

Fundamentals of ISO 20022 and SWIFT MX For Payments



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Course learning objectives

- Types of payment and settlement systems
- Key elements of payment and settlement
- What is ISO 20022 and why it is needed
- How ISO 20022 messages are developed
- ISO XML schema definitions and instances
- Overview of SWIFT Standards MX, CBPR+, HVPS+
- How to use ISO 20022 pacs, pain and camt messages for payments



Learning Objectives

Agenda

- Module 01 : Introduction to Payments and Settlement Systems
- Module 02 : Introduction to ISO 20022
- Module 03 : ISO 20022 messages for Payments Domain





Module 1

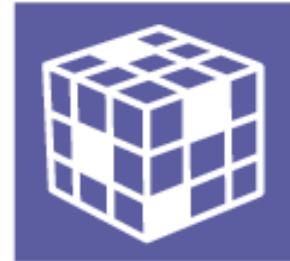


Introduction to Payment and Settlement Systems

Module 1 : Introduction to ISO 20022



- What is payment and settlement
- Types of payments viz. push, pull and collaborative
- Key elements of payment and settlement
- Types of payment and settlement systems
 - HVPS, Bulk, Instant
 - Domestic, Regional, Cross Border



Module 1

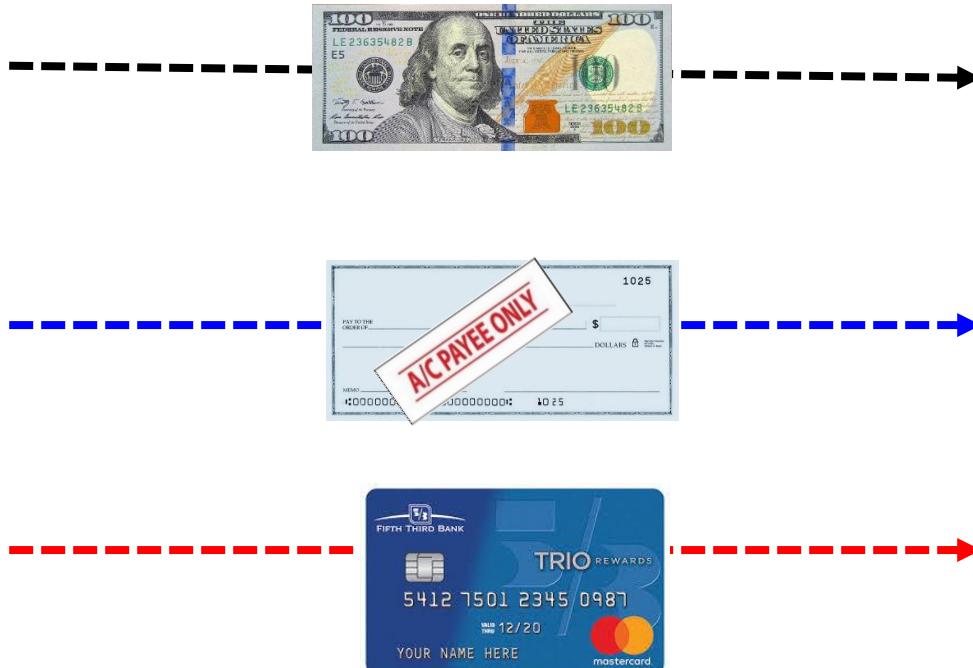
What is a
payment and settlement system ?



Understanding payment and settlement



Jack
Customer



Shop-keeper

KEY CONCEPTS

Payment is the initiation of the transaction.

Settlement is where the beneficiary has unconditional, irrevocable and full control over the money.

Payment classification (1/2)



- **Classification based on location**
 - Within a bank (book transfer) Customer to Customer / Account to Account
 - Local (within a city)
 - Domestic (within a country) in local currency – Exceptions e.g. Hong Kong and UK
 - Regional Payment Systems (SEPA, SADC SIRESS, COMESA REPSS)
 - Cross border (across countries) in foreign exchange – Exceptions e.g. EUR / XCD / ZAR
- **Types of transactions**
 - Push
 - Pull
 - Collaborative/biller solutions/EBPP/EIPP



Payment classification (2/2)



- **Classification based on message/file**
 - Single message containing payment instruction/s e.g. RTGS transactions
 - File containing payment instructions (bulk) e.g. ACH transactions
- **Classification based on funds availability to beneficiary and/or settlements types**
 - Real time gross settlement e.g. Fedwire USA, TARGET2 SEPA, UK CHAPS
 - Real time net settlement e.g. CHIPS USA, LVTS Canada
 - Multilateral batch settlement e.g. ACH, USA, NACH India, SEPA STEP2
 - Instant payment systems e.g. US RTP, SEPA RT1, SEPA TIPS, IMPS India, NPP Australia.

