/0210: tokenization eligibility**

Following is a list of the data elements and values applicable to the Financial Transaction Request Response/0210 message type for Tokenization Eligibility. All mandatory Financial Transaction Request Response/0210 data elements apply.

<b>Data Element ID and Name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/Comments</b>
DE 3 (Processing Code)	ME	ME	.	Must be the same value as the original Financial Transaction Request/0200

Data Element ID and Name	Org	Sys	Dst	Values/Comments
DE 4 (Amount, Transaction)	ME	ME	.	Must be the same value as the original Financial Transaction Request/0200
DE 39 (Response Code)	M	.	.	<ul style="list-style-type: none"> <li>One of the following values indicating how the issuer wants Mastercard to proceed with the tokenization process:</li> <li>• 00 = Continue</li> <li>• 05 = Decline</li> <li>• 85 = Continue, but require additional authentication</li> </ul>
DE 124 (Member Defined Data)	C	.	.	See layout for DE 124. If the issuer responds with DE 39 = 00 or 85, the issuer may optionally provide DE 124. If the issuer responds with DE 39 = 05, DE 124 must not be present.

### DE 124 subfields for Financial Transaction Request Response/0210: tokenization eligibility

The following subfields are available in DE 124 for Financial Transaction Request Response/0210—Tokenization Eligibility.

Absolute positioning of data in DE 124 subfields is required. Each value must be padded with spaces if the length does not fit exactly the length of the subfield. Subfields not containing values must be populated with spaces when they are followed by subfields that contain values. If one or more subfields at the end of the data element do not contain a value, the subfield(s) will not be present and the total length of DE 124 will be reduced by the subfield length(s).

Subfield Name	Attributes	Values/Comments
Issuer product Configuration ID	ans-10	<p>The unique product configuration identifier provided by the issuer that identifies a particular set of card art, texts, and other product related data, provided during the issuer enablement or maintenance process.</p> <p>By specifying the Issuer Product Configuration ID on the Token Eligibility Request Response, an issuer may override the usual Product Configuration assigned as the default at Account Range level. This allows greater control over exactly which card art and related card product data gets applied as part of a specific tokenization process. However, this does not provide a mechanism to override the Issuer Terms and Conditions File, which always comes from the default Product Configuration(s) assigned at Account Range level.</p>
Primary Account Number Card Sequence Number	ans-3, leading zeros	The card sequence number associated with the primary account number

<b>Subfield Name</b>	<b>Attributes</b>	<b>Values/Comments</b>
Token Data and Activation Method(s)	ans...186	When the issuer responds with DE 39 = 85 (Continue, but require additional authentication), the issuer may provide one or more methods by which the consumer can retrieve the activation code. If the issuer responds with DE 39 = 00 (Continue) or 05 (Decline), or if the issuer responds with DE 39 = 85 but uses an issuer-specified default for the activation code distribution method, this field will not be present. Each method will consist of:
<b>Name</b>	<b>Attributes</b>	<b>Values/Comments</b>
Activation Method Type	n-1	<p>1 = Masked mobile phone number</p> <p>2 = Masked email address</p> <p>3 = Automated call center phone number</p> <p>4 = Call center phone number</p> <p>5 = Website</p> <p>6 = Mobile application</p> <p>7 = Masked voice call phone number</p>
Activation Method Value	ans...183	See examples below
Delimiter	ans...2	<p>If multiple activation code distribution methods are provided by the issuer, the issuer must separate each method with the " " delimiter.</p> <p>Following the last character of the final method in the field, the issuer should include two " " delimiters.</p> <p>Values:</p> <p>" " indicates another Activation Code Distribution Method follows.</p>

<b>Subfield Name</b>	<b>Attributes</b>	<b>Values/Comments</b>
		"  " indicates the last Activation Code Distribution Method.

**Table 136: Examples**

"1(###) ### 4567 |"

1 = Masked mobile phone number

The "1" will be followed by the masked mobile phone number, then the delimiter.

"2a\*\*\*d@anymail.com |"

2 = Masked email address

The "2" will be followed by the consumer's masked email address (the issuer will mask according to their own format), then the delimiter.

"3(555) 123 4567 |"

3 = Automated call center phone number

The "3" will be followed by the phone number, then the delimiter. This phone number is not masked.

"4(555) 123 8901 |"

4 = Call center phone number

The "4" will be followed by the phone number, then the delimiter. This phone number is not masked.

"5http://www.anybank.com |"

5 = Website

The "5" will be followed by the issuer's website URL, then the delimiter.

"6com.anybank.mobileapp |"

6 = Mobile app

The "6" will be followed by the issuer's mobile app information, the content of which depends upon the mobile device operating system, then the delimiter.

"7(###) ### 2345 ||"

7 = Masked voice call phone number

The "7" will be followed by the masked voice call phone number. If this were the last Activation Code Distribution Method provided, the value is followed by two delimiters.

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### **Financial Transaction Request/0200: tokenization authorization**

Following is a list of the data elements and values applicable to the Financial Transaction Request/0200 message type for Tokenization Authorization. All mandatory Financial Transaction Request/0200 data elements apply.

<b>Data element ID and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/comments</b>
DE 2 (Primary Account Number)	.	X	M	Cardholder's primary account number
DE 3 (Processing Code)	.	X	M	00 = Purchase
DE 4 (Amount, Transaction)	.	X	M	Will be zero
DE 14 (Date, Expiration)	.	X	C	Cardholder's primary account expiration date
DE 22 (Point of Service Entry Mode)	.	X	M	Subfield 1 (POS Terminal PAN Entry Mode) = 01 (PAN manual entry)  Subfield 2 (POS Terminal PIN Entry Mode) = 0 (Unspecified or unknown)
DE 35 (Track 2 Data)	.	X	C	For Maestro tokenization messages, the Single Message System creates and provides Track 2 data.
DE 48 Transaction Category Code	.	X	C	T (Phone, Mail, or Electronic Commerce Order)
DE 48 (Additional Data), subelement 23 (Payment Initiation Channel)	.	X	C	Value indicating the type of device for which the consumer is requesting tokenization of a primary account number.
DE 48 (Additional Data), subelement 26 (Wallet Program Data), subfield 1 (Wallet Identifier)	.	X	C	Contains the identifier associated with the Wallet Provider.
DE 48 (Additional Data—Private Use), subelement 33 (PAN Mapping File Information), subfield 1 (Account Number Indicator)	.	X	C	Subfield 1 contains the type of PAN mapping account. Possible values: <ul style="list-style-type: none"><li>• C when MDES Secure Element Token</li><li>• H when MDES Cloud-Based Payments Token</li><li>• F when MDES Static Token</li></ul>
DE 48 (Additional Data—Private Use), subelement 33 (PAN Mapping File Information), subfield 2	.	X	C	Subfield 2 indicates the PAN mapping account.
DE 48 (Additional Data—Private Use), subelement 33 (PAN Mapping File Information), subfield 6 (Token Requestor ID)	.	X	C	Subfield 6 contains the ID assigned by the Token Service Provider to the Token Requestor.

<b>Data element ID and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/comments</b>
DE 48 (Additional Data—Private Use), subelement 33 (PAN Mapping File Information), subfield 8 (Storage Technology)	.	X	C	Contains a value indicating the storage technology of the requested token.
DE 48 (Additional Data), subelement 82 (Address Verification Service)	.	X	C	52 = AVS and Financial Transaction Request/0200
DE 48 (Additional Data), subelement 92 (CVC 2)	.	X	C	CVC 2 value from the signature panel of the card when applicable
DE 61 (Point of Service [POS] Data), subfield 7 (POS Transaction Status)	.	X	M	9 = Tokenization Request/Notification
DE 120 (Record Data)	.	X	C	AVS postal code and address data in the format specified by the issuer
DE 124 (Member Defined Data)	.	X	M	See layout for DE 124.

### **DE 124 subfields in Financial Transaction Request/0200: tokenization authorization**

These are the subfields available in DE 124 in a Financial Transaction Request/0200 message for Tokenization Authorization.

Absolute positioning of data in DE 124 subfields is required. Subfields not containing values will be populated with spaces when they are followed by subfields that contain values. If one or more subfields at the end of the data element do not contain a value, the subfield(s) will not be present and the total length of DE 124 will be reduced by the subfield length(s).

<b>Subfield name</b>	<b>Attributes</b>	<b>Values/comments</b>
Message Type	an-2	TA = Tokenization Authorization Request (TAR)
Correlation ID	an-14	Identifier assigned by Mastercard that can be used by the issuer to associate related tokenization request/notification messages.
Primary Account Number Source	an-1	Identifies the method which the cardholder is attempting to tokenize a primary account number with one of the following values:  1 = Card on file 2 = Card added manually 3 = Card added via application
Payment Application Instance ID	ans-48, left-justified, padded with spaces	Identifier associated with the payment application installed onto a device.

<b>Subfield name</b>	<b>Attributes</b>	<b>Values/comments</b>
Device Source IP Address	ans-12, left-justified, padded with spaces	Variable length IP address. Each octet of the IP address is converted to hex, and joined into one string, with the order maintained.

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<b>Subfield name</b>	<b>Attributes</b>	<b>Values/comments</b>
Wallet Provider Account ID Hash	ans-64	<p>When provided by the Wallet Provider, the issuer may use this hash value to match against known identifiers for the cardholder; for example, their email addresses on file. If the hash values match, this may aid an issuer's digitization decision by providing additional factors to help verify that the Wallet Provider account holder is indeed their cardholder, or to differentiate between primary and secondary cardholders. The Wallet Provider computes the hash over an email address; MDES receives this and includes it in the data sent to the issuer. The issuer computes the hash of the email address on file for the cardholder; if it matches the hash of the one received from the Wallet Provider, the comparison with the hash value received from the Wallet Provider may be used by the issuer to assist determining the digitization decision. Hashing is used to help the issuer verify the cardholder email (or other relevant identifiers that the issuer may have for the cardholder) without the Wallet Provider providing the full email for privacy and security reasons. When the Wallet Provider is Apple Pay, the hash is generated using the PBKDF2 algorithm (PKCS #5). PBKDF2 is performed using 10 iterations, a salt, and the lowercase account ID as the password. The salt is calculated by taking the lower case UTF-8 bytes from the account ID and performing a SHA-256. Hash calculation example:</p> <ul style="list-style-type: none"> <li>• Input (Password): csharp@walletprovider.com</li> <li>• Salt: 41404d1bca85ddb59ab21466e277ac1ac5f6147 0be120c82a21b1e45b5 248123</li> <li>• Count: 10</li> <li>• Output: 7098014b646d44c6f3b454c5d54f7a32b3b46e2b 0c8e2367f3e5307e30 36dfe6</li> </ul> <p>For all other Wallet Providers, the field contains the hash resulting from the following "accountIdHash" algorithm, right-padded with spaces. "accountId" is the lower case UTF-8 bytes of the account ID:</p> <pre>public String accountIdHash (String accountId) {     String random8Bytes = 123CCB2F30BA420B     return random8Bytes +         lessSignificant24bytes(strongerHash(accountId +             random8Bytes)) }  public String strongerHash(String</pre>

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<b>Subfield name</b>	<b>Attributes</b>	<b>Values/comments</b>
		<pre>dataToHash) {String currentHash = dataToHash; for (int i = 0; i &lt; 5000; i++) {currentHash = sha256(currentHash);} return sha256(sha256(dataToHash) + currentHash);}</pre> <p><b>NOTE:</b> String random8Bytes = 123CCB2F30BA420B" is a fixed value for all Wallet Providers.</p> <p>Hash calculation example:</p> <ul style="list-style-type: none"> <li>• email address: cardholdername@walletprovider.com</li> <li>• accountId: 63617264686F6C6465726E616D654077616C6 C657470726F7669646 5722E636F6D</li> <li>• random8Bytes: 123CCB2F30BA420B</li> <li>• output: 123CCB2F30BA420B17F837DF60E2FC9D6965A 74476849FCD43A640F 792A2B358</li> </ul>
Cardholder Name	ans-27	<p>This field may be present and contain the name of the cardholder. The format is either LASTNAME/FIRSTNAME with the names delimited by a slash "/" (Example: SMITH/JOE) or the format is FIRSTNAME LASTNAME (Example: JOE SMITH).</p> <p>If the cardholder's name is longer than 27 positions, the data will be truncated to the maximum length of 27.</p>
Wallet Provider Tokenization Recommendation	an-1	<p>Tokenization decision suggested by the Wallet Provider. One of the following values:</p> <p>0 = Decline 1 = Approve 2 = Require additional authentication</p>
Wallet Provider Tokenization Recommendation Standard Version	an-2, left-justified, padded with spaces	The version of the standards the Wallet Provider is using to determine the suggested tokenization recommendation.
Wallet Provider Device Score	n-1	Score assigned by Wallet Provider for the device. Value between 1 and 5.
Wallet Provider Account Score	n-1	Score assigned by Wallet Provider for the primary account number. Value between 1 and 5.

<b>Subfield name</b>	<b>Attributes</b>	<b>Values/comments</b>
Number of Active Tokens for the Primary Account Number	ans-2, leading zeros	Number of active or suspended tokens for the primary account number digitized to consumer devices (including the token requested). Space-filled when requested token provisioned to a server.
Wallet Provider Tokenization Recommendation Reason Codes	ans-6	<p>Code indicating the specific reason the Wallet Provider is suggesting the tokenization recommendation.</p> <p>The data of this field is a hex-encoded bitmap, whereby each bit corresponds to a specific Reason Code.</p> <p>The bitmap is big-endian with the least significant bit corresponding to Reason Code 01, with the next least significant bit corresponding to Reason Code 02, and so on. For example, if Reason Codes 01, 05, and 16 were encoded, the bitmap would be 00000000100000000000100001 and the hex value of this field would be 008011.</p> <p>If the Wallet Provider has no reason, this field will contain spaces.</p>
Device Location	ans-9	<p>Latitude and longitude where the device the consumer is attempting to tokenize a card onto is located.</p> <p>Device Location Latitude – an-4; hexadecimal encoded degrees with 2 decimal places</p> <p>Device Location Longitude – an-4; hexadecimal encoded degrees with 2 decimal places</p> <p>Device Location Lat/Long Sector – n-1 – one of the following values:</p> <ul style="list-style-type: none"> <li>1 = Latitude = N, Longitude = W</li> <li>2 = Latitude = N, Longitude = E</li> <li>3 = Latitude = S, Longitude = W</li> <li>4 = Latitude = S, Longitude = E</li> </ul> <p>This field will contain spaces if the Wallet Provider has not provided this information.</p>
Mobile Number Last 4 Digits	ans-4	<p>Last four digits of the consumer's mobile phone number</p> <p>This field will contain spaces if the Wallet Provider has not provided this information.</p>

<b>Subfield name</b>	<b>Attributes</b>	<b>Values/comments</b>
Token Type	an-1	<p>Contains a value indicating the type of token.</p> <p>C = Mastercard Cloud-Based Payments</p> <p>F = Static</p> <p>S = Embedded Secure Element</p>
Consumer Identifier	an-88	<p>Unique Identifier for each consumer, which financial institutions will then need to verify before a consumer can add their credentials to the payment-enabled devices. Position 212–299 in the DE 124 of the Financial Transaction Request/0200–Tokenization Authorization message only.</p> <p>Issuers and processors will not receive the new Consumer Identifier in DE 124 unless they explicitly opt to receive it.</p>

#### **Financial Transaction Request Response/0210: tokenization authorization**

Following is a list of the data elements and values applicable to the Financial Transaction Request Response/0210 message type for Tokenization Authorization. All mandatory Financial Transaction Request Response/0210 data elements apply.

Absolute positioning of data in DE 124 subfields is required. Each value must be padded with spaces if the length does not fit exactly the length of the subfield. Subfields not containing values must be populated with spaces when they are followed by subfields that contain values. If one or more subfields at the end of the data element do not contain a value, the subfield(s) will not be present and the total length of DE 124 will be reduced by the subfield length(s).

<b>Data element ID and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/comments</b>
DE 3 (Processing Code)	ME	ME	.	Must be the same value as the original Financial Transaction Request/0200
DE 4 (Amount, Transaction)	ME	ME	.	Must be the same value as the original Financial Transaction Request/0200
DE 39 (Response Code)	M	.	.	<p>One of the following values indicating how the issuer wants Mastercard to proceed with the tokenization process:</p> <ul style="list-style-type: none"> <li>• 00 = Approve</li> <li>• 05 = Decline</li> <li>• 85 = Approve, but require additional authentication</li> </ul>
DE 48 Transaction Category Code	CE	CE	.	Must be the same value as the original Financial Transaction Request/0200

<b>Data element ID and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/comments</b>
DE 48 (Additional Data—Private Use), subelement 82 (Address Verification Service)	CE	CE	.	52 = AVS and Financial Transaction Request/0200
DE 48 (Additional Data—Private Use), subelement 83 (Address Verification Service Response)	C	.	.	The AVS response code
DE 48 (Additional Data—Private Use), subelement 87 (Card Validation Code Result)	C	.	.	The CVC 2 result code
DE 48 (Additional Data—Private Use), subelement 92 (CVC 2)	CE	CE	.	Must be the same value as the original Financial Transaction Request/0200
DE 56 (Payment Account Data)	C	X	C	PAR value provided by the Issuer when Issuer or its designated service provider is BIN Controller (Mastercard is not BIN Controller).
DE 124 (Member Defined Data)	C	.	.	See layout for DE 124. If the issuer responds with DE 39 = 00 or 85, the issuer may optionally provide DE 124. If the issuer responds with DE 39 = 05, DE 124 must not be present.

### **DE 124 subfields in Financial Transaction Request Response/0210: tokenization authorization**

These are the subfields available in DE 124 in a Financial Transaction Request Response/0210 message to support the Mastercard Digital Enablement Service.

<b>Subfield name</b>	<b>Attributes</b>	<b>Values/comments</b>
Issuer Product Configuration ID	ans-10	<p>The unique product configuration identifier provided by the issuer that identifies a particular set of card art, texts, and other product related data, provided during the issuer enablement or maintenance process.</p> <p>By specifying the Issuer Product Configuration ID on the Token Authorization Request Response, an issuer may override the usual Product Configuration assigned as the default at Account Range level. This allows greater control over exactly which card art and related card product data gets applied as part of a specific tokenization process. However, this does not provide a mechanism to override the Issuer Terms and Conditions File, which always comes from the default Product Configuration(s) assigned at Account Range level.</p>

<b>Subfield name</b>	<b>Attributes</b>	<b>Values/comments</b>
Primary Account Number Card Sequence Number	ans-3, leading zeros	The card sequence number associated with the primary account number.
Token Data and Activation Method(s)	ans...286	<p>The subfield can have zero to multiple groupings of three Token Data and Activation Method Type, Token Data and Activation Method Value, and Delimiter.</p> <p>When the issuer responds with DE 39 = 85 (Approve, but require additional authentication), the issuer may provide one or more activation methods by which the consumer can retrieve the activation code. If the issuer responds with DE 39 = 00 (Approve) or 05 (Decline) activation methods will not be present. If the issuer responds with DE 39 = 85 but uses an issuer-specified default for the activation method, activation methods may not be present.</p> <p>When the issuer responds with DE 39 = 00 (Approve) or DE 39 = 85 (Approved, but require additional authentication), the issuer may provide zero to multiple token personalization data.</p>
• Token Data and Activation Method Type	an-1	<p>1 = Masked mobile phone number (activation method)</p> <p>2 = Masked email address (activation method)</p> <p>3 = Automated call center phone number (activation method)</p> <p>4 = Call center phone number (activation method)</p> <p>5 = Website (activation method)</p> <p>6 = Mobile application (activation method)</p> <p>7 = Masked voice call phone number (activation method)</p> <p>a = Alternate account identifier</p> <p>t = One or multiple token personalization data items</p>

<b>Subfield name</b>	<b>Attributes</b>	<b>Values/comments</b>
• Token Data and Activation Method Value	ans...283	<p>When the Token Data and Activation Method Type is 1, 2, 3, 4, 5, 6, or 7 the issuer must provide values used to specify an activation method. See Examples 1, 2, 3, and 4 for examples of Token Data and Activation Method(s) containing activation method values.</p> <p>When the Token Data and Activation Method Type is value <b>a</b>, the issuer must provide an alternate account identifier and MDES provide a suffix to the wallet attempting the digitization when the token is created. An alternate account identifier is a cardholder-friendly reference to a bank account, for example an IBAN (International Bank Account Number). It is typically useful to display the suffix of the alternate account identifier to a cardholder not aware of their Account PAN so that the tokenized card associated to the alternate account identifier can be identified. It is recommended issuers provide the full alternate account identifier to enable searches for tokens when supporting cardholders. When multiple alternate account identifiers are provided only the last one is validated and used if valid. Space characters in an alternate account identifier are trimmed. The resulting value must be at least 9 characters but no more than 64 characters. Error in processing the alternate account identifier does not stop the digitization process; it continues without any alternate account identifier. See Example 9 for an example of Token Data and Activation Method(s) containing an alternate account identifier.</p> <p>When the Token Data and Activation Method Type is <b>t</b>, the issuer must provide one or multiple proprietary token personalization data items that MDES will include in the token profile. See Example 8 for an example of Token Data and Activation Method(s) containing multiple token personalization data items.</p> <p>Each token personalization data item can have one to multiple instances of couples Token Personalization Data and Separator.</p> <p>Token Personalization Data: Base64 encoded data. Structure and content of data are defined separately per <i>Mastercard Digital Enablement Service (MDES) Issuer Implementation Guide</i>. See Examples 6 and 7.</p>
Separator	ans..1	Each separate token personalization data (including after the last) will be delimited by a "~" character.

Subfield name	Attributes	Values/comments
• Delimiter	ans-2	<p>See Example 5 for an example of Token Data and Activation Method(s) containing multiple activation methods values and multiple token personalization data items.</p> <p>If multiple Token Data and Activation Methods are provided by the issuer, the issuer must separate each method with the " " delimiter.</p> <p><b>NOTE: When at least another grouping of three Token Data and Activation Method Type, Token Data and Activation Method Value, and Delimiter follows, then the Delimiter has attributes of ans-1.</b></p> <p>Delimiter Values:</p> <p>" " indicates another Token Data or Activation Method follows.</p> <p>Following the last character of the final token data and activation method in the field, the issuer should include two " " delimiters.</p> <p>"  " indicates the last Token Data and Activation Method.</p>

**Table 137: Examples**

Example	Description
1	An example of Token Data and Activation Method(s) subfield containing only a masked mobile phone number activation method: 1(###)###4567
2	An example of Token Data and Activation Method(s) subfield containing the masked email address activation method and the automated call center phone number activation method: 2a***d@anymail.com 3(555)1234567
3	An example of Token Data and Activation Method(s) subfield containing the call center phone number activation method, the website activation method and the masked voice call phone number activation method: 4(555)1238901 5http://www.anybank.com 6com.anybank.mobileapp
4	An example of Token Data and Activation Method(s) subfield containing only a masked voice call phone number activation method: 7(###)###4567
5	An example of Token Data and Activation Method(s) subfield containing mobile application activation method, masked email address activation method and some personalization data for the token profile: 6com.anybank.mobileapp 2a***d@anymail.com tBJ9uCwJQAAEwOQECAwQFX1UCR1l=~CwECAwQFBgc=~

<b>Example</b>	<b>Description</b>
6	An example of Token Personalization Data: "BJ9uCwJQAAEwOQECAwQFX1UCR1I=" that is "049F6E 0B 0250 0001 3039 0102030405 5F55 02 4652" base64 encoded. The purpose of Token Personalization Data is to replace default Third Party Data (9F6E) and add Issuer Country Code (5F55) in Contactless FCI Issuer Discretionary Data.
7	An example of Token Personalization Data: "CwECAwQFBgc=" that is "0B01020304050607" base64 encoded. The purpose of Token Personalization Data is to create a new tag "9F70" (Protected Data Envelope) readable through GET DATA on both Management and Contactless Payment interfaces.
8	An example of Token Data and Activation Method(s) subfield containing multiple token personalization data items: tBJ9uCwJQAAEwOQECAwQFX1UCR1I=~CwECAwQFBgc=~
9	An example of Token Data and Activation Method(s) subfield containing an alternate account identifier: aBE02123456789012

#### **Financial Transaction Request/0200: activation code notification**

Following is a list of the data elements and values applicable to the Financial Transaction Request/0200 message type for Activation Code Notification. All mandatory Financial Transaction Request/0200 data elements apply.

<b>Data element ID and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/comments</b>
DE 2 (Primary Account Number)	.	X	M	Cardholder's primary account number
DE 3 (Processing Code)	.	X	M	00 = Purchase
DE 4 (Amount, Transaction)	.	X	M	Will be zero
DE 14 (Date, Expiration)	.	X	C	Cardholder's primary account expiration date
DE 22 (Point of Service Entry Mode)	.	X	M	Subfield 1 (POS Terminal PAN Entry Mode) = 01 (PAN manual entry)  Subfield 2 (POS Terminal PIN Entry Mode) = 0 (Unspecified or unknown)
DE 35 (Track 2 Data)	.	X	C	For Maestro tokenization messages, the Single Message System creates and provides Track 2 data.
DE 48 Transaction Category Code	.	X	C	T (Phone, Mail, or Electronic Commerce Order)
DE 48 (Additional Data), subelement 23 (Payment Initiation Channel)	.	X	C	Value indicating the type of device for which the consumer is requesting tokenization of a primary account number.
DE 48, subelement 26 (Wallet Program Data), subfield 1 (Wallet Identifier)	.	X	C	Contains the identifier associated with the Wallet Provider.

<b>Data element ID and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/comments</b>
DE 48 (Additional Data—Private Use), subelement 33 (PAN Mapping File Information), subfield 1 (Account Number Indicator)	.	X	C	Subfield 1 contains the type of PAN mapping account. Possible values: • C when MDES Secure Element Token • H when MDES Cloud-Based Payments Token • F when MDES Static Token
DE 48 (Additional Data—Private Use), subelement 33 (PAN Mapping File Information), subfield 2	.	X	C	Subfield 2 indicates the PAN mapping account.
DE 48 (Additional Data—Private Use), subelement 33 (PAN Mapping File Information), subfield 6 (Token Requestor ID)	.	X	C	Subfield 6 contains the ID assigned by the Token Service Provider to the Token Requestor.
DE 61 (Point of Service [POS] Data) subfield 7 (POS Transaction Status)	.	X	M	9 = Tokenization Request/Notification
DE 124 (Member Defined Data)	.	X	M	See layout for DE 124.

**DE 124 subfields in Financial Transaction Request/0200: activation code notification**

These are the subfields available in DE 124 in the Financial Transaction Request/0200 message for Activation Code Notification for the Mastercard Digital Enablement Service.

Absolute positioning of data in DE 124 subfields is required. Subfields not containing values will be populated with spaces when they are followed by subfields that contain values. If one or more subfields at the end of the data element do not contain a value, the subfield(s) will not be present and the total length of DE 124 will be reduced by the subfield length(s).

<b>Subfield name</b>	<b>Attributes</b>	<b>Values/comments</b>
Message Type	an-2	AC = Activation Code Notification (ACN)
Correlation ID	an-14	Identifier assigned by Mastercard to associate related tokenization request/notification messages.
Activation Code	ans-8, left-justified, padded with spaces	Activation Code assigned by Mastercard that will be provided to the issuer for delivery to the consumer to complete the tokenization process.
Activation Code Expiration Date and Time	n-10	Date and time that the Activation Code expires specified in UTC units. Format: YYMMDDhhmm

<b>Subfield name</b>	<b>Attributes</b>	<b>Values/comments</b>
Consumer's Activation Method Preference	ans..165	This field contains the distribution method selected by the consumer, if only one was offered by the issuer, then that distribution method. There will be only one method contained within this field. This field will only be present if the cardholder provides a choice.
<b>Name</b>	<b>Attributes</b>	<b>Values/comments</b>
Activation method type	n-1	1 = Masked mobile phone number 2 = Masked email address 3 = Automated call center phone number 4 = Call center phone number 5 = Website 6 = Mobile application 7 = Masked voice call phone number
Activation Method Value	ans...164	See examples below.

**Table 138: Examples**

"1(###) ### 4567"

1 = Masked mobile phone number

The "1" will be followed by the masked mobile phone number.

"2a\*\*\*d@anymail.com"

2 = Masked email address

The "2" will be followed by the consumer's masked email address (the issuer will mask according to their own format).

"3(555) 123 4567"

3 = Automated call center phone number

The "3" will be followed by the phone number. This phone number is not masked.

"4(555) 123 8901"

4 = Call center phone number

The "4" will be followed by the phone number. This phone number is not masked.

"5http://www.anybank.com"

5 = Website

The "5" will be followed by the issuer's website URL.

"6com.anybank.mobileapp"

6 = Mobile app

The "6" will be followed by the issuer's mobile app information, the content of which depends upon the mobile device operating system.

"7(###) ### 2345"

7 = Masked voice call phone number

The "7" will be followed by the masked voice call phone number.

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### **Financial Transaction Request Response/0210: activation code notification**

Following is a list of the data elements and values applicable to the Financial Transaction Request Response/0210 message type for Activation Code Notification. All mandatory Financial Transaction Request Response/0210 data elements apply.

<b>Data element ID and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/comments</b>
DE 3 (Processing Code)	ME	ME	.	Must be the same value as the original Financial Transaction Request/0200
DE 4 (Amount, Transaction)	ME	ME	.	Must be the same value as the original Financial Transaction Request/0200
DE 39 (Response Code)	M	.	.	00 = Approved

**NOTE:** DE 124 is not present.

### **Financial Transaction Request/0200: tokenization complete notification**

Following is a list of the data elements and values applicable to the Financial Transaction Request/0200 message type for Tokenization Complete Notification. All mandatory Financial Transaction Request/0200 data elements apply.

<b>Data element ID and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/comments</b>
DE 2 (Primary Account Number)	.	X	M	Cardholder's primary account number

Program and service formats  
Financial Transaction Request/0200: tokenization complete notification

<b>Data element ID and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/comments</b>
DE 3 (Processing Code)	.	X	M	00 = Purchase
DE 4 (Amount, Transaction)	.	X	M	Will be zero
DE 14 (Date, Expiration)	.	X	C	Cardholder's primary account expiration date
DE 22 (Point of Service Entry Mode)	.	X	M	Subfield 1 (POS Terminal PAN Entry Mode) = 01 (PAN manual entry) Subfield 2 (POS Terminal PIN Entry Mode) = 0 (Unspecified or unknown)
DE 35 (Track 2 data)	.	X	C	For Maestro tokenization messages, the Single Message System creates and provides Track 2 data.
DE 48 Transaction Category Code	.	X	C	T (Phone, Mail, or Electronic Commerce Order)
DE 48 (Additional Data), subelement 23 (Payment Initiation Channel)	.	X	C	Value indicating the type of device for which the consumer is requesting tokenization of a primary account number.
DE 48, subelement 26 (Wallet Program Data), subfield 1 (Wallet Identifier)	.	X	C	Contains the identifier associated with the Wallet Provider.
DE 48 (Additional Data—Private Use), subelement 33 (PAN Mapping File Information), subfield 1 (Account Number Indicator), subfield 2 (Account Number), subfield 3 (Expiration Date), subfield 5 (Token Assurance Level), subfield 6 (Token Requestor ID), and subfield 8 (Storage Technology)	.	X	C	Subfield 1 indicates the type of PAN mapping account. Subfield 2 indicates the PAN mapping account number. Subfield 3 indicates the expiration date of the PAN mapping account. Subfield 5 indicates Token Assurance Level. Subfield 6 contains the ID assigned by the Token Service Provider to the Token Requestor. Subfield 8 indicates Storage Technology of the token.
DE 56 (Payment Account Data)	.	X	C	This is only for MDES Tokenization Complete Notifications.
DE 61 (Point of Service [POS] Data), subfield 7 (POS Transaction Status)	.	X	M	9 = Tokenization Request/Notification
DE 124 (Member Defined Data)	.	X	M	See layout for DE 124.

**DE 124 subfields in Financial Transaction Request/0200: tokenization complete notification**

These are the subfields available in DE 124 in the Financial Transaction Request/0200 message for Tokenization Complete Notification for the Mastercard Digital Enablement Service.

Absolute positioning of data in DE 124 subfields is required. Subfields not containing values will be populated with spaces when they are followed by subfields that contain values. If one or more subfields at the end of the data element do not contain a value, the subfield(s) will not be present and the total length of DE 124 will be reduced by the subfield length(s).

<b>Subfield name</b>	<b>Attributes</b>	<b>Values/comments</b>
Message Type	an-2	TC = Tokenization Complete Notification (TCN)
Correlation ID	an-14	Identifier assigned by Mastercard to associate related tokenization request/notification messages.
Number of Active Tokens for the Primary Account Number	ans-2, leading zeros	Number of active or suspended tokens for the primary account number digitized to consumer devices. Space-filled when token present in DE 48, subelement 33, subfield 2 (Account Number) in an 0100 Tokenization Complete Notification message is provisioned to a server.
Issuer Product Configuration ID	ans-10	The unique product configuration identifier applied to the token, as provided by the issuer, identifying a particular set of card art, texts, and other product related data, that were provided during the issuer enablement or maintenance process.
Consumer Language	a-2	Language preference selected by the consumer.
Device Name	ans-20, left-justified, padded with spaces	Name that the consumer has associated to the device with the Wallet Provider.
Final Tokenization Decision	ans-1	The final tokenization decision that was used in the tokenization of the card: 1 = Approve 2 = Approve, but require additional authentication
Final Tokenization Decision Indicator	ans-1	The element of the Service that was responsible for determining the final tokenization decision: 1 = Tokenization Eligibility Response 2 = Tokenization Authorization Response 3 = Issuer pre-defined tokenization rules 4 = Mobile Application
T&C Identifier	ans-32, left-justified, padded with spaces	Identifier associated with the version of terms and conditions accepted by the consumer.