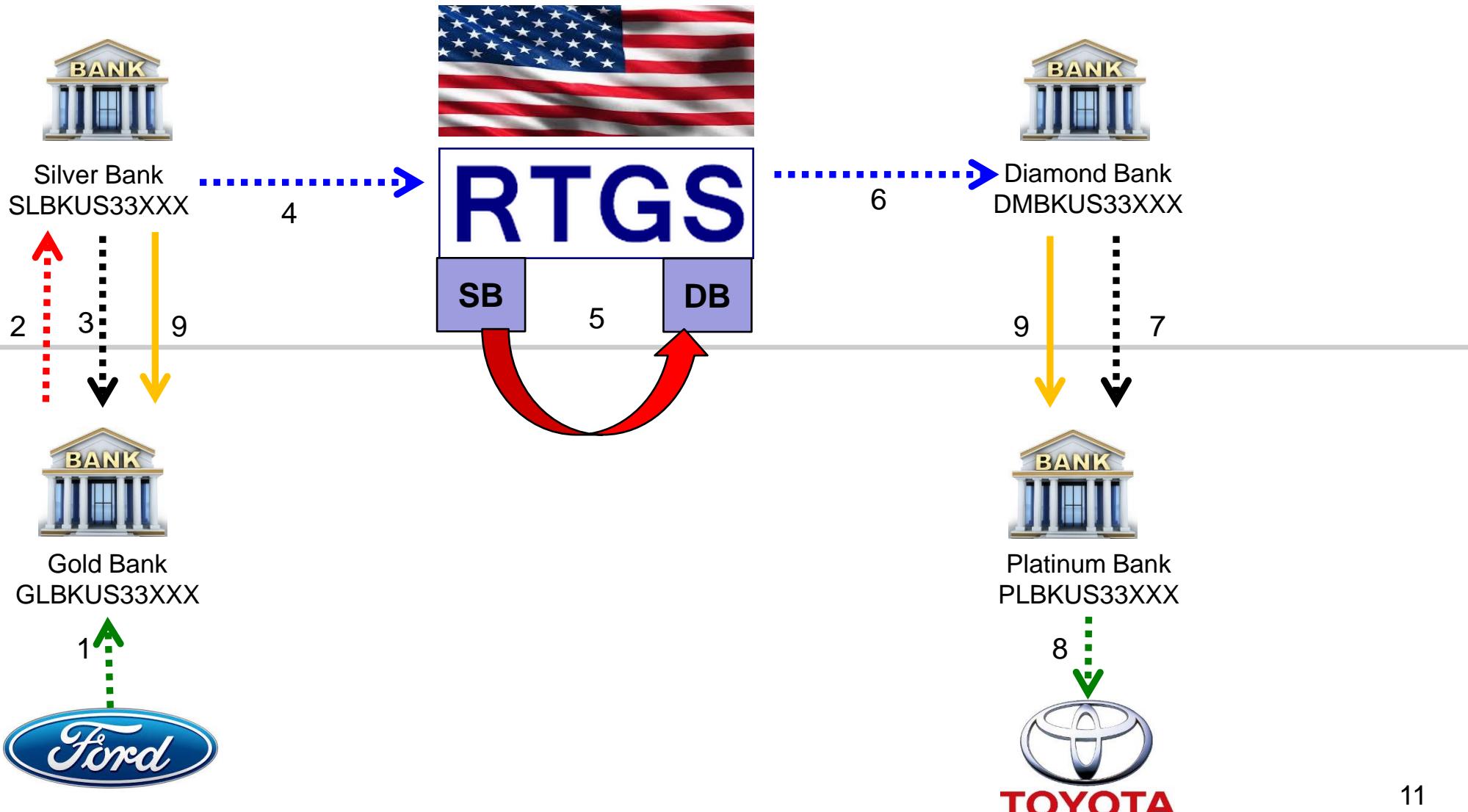




Domestic payment

Understanding domestic payment

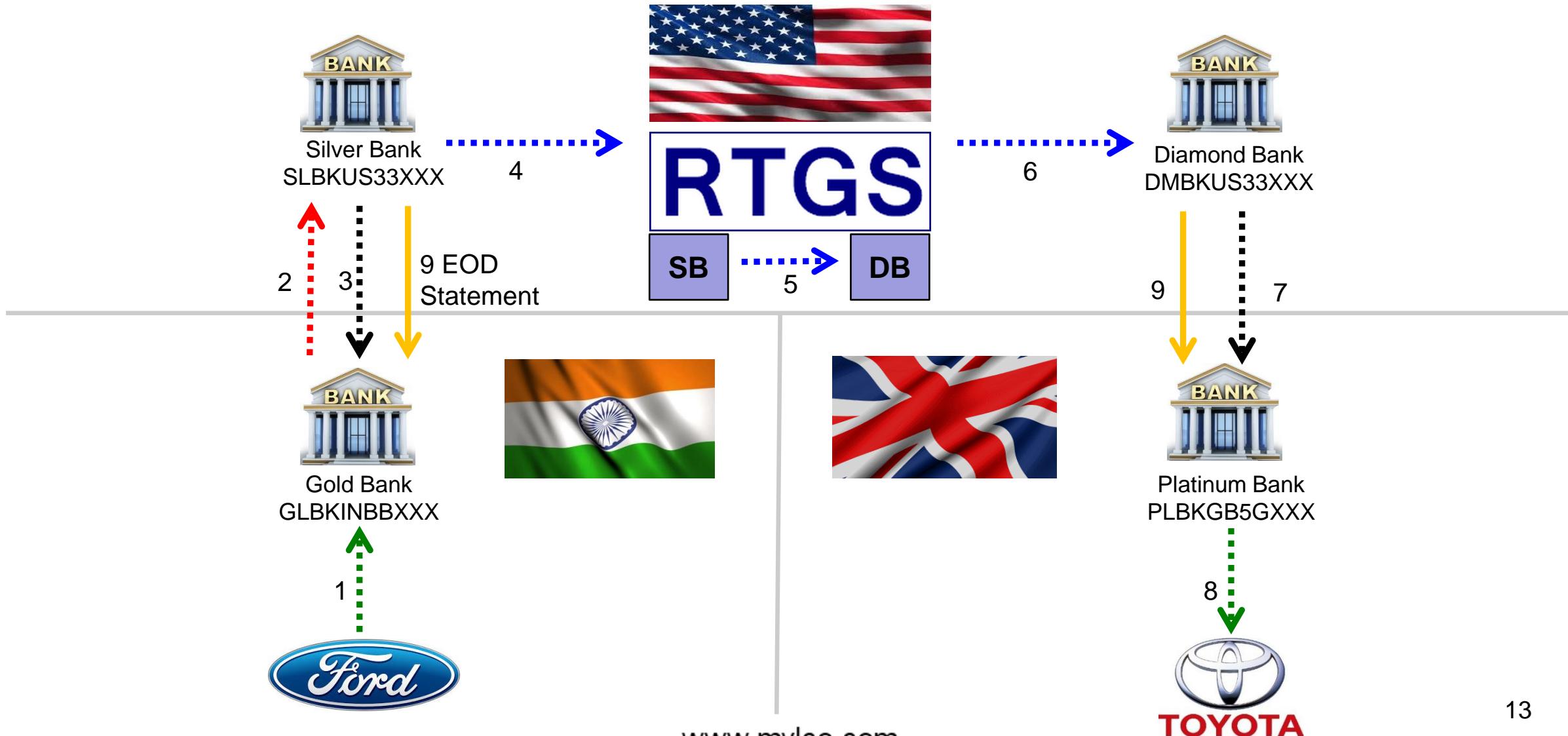
Direct Participants



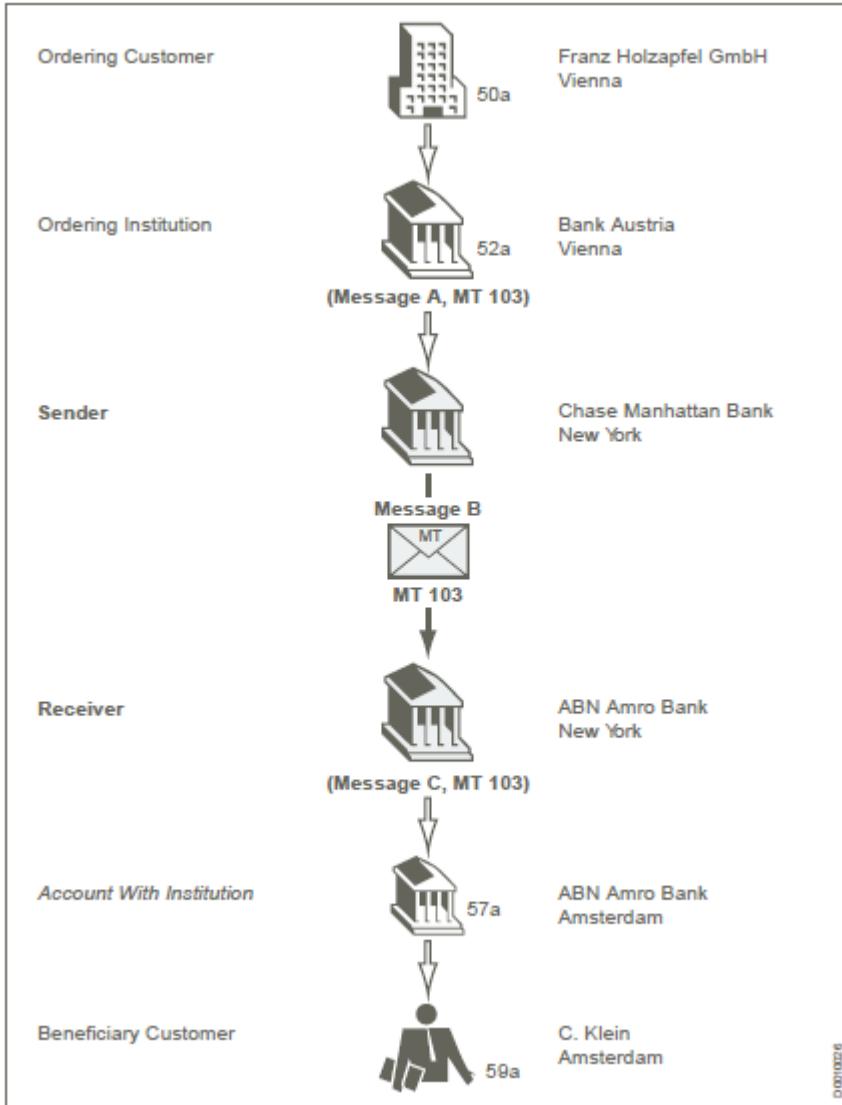


Cross border payment

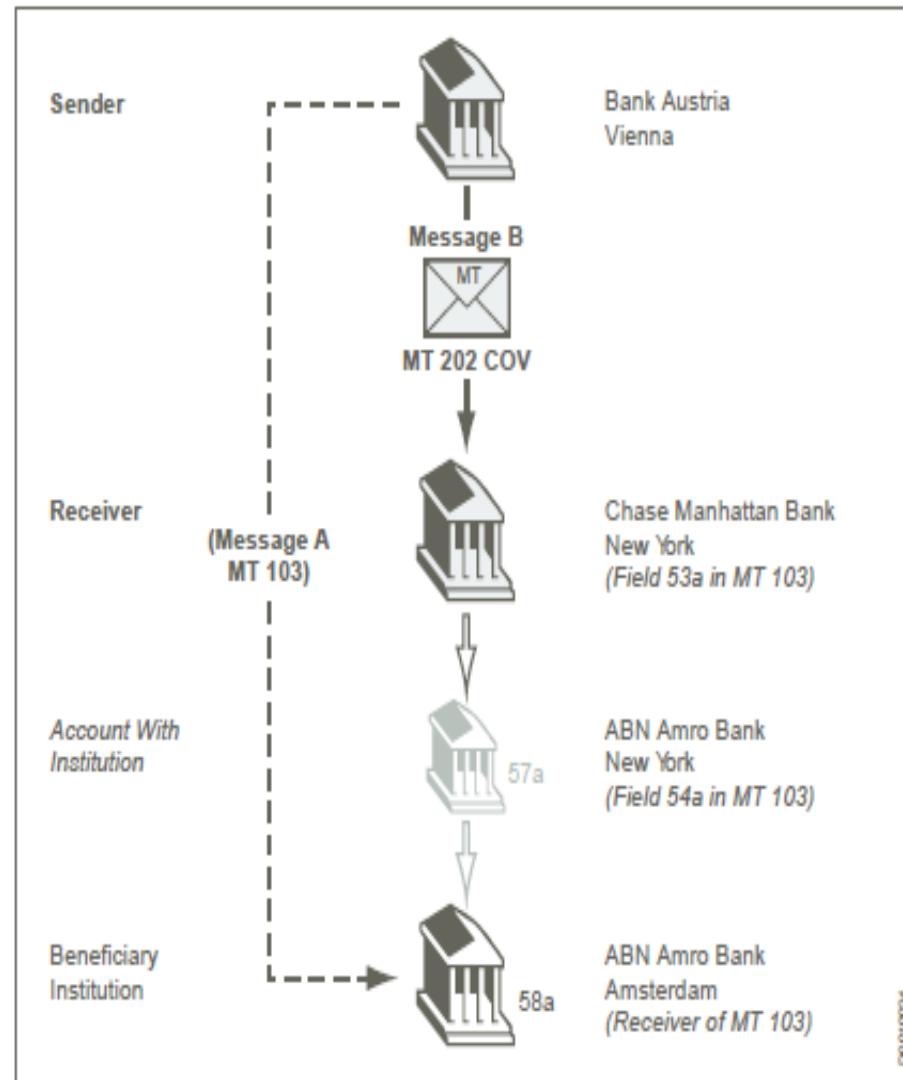
Understanding cross border payment



Serial Method

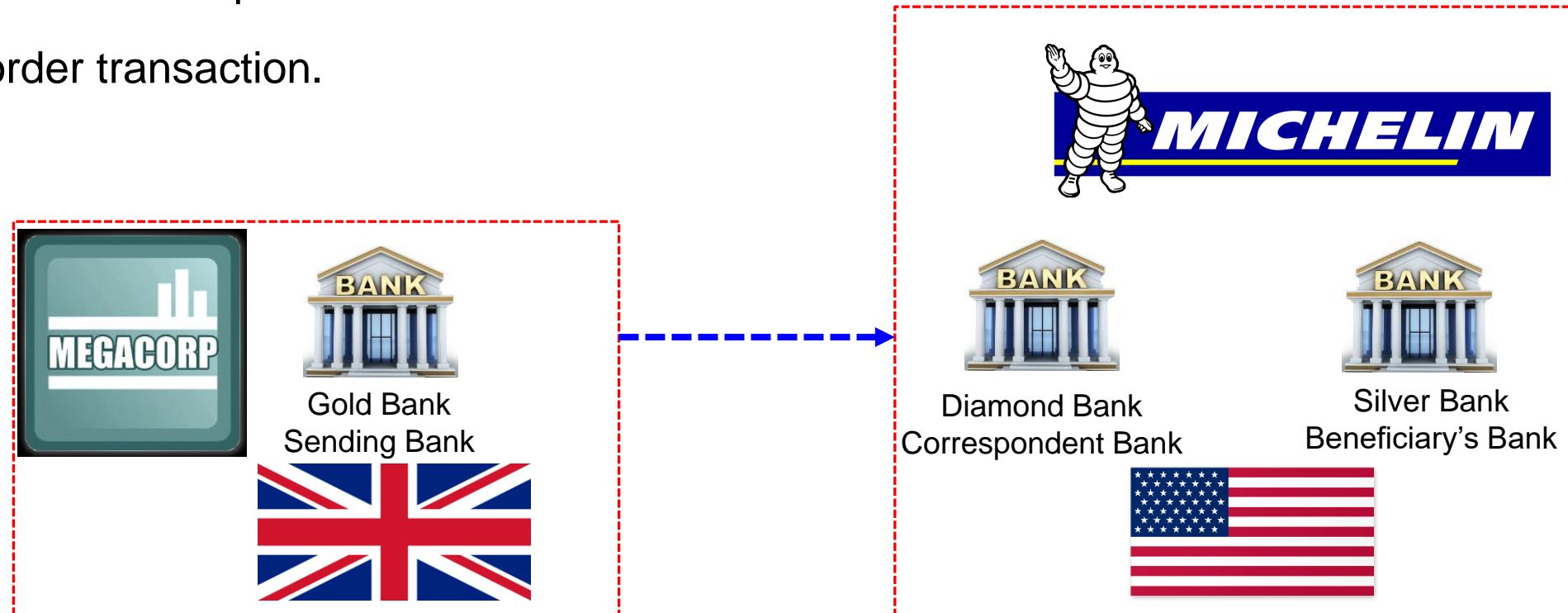


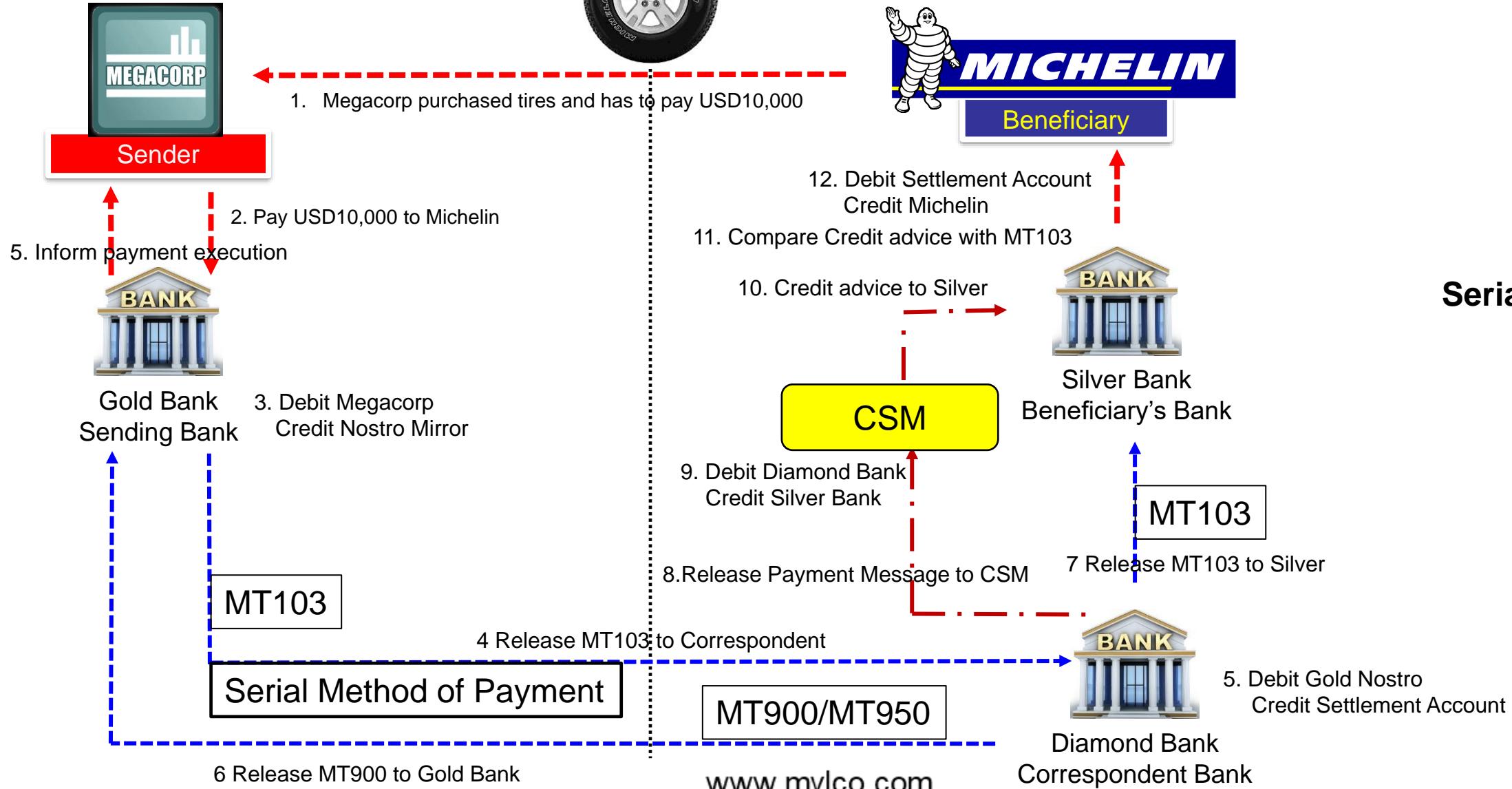
Cover Method

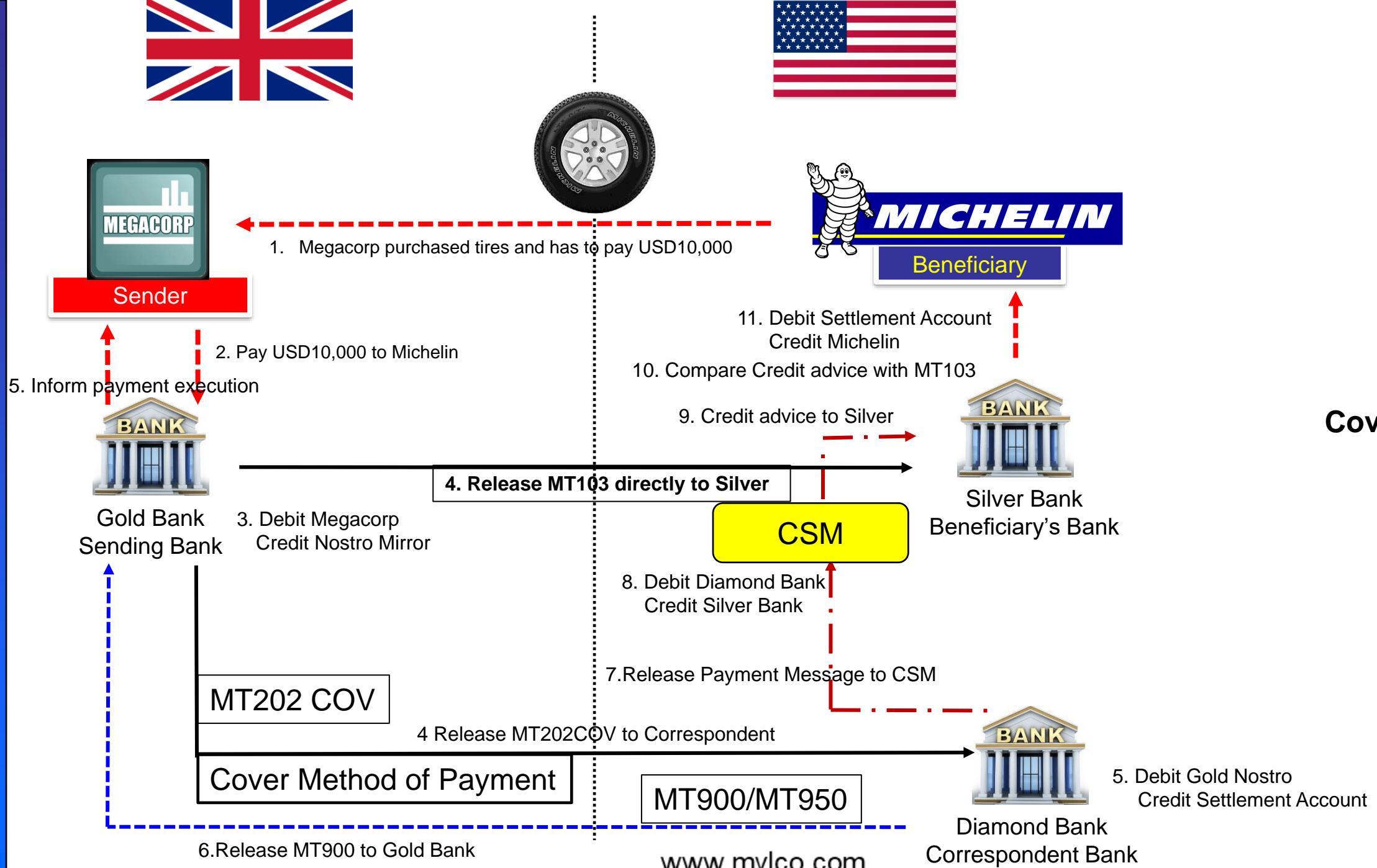


Cross border payment methods

- Megacorp banks with Gold Bank UK. It wants to remit USD 10,000 to Michelin Tires banking with Silver Bank New York.
- Diamond Bank USA is correspondent of Gold Bank UK.
- This is a cross border transaction.