Subfield name	Attributes	Values/comments
T&C Date and Time	ans-10	Date and time that the consumer accepted the terms and conditions of the Service specified in UTC units. Format: YYMMDDhhmm
Number of Activation Attempts	ans-1	Number of activation code entry attempts by the cardholder. Space-filled when DE124, SF14 (Token Type) value is F.
Token Unique Reference	ans-48, left-justified, padded with spaces	Service-allocated unique reference to the token.
Primary Account Number Unique Reference	ans-48, left-justified, padded with spaces	Service-allocated unique reference to the tokenized Primary Account Number at the wallet level.
Token Type	an-1	Contains a value indicating the type of token present in DE 48, subelement 33, subfield 2 (Account Number) in an 0200 Tokenization Complete Notification message.  C = Mastercard Cloud-Based Payments  F = Static  S = Embedded Secure Element

### Financial Transaction Request Response/0210—Tokenization Complete Notification

Following is a list of the data elements and values applicable to the Financial Transaction Request Response/0210 message type for Tokenization Complete Notification. All mandatory Financial Transaction Request Response/0210 data elements apply.

Data element ID and name	Org	Sys	Dst	Values/comments
DE 3 (Processing Code)	ME	ME	.	Must be the same value as the original Financial Transaction Request/0200
DE 4 (Amount, Transaction)	ME	ME	.	Must be the same value as the original Financial Transaction Request/0200
DE 39 (Response Code)	.	.	.	00 = Approved

**NOTE:** DE 124 is not present.

### **Financial Transaction Request/0200: tokenization event notification**

The Following is a list of the data elements and values applicable to the Financial Transaction Request/0200 message type for Tokenization Event Notification. All mandatory Financial Transaction Request/0200 data elements apply.

<b>Data element ID and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/comments</b>
DE 2 (Primary Account Number)	.	X	M	Cardholder's primary account number
DE 3 (Processing Code)	.	X	M	00 = Purchase
DE 4 (Amount, Transaction)	.	X	M	Will be zero
DE 14 (Date, Expiration)	.	X	C	Cardholder's primary account expiration date
DE 22 (Point of Service Entry Mode)	.	X	M	Subfield 1 (POS Terminal PAN Entry Mode) = 01 (PAN manual entry)  Subfield 2 (POS Terminal PIN Entry Mode) = 0 (Unspecified or unknown)
DE 35 (Track 2 data)	.	X	C	For Maestro tokenization messages, the Single Message System creates and provides Track 2 data.
DE 48 Transaction Category Code	.	X	C	T (Phone, Mail, or Electronic Commerce Order)
DE 48 (Additional Data), subelement 23 (Payment Initiation Channel)	.	X	C	Value indicating the type of device for which the consumer is requesting tokenization of a primary account number.
DE 48, subelement 26 (Wallet Program Data), subfield 1 (Wallet Identifier)	.	X	C	Contains the identifier associated with the Wallet Provider.
DE 48 (Additional Data—Private Use), subelement 33 (PAN Mapping File Information), subfield 1 (Account Number Indicator), subfield 2 (Account Number), subfield 3 (Expiration Date), and subfield 6 (Token Requestor ID)	.	X	C	Subfield 1 indicates the type of PAN mapping account.  Subfield 2 indicates the PAN mapping account number.  Subfield 3 indicates the expiration date of the PAN mapping account.  Subfield 6 contains the ID assigned by the Token Service Provider to the Token Requestor.
DE 61 (Point of Service [POS] Data), subfield 7 (POS Transaction Status)	.	X	M	9 = Tokenization Request/Notification
DE 124 (Member Defined Data)	.	X	M	See layout for DE 124.

**DE 124 subfields in Financial Transaction Request/0200: tokenization event notification**

These are the subfields available in DE 124 in a Financial Transaction Request/0200 message to support the Tokenization Event Notification.

Absolute positioning of data in DE 124 subfields is required. Subfields not containing values will be populated with spaces when they are followed by subfields that contain values. If one or more subfields at the end of the data element do not contain a value, the subfield(s) will not be present and the total length of DE 124 will be reduced by the subfield length(s).

<b>Subfield name</b>	<b>Attributes</b>	<b>Values/comments</b>
Message type	an-2	TV = Tokenization Event Notification (TVN)
Correlation ID	an-14	Identifier assigned by Mastercard to associate related tokenization request/notification messages
Tokenization event indicator	n-1	<p>Value indicating the event that has occurred on the Mastercard Digital Enablement Service for the token</p> <p>3 = Deactivate</p> <p>4 = Deleted from consumer device</p> <p>6 = Suspend</p> <p>7 = Resume</p> <p>8 = Tokenization Exception Event</p> <p>9 = Replacement</p>
Tokenization event reason code	an-2	<p>If Tokenization Event Indicator contains value 8 (Tokenization Exception Event), this field contains a value indicating the event reason. If the Tokenization Event Indicator contains a value of 3 (Deactivate), 6 (Suspend), or 7 (Resume), this field will not be present.</p> <p>00 = Activation code retries exceeded</p> <p>01 = Activation code expired or invalidated</p> <p>02 = Activation code entered incorrectly by cardholder</p>

<b>Subfield name</b>	<b>Attributes</b>	<b>Values/comments</b>
Event requestor	ans-1	<p>If the Tokenization Event Indicator contains a value of 3 (Deactivate), 6 (Suspend), or 7 (Resume), this field will contain a value indicating what entity requested the event. If the Tokenization Event Indicator contains a value of 8 (Tokenization Exception Event) this field will be spaced filled.</p> <p>0 = Indicates the Tokenization Event was requested by the Wallet Provider or Token Requestor</p> <p>1 = Indicates the Tokenization Event was requested by the Funding Account issuer</p> <p>2 = Indicates the Tokenization Event was requested by the Cardholder</p> <p>3 = Indicates the Tokenization Event was requested in relation to a systematic event triggered by Mobile PIN Validation security (applicable to Tokenization Event Indicator value of 6 (Suspend), or 7 (Resume) only)</p> <p>4 = Indicates the Tokenization Event was requested in relation to a systematic event triggered by Mobile PIN Change Validation security (applicable to Tokenization Event Indicator value of 6 (Suspend), or 7 (Resume) only)</p> <p>5 = Reserved for future use</p> <p>6 = Reserved for future use</p> <p>7 = Reserved for future use</p> <p>8 = Reserved for future use</p> <p>9 = Reserved for future use</p>
Token unique reference	ans-48, left-justified, padded with spaces	Service-allocated unique reference to the token.

<b>Subfield name</b>	<b>Attributes</b>	<b>Values/comments</b>
Cardholder disabled payment channel	an-3	<p>This field is present only if Tokenization Event Indicator contains value 2 (Payment Channel Preference Updated).</p> <p>The data of this field is a hex-encoded bitmap, whereby each bit corresponds to a specific payment channel disabled by the cardholder.</p> <p>The bitmap is big-endian with the least significant bit corresponding to Payment Channel 01, with the next least significant bit corresponding to Payment Channel 02 and so on. For example, if Payment Channels 01, 03, and 05 were encoded, the bitmap would be 0000 0001 0101 and the hex value of this field would be 15.</p> <p>MDES will pass 0 if all payment channels are enabled.</p> <p>Bit Position and Payment Channel</p> <ul style="list-style-type: none"> <li>• 1 = Contactless</li> <li>• 2 = Merchant Presented QR (MPQR)</li> <li>• 3 = Customer Presented QR (CPQR)</li> <li>• 4 = Digital Secure Remote Payment (DSRP) In-App</li> <li>• 5 = Person to Person (P2P)</li> <li>• 6 = Dynamic Magnetic Stripe Data (DMSD)</li> <li>• 7 to 12 = Reserved for future use</li> </ul>

#### **Financial Transaction Request Response/0210: tokenization event notification**

Following is a list of the data elements and values applicable to the Financial Transaction Request Response/0210 message type for Tokenization Event Notification. All mandatory Financial Transaction Request Response/0210 data elements apply.

<b>Data element ID and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/comments</b>
DE 3 (Processing Code)	ME	ME	.	Must be the same value as the original Financial Transaction Request/0200
DE 4 (Amount, Transaction)	ME	ME	.	Must be the same value as the original Financial Transaction Request/0200
DE 39 (Response Code)	M	.	.	00 = Approved

**NOTE:** DE 124 will not be present.

### **Issuer File Update Request/0302: maintenance (token/PAN update)**

Following is a list of the data elements and values applicable to this message type. All mandatory Issuer File Update Request/0302 data elements apply.

<b>Data element and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/comments</b>
DE 2 (Primary Account Number)	M	M	•	Contains the cardholder's primary account number.
DE 91 (Issuer File Update Code)	M	M	•	Contains the Issuer File Update function code. Valid values will be: • 2 (Update)
DE 101 (File Name)	M	M	•	MCC106 (MDES PAN Mapping File)
DE 120 (Record Data)	M	M	•	Refer to the table below for specific layout of DE 120.

### **DE 120 layout for MCC106 Mastercard Digital Enablement Service (token update)**

The following table provides the technical details of DE 120 (Record Data) when DE 101 (File Name) contains the value MCC106 (MDES PAN Mapping File) in the Issuer File Update Request/0302 message.

<b>Field ID</b>	<b>Field name</b>	<b>Attributes</b>	<b>Values/comments</b>
1	Mapping file indicator	an-1	M = Mastercard Digital Enablement Service Tokens excluding Static Tokens  A = All Mastercard Digital Enablement Service Tokens including Static Tokens  Best practice for the issuer to use value A
2	Replacement PAN	an-19	Number replacing the number that is embossed, encoded, or both on the card (the primary account number). Customers may input only account numbers for BINs assigned to the associated customer ID assigned by Mastercard.  The issuer has the option to provide a replacement primary account number for association to the token.  Format: Left-justified, with trailing spaces

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<b>Field ID</b>	<b>Field name</b>	<b>Attributes</b>	<b>Values/comments</b>
3	Replacement PAN expiration date	n-4	<p>Expiration date that is associated with the number replacing the number that is embossed, encoded, or both on the card that represents the cardholder primary account number.</p> <p>If the issuer has provided a replacement primary account number, this field contains the expiration date that is associated with the replacement primary account number.</p> <p>If the issuer has not provided a replacement primary account number, this field contains the expiration date of the existing primary account number.</p> <p>Format: YYMM</p>
4	Primary account card sequence number	ans-3	<p>If the issuer has provided a replacement primary account number, this field will contain the card sequence number associated with the replacement primary account number.</p> <p>If the issuer has not provided a replacement primary account number, this field will contain the card sequence number associated with the original primary account number.</p>
5	Notify wallet provider indicator	n-1	<p>If the issuer has provided a replacement primary account number and replacement primary account number expiration date, this field indicates whether the Wallet Provider should be notified of the change.</p> <p>Values:</p> <ul style="list-style-type: none"> <li>• 0 = Update token mapping information and notify the Wallet Provider with the primary account number information</li> <li>• 1 = Update token mapping information, but do not notify the Wallet Provider with the primary account number information</li> <li>• 2 = Do not update token mapping information, but do update the Wallet Provider with the primary account number information</li> </ul>

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<b>Field ID</b>	<b>Field name</b>	<b>Attributes</b>	<b>Values/comments</b>
6	Token: if replacing a specific token	an-19	<p>Surrogate value for a PAN that is consistent with ISO message requirements and is a 13 to 19-digit numeric value that passes basic validation rules of an account number, including the LUHN check.</p> <p>Format: Left-justified, with trailing spaces</p> <p>If field not present, update shall apply to all token to PAN mappings associated with the PAN</p>

**DE 120 layout for MCC106 Mastercard Digital Enablement Service (PAN update: deactivate/  
suspend/resume token)**

The following table provides the technical details of DE 120 (Record Data) when DE 101 (File Name) contains the value MCC106 (MDES PAN Mapping File) in the Issuer File Update Request/0302 message.

<b>Field ID</b>	<b>Field name</b>	<b>Attributes</b>	<b>Values/comments</b>
1	Mapping file indicator	an-1	<p>M = Mastercard Digital Enablement Service Tokens excluding Static Tokens</p> <p>A = All Mastercard Digital Enablement Service Tokens including Static Tokens</p> <p>Best practice for the issuer to use value A</p>
2	Action required	an-1	<ul style="list-style-type: none"> <li>• S = Suspend token</li> <li>• D = Deactivate token</li> <li>• C = Resume token</li> </ul>
3	Notify wallet provider indicator	n-1	<p>This field indicates whether the Wallet Provider should be notified of the change.</p> <p>Value:</p> <p>0 = Update token mapping information and notify the Wallet Provider with the primary account number information.</p>
4	Token: if updating a specific token	an-19	<p>Surrogate value for a PAN that is consistent with ISO message requirements and is a 13 to 19-digit numeric value that passes basic validation rules of an account number, including the LUHN check.</p> <p>Format: Left-justified, with trailing spaces.</p> <p>If field not present, update shall apply to all token to PAN mappings associated with the PAN.</p>

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**Issuer file update request response/0312: issuer token maintenance response (token/PAN update)**

Following is a list of the data elements and values applicable to this message type. All mandatory Issuer File Update Request Response/0312 data elements apply.

<b>Data element and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/Comments</b>
DE 2 (Primary Account Number)	.	ME	ME	Must be the same value as in the original Issuer File Update Request/0302.
DE 39 (Response Code)	.	M	M	Indicates disposition of Issuer File Update Request/0302.
DE 44 (Additional Response Data)	.	C	C	May contain additional response information, based on DE 39.
DE 91 (Issuer File Update Code)	.	ME	ME	Must be the same value as in the original Issuer File Update Request/0302.
DE 101 (File Name)	.	ME	ME	Must be the same value as in the original Issuer File Update Request/0302.
DE 120 Record Data	.	ME	ME	Must be the same value as in the original Issuer File Update Request/0302.

**Administrative Advice/0620: issuer token notification advice**

Mastercard will support new layouts for Administrative Advice/0620 messages to communicate activation codes to issuers in support of token issuance and to notify issuers that Mastercard has assigned a token on their behalf. Following is a list of the data elements and values applicable to this message type. All mandatory Administrative Advice/0620—System-generated data elements apply.

<b>Data element and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/comments</b>
Message Type Identifier (MTI)	.	X	M	Constant—0620 (Administrative Advice)
Bit Map, Primary	.	X	M	Mandatory
Bit Map, Secondary	.	X	M	Mandatory
DE 7 (Transmission Date and Time)	.	X	M	Transaction time stamp; UTC date and time that this transaction was entered into interchange
DE 11 (Systems Trace Audit Number [STAN])	.	X	M	Transaction trace number; must be unique value for transaction initiator within each UTC day
DE 33 (Forwarding Institution ID Code)	.	X	M	Identifies the customer, institution, or Authorization Platform facility originating the Administrative Advice/0620 message

<b>Data element and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/comments</b>
DE 42 (Card Acceptor Identification Code)	.	X	M	Identifies the card acceptor.
DE 56 (Payment Account Data)	.	X	C	This is only for MDES Tokenization Complete Notifications.
DE 60 (Advice Reason Code)	.	X	M	Indicates the specific reason for the transmission of the Advice message  Subfield 1 (Advice Reason Code) = 141 (Mastercard Digital Enablement Service Advice to Issuer)  Subfield 2 (Advice Detail Code) = one of the following values: <ul style="list-style-type: none"><li>• 0250 = Activation Code Notification (ACN)</li><li>• 0251 = Tokenization Complete Notification</li><li>• 0252 = Tokenization Event Notification</li></ul>
DE 63 (Network Data)	.	X	M	Contains the Banknet Reference Number that the Authorization Platform provides as a unique transaction ID.
DE 100 (Receiving Institution ID Code)	.	X	M	Identifies the customer, institution, or Authorization Platform facility that will receive this Administrative Advice/0620.
DE 120 (Record Data)	.	X	M	Contains activation code information. Refer to the associated DE 120 layout.

### **DE 120 layout for Administrative Advice/0620: issuer token notification advice for activation code notification**

The following table provides the technical details of DE 120 (Record Data) when DE 60 (Advice Reason Code), subfield 1 (Advice Reason Code) contains the value 141 (Mastercard Digital Enablement Service Advice to Issuer) and DE 60, subfield 2 (Advice Detail Code) contains the value 0250 (Activation Code Notification) in the Administrative Advice/0620 message.

Absolute positioning of data in DE 120 subfields is required. Subfields not containing values will be populated with spaces when they are followed by subfields that contain values. If one or more subfields at the end of the data element do not contain a value the subfield(s) will not be present and the total length of DE 120 will be reduced by the subfield length(s).

<b>Field ID</b>	<b>Field Name</b>	<b>Attributes</b>	<b>Values/Comments</b>
1	Primary account number	an-19	Cardholder's primary account number
2	Primary account number expiry date	n-4	Cardholder's primary account number expiration date
3	Correlation ID	an-14	Identifier assigned by Mastercard to associate related tokenization request/notification messages.
4	Activation code	ans-8, left-justified, padded with spaces	Activation Code assigned by Mastercard that will be provided to the issuer for delivery to the consumer to complete the tokenization process.
5	Activation code expiration date and time	n-10	Date and time that the Activation Code expires specified in UTC units. Format: YYMMDDhhmm
6	Customer's activation method preference	ans-165, left-justified, padded with spaces	This field contains the activation method selected by the consumer, if only one was offered by the issuer, then that activation method will be present. There will be only one method contained within this field. This field will only be present if the cardholder made a selection.
<b>Name</b> <b>Attributes</b> <b>Values/Comments</b>			
Activation Method Type			
n-1			
1 = Masked mobile phone number			
2 = Masked email address			
3 = Automated call center phone number			
4 = Call center phone number			
5 = Website			
6 = Mobile application			
7 = Masked voice call phone number			
Activation Method Value			
ans...164			
See examples below.			
7	Token Requestor ID	n-11	Contains the identifier assigned by the Token Service Provider to the Token Requestor.
8	Wallet ID	ans-3	Contains the identifier associated with the Wallet Provider. Presence of this field is conditional.

<b>Field ID</b>	<b>Field Name</b>	<b>Attributes</b>	<b>Values/Comments</b>
9	Device type	ans-2	Indicates the type of device used. Presence of this field is conditional.

**Table 139: Examples**

"1(###) ### 4567"

1 = Masked mobile phone number

The "1" will be followed by the masked mobile phone number.

"2a\*\*\*d@anymail.com"

2 = Masked email address

The "2" will be followed by the consumer's masked email address (the issuer will mask according to their own format).

"3(555) 123 4567"

3 = Automated call center phone number

The "3" will be followed by the phone number. This phone number is not masked.

"4(555) 123 8901"

4 = Call center phone number

The "4" will be followed by the phone number. This phone number is not masked.

"5http://www.anybank.com"

5 = Website

The "5" will be followed by the issuer's website URL.

"6com.anybank.mobileapp"

6 = Mobile app

The "6" will be followed by the issuer's mobile app information, the content of which depends upon the mobile device operating system.

"7(###) ### 2345"

7 = Masked voice call phone number

The "7" will be followed by the masked voice call phone number.

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**DE 120 layout for Administrative Advice/0620: issuer token notification advice for tokenization complete notification**

The following table provides the technical details of DE 120 (Record Data) when DE 60 (Advice Reason Code), subfield 1 (Advice Reason Code) contains the value 141 (Mastercard Digital Enablement Service Advice to Issuer) and DE 60, subfield 2 (Advice Detail Code) contains the value 0251 (Tokenization Complete Notification) in the Administrative Advice/0620 message.

Absolute positioning of data in DE 120 subfields is required. Subfields not containing values will be populated with spaces when they are followed by subfields that contain values. If one or more subfields at the end of the data element do not contain a value the subfield(s) will not be present and the total length of DE 120 will be reduced by the subfield length(s).

<b>Field ID</b>	<b>Field name</b>	<b>Attributes</b>	<b>Values/comments</b>
1	Token	an-19	Surrogate value for a PAN that is consistent with ISO message requirements and is a 13 to 19-digit numeric value that passes basic validation rules of an account number, including the LUHN check.  Format: Left-justified, with trailing spaces
2	Token expiration date	n-4	Expiration date associated with the token.
3	PAN	an-19	Number that is embossed, encoded, or both on the card (also known as the primary account number). Customers may input only account numbers for BINs assigned to the associated customer ID assigned by Mastercard.  Format: Left-justified, with trailing spaces
4	PAN expiration date	n-4	Expiration date that is embossed, encoded, or both on the card that represents the cardholder primary account number (primary account number).  Format: YYMM
5	Token service provider identification	a-1	M = Mastercard Digital Enablement Service
6	Token assurance level	n-2	Assurance level assigned to the token (value between 00 and 99).
7	Token requestor ID	n-11	The ID assigned by Mastercard to the token requestor.

<b>Field ID</b>	<b>Field name</b>	<b>Attributes</b>	<b>Values/comments</b>
8	Contactless usage	n-1	<p>Contains value indicating if the token is permitted for use in contactless transactions.</p> <p>Values:</p> <ul style="list-style-type: none"> <li>• 0 = Token is not permitted for use in contactless transactions</li> <li>• 1 = Token is permitted for use in contactless transactions</li> </ul>
9	Card on file electronic commerce usage	n-1	<p>Contains value indicating if the token is permitted for use in card on file electronic commerce transactions.</p> <p>Values:</p> <ul style="list-style-type: none"> <li>• 0 = Token is not permitted for use in Card on File electronic commerce transactions</li> <li>• 1 = Token is permitted for use in card on file electronic commerce transactions</li> </ul>
10	Mobile/digital wallet electronic commerce usage	n-1	<p>Contains value indicating if the token is permitted for use in mobile/digital wallet electronic commerce transactions.</p> <p>Values:</p> <ul style="list-style-type: none"> <li>• 0 = Token is not permitted for use in mobile/digital wallet electronic commerce transactions</li> <li>• 1 = Token is permitted for use in mobile/digital wallet electronic commerce transactions</li> </ul>
11	Correlation ID	an-14	Identifier assigned by Mastercard to associate related tokenization request/notification messages.
12	Number of active tokens for the primary account number	ans-2, leading zeros	Number of active or suspended tokens for the primary account number digitized to consumer devices. Space-filled when token present in DE 48, subelement 33, subfield 2 (Account Number) in an 0100 Tokenization Complete Notification message is provisioned to a server. Presence of this field is conditional.
13	Issuer product configuration ID	ans-10	The unique product configuration identifier applied to the token, as provided by the issuer, identifying a particular set of card art, texts, and other product related data, that were provided during the issuer enablement or maintenance process. Presence of this field is conditional.
14	Consumer language	a-2	Language preference selected by the consumer. Presence of this field is conditional.

<b>Field ID</b>	<b>Field name</b>	<b>Attributes</b>	<b>Values/comments</b>
15	Device name	ans-20, left-justified, padded with spaces	Name that the consumer has associated to the device with the Wallet Provider. Presence of this field is conditional.
16	Final tokenization decision	ans-1	The final tokenization decision that was used in the tokenization of the card. <ul style="list-style-type: none"> <li>• 1 = Approve</li> <li>• 2 = Approve but requires additional authentication</li> </ul> Presence of this field is conditional.
17	Final tokenization decision indicator	ans-1	The element of the Service that was responsible for determining the final tokenization decision: <ul style="list-style-type: none"> <li>• 1 = Tokenization Eligibility Response</li> <li>• 2 = Tokenization Authorization Response</li> <li>• 3 = Issuer pre-defined tokenization rules</li> <li>• 4 = Mobile Application</li> </ul> Presence of this field is conditional.
18	T&C identifier	ans-32, left justified, padded with spaces	Identifier associated with the version of terms and conditions accepted by the consumer. Presence of this field is conditional.
19	T&C date and time	ans-10	Date and time that the consumer accepted the terms and conditions of the Service, specified in UTC units. Format: YYMMDDhhmm
20	Number of activation attempts	ans-1	Number of activation code entry attempts by the cardholder. Space-filled when DE124, SF14 (Token Type) value is F. Presence of this field is conditional.
21	Token unique reference	ans-48, left justified, padded with spaces	Service-allocated unique reference to the token.
22	Primary account number unique reference	ans-48, left justified, padded with spaces	Service-allocated unique reference to the tokenized Primary Account Number at the wallet level.
23	Token type	an-1	Contains a value indicating the type of token present in DE 120, field 1 (Token) in an 0620 Tokenization Complete Notification message. <ul style="list-style-type: none"> <li>• C = Mastercard Cloud-Based Payments</li> <li>• F = Static</li> <li>• S = Embedded Secure Element</li> </ul>

<b>Field ID</b>	<b>Field name</b>	<b>Attributes</b>	<b>Values/comments</b>
24	Wallet ID	ans-3	Contains the identifier associated with the Wallet Provider. Presence of this field is conditional.
25	Device type	ans-2	Indicates the type of device used. Presence of this field is conditional.
26	Storage technology	an-2	Contains a value indicating the storage technology of the token. Presence of this field is conditional.

**NOTE:** The Token Requestor ID is already being included in DE 120, field ID 7 of the Administrative Advice/0620—Issuer Token Notification Advice for Tokenization Complete Notification message.

#### **DE 120 layout for Administrative Advice/0620: issuer token notification advice for tokenization event notification**

The following table provides the technical details of DE 120 (Record Data) when DE 60 (Advice Reason Code), subfield 1 (Advice Reason Code) contains the value 141 (Mastercard Digital Enablement Service Advice to Issuer) and DE 60, subfield 2 (Advice Detail Code) contains the value 0252 (Tokenization Event Notification) in the Administrative Advice/0620 message.

Absolute positioning of data in DE 120 subfields is required. Subfields not containing values will be populated with spaces when they are followed by subfields that contain values. If one or more subfields at the end of the data element do not contain a value the subfield(s) will not be present and the total length of DE 120 will be reduced by the subfield length(s).

<b>Field ID</b>	<b>Field name</b>	<b>Attributes</b>	<b>Values/comments</b>
1	Primary account number	an-19	Cardholder's primary account number
2	Primary account number expiry date	n-4	Cardholder's primary account expiration date
3	Token (PAN mapping file information)	an-19	Token
4	Token expiration date (PAN mapping file information)	an-4	Token expiration date
5	Token service provider identification	a-1	M = Mastercard Digital Enablement Service
6	Correlation ID	an-14	Identifier assigned by Mastercard to associate related tokenization request/notification messages

<b>Field ID</b>	<b>Field name</b>	<b>Attributes</b>	<b>Values/comments</b>
7	Tokenization event indicator	n-1	<p>Value indicating the event that has occurred on the Mastercard Digital Enablement Service for the token</p> <p>3 = Deactivate 4 = Deleted from consumer device 6 = Suspend 7 = Resume 8 = Tokenization Exception Event 9 = Replacement</p>
8	Tokenization event reason code	an-2	<p>If the Tokenization Event Indicator contains value 8 (Tokenization Exception Event), this field contains a value indicating the event reason. If the Tokenization Event Indicator contains a value of 3 (Deactivate), 6 (Suspend), or 7 (Resume), this field will not be present.</p> <ul style="list-style-type: none"> <li>• 00 = Activation code retries exceeded</li> <li>• 01 = Activation code expired or invalidated</li> <li>• 02 = Activation code entered incorrectly by cardholder</li> </ul>
9	Contactless usage	n-1	<p>Contains value indicating if the token is permitted for use in contactless transactions.</p> <p>Values:</p> <ul style="list-style-type: none"> <li>• 0 = Token is not permitted for use in contactless transactions</li> <li>• 1 = Token is permitted for use in contactless transactions</li> </ul>
10	Card on file electronic commerce usage	n-1	<p>Contains value indicating if the token is permitted for use in card on file electronic commerce transactions.</p> <p>Values:</p> <ul style="list-style-type: none"> <li>• 0 = Token is not permitted for use in Card on File electronic commerce transactions</li> <li>• 1 = Token is permitted for use in card on file electronic commerce transactions</li> </ul>

<b>Field ID</b>	<b>Field name</b>	<b>Attributes</b>	<b>Values/comments</b>
11	Mobile/digital wallet electronic commerce usage	n-1	<p>Contains value indicating if the token is permitted for use in mobile/digital wallet electronic commerce transactions.</p> <p>Values:</p> <ul style="list-style-type: none"> <li>• 0 = Token is not permitted for use in mobile/digital wallet electronic commerce transactions</li> <li>• 1 = Token is permitted for use in mobile/digital wallet electronic commerce transactions</li> </ul>
12	Event requestor	ans-1	<p>If the Tokenization Event Indicator contains a value of 3 (Deactivate), 6 (Suspend), or 7 (Resume), this field will contain a value indicating the party that requested the event. If the Tokenization Event Indicator contains a value of 8 (Tokenization Exception Event) this field will be space filled.</p> <ul style="list-style-type: none"> <li>• 0 = Indicates the Tokenization Event was requested by the Wallet Provider or Token Requestor</li> <li>• 1 = Indicates the Tokenization Event was requested by the Funding Account issuer</li> <li>• 2 = Indicates the Tokenization Event was requested by the Cardholder</li> <li>• 3 = Indicates the Tokenization Event was requested in relation to a systematic event triggered by Mobile PIN Validation security (applicable to Tokenization Event Indicator value of 6 (Suspend), or 7 (Resume) only)</li> <li>• 4 = Indicates the Tokenization Event was requested in relation to a systematic event triggered by Mobile PIN Change Validation security (applicable to Tokenization Event Indicator value of 6 (Suspend), or 7 (Resume) only)</li> <li>• 5 = Reserved for future use</li> <li>• 6 = Reserved for future use</li> <li>• 7 = Reserved for future use</li> <li>• 8 = Reserved for future use</li> <li>• 9 = Reserved for future use</li> </ul>
13	Token requestor ID	n-11	Contains the identifier assigned by the Token Service Provider to the Token Requestor.

<b>Field ID</b>	<b>Field name</b>	<b>Attributes</b>	<b>Values/comments</b>
14	Wallet ID	ans-3	Contains the identifier associated with the Wallet Provider. Presence of this field is conditional.
15	Device type	ans-2	Indicates the type of device used. Presence of this field is conditional.
16	Token unique reference	ans-48, left-justified, padded with spaces	Service-allocated unique reference to the token.
17	Cardholder disabled payment channel	an-3	<p>This field is present only if Tokenization Event Indicator contains value 2 (Payment Channel Preference Updated).</p> <p>The data of this field is a hex-encoded bitmap, whereby each bit corresponds to a specific payment channel disabled by the cardholder.</p> <p>The bitmap is big-endian with the least significant bit corresponding to Payment Channel 01, with the next least significant bit corresponding to Payment Channel 02 and so on. For example, if Payment Channels 01, 03, and 05 were encoded, the bitmap would be 0000 0001 0101 and the hex value of this field would be 15.</p> <p>MDES will pass 0 if all payment channels are enabled.</p> <p>Bit Position and Payment Channel</p> <ul style="list-style-type: none"> <li>• 1 = Contactless</li> <li>• 2 = Merchant Presented QR (MPQR)</li> <li>• 3 = Customer Presented QR (CPQR)</li> <li>• 4 = Digital Secure Remote Payment (DSRP) In-App</li> <li>• 5 = Person to Person (P2P)</li> <li>• 6 = Dynamic Magnetic Stripe Data (DMSD)</li> <li>• 7 to 12 = Reserved for future use</li> </ul>

#### **Administrative Advice Response/0630: issuer token notification advice response**

Following is a list of the data elements and values applicable to this message type. All mandatory Administrative Advice Response/0630 data elements apply.

<b>Data element and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/comments</b>
Message Type Identifier (MTI)	M	M	•	Constant—0630 (Administrative Advice Response)

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<b>Data element and name</b>	<b>Org</b>	<b>Sys</b>	<b>Dst</b>	<b>Values/comments</b>
Bit Map, Primary	M	M	.	Mandatory
Bit Map, Secondary	M	M	.	Mandatory
DE 7 (Transmission Date and Time)	ME	ME	.	Must be the same value as in the original Administrative Advice/0620
DE 11 (Systems Trace Audit Number [STAN])	ME	ME	.	Must be the same value as in the original Administrative Advice/0620
DE 33 (Forwarding Institution ID Code)	ME	ME	.	Must be the same value as in the original Administrative Advice/0620
DE 39 (Response Code)	M	M	.	Indicates the disposition of the original Administrative Advice/0620
DE 44 (Additional Response Data)	C	C	.	May contain the additional error code information depending on the value in DE 39
DE 63 (Network Data)	ME	ME	.	Must be the same value as in the original Administrative Advice/0620
DE 100 (Receiving Institution ID Code)	ME	ME	.	Must be the same value as in the original Administrative Advice/0620

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## Chapter 6 Communication protocols

*This section describes the linking methods that customer processing systems (CPSs) use to connect to Mastercard Network.*

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Overview.....	896
Connecting to the Mastercard Network.....	896
Mastercard interface processor (MIP) and debit interface unit (DIU).....	896
Mastercard network.....	898
Online transaction communications.....	898
Batch file transmission.....	898
Dial back-up and data priority.....	898
Mastercard Network infrastructure.....	899
Multi-protocol label switching (MPLS).....	899
Service interruption.....	900
Service delivery points (SDP).....	900
Online communication using MIP/DIU.....	901
File transfer using VPN.....	902
VPN file transfer using TCP/IP.....	902
Mastercard Digital Enablement Service.....	902

## Overview

All customer processing systems (CPSs) participating in services offered by Mastercard Network must link to the Single Message System through Mastercard Virtual Private Network (VPN) via MIP/DIU.