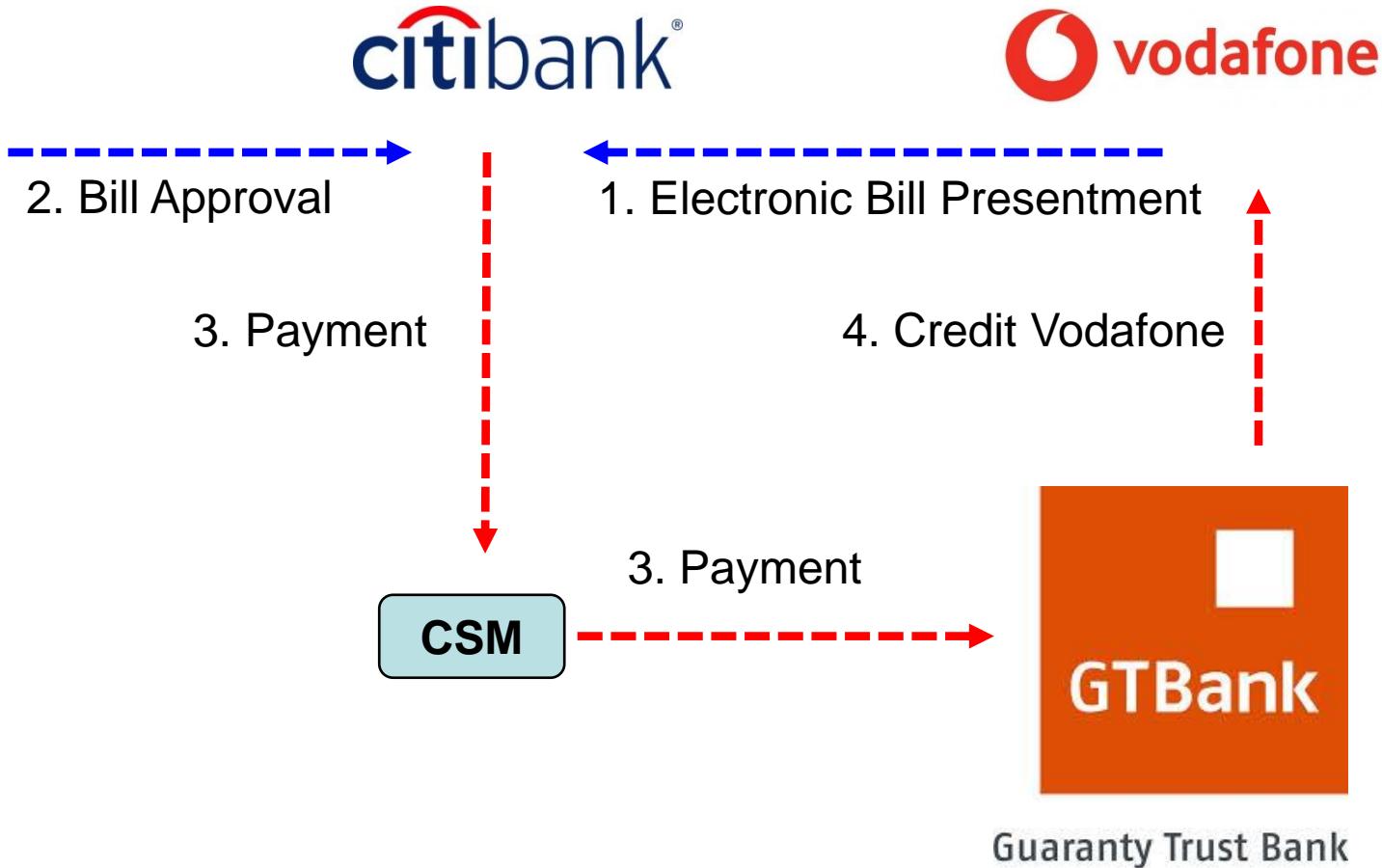




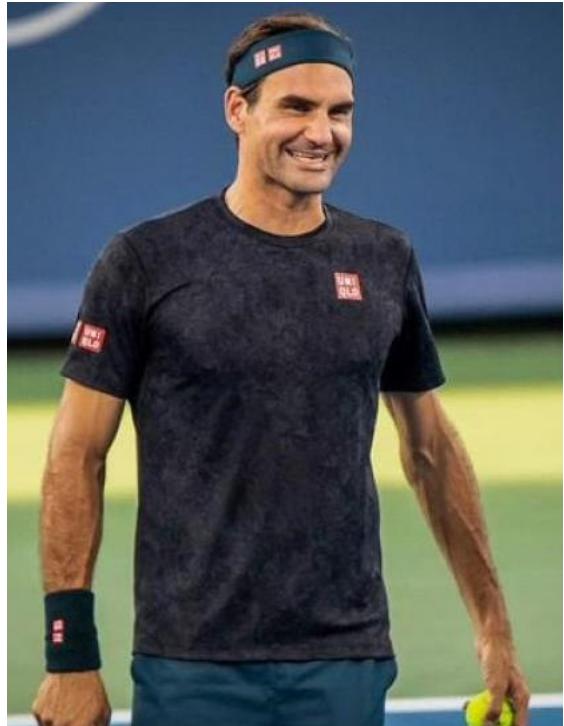


Collaborative payment

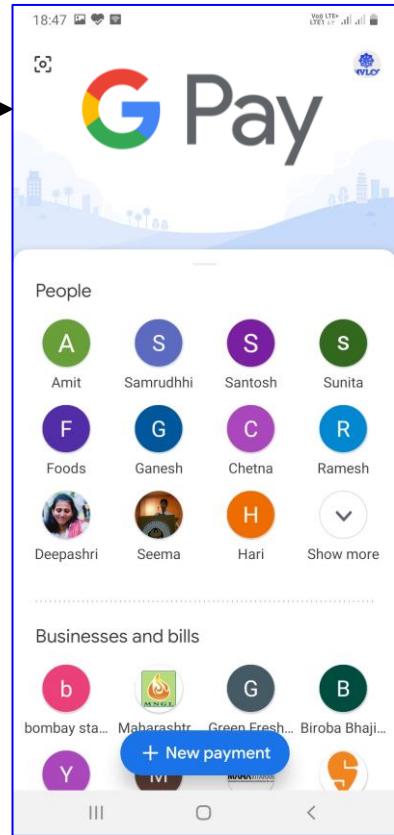
Electronic Bill Presentment and Payment (EBPP)



Request to pay example : Setting up



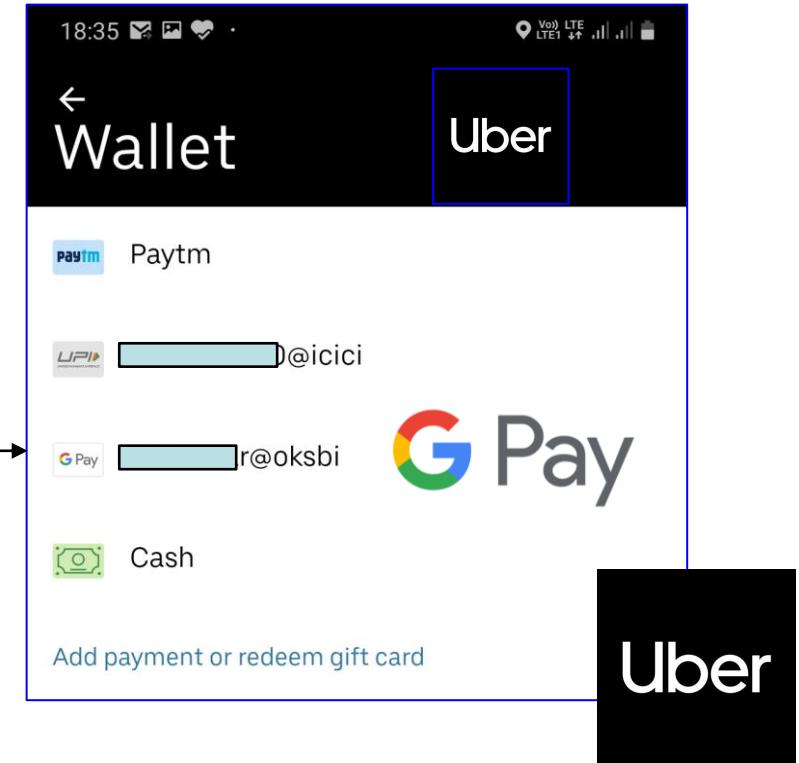
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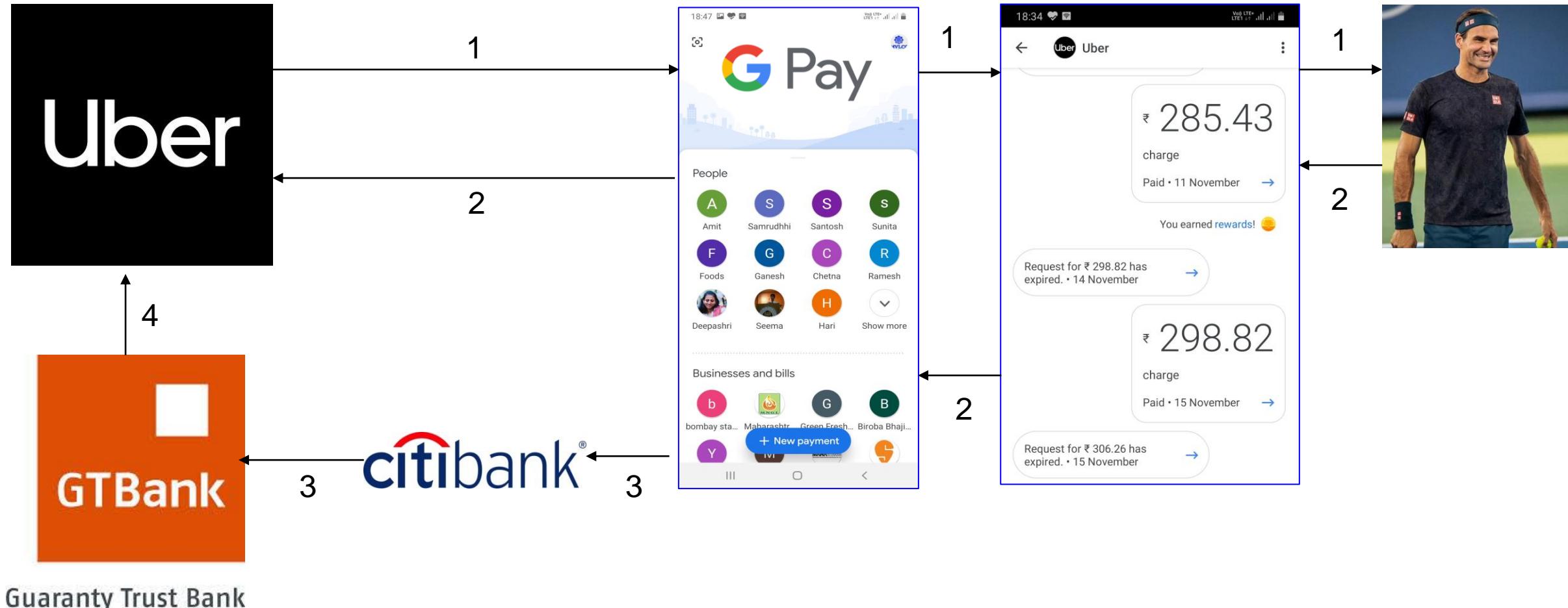
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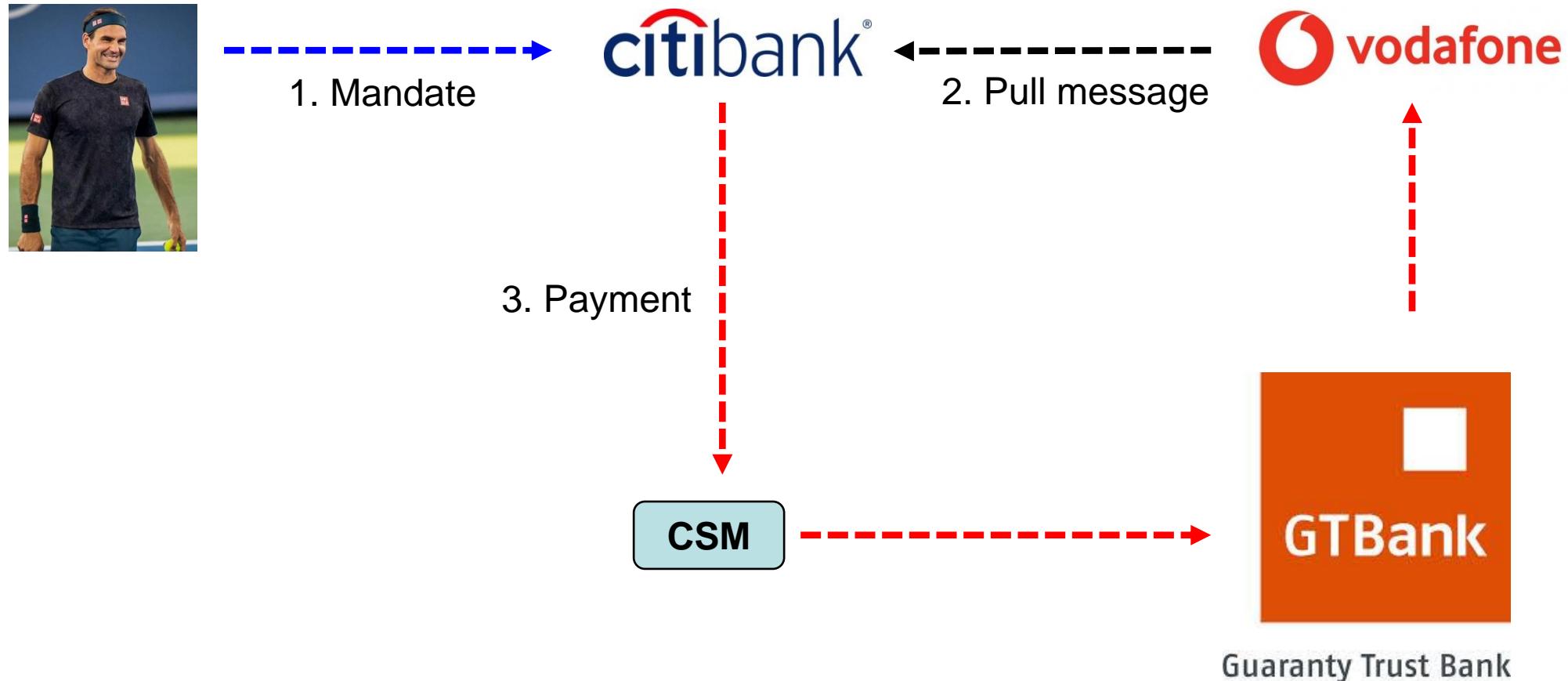
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Request to pay : payment approval : payment



Pull transaction example



Key elements of payment systems



Message

- **Paper message**
(examples)
 - Cheque
 - Demand draft
- **Electronic message**
(examples)
 - RTGS/EFT
 - ACH

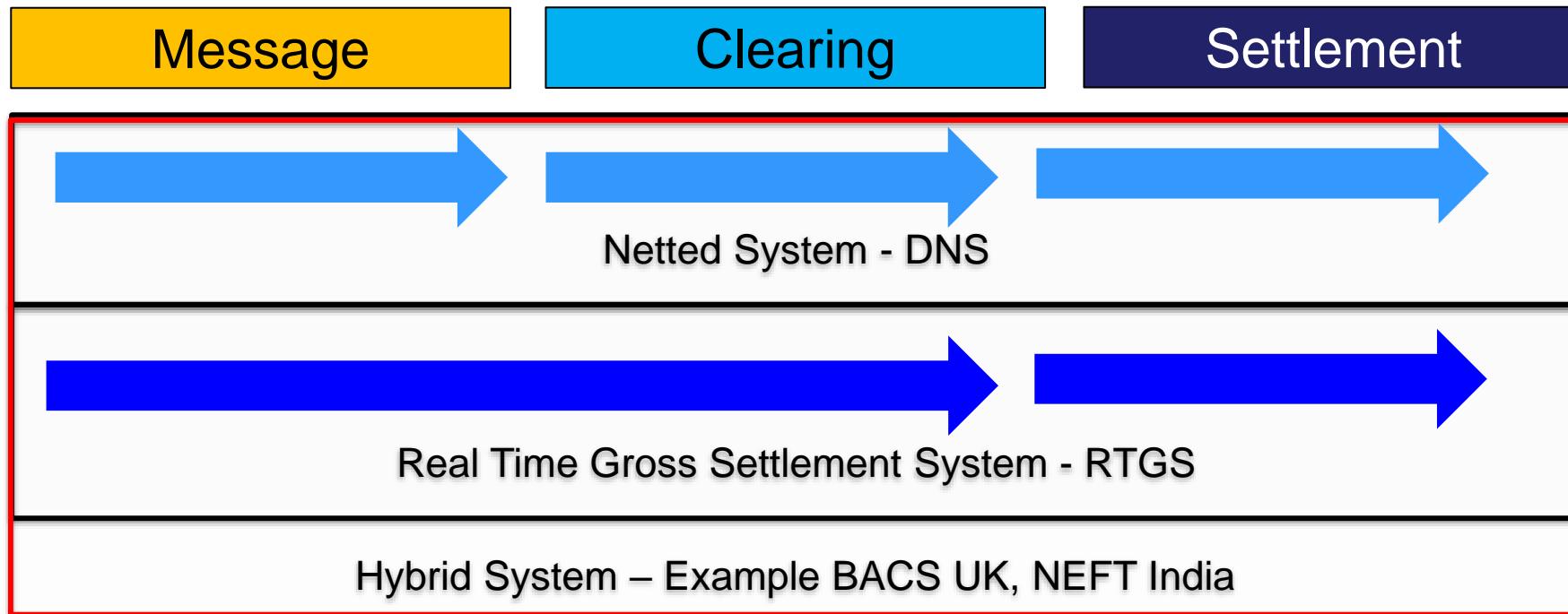
Clearing

- Message processing and computing obligations
- **Netting Process** (only in netted systems)
 - Bi-lateral netting
 - Multilateral netting

Settlement

- Unconditional
- Final and irrevocable

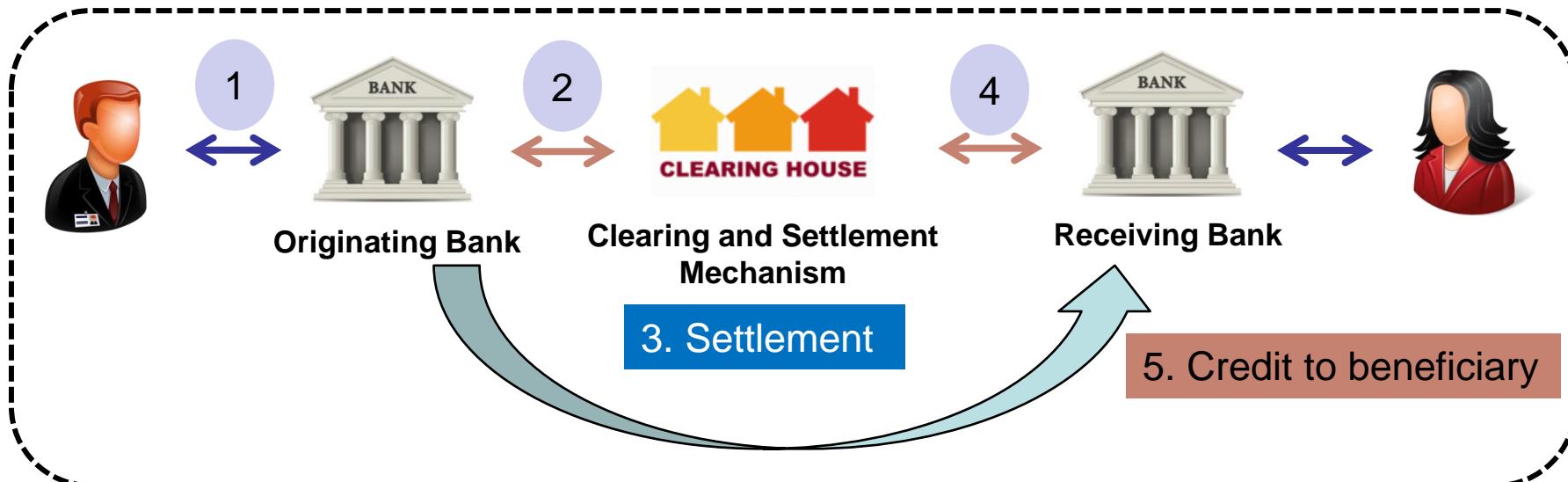
Key elements of payment systems



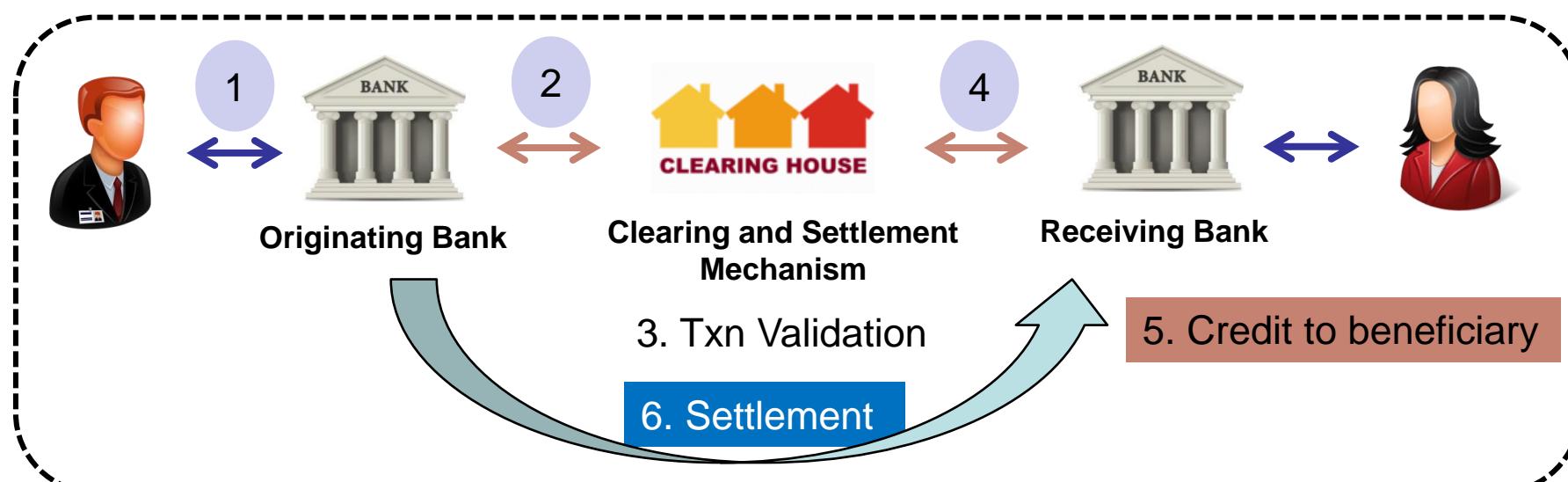
We also have **Real-time Final Settlement Systems** viz.

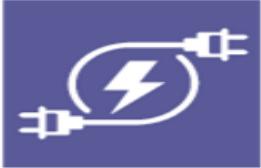
- CHIPS in USA (High Value)
- LVTS in Canada (High Value)
- Faster Payments in UK (Low Value)
- IMPS in India (Low Value)

DNS, RTGS
and Hybrid.
Other than
RTFS



RTFS





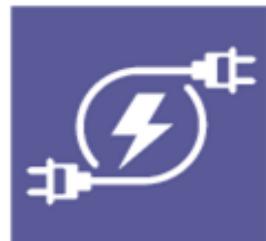
Module 2



Introduction to ISO 20022

Module 2 : Introduction to ISO 20022

- What is ISO 20022
- Advantages of ISO 20022
- Understanding the development methodology
- ISO 20022 repository
- Three layered approach and business models
- Five business domains supported by ISO 20022
- Development, registration and maintenance process
- Message naming convention in ISO 20022
- Overview of SWIFT standards MX



Module 2



The “**closing**” is the last step in buying and financing a home. The “**closing**,” also called “settlement,” is when you and all the other parties in a mortgage **loan** transaction sign become responsible.

www.consumerfinance.gov

What is a mortgage?



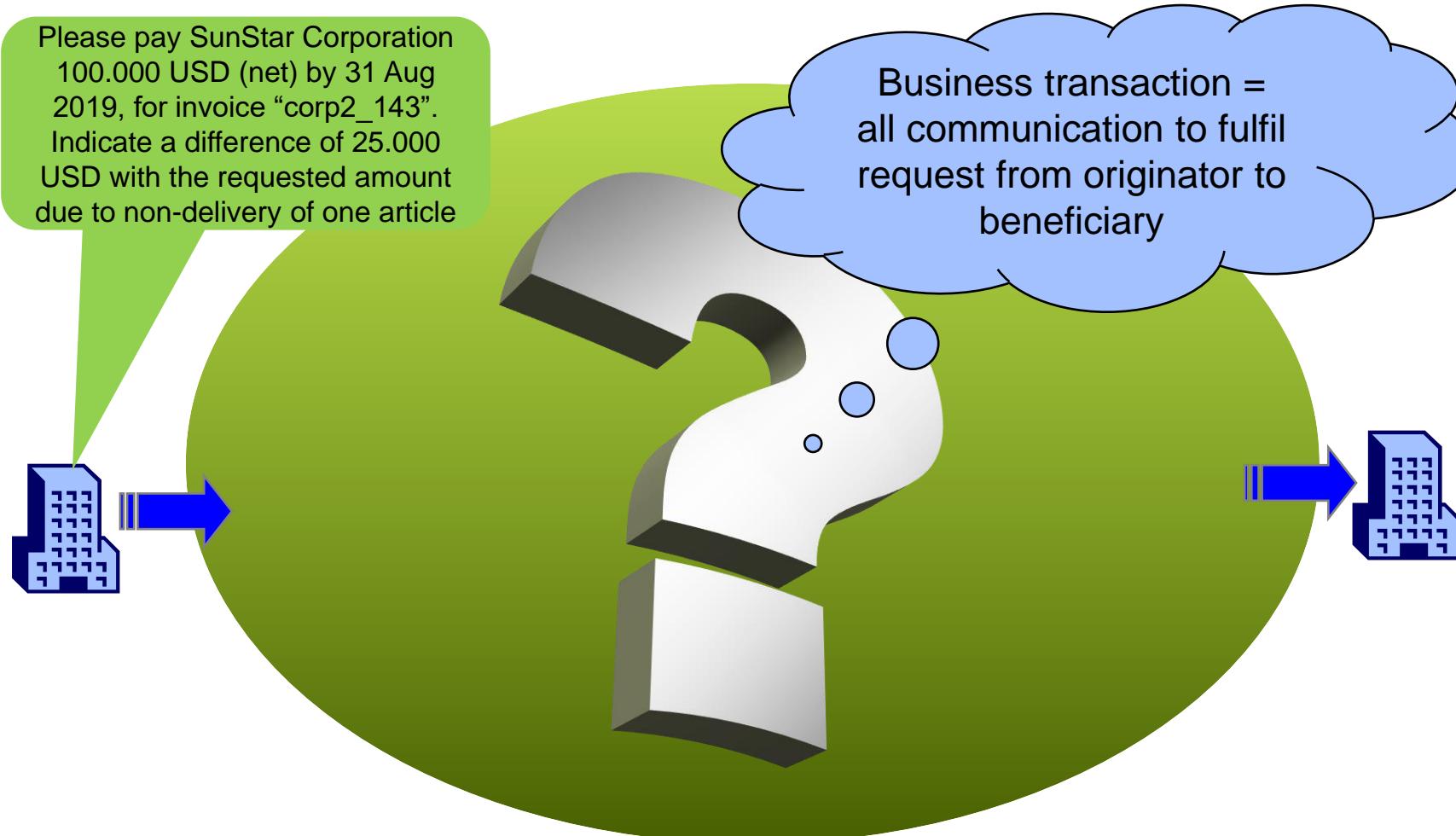
blog.indialends.com › how-to-close-a-personal-loan