## Connecting to the Mastercard Network

The Mastercard Network uses a peer-to-peer architecture and a mesh configuration. A peer-to-peer architecture allows data to follow the most efficient route to its destination and flows through distributed intelligence.

Therefore, multiple locations are available for processing information, even during peak times. Another important feature of the architecture of the Mastercard Network is its on-demand dial back-up equipment.

### **Mastercard interface processor (MIP) and debit interface unit (DIU)**

The MIP and DIU provide the hardware and software at the customer site that allows the customer host system to interface with the Mastercard Network in a standard, efficient manner.

The MIP/DIU also permits distributed data processing functions to support the financial service applications of Mastercard.

Customers may already have a MIP on-site or may share a MIP/DIU with other financial institutions in the area. To accommodate Maestro® and Cirrus® processing, Mastercard will upgrade the MIP/DIU and route the online real-time financial transactions between the customer and the Mastercard Network.

**NOTE:** Throughout this manual, references to "online" mean that an acquirer or issuer is directly connected to a Mastercard MIP or DIU, and such references are not intended to imply that the acquirer or issuer is connected through any web-based means.

The required customer communication protocol for online debit processing is Transmission Control Protocol/Internet Protocol (TCP/IP). The precise configuration at a given customer site is engineered jointly by the customer and the Mastercard Network Engineering Group. Historical or anticipated transaction volume is the basis for the MIP configuration.

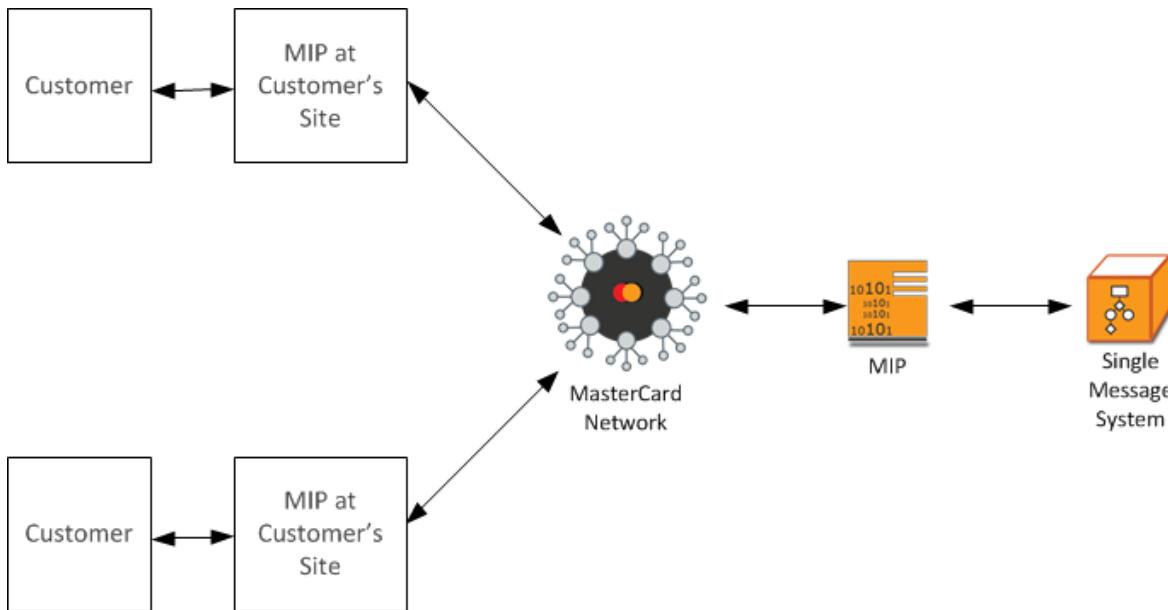
This illustration shows the customer host system's connection to the Mastercard Network.

### **Response routing to the MIP/DIU**

When the member host sends response messages to issuing traffic requests, for example, a host receives a Financial Transaction Request/0200 and responds with a Financial Transaction Request Response/0210, or receives a Financial Transaction Advice/0220 and responds with a Financial Transaction Advice Response/0230, the responses should always be returned to the same MIP/socket connection from which the original request message was received. This should

apply to all request/response message pairs, for both the Authorization Platform and Single Message System.

**Figure 7: Connecting to the Mastercard Network**



#### **Response routing to the MIP/DIU**

When the member host sends response messages to issuing traffic requests, for example, a host receives a Financial Transaction Request/0200 and responds with a Financial Transaction Request Response/0210, or receives a Financial Transaction Advice/0220 and responds with a Financial Transaction Advice Response/0230, the responses should always be returned to the same MIP/socket connection from which the original request message was received. This should apply to all request/response message pairs, for both the Authorization Platform and Single Message System.

Refer to the *Data Communications Manual* for additional information on the Dual Message System and MIP/DIU options.

**NOTE:** If a customer selects the Mastercard Network/MIP connectivity option, it must contact its Mastercard Regional Office, Mastercard Network Payment Systems—Implementation Support Manager, or both for more detailed requirements.

## Mastercard network

The Mastercard Network is built upon a Multi-Protocol Label Switching (MPLS) infrastructure. This MPLS network has many fault tolerant safeguards built in to protect Mastercard Network customers from network related failures.

In order to access the network, each customer site will be equipped by Mastercard with a service delivery point (SDP) that typically consists of a MIP or debit interface unit (DIU), dual state-of-the-art Cisco routers and dual Ethernet switches.

### Online transaction communications

All customers must be able to connect to the Mastercard Network using the TCP/IP protocol.

### Batch file transmission

Customers requiring complex-to-complex (CTC) batch file transmissions will need to be able to connect to the Mastercard Network using TCP/IP. File transfer communications will use the Mastercard SDP, however typically will be run through a dedicated router interface (not through the MIP/DIU interface). Mastercard does offer multiple batch file delivery options.

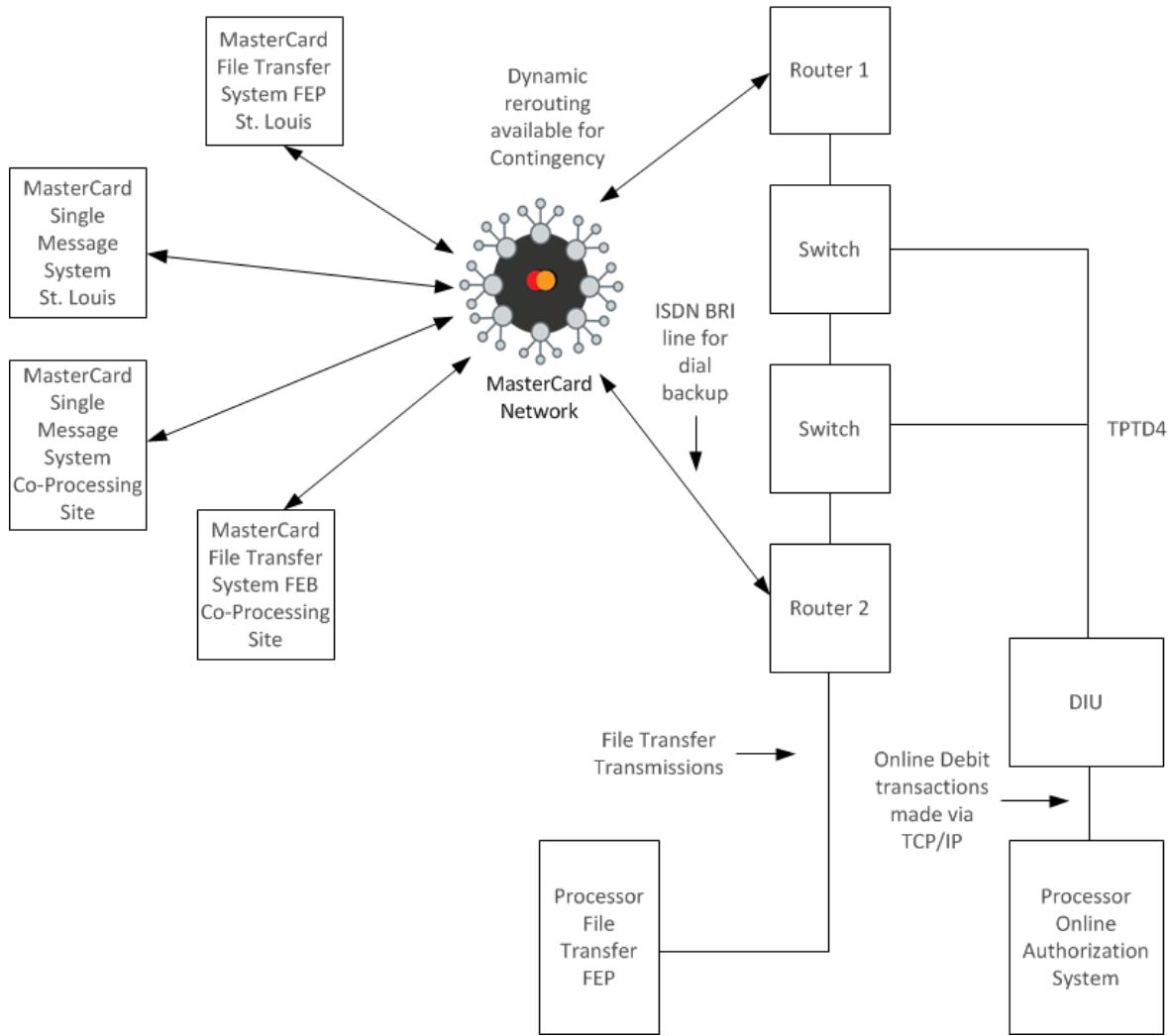
Contact your Implementation Specialist for a full list of offerings.

### Dial back-up and data priority

In the event that a problem occurs with the MPLS access circuit, ISDN service (or analog dials if ISDN is unavailable) provides backup.

The routers immediately initiate ISDN service upon detecting a problem across the primary MPLS circuit. The Mastercard Network is configured as such that if there is any network congestion, the Online transaction data receives a higher routing priority than batch file data.

**Figure 8: Typical VPN configuration**



## Mastercard Network infrastructure

There are two primary network components that are used for both Online and File Transfer communications: MPLS technology and the service delivery point (SDP).

### Multi-protocol label switching (MPLS)

Multi-protocol Label Switching (MPLS) is the backbone of the Mastercard next generation network. MPLS is a packet-forwarding technology which uses labels to make data forwarding decisions across a wide area network (WAN). MPLS provides a mechanism for engineering network traffic patterns that is independent of routing tables.

This allows for the association of additional information with a label, such as class-of-service (CoS) values, that can be used to prioritize packet forwarding.

MPLS works by assigning short tables to network packets that describe how to forward them through the network. In an MPLS environment, the analysis of the packet header is performed just once, when a packet enters the MPLS cloud. The packet then is assigned to a stream, which is identified by a label, which is a short fixed-length value at the front of the packet.

The Mastercard MPLS network is built using three different carriers: AT&T, BT (British Telecom), and Orange. This allows for network diversity and allows for a more flexible, reliable, and scalable architecture.

### **Service interruption**

If there is an interruption in the MPLS network there will be little, if any, service interruption due to an MPLS mechanism that allows for a very fast auto rerouting of traffic away from an unavailable router.

If the customer access circuit is impacted by a local exchange carrier (LEC) outage, the customer site router will detect the circuit down condition and invoke an ISDN (integrated services digital network) call to restore processor connectivity.

### **Service delivery points (SDP)**

A typical Mastercard Network Service Delivery Point (SDP) that encompasses the Mastercard equipment placed at a customer site includes

- Mastercard equipment cabinet
- debit interface unit (DIU)
- one or two Ethernet switches
- one or two Cisco 26XX or 28XX series routers
- MPLS access circuit, and
- ISDN circuit.

Mastercard has worked very closely with its carriers (AT&T, BT, and Orange) to develop a highly reliable, highly redundant service delivery point (with regards to the communications equipment).

A typical service delivery point has automatic failover if the

- primary Cisco router
- primary Ethernet switch, or
- MPLS access circuit

becomes inoperable.

Mastercard is the sole and exclusive owner of all equipment that Mastercard places at an Service Delivery Point (SDP). Effective as of the date of placement, the customer is granted a nonexclusive, non-assignable license to use the SDP equipment. The customer may not take any action adverse to Mastercard with respect to its ownership of the SDP equipment.

The customer at all times remains responsible for the safety and proper use of all SDP equipment placed at a location by request of the customer, and must employ at that location the minimum security requirements set forth in this section. At its own expense, the customer

must promptly return all SDP equipment to Mastercard upon request of Mastercard and without such request, in the event of bankruptcy or insolvency.

### **Online communication using MIP/DIU**

A Debit Interface Unit (DIU) facilitates online communications between a customer and the Mastercard Network. The DIU is a computer connected to the SDP at the customer site which allows a customer to send debit transactions to Mastercard across the VPN.

The DIU only supports the TCP/IP Protocol. There are two Ethernet cards within each DIU. The "primary" card provides connectivity from the DIU into the Mastercard Network. The "secondary" card provides connectivity access from a customer host into the DIU.

The DIU receives transactions from the customer, performs certain logging, statistical, and routing functions (for example, transaction and program counters), and encapsulates the transactions into TCP/IP format for transport across the VPN.

The Mastercard Operations Command Center (OCC) has remote access to each DIU for troubleshooting purposes. Using this remote console access, the OCC is able to perform various monitoring and troubleshooting functions, which assist in problem determination and resolution.

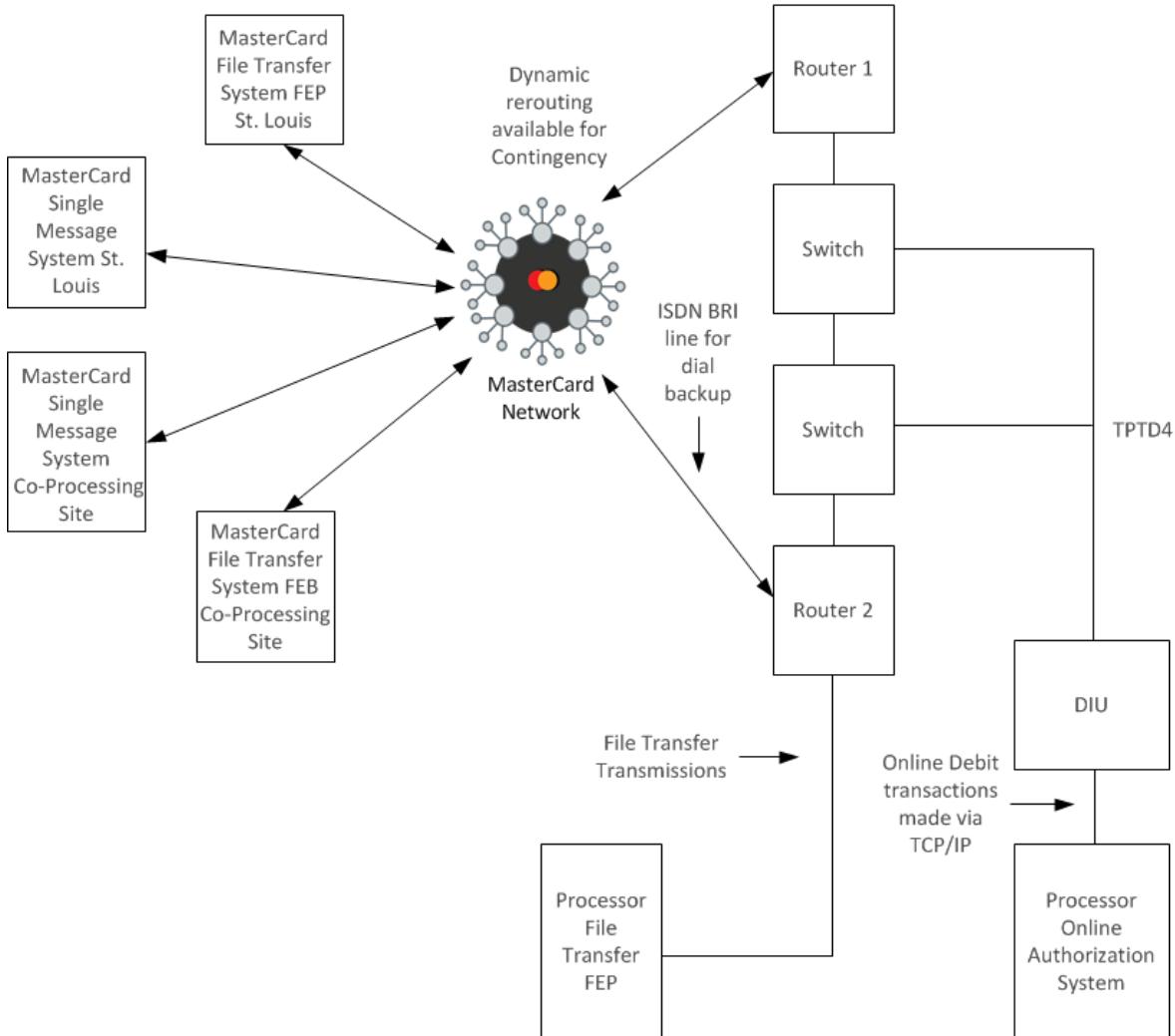
## File transfer using VPN

There is a TCP/IP solution for support of settlement detail and report file transmissions. This subsections describe both options.