How To Close a Personal Loan - IndiaLends - IndiaLends Blog

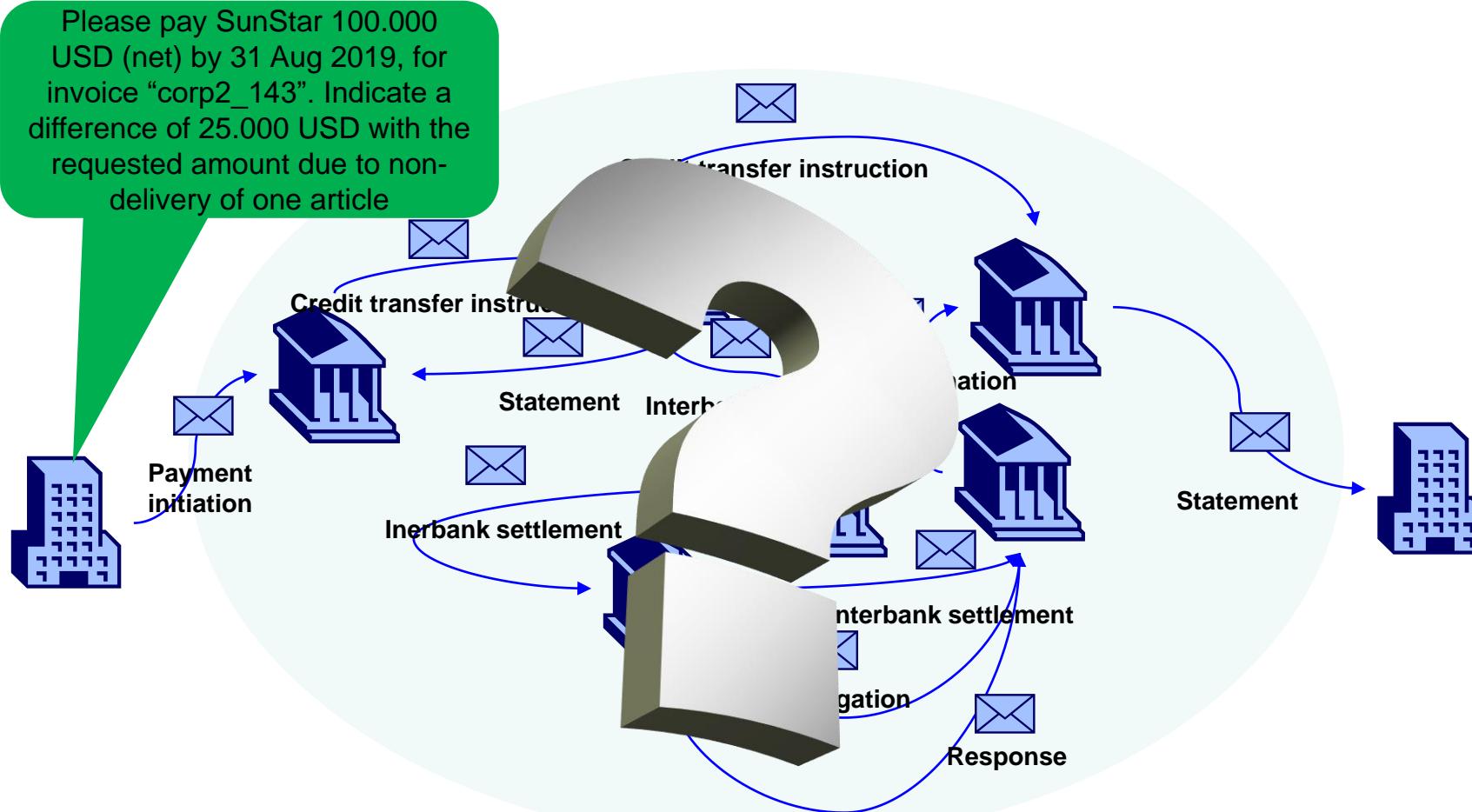
A typical business transaction

Please pay SunStar Corporation 100.000 USD (net) by 31 Aug 2019, for invoice "corp2_143". Indicate a difference of 25.000 USD with the requested amount due to non-delivery of one article

Business transaction =
all communication to fulfil
request from originator to
beneficiary



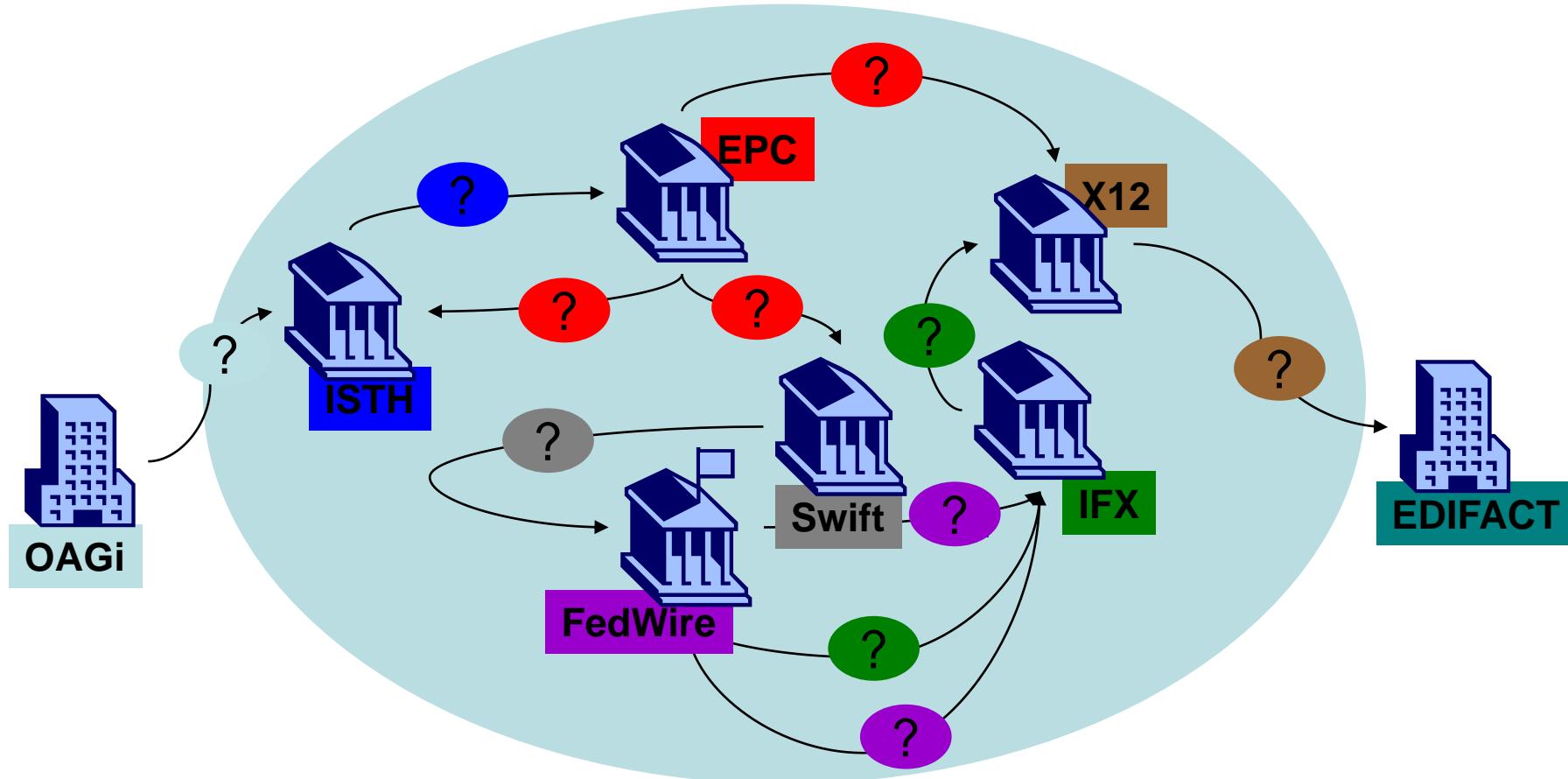
A typical business transaction

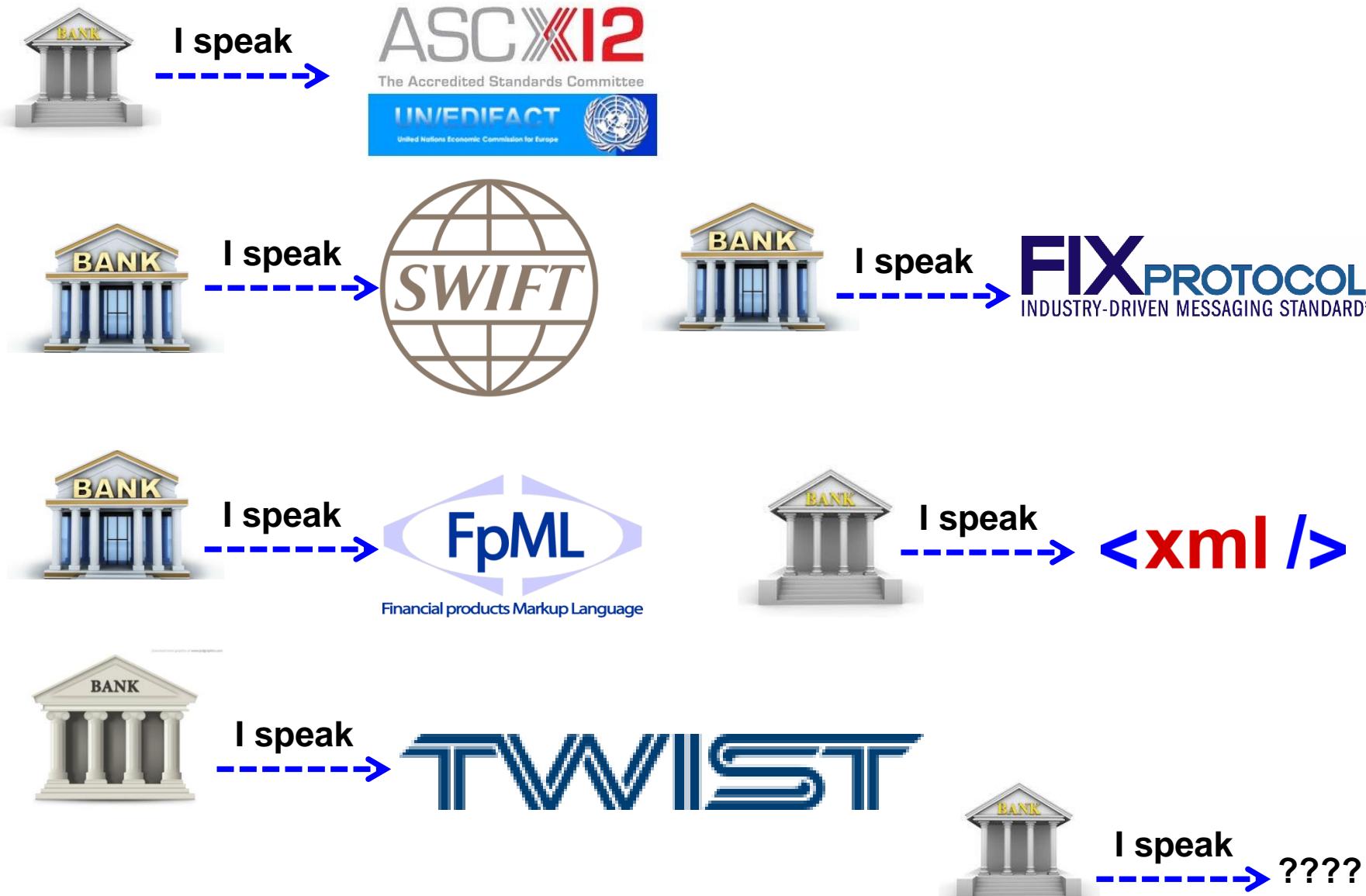


What is required to make this business transaction work?

- All necessary communications are foreseen
- All required information can be obtained and/or forwarded where and when necessary

A typical business transaction ... impacted by the standards landscape





What is UNIFI - ISO 20022...

- ISO 20022 is an international **Universal Standard for data exchange** between Financial Institutions electronically.
- ISO 20022 **is not a suite of message standards but a recipe defined by ISO to develop messages** for the financial industry. Technically, ISO 20022 is the standard that provides the rules for how to develop the messages and the documentation of the messages
- ISO 20022 - UNIversal Financial Industry message scheme, the recipe:
 - *syntax neutral business modeling methodology*
 - *syntax specific design rules for XML*
 - *reverse engineering approach to ease coexistence*
 - *industry led development/registration process*
 - *financial repository on www.iso20022.org*



ISO 20022
Universal financial industry message scheme

What is UNIFI - ISO 20022...



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- ISO 20022 **is not a suite of message standards but a recipe defined by ISO to develop messages** for the financial industry. Technically, ISO 20022 is the standard that provides the rules for how to develop the messages and the documentation of the messages

The ISO 20022 Standard

The ISO 20022 standard is described in the document "ISO 20022 Financial Services - Universal financial industry message scheme".