### VPN file transfer using TCP/IP

Mastercard offers File Transfer support using SDP integrated TCP/IP. File Transfer traffic will be on a dedicated segment by providing a second Ethernet connection on router 2.

**Figure 9: Typical TCP/IP configuration**



## Mastercard Digital Enablement Service

The Mastercard Digital Enablement Service (MDES) enhances payment security and reduces fraud risk via tokenization. The service generates a token (substitutes primary account number)

that can be used in place of a PAN in transactions. Refer to the *MDES Issuer Implementation Guide* (MIIIG) for more information.

# Chapter 7 Encryption

*This section describes network key management, the exchange of encryption keys, and the maintenance of security in the online environment.*

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Overview.....	905
Registration of member security officers.....	905
Key naming convention.....	905
Dynamic key encryption: working key.....	906
Static key encryption: working key.....	907
Mastercard Network PIN verification services.....	907
Single Message System key management.....	908
Master file keys.....	908
Communication keys.....	908
Working key.....	909
Single Message System security requirements.....	909
Physically secure device (PSD).....	910
PIN encryption/decryption process.....	910
Zone key management.....	912
Key exchange and PIN validation data flows.....	913
Triple DES.....	913
Double key length.....	913
Triple key length.....	914
Customer testing.....	915
Network key management responsibilities.....	915
ANSI PIN block format.....	916
PIN encryption.....	916
Sanity checks.....	920
Security provisions.....	921
PIN generation verification.....	921
ABA.....	921
Required functionality.....	923
Detection and replacement of corrupt or compromised keys.....	924
Fallback to clear text.....	925
Emergency communication key procedures.....	925

## Overview

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Network key management involves the exchange and security of encryption keys in the Mastercard Network online environment.

The Mastercard Network supports two options for key management:

- dynamic and
- static

**NOTE:** Mastercard does not permit software encryption of PIN data within the Mastercard ATM network or the Maestro and Cirrus programs. All processors participating in the Mastercard ATM network or the Cirrus and Maestro programs must use hardware encryption devices only.

## Registration of member security officers

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Before initiating a key exchange customers must have Security Officers registered with Key Management Services Operations (KMS), using the *Key Management Services—Member Security Officer Registration/Update* (Form 1029), which can be downloaded from Member Publications on Mastercard Connect™.

A minimum of two security officers must be registered, the Sending Security Officer and the Receiving Security Officer. This Security Officer registration must be done during a Face to Face meeting with a Mastercard Representative or if it is not possible to arrange such a meeting, we will accept the Security Officer registration carried out by a *Public Notary using the Key Management Services—Notary Letter* (Form 1033).

In both cases, the Security Officers registering must bring to the meeting some form of identification such as a passport or an ID Card. The Security Officers must not send any keys until they have received the confirmation that their registration has been processed, otherwise any key information received will be destroyed.

**NOTE:** Please make certain that you select the MDS check box only. The EMV and OBKM boxes should only be checked if you are registering the same security officer(s) for EMV PKI or OBKM Services. In this case, refer to the PKI Certification Authority Member Procedures for further details on this process or to the On-Behalf Key Management Procedures If you are registering for OBKM, the security officers should not be less than three.

## Key naming convention

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The master key encrypts the working key and communication key for storage.

The communication key is used to encrypt and decrypt the working key in Single Message System or CIS ISO 8583–1987 Network Management/0800.

The working key is used to encrypt the PIN block in DE 52 of the Financial Transaction Request (Preauthorization)/0200 message.

Following are functional versus vendor-specific key names.

**NOTE:** Functional key names will be used throughout this chapter.

**Table 140: Functional versus vendor-specific key names**

<b>Functional</b>	<b>Atalla</b>	<b>Racal</b>
Master	MFK (Master File Key)	LMK (Local Master Key)
Communication	KEK (Key Exchange Key)	ZMK (Zone Master Key)
Working	KPE (Key PIN Encryption)	ZPK (Zone PIN Key)

## **Dynamic key encryption: working key**

The online working key exchange uses the Mastercard ISO 8583-1987 Network Management/0800 message. The Mastercard Network Host security module (HSM) generates a random online working key (PIN encryption key).

Only the Mastercard Network can send the key exchange; however, the Processor may request a key exchange at any time.

The Mastercard Network changes the working key, online, at least once every 12 hours. Processors connected to via an ISO 8583-1987 interface use the working key.

The Processor and the Mastercard Network jointly establish and use the communication key to encrypt the new working key in the online Mastercard ISO 8583-1987 Network Management/0800 message.

The Processor validates the check value before loading the new working key. The Processor uses the check value to ensure that the Mastercard Network generated the new working key from the same unique communication key established between the Processor and the Single Message System.

The Single Message System begins using the new working key immediately upon receipt of the Processor's approved Network Management Request Response/0810 message. The Mastercard Network files the previous working key. Should the acquirer send a PIN block encrypted under the previous working key within the first five minutes of a successful key exchange, the Single Message System will attempt to process the encrypted PIN block using the old and new working key. This assures the acquirer sufficient time to load and use the new working key. It also limits sanity check errors from occurring on transactions in-flight during the key exchange sequence. Mastercard recommends that Processors begin using the new working key immediately upon

receipt of the Single Message System Network Management Advice/0820 key exchange confirmation.

The working key encrypts and decrypts DE 52 (Personal Identification Number [PIN] Data) of the ISO 8583-1987 Financial Transaction Request/0200 message as well as optional DE 125 for Processors that support PIN change that the Processor and the Mastercard Network send. The Mastercard Network and the customer also use the working key to encrypt and decrypt the Positive ID data found in DE 112 subelement 22, for those that support the Positive ID service. The Processor uses the same working key for issuing and acquiring transactions. The working key supports both ATM and POS products.

Mastercard requests that Processors submit new communication key components, used to encrypt the dynamically exchanged working keys, on an annual basis. Mastercard debit staff will contact the Processor, provide a copy of the *MDS Production Communications Key Exchange* form and schedule the exchange and loading of the new communication key at Mastercard and Processor site.

**NOTE:** Mastercard recommends that new Debit Mastercard Processors use dynamic PIN encryption keys. Dynamic keys are exchanged online while static keys must be entered manually (offline). For more information on PIN key management refer to the *Security Rules and Procedures* manual.

## **Static key encryption: working key**

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The Processor and Mastercard Network jointly establish and use the new static working key. The Processor validates the check value and loads the new static working key. The Single Message System uses the static working key to encrypt the PIN for safe transmission to the issuer and the issuer uses it to decrypt the PIN before performing PIN validation.

The static working key, used to encrypt the PIN in DE 52 is not exchanged online; it is entered manually (offline) and is used by Processors who perform their own PIN verification. The static working key supports ATM and POS products.

The static working key or PIN encryption key (KPE) is changed annually.

## **Mastercard Network PIN verification services**

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The Mastercard Network provides PIN verification services for

- credit card issuers using the Authorization Request/0100 Dual Message System connection to interface with the Single Message System for ATM cash advances and Mastercard PIN for Purchase transactions and
- issuers connected to the Single Message System via a Financial Transaction/0200 message interface that have opted for Mastercard Stand-In processing.

If the issuer wants the Single Message System to perform PIN verification, they must provide the PIN verification key(s) and PIN processing parameters to the Mastercard Network. Please contact your Mastercard Regional Office representative for the required forms.

The Single Message System supports the ABA method of PIN verification.

Refer to the *Authorization Manual* for more information about PIN verification methods.

## Single Message System key management

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The Single Message System key management scheme is a method of exchanging encryption keys and maintaining encryption key integrity in an online environment.

The Single Message System employs the following hierarchy of encryption keys:

- Master file key: Encrypts working keys and communication keys for safe storage on a database.
- Communication key: Encrypts a working key for transmission between Mastercard Network and the processor during the online key exchange.
- Working key: Encrypts a PIN block for transmission between the processors and the Mastercard Network.

### Master file keys

Master file keys are unique to the Single Message System and each processor that connects to the Mastercard Network. Their function is to protect the communication keys and working keys for storage at each site (processor and the Mastercard Network).

It is the responsibility of each processor to generate and securely maintain a proprietary master file key.

### Communication keys

Both the Single Message System and the processor share communication keys. These keys encrypt the new working keys during the dynamic online key exchange.

It is the joint responsibility of the Single Message System and each processor to generate the unique communication key used to exchange/encrypt working keys.

Processors must establish a new communication key with the interchange system once every three (3) years.

1. Customers must use the *Customer Initiated Key Part Exchange Form* (Form 536) to request a new communication key exchange. Processors can obtain this form from their Mastercard Regional Office representative or their Debit Services Implementation Manager. It is also available on Mastercard Connect.
2. Processor Sending Key Officer generates and records the processor clear key component, making an original and a copy. The original is stored in a sealed envelope. The Mastercard Receiving Key Officer receives the copy in a sealed envelope via courier. Customers must use the *Customer Initiated Key Part Exchange Form* (Form 536) to accomplish this task. Processors can obtain this form from their Mastercard Regional Office representative or their Debit Services Implementation Manager. It is also available on Mastercard Connect.
3. Mastercard Sending Key Officer generates and records the Single Message System clear key component and a check value. This key component consists of thirty-two (32) or forty-eight

- (48) hexadecimal characters with odd parity on each pair of digits. The Mastercard Receiving Key Officer makes an original and a copy; and stores the original in a sealed envelope. The Processor Receiving Key Officer receives the copy in a key component safe by courier.
4. At each site, each key officer enters the key part in his custody into the host security module to be used to generate the communication key (for example, an Atalla security device). A dual control environment handles the management of key components. The system performs a binary "Exclusive-Or" function on the two key parts and corrects the parity, thus generating the communication key.
  5. The processor's master key encrypts this communication key and the resulting cryptogram is stored in the database for use during the online key exchange of working keys.
  6. The key parts at each site are stored under dual custody in sealed envelopes for thirty days, then destroyed after that time.
  7. Mastercard recommends that new keys be generated once a year.

### **Working key**

PIN encryption keys are working keys generated by the Single Message System for each direct-connect online processor. These keys encrypt the PIN block in DE 52 of the online authorization request message and optionally DE 112 (Additional Data [National Use]), subelement 22 (Positive ID Transactions) for positive ID and DE 125, if present.

It is the responsibility of the Mastercard Network to generate and distribute the working key.

New working keys are changed dynamically and have the following life cycle:

- Used for no more than 12 hours.
- Changed after five consecutive "sanity check" errors.
- Changed upon request by the intermediate network facility (INF), acquirer processor system (APS), or issuer processor system (IPS).

It is the responsibility of the processor to safely store this working key by translating it from encryption under the shared communication key to encryption under a proprietary master key using hardware security procedures. The processor must use this working key to encrypt all PIN blocks (using ANSI PIN block formatting) sent to the Mastercard Network as well as to decrypt all PIN blocks received from the Mastercard Network.

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## **Single Message System security requirements**

Within the Single Message System environment, security considerations include measures for ensuring message security and integrity, as well as protection against cardholder personal identification number (PIN) disclosure.

The Mastercard Network uses secure PIN encryption to protect all PINs. This section describes the key management implementation scheme within the Single Message System, which provides an enhanced degree of protection against PIN disclosure.

The Mastercard Network employs PIN encryption using the Data Encryption Standard (DES) algorithm for network security management. Security under DES is dependent on the secrecy of the keys used and therefore on the management of those keys. The Mastercard Network implements the "zone" approach to key management with dynamic keys.

Mastercard chose this approach instead of an "end-to-end" approach for the following reasons:

- Key exchange is required only between connected intermediate network facilities (INFs), acquirer processor systems (APSs), and issuer processing systems (IPSs).
- Keys are not required to be loaded at the terminal for every issuer participating in the ATM or POS programs.

Figure 6.1 and Figure 6.2 outline the "zone" approach and the flow of key exchange and PIN validation.

In ATM and POS programs, all PINs must be encrypted at the point of entry (the terminal) using the DES algorithm and the approved ANSI PIN block format. The PIN will remain encrypted until the issuer receives it for verification. It will be translated from one zone's working key to another zone's working key as it is passed from one processor to another through the Single Message System. The Single Message System must receive the PIN encrypted using the ANSI PIN block format.

Customers must execute all PIN encryption, translation, and decryption for the ATM or POS programs using hardware encryption through physically secure devices. Both the host and the point of entry, such as the ATM or POS terminal, must use physically secure hardware.

### **Physically secure device (PSD)**

A physically secure device (PSD) is a hardware device that cannot be penetrated successfully to disclose all or part of any key or PIN resident within such a device. Penetration of a PSD shall cause the automatic and immediate erasure of all PINs and keys, as well as all useful residue of PINs and keys contained within the device.

The customer's host computer system must use a hardware security module (HSM) to ensure that the cardholder PIN and the PIN keys used to encrypt the PIN do not reside within the processor's host system.

The ATM must use a PSD such as an encryption board or a keyboard encryption controller to encrypt the PIN before it leaves the terminal and is sent to the acquirer's host.

### **PIN encryption/decryption process**

PIN encryption, translation, or decryption must not be performed using software DES routines.

The use of DES software in acquirer processing systems (APSs), issuer processing systems (IPSs), or intermediate network facilities (INFs) is a violation of the rules.

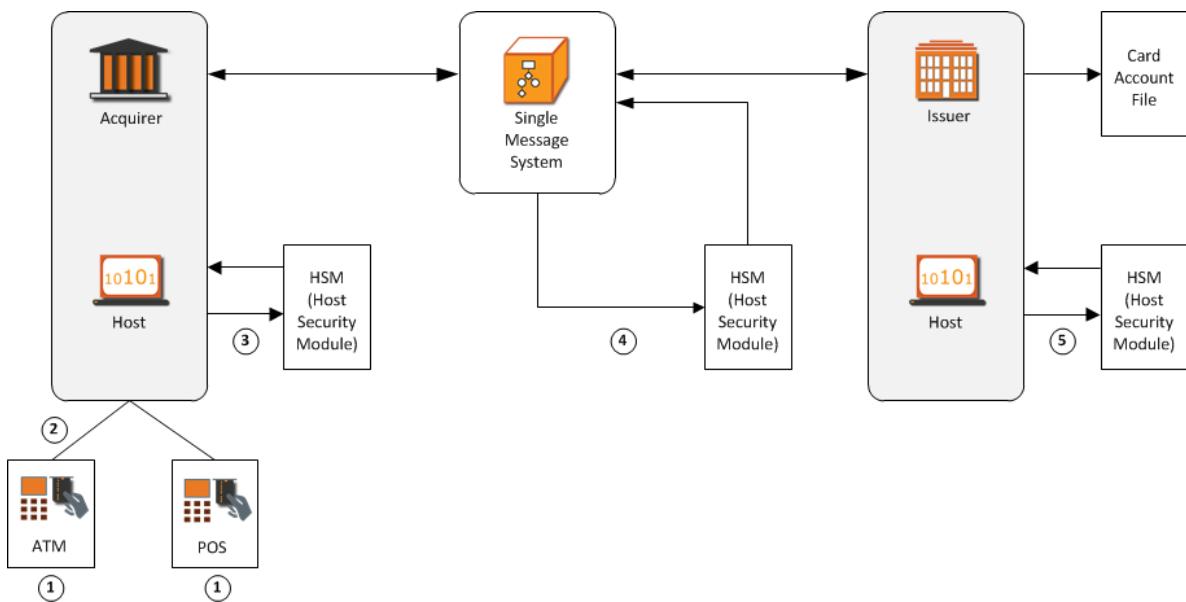
Following are the PIN encryption/decryption steps.

1. Cardholder enters PIN at point of entry.
2. The terminal encrypts the PIN in hardware under a PIN encryption key and sends it to the acquirer's host.