The current edition of the standard includes eight parts, published in May 2013:

- ISO 20022-1: Metamodel
- ISO 20022-2: UML profile
- ISO 20022-3: Modelling
- ISO 20022-4: XML schema generation
- ISO 20022-5: Reverse engineering
- ISO 20022-6: Message transport characteristics
- ISO 20022-7: Registration
- ISO 20022-8: ASN.1 generation

ope:

ancial industry message scheme

Why to use ISO 20022 for messaging?

- Numerous standards are currently used in the financial industry for messaging e.g. SWIFT MT, ISO8583, EDIFACT, FIX. This results in following issues:
- Financial institutions have to support multiple standards.
- Interoperability i.e. from one system to another systems is hampered, requires conversions which adds time, cost and errors in conversion process.
- Terminology used differs among messaging standards. For instance a party making a payment is called “Originator” in ANSI standard, is called “Ordering Customer” in SWIFT MT standards.
- The messaging standards also have proprietary syntax and also do not carry data **end to end** as they are designed to support only **point to point**.
- Some messaging happens in paper based systems.
- Limited character sets are supported. For instance SWIFT MT standards support only Latin characters.
- The other standards follow “one size fits all” approach and are not flexible.



Issues with MT series

- MT was designed at a time when storage and bandwidth cost more than they do today, so emphasizes brevity over completeness or readability of data.
- MT series does not cover all the business processes e.g. mandates for MT104 or EBPP/EIPP.
- MT series is standardized globally whereas payment practices, rules/regulation differ from region to region.
- It predates the emergence of anti-terrorist financing regulation, which requires payments to be screened against sanctions lists, and the development of ‘big data’ technology, which can extract important business intelligence from transaction data.
- MT does not support fields such as “Ultimate debtor/Creditor”, making compliance difficult.
- It limits text to a Latin-only character set (e.g. ISO 8859-1), which is no longer ideal now that many of the world’s fastest growing economies are in Asia.



ADVANTAGES

Advantages of ISO 20022

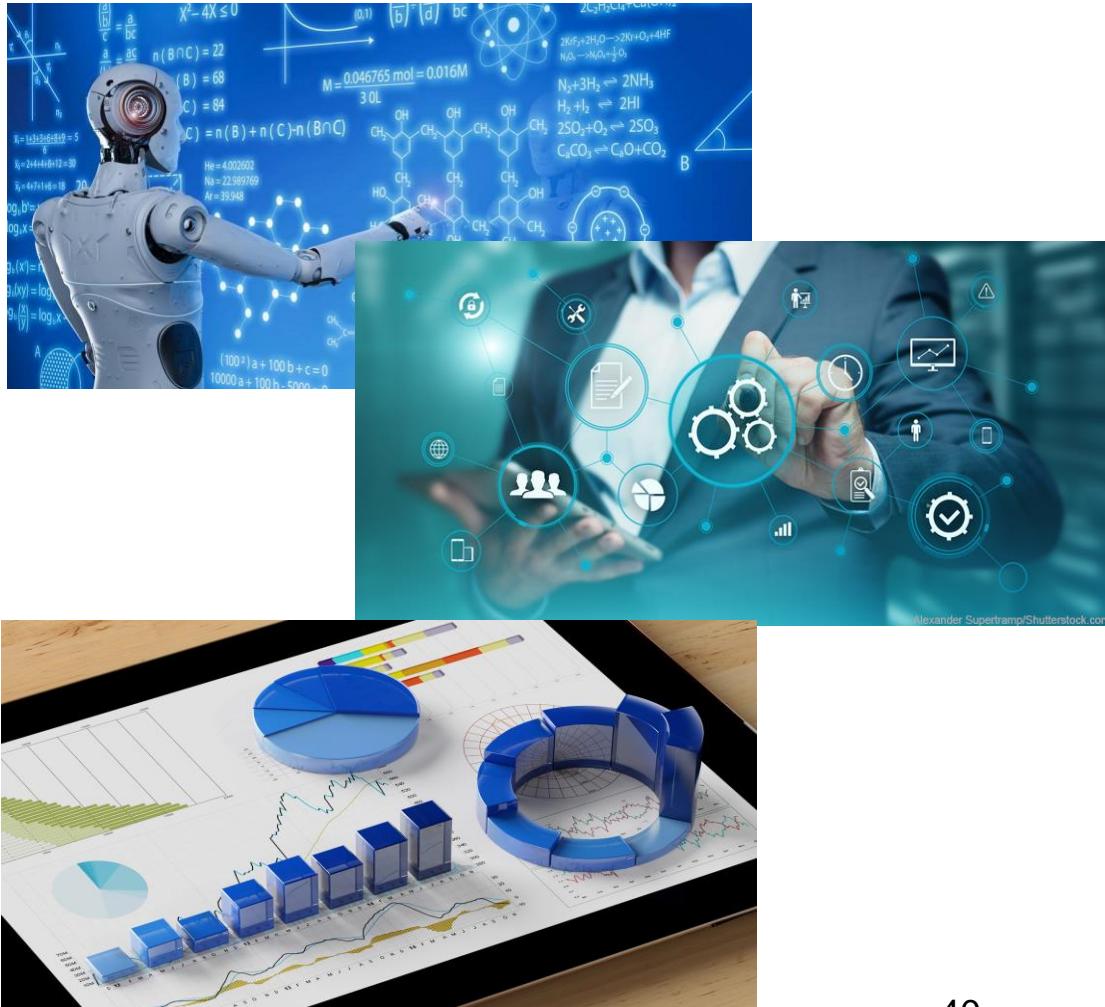
Advantages of ISO 20022 (1/3)

- **Linking messages to business processes**
 - Each part of an ISO 20022 message is linked to business components (in the model) that are meaningful and easily recognisable to users and can be linked to the data in back-office applications.
- **Reusing documented and structured components**
 - Since the components and elements are reused across messages, it is easier to introduce new messages. Maintenance is also easier, since most of the changes can be made at the component level.
- **Syntax, interoperability and co-existence**
 - The message is machine readable and enables easy manipulation of messages by most modern software, including mapping the information to other formats and standards.



Advantages of ISO 20022 (2/3)

- **New generation technology.** ISO 20022 was designed to be ‘future proof’ and adapt to new technologies.
- **Rethink business processes.** Migration to ISO 20022 presents an opportunity to rethink or redesign suboptimal business processes, including the possibility to introduce value added services at the centre.
- **Streamlining of data models and reporting:** The ISO 20022 data model supports all payments and securities processing related flows, which can help organisations comply with reporting obligations.



Advantages of ISO 20022 (3/3)

- **Flexibility:**
 - adapts to changes more easily
- **Harmonisation:**
 - over 70 countries have adopted
- **Straight-through processing:**
 - better data leads to less intervention
- **Analytics:**
 - improved decision making based on better data

Rich data	Covers the entire financial industry
Easier technical integration	Interoperability
New features	Future proof





Extra processes supported by ISO20022

Examples : extra processes supported by ISO 20022



- Account Switching (acmt)
- Authorities Financial Investigation (auth)
- Bank Account Management (acmt)
- Bank Services Billing (camt)
- Change/verify Account Identification (acmt)
- Creditor Payment Activation Request (pain)
- Payment Mandates (pain)
- Stand-alone Remittance Advice (remt)



ISO 20022

Universal financial industry message scheme

MT and MX Equivalence Tables

This document provides a list of all MT messages together with the equivalent MX messages, where these exist. This document is for readers that wish to know the equivalences between MT and MX messages.

BECOME A CONTRIBUTOR

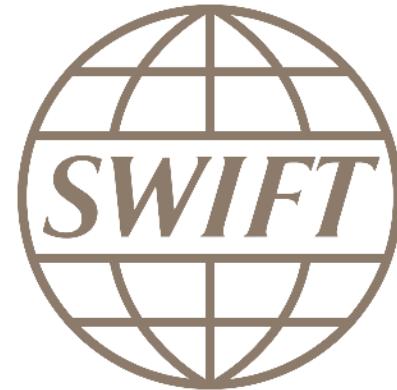
everyday

Contributors

Contributors/Submitting organisations



- Communities of users or organisations that want to develop ISO 20022 compliant messages to support their financial transactions
- **Submitting organisations**
 - SWIFT
 - IFX - Interactive Financial eXchange Forum
 - Clearstream
 - Euroclear
 - FpML Protocols
 - TWIST - Transaction Workflow Innovation Standards Team
 - OAGi - Open Application Group
 - CSTP - Corporate Straight Through Processing Bank Group
 - ISTH - International Standards Team Harmonisation
 - ISITC - International Securities Association for Institutional Trade Communication



Financial products Markup Language



ISO 20022 registration bodies governance



The Registration Management Group (RMG)

The ISO 20022 Registration Management Group (RMG) is made of senior industry experts nominated by registered Member Entities.

The Standards Evaluation Groups (SEGs) and The Sub Standards Evaluation Groups (SubSEGs)

The RMG is the highest ISO 20022 registration body: it supervises the overall registration process and reports to ISO TC68/SC9.

Registration Authority (RA)

The role of the RMG is to promote and support the involvement of financial service actors to facilitate the registration and maintenance of high quality globally relevant ISO 20022 compliant business models for exchange of information for financial services.

Technical Support Group (TSG)

The RMG defines the scope of necessary SEGs, approves business justifications for new messages and allocates them to one or more SEGs.

ISO 20022 registration bodies governance



The Registration Management Group (RMG)

**The Standards Evaluation Groups (SEGs) and
The Sub Standards Evaluation Groups (SubSEGs)**

Registration Authority (RA)

Technical Support Group (TSG)

The ISO 20022 Standards Evaluation Groups (SEGs) are made up of industry experts in specific business domains of the financial industry as defined by the ISO 20022 Registration Management Group (RMG).

The scope of the Payments SEG includes the messages supporting transactions and business processes related to the following non exhaustive list of financial instruments:

- Credit transfers
- Direct debits
- Cheques

ISO 20022 registration bodies governance



The Registration Management Group (RMG)

**The Standards Evaluation Groups (SEGs) and
The Sub Standards Evaluation Groups (SubSEGs)**

Registration Authority (RA)

Technical Support Group (TSG)

The ISO 20022 Registration Authority (RA) is the guardian of the ISO 20022 Financial Repository. The RA services are provided by SWIFT S.C.

ISO 20022 registration bodies governance



The Registration Management Group (RMG)

**The Standards Evaluation Groups (SEGs) and
The Sub Standards Evaluation Groups (SubSEGs)**

Registration Authority (RA)

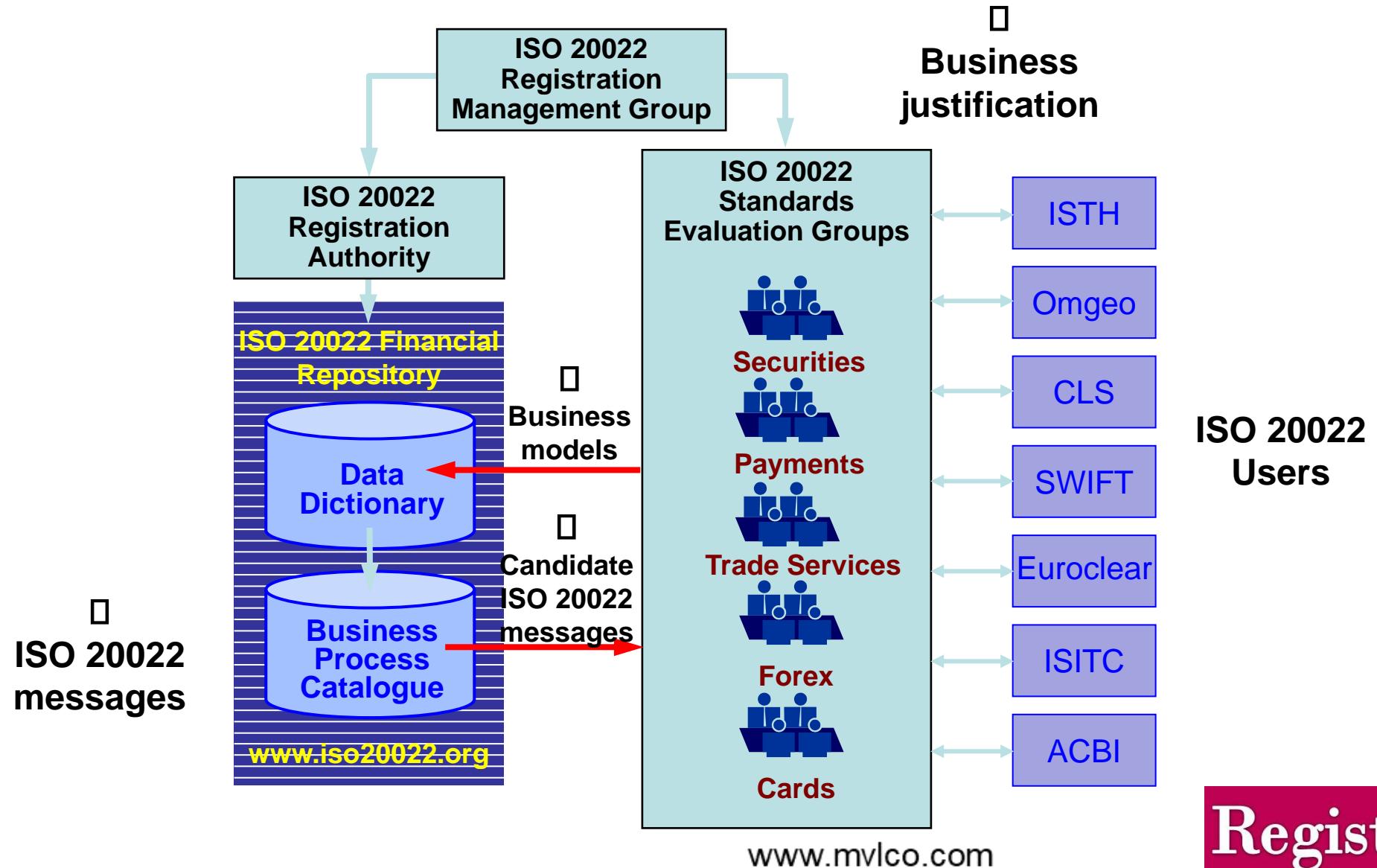
Technical Support Group (TSG)

The ISO 20022 Technical Support Group (TSG) is made of recognized experts in the technical implementation of the ISO 20022 standard.

The TSG provides technical support to the other ISO 20022 registration bodies (RMG, RA, SEGs) and the submitting organisations or communities of users, upon their request.

The TSG advises submitting organisations, the RA and the SEGs on the most appropriate and consistent interpretation of the ISO 20022 methodology and the compliance thereof. The TSG can also assist a SEG on technical issues arising from the evaluation of candidate ISO 20022 messages or on the technical "implementability" of the proposed messages.

The registration process

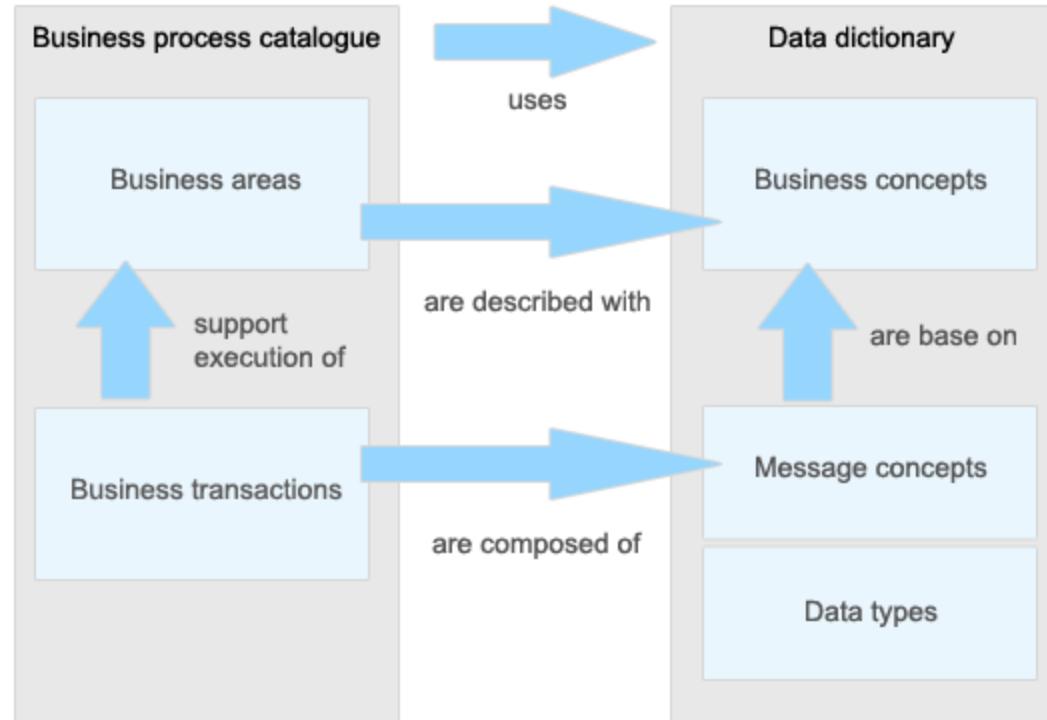


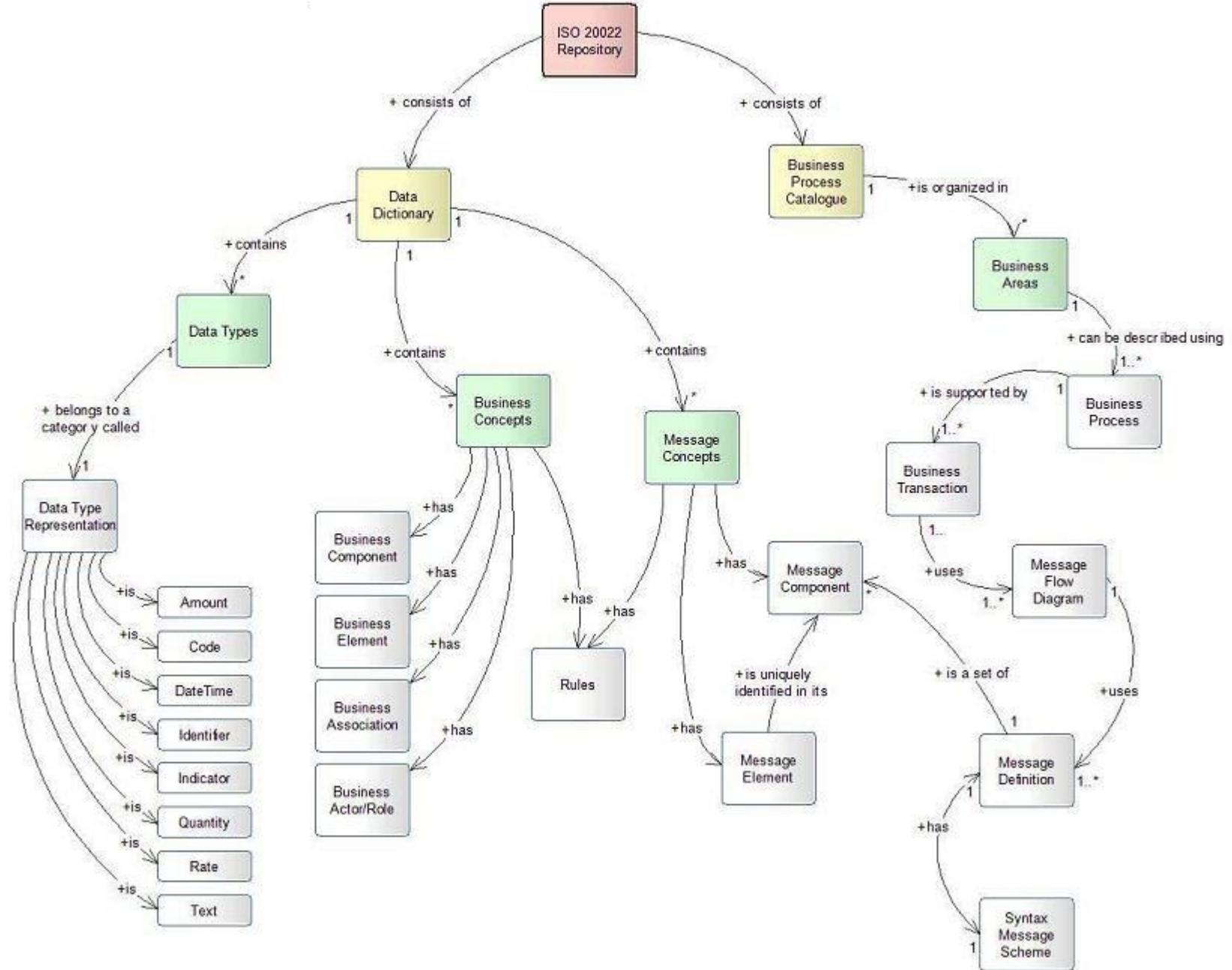


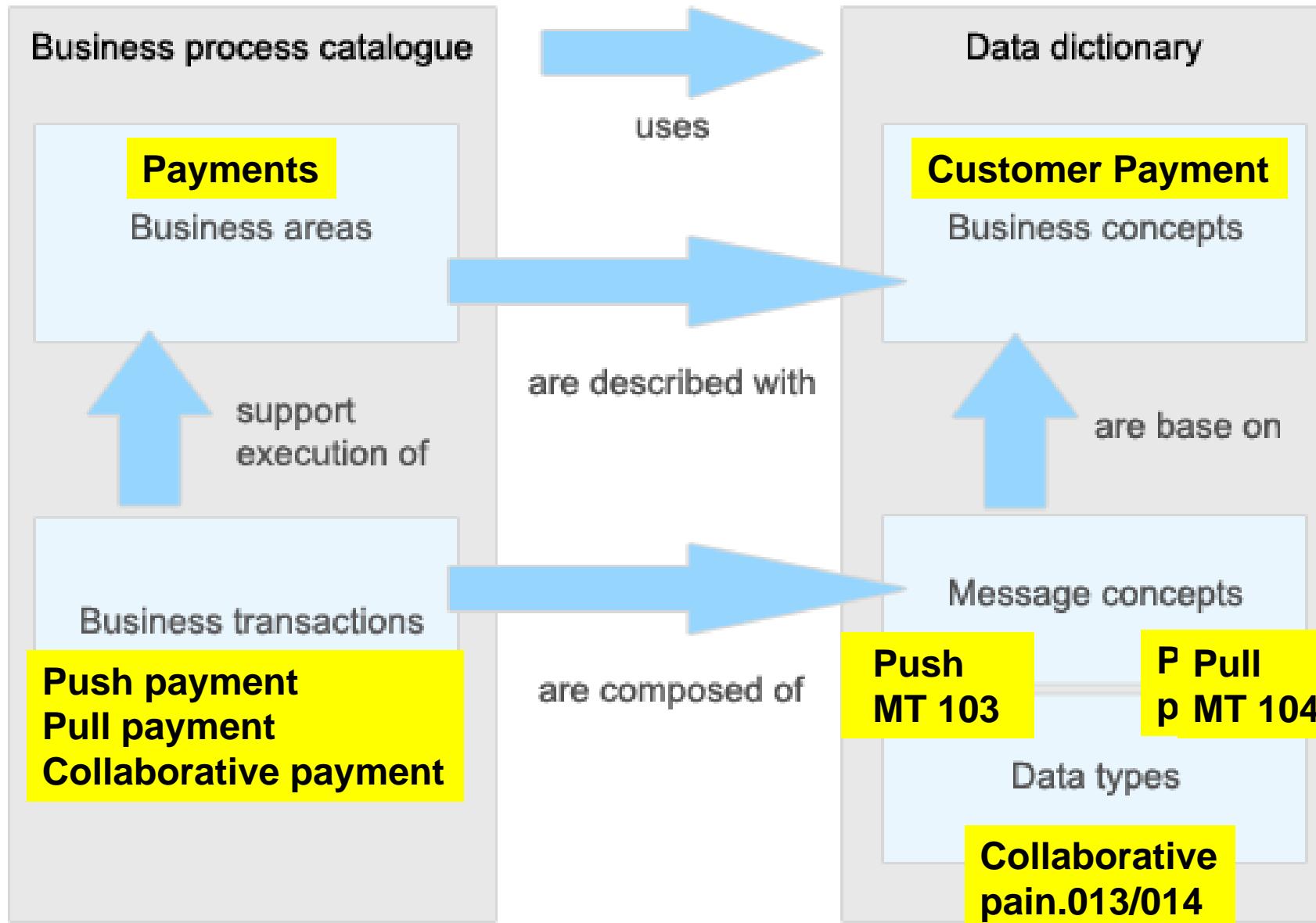
ISO 20022 financial repository

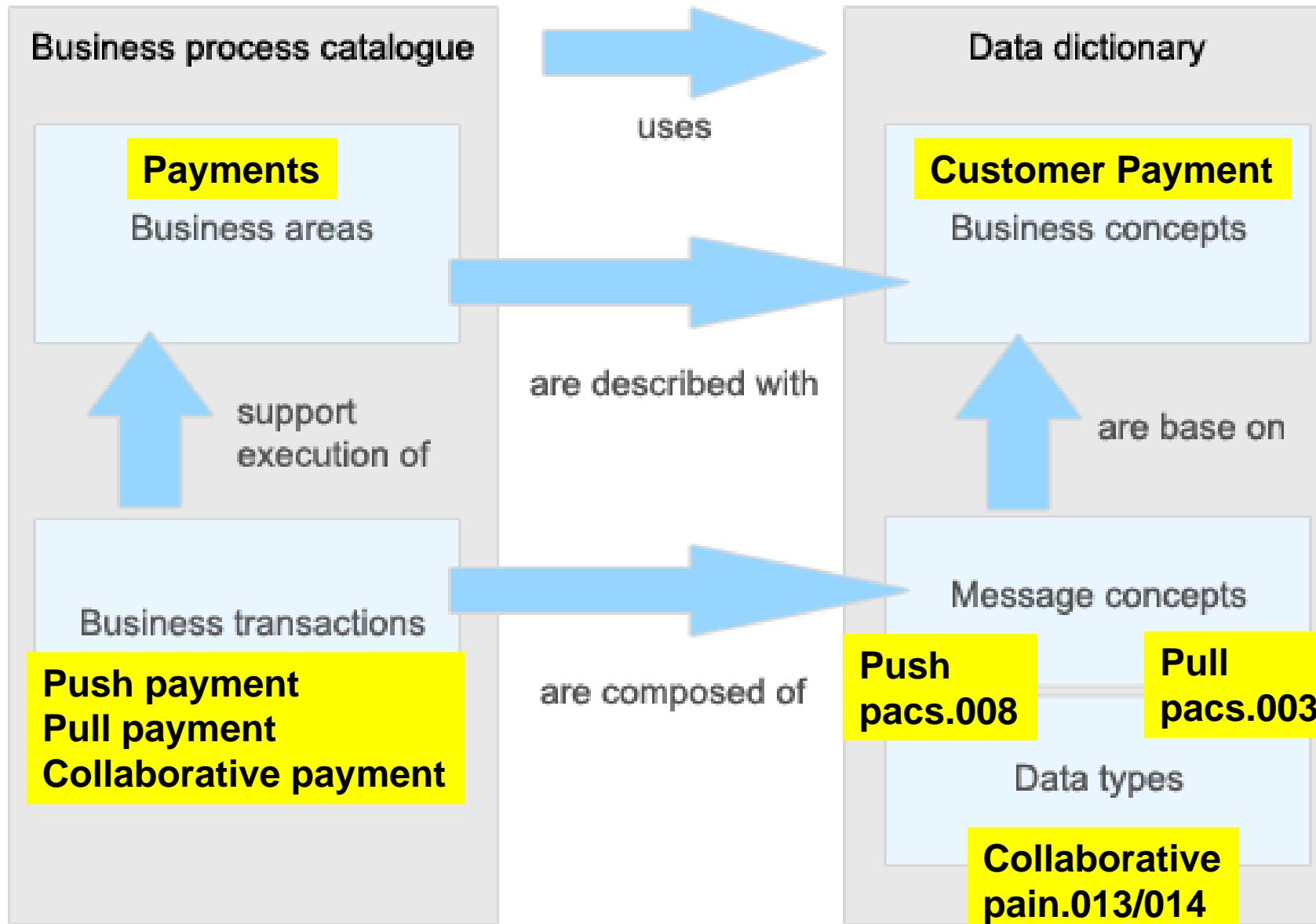
Financial repository

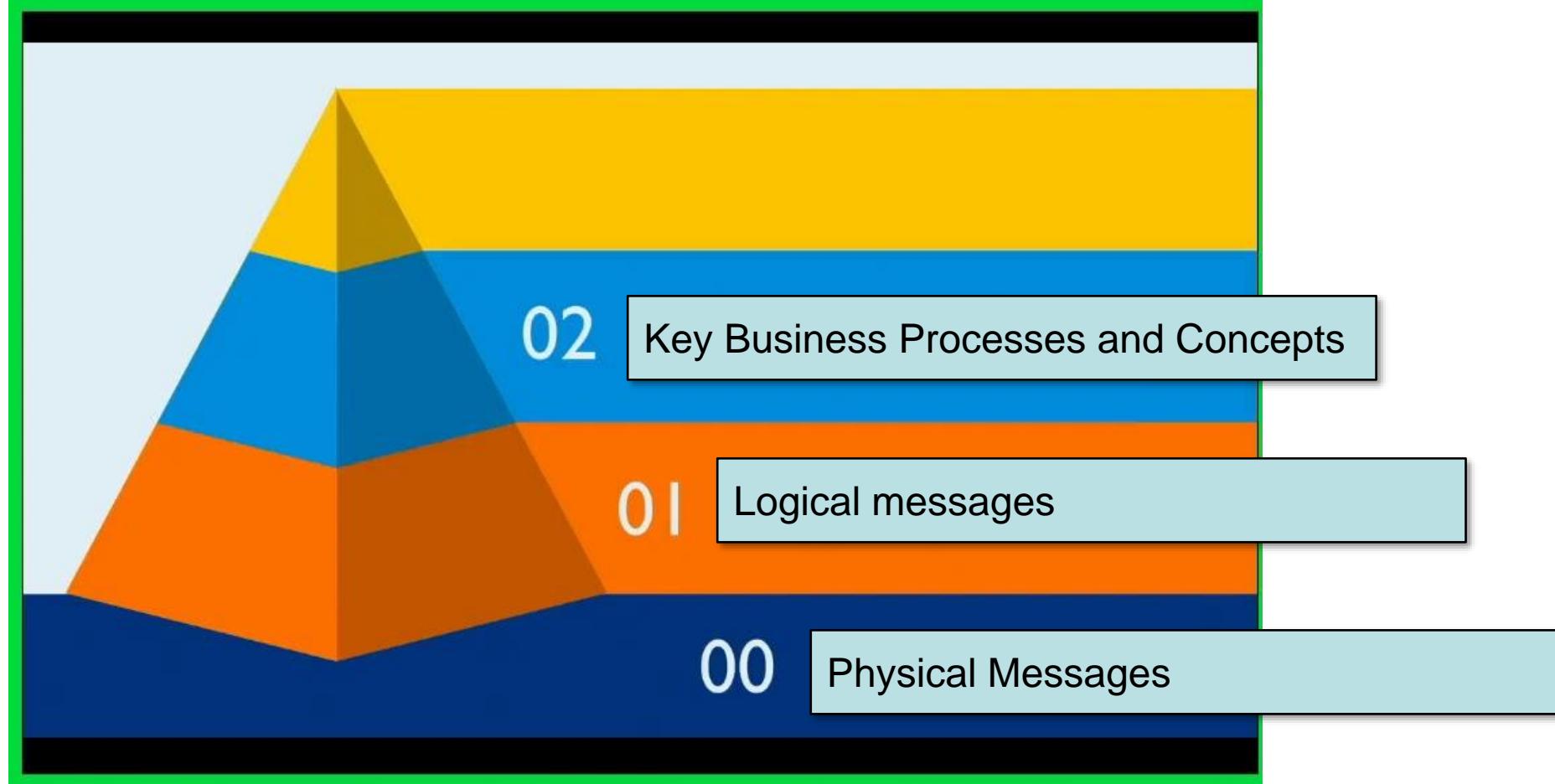
- The ISO 20022 Repository consists of two major parts: the Data Dictionary and the Business Process Catalogue.
- The **Data Dictionary** contains **Business Concepts, Message Concepts and Data Types**. All these items are reusable and are called **Dictionary Items**.
- The **Business Process Catalogue** is organised in Business Areas. It contains **Financial business process models, Financial business transactions, including messages and XML message schemas**. All items that are stored in the Business Process Catalogue are called **Catalogue Items**.







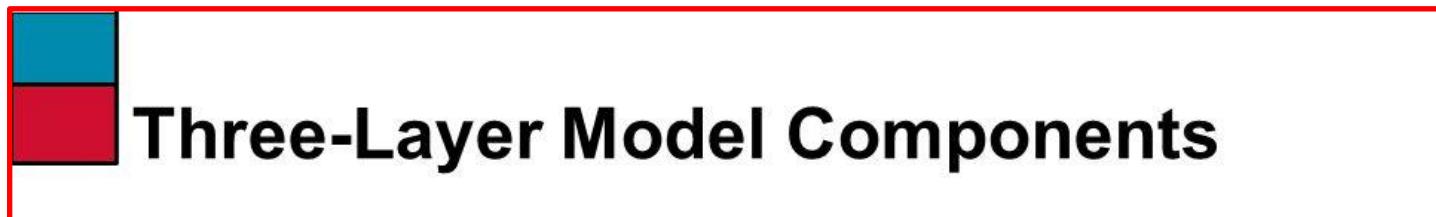




Three layer model

Three layer model

- ISO 20022 is the agreed methodology used by the financial industry to create consistent message standards across all the business processes of the industry.
- The ISO 20022 method is based on the concept of **three separate layers**. :