Encryption  
PIN encryption/decryption process

---

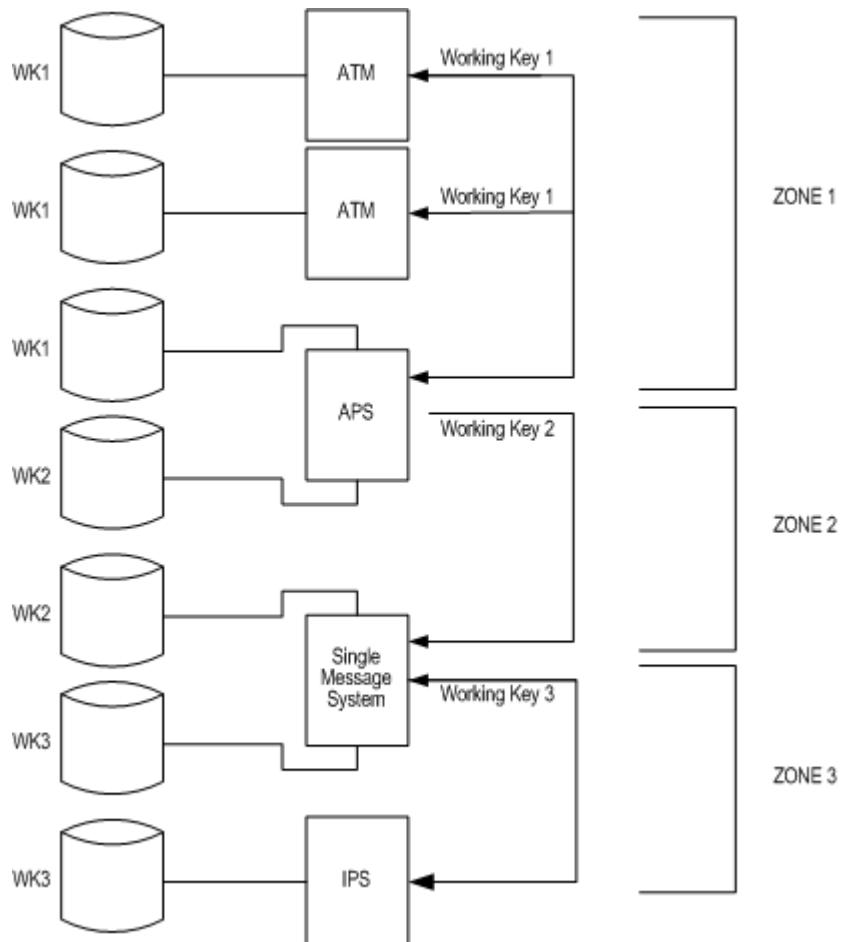
3. The acquirer's host receives the encrypted PIN, which is then decrypted in hardware using the terminal working key. The host system then encrypts it in hardware under a different key that the acquirer and the Single Message System share. The Single Message System then receives the newly encrypted PIN.
4. The Single Message System decrypts the PIN in hardware. It re-encrypts the PIN using a different key that the Mastercard Network and the issuer share. The Single Message System sends the newly encrypted PIN in hardware to the issuer for verification.
5. The issuer decrypts the PIN using the key it shares with the Mastercard Network and verifies that the PIN is valid.



## Zone key management

The following diagram illustrates zone key management.

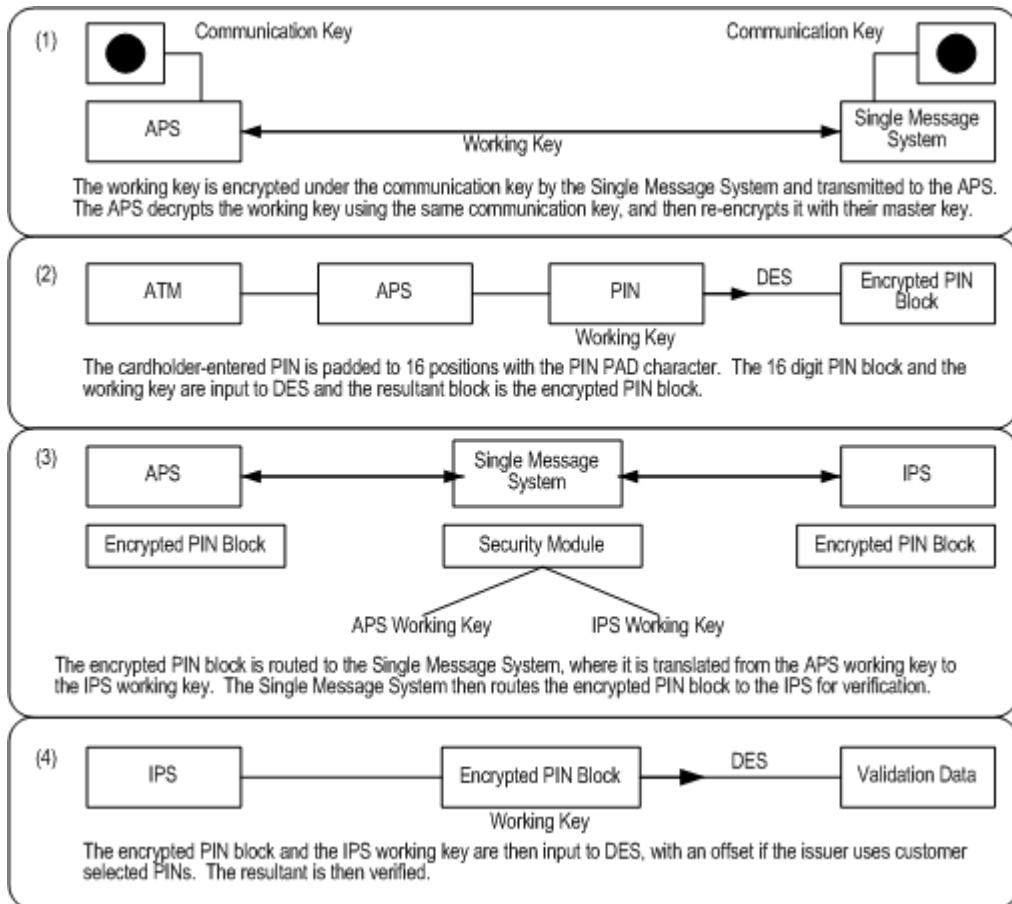
Figure 10: Zone key management



## Key exchange and PIN validation data flows

The following diagram illustrates key exchange and PIN validation data flows.

**Figure 11: Key exchange and PIN validation data flows**



## Triple DES

In February 2000, the International Security Committee (ISC) endorsed the migration of customers and processors to the triple DES standard. Mastercard Network encryption support currently uses the triple DES encryption method to effectively counter sophisticated "brute force" key attacks.

Mastercard requires that all keys for a defined key zone be of the same length. For example, both the zone master key (KEK) and the zone working key (KPE) for a processor link must be double length, or both must be triple length.

### Double key length

Processors that use double length keys under triple DES will follow the key exchange process below in ISO 0800/0810/0820 message sequences to complete encryption key exchanges with the Mastercard Network.

The key information is stored in DE 48, subelement 11, in the following format.

**Table 141: Key Information Format**

Subfield	Attribute	Value
Subtag ID	n-2	11
Subtag Length	n-2	54
Key Class Identifier	an-2	PK (Pin key exchange)
Key Index Number	n-2	00 (constant)
Key Cycle Number	n-2	00-99
Encrypted Key	an-32	Hexadecimal characters 0-9, A-F; <b>double key length</b>
Key Check Value	an-16	The key check value consists of the first four hexadecimal characters (0-9, A-F) of the calculated check value followed by spaces.

### **Triple key length**

Processors using triple length keys under triple DES will follow the key exchange process below in ISO 0800/0810/0820 message sequences to complete encryption key exchanges with the Mastercard Network.

The key information is stored in DE 48, subelement 11, in the following format.

**Table 142: Key information format**

Subfield	Attribute	Value
Subtag ID	n-2	11
Subtag Length	n-2	70
Key Class Identifier	an-2	PK (Pin key exchange)
Key Index Number	n-2	00 (constant)
Key Cycle Number	n-2	00-99
Encrypted Key	an-48	Hexadecimal characters 0-9, A-F; <b>triple key length</b>
Key Check Value	an-16	The key check value consists of the first four hexadecimal characters (0-9, A-F) of the calculated check value followed by spaces.

### **Customer testing**

The Mastercard Debit Financial Simulator version includes enhancements to support testing of triple DES encryption. During testing, Mastercard requires acquirers and issuers to test with the Single Message System, verifying that they are able to support triple DES encryption.

The Single Message System tracks the encryption method used at the issuer and processor levels and generates the appropriate key exchanges and PIN translations.

<b>Key type</b>	<b>Key</b>
Telephone	1-914-249-5620
Fax	1-914-249-4301

## **Network key management responsibilities**

---

These topics describe network key management responsibilities.

### **Single Message System switch**

These are steps that network key management responsibilities in dealing with the Single Message System.

1. Identify, authorize, and brief the appropriate staff for management of the master key and the communications keys.
2. Appoint communication key-part holders.
3. Keep the key parts in dual custody.
4. Manage the exchange of new communication keys with processors.
5. Initiate dynamic online key exchanges as required.

### **Processors**

1. Select and purchase a hardware security module.
2. Demonstrate ability to receive and process working key exchange requests.
3. Demonstrate ability to translate PINs from one key to another in hardware.
4. Develop procedure for managing the communication key.
5. Identify, authorize, and brief the appropriate staff for management of the master key and the communications keys.
6. Appoint communications key-part holders.
7. Keep the logical key parts under dual control.

All PINs must be encrypted at the point of entry using the Triple DES algorithm and the approved ANSI PIN block format. The ANSI PIN block is the only format supported by the Single Message System. Below is the description of the PIN block creation.

## ANSI PIN block format

The ANSI PIN block is built by performing a binary "Exclusive OR" of the two sixteen-hexadecimal digit data elements together.

1. The first hexadecimal data element contains cardholder PIN information.
  - a. The first digit is zero.
  - b. The second digit is the length of the PIN, which must be 4–9, A (10), B (11), or C (12). The maximum length is twelve digits.
  - c. The third digit is the start of the cardholder PIN; twelve is the maximum length.
  - d. The PIN is padded on the right with hexadecimal "F"s to complete the 16-digit data element.
2. The second hexadecimal data element contains primary account number (PAN) information.
  - a. The first four digits are set to zero.
  - b. The next 12 digits of the data element contain the right-most 12 digits of the PAN, excluding the check digit. If the PAN contains 12 or less digits, then the entire PAN excluding the check digit is used. The field is padded on the left with zeros to complete the 16-digit data element.

The two hexadecimal data elements are "Exclusive OR'ed" to obtain the ANSI PIN block result.

## PIN encryption

The acquirer must send the entered PIN to the Single Message System, encrypted in an ANSI block format (Figure 6.4).

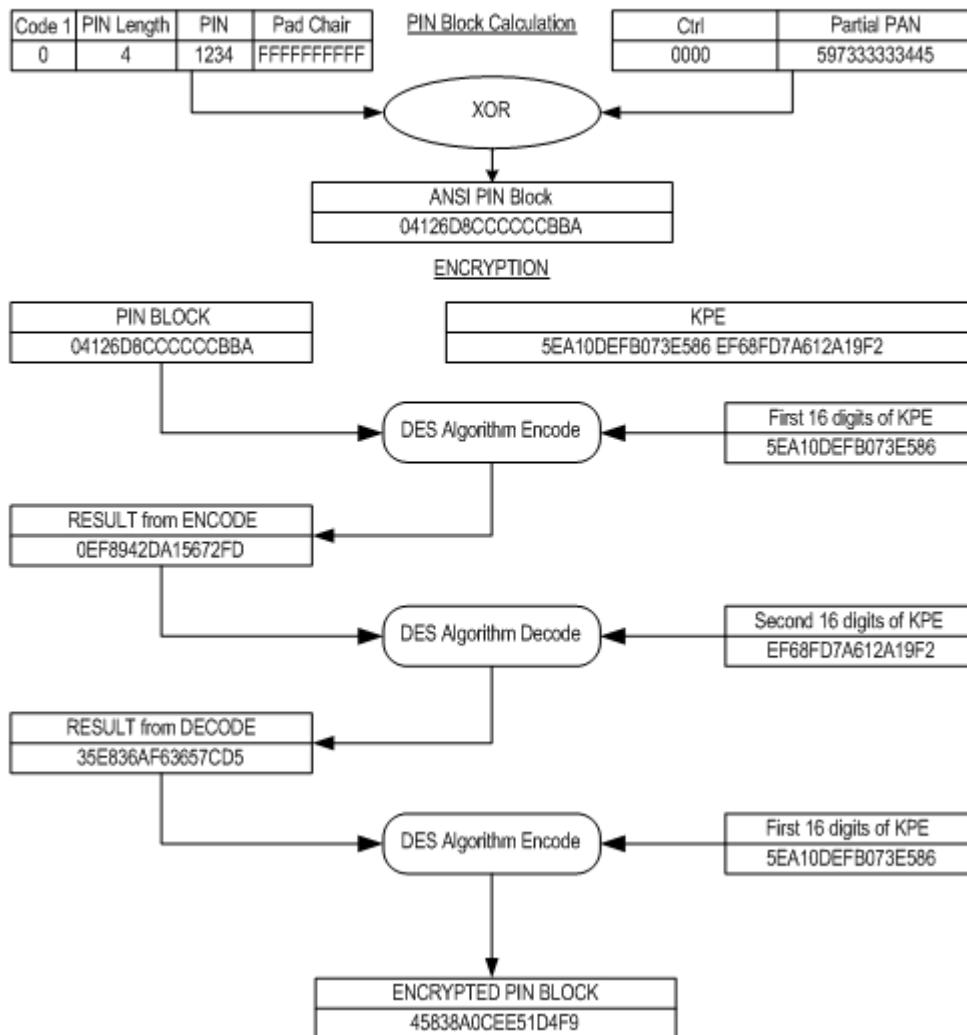
The acquirer must meet the following requirements when encrypting a PIN:

1. The first digit of the first block will contain the control character 0, followed by a number representing the length of the PIN, and then the PIN itself. The remaining digits of the block are filled with the pad character "F".
2. The first four characters of the second block will contain 0000, followed by the 12-right-most digits of the PAN, excluding the check digit.
3. In formatting an ANSI block, the acquirer will "Exclusive-OR" (XOR) the two 16-digit blocks.
4. After creation of the PIN block, it is sent through the DES algorithm with the 32-digit, or 48-digit key (KPE), producing the encrypted PIN block, which is sent to the Single Message System.
5. The Single Message System will translate the PIN block from encryption under the KPE it shares with the acquirer to encryption under the KPE that it shares with the issuer.
6. The Single Message System then forwards the newly encrypted PIN block in the authorization request message to the issuer.

**NOTE:** The Single Message System performs PIN validation services for some issuers using the Authorization Request/0100 message type. For those issuers, the Single Message System will not translate the acquirer's encrypted PIN block as described in the steps above. The Single Message System will perform PIN validation. The Authorization Request/0100 message to the issuer will not contain the PIN block.

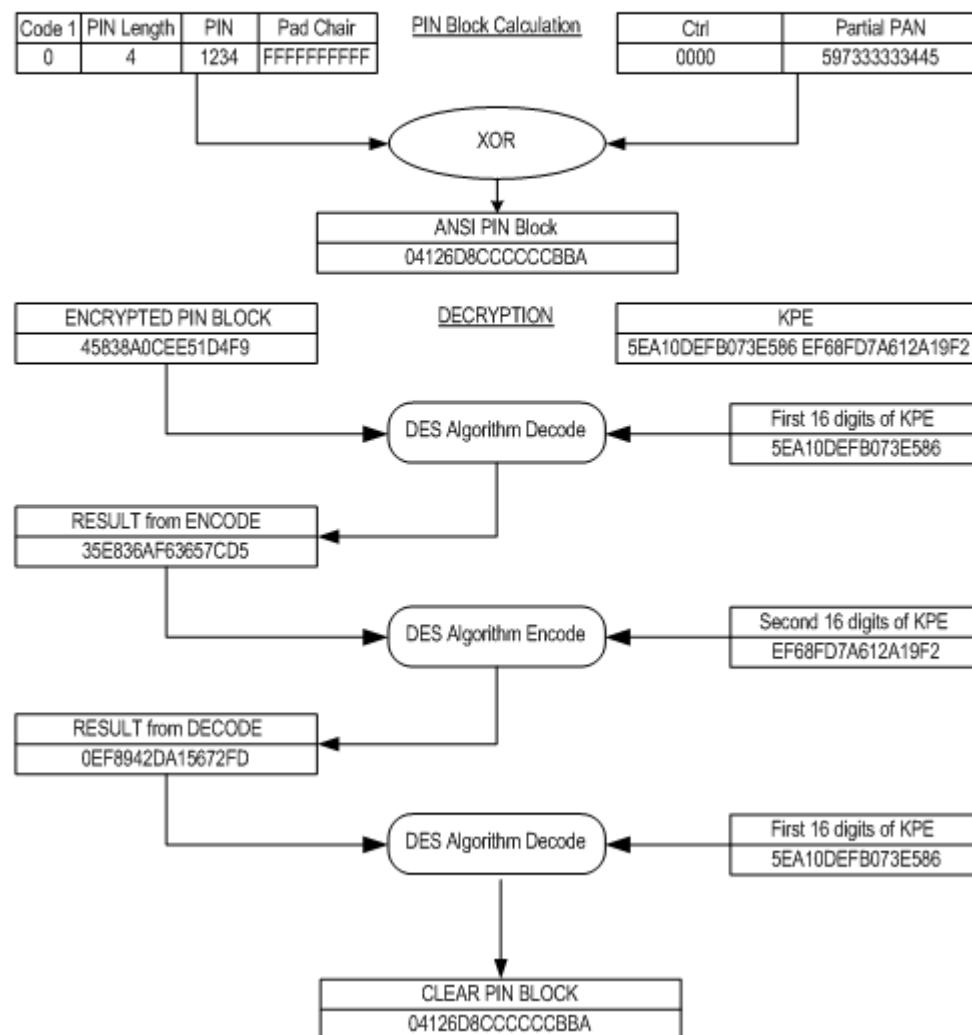
### ANSI PIN block encryption double length key

Entered Pin : "1234"  
 PAD : 'F'  
 KPE : "5EA10DEFB073E586 EF68FD7A612A19F2"  
 Account # : "541597333333456"  
 Partial PAN : "597333333445"



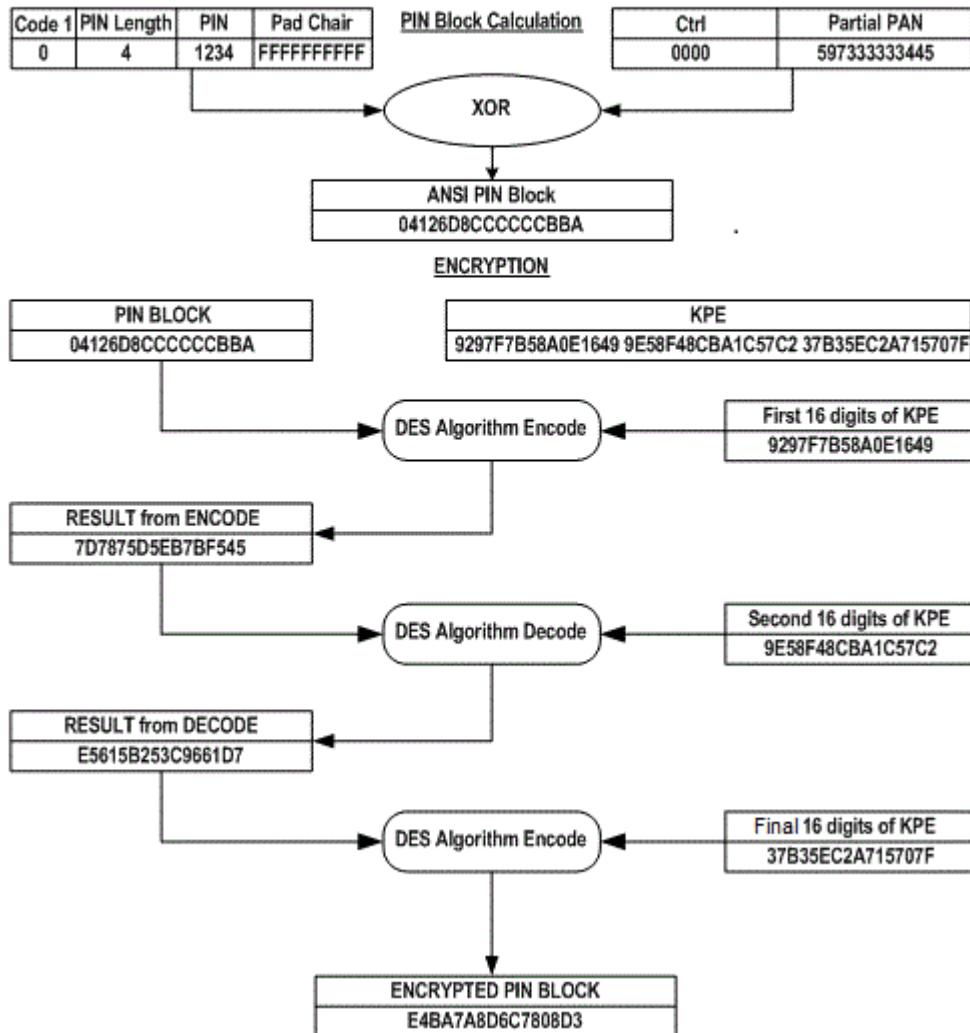
### ANSI PIN block decryption double length key

Entered Pin : "1234"  
 PAD : 'F'  
 PEK : "5EA10DEFB073E586 EF68FD7A612A19F2"  
 Account # : "5415973333334456"  
 Partial PAN : "597333333445"



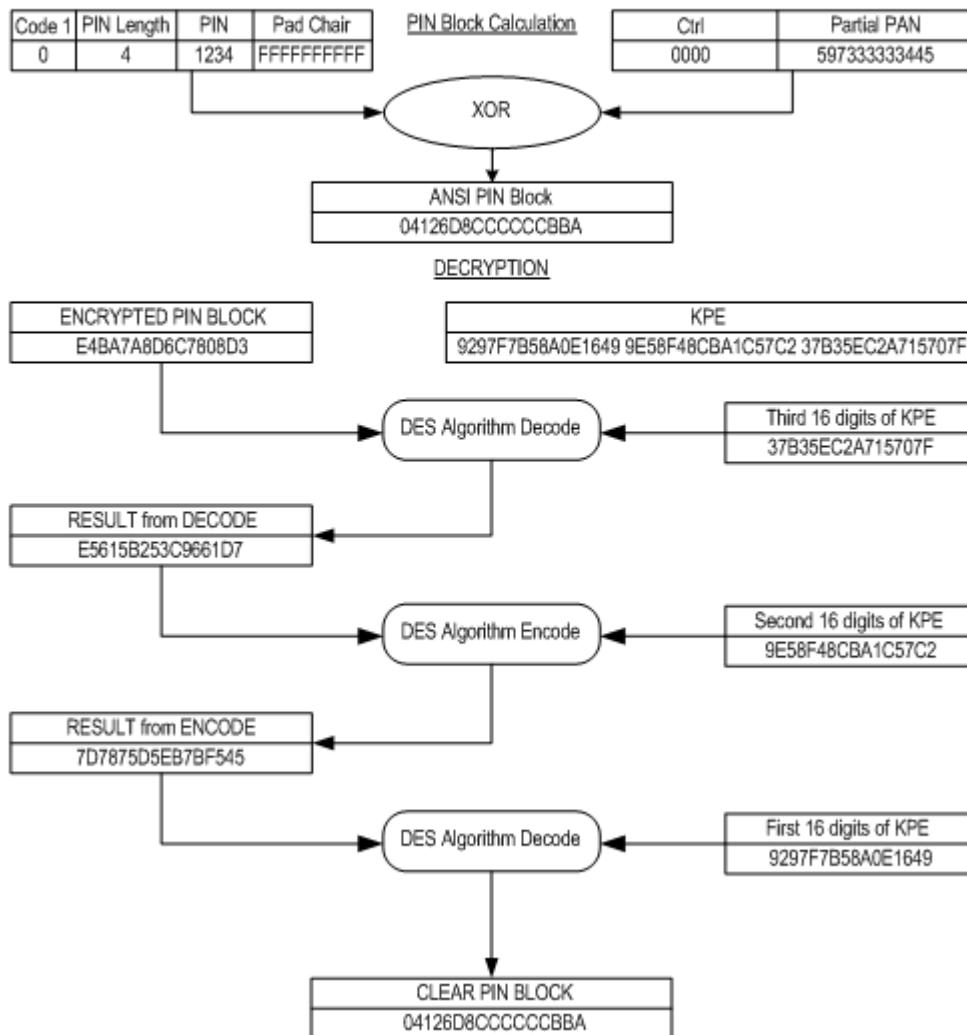
### ANSI PIN block encryption triple length key

Entered Pin : "1234"  
 PAD : "F"  
 KPE : "9297F7B58A0E1649 9E58F48CBA1C57C2 37B35EC2A715707F"  
 Account # : "541597333334456"  
 Partial PAN : "59733333445"



### ANSI PIN block decryption triple length key

Entered Pin : "1234"  
 PAD : "F"  
 KPE : "9297F7B58A0E1649 9E58F48CBA1C57C2 37B35EC2A715707F"  
 Account # : "5415973333334456"  
 Partial PAN : "597333333445"



### Sanity checks

All physically secure devices (PSDs) must be able to detect possible working key corruption by verifying that the clear text PIN block is in the expected format. Failure of this sanity check

should result in a declined transaction and the initiation of the key exchange sequence between the processor and the Mastercard Network.

### **Security provisions**

The security provisions at the Mastercard Network require adherence to the following.

- All terminals must encrypt PINs in a physically secure device using the ISO approved algorithm(s) for PIN encipherment listed in ISO 9564-2 (DES algorithm) and a working key that is used at the terminal (ATM or POS). Working keys that are loaded manually must be loaded in a dual control environment.
- Mastercard recommends that the same working key not be assigned to any two terminals driven by the same hardware, software, or both in a predictable manner.
- All keys must be stored encrypted using the ISO approved algorithm(s) for PIN encipherment listed in ISO 9564-2 (DES algorithm) and a proprietary master key. Alternately, keys may be stored within a physically secure device. All encryption/decryption processing must occur within a physically secure device.
- All intermediate network facilities (INFs) between the terminal and the issuer processor must receive and send customer-entered PINs in the form of a cryptogram to other INFs using the ISO approved algorithm(s) for PIN encipherment listed in ISO 9564-2 (DES algorithm) and working keys statically or dynamically maintained by the INFs processing activity.
- PINs may be decrypted and re-encrypted, during INF transmission processing, to change the format of the PIN block or the working key used to protect the PIN. It must be translated in a physically secure device.
- Working keys maintained dynamically must be used for no more than 12 hours.

## **PIN generation verification**

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Mastercard provides a PIN verification service for all purchase transactions that contain a PIN.

To request PIN verification from the Single Message System, the issuer must provide the PIN verification key(s) and PIN processing parameters to the Mastercard Network. This is achieved by completing the *PIN Processing Profile Form* (Form 269) and by sending the PIN verification keys using the *Hard Copy Key Exchange Form* (Form 723).

The Single Message System supports the American Bankers Association (ABA) method of PIN generation verification. This topic presents a description of each methodology.

The PIN verification service is an optional service.

### **ABA**

To generate PINs using the ABA method, the institution must determine the

- validation data
- PVKI (PIN verification key index)
- key left

- key right, and
- PIN (customer-selected).

This generation process will produce a PIN verification value (PVV), which is encoded on Track 2 of the card's magnetic stripe or provided by the customer in a file.

The validation data is the last 11 digits of the PAN, excluding the check digit. The PVKI is appended to the validation data, which is in turn appended by the PIN to complete the 16-digit block.

This block along with the 16-digit key left is sent through the DES algorithm to produce another 16-digit block. The resultant block is sent through DES using the 16-digit key right, producing a new 16-digit resulting block. This new block is sent through DES with the key left to produce the final block called the generated PIN block.

The PVV is determined by taking the first four numeric digits of the natural PIN block. If there are not four numeric digits, the A-F are mapped to 0-5 starting from the beginning of the natural PIN block, and the remaining digits of the PVV are completed.

**For example:**

**47CAD278C8674359 = 4727**

**EFACECB4B9C4EEAF = 494E = 4944**

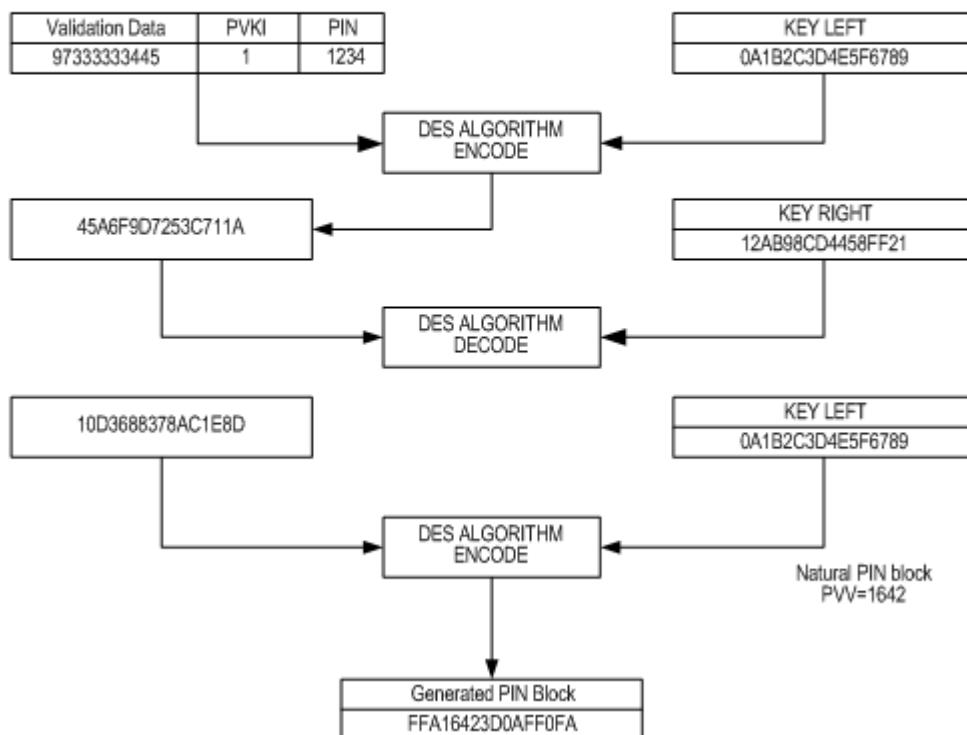
**BDBACF4FCDF33ABE = 433B = 4331**

**BFDCCA4FBFBFAADF = 4BFD = 4153**

**EFAAFAFFEEEDFBFCE = EFAA = 4500**

### ABA PIN Generation

ASSIGNED PIN : "1234"  
 KEY LEFT : "0A1B2C3D4E5F6789"  
 KEY RIGHT : "54159733333445"  
 PAN : "54159733333445"  
 VAL. DATA : "9733333445"



Any intermediate network facility (INF) that is not a processor and does not translate, use, or verify PIN or key data for any transaction processed by such INF is not subject to any of the provisions listed above.

### Required functionality

Using a physically secure device (PSD) only, a processor must be able to support the functionality indicated in these tables.

**NOTE:** Mastercard does not permit software emulation of these DES security functions. For more information, refer to the *Mastercard Rules*.

<sup>a</sup> Processors or networks not directly connected to the Mastercard Network.

**Table 143: Key Management Functions**

Functionality	Processors	Others <sup>a</sup>	Terminals
Store master key	Required	Required	Required
Establish/reset communication key	Required	Required	Required
Generate working key	Required	Optional	Optional
Receive working key	N/A	Required	Optional

**Table 144: PIN Processing Functions**

Functionality	Processors	Others <sup>a</sup>	Terminals
Encrypt PIN	Required	Required	Required
Verify PIN	N/A	Required (IPS)	Optional
Translate from ANSI to ANSI	Required	Optional	Optional
Translate from PIN PAD to ANSI	N/A	Required	Optional
Translate from ANSI to PIN PAD	N/A	Optional	Optional
Translate from Clear to ANSI	Required	Required	Required
Translate from ANSI to Clear	Required	Required	Required

## Detection and replacement of corrupt or compromised keys

All PSDs must be able to detect possible corrupted or compromised working keys by verifying that the clear text PIN block is in the expected format.

Failure to perform this sanity check should result in a declined transaction and the initiation of a key exchange sequence between the INFs where the corrupted or compromised key is detected. If a corrupted or compromised key is detected, either by the Mastercard Network or a customer, immediate notification to the other party is required.

After there has been a successful working key exchange, it is the responsibility of the processor and of Mastercard to preserve the old working key for a period of five minutes. If the system receives a sanity check error during this five-minute period, the system should try the old working key before returning an error. If the stored key receives a sanity check, the system should return a response code appropriate to the type of message format used.

## Fallback to clear text

In the event of a major problem with security equipment (for example, a faulty PSD or DES circuit board), Mastercard will have no choice but to suspend all transaction processing with the processor.

**NOTE:** Use of clear text processing of transactions is expressly prohibited by the *Mastercard Rules*.

## Emergency communication key procedures

In the event that a successful working key exchange cannot be performed, Mastercard will invoke the emergency communication key procedure using this procedure.

1. The Mastercard Network marks the faulty processor as down.
2. Authorized Mastercard personnel randomly generate an emergency communication key (generating both parts of the key).
3. Mastercard Network personnel call the security or operations staff at the processor. The emergency communication key is given verbally to the processor.
4. Both the Mastercard Network and the processor insert the new emergency communication key in their security modules.
5. The Mastercard Network initiates key exchange and log-on, using the new emergency communication key.

The emergency communication key procedure is to be used only as an interim measure to enable a processor to resume transaction processing with the Mastercard Network as quickly as possible following a key exchange failure. The personnel responsible for key management must be notified immediately of the security failure situation and must conduct a secure key exchange at the earliest possible time.

Use of the emergency communication key in any one occurrence is limited to six business days. After such time, the processor must have reestablished the jointly established communication key, in accordance with the provisions outlined in this section.

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