 - **the top layer** provides the **key business processes and concepts**;
 - **the middle layer** provides **logical messages or message models**; and
 - **the bottom layer** deals with **syntax**.



Top layer : Business model

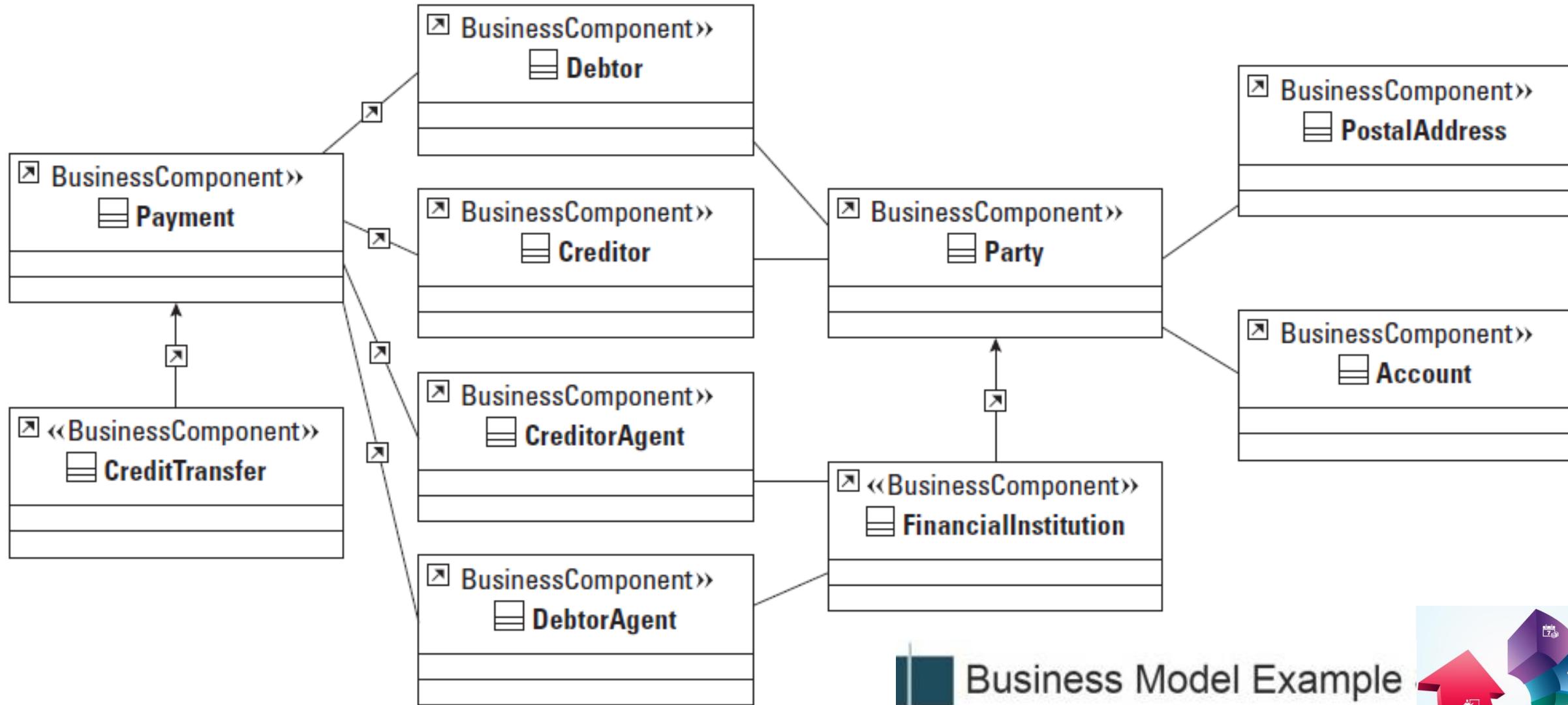
- The ISO 20022 methodology starts with the creation of the **business model**.
 - Put simply, this **is the definition of the activity or business process**, the **business roles** and **actors** involved in that activity and the **business information** needed in order for the activity to take place.
- The Business Model includes completely defined business components and elements and the relationship among these components.
- The Business Model is used to derive the data elements used in ISO 20022 message definitions (the ISO 20022 Message Concepts), thereby ensuring a common understanding across all messages used to support the various business domains. As such, it is one of the most important ingredients of the ISO 20022 recipe.

Top layer : Business information



- The **business information**
 - is organised into **business components** containing **business elements**.
 - For example, when looking at the processes involved in a **credit transfer**, key notions such as **debtor** (the party that pays), **creditor** (the money receiver), **debtor agent** (the bank of the debtor), **creditor agent** (the bank of the creditor), and payment were identified.
- Each of these **components** has further details (**elements**).

Business components in a payment transaction



Business Model Example



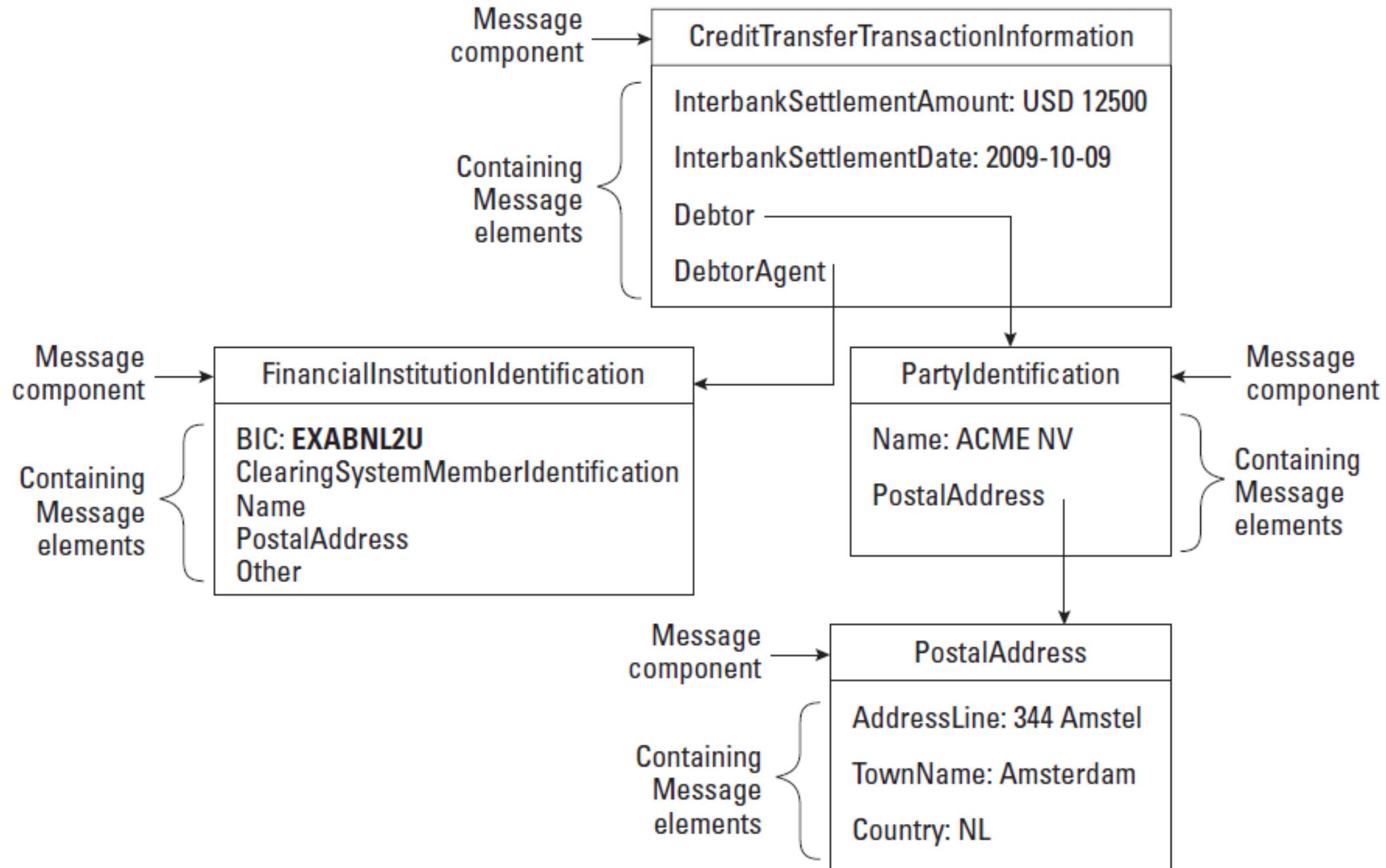
- **Payments and cash management domain**
 - Payments
 - Exception and Investigations



Second layer : Message model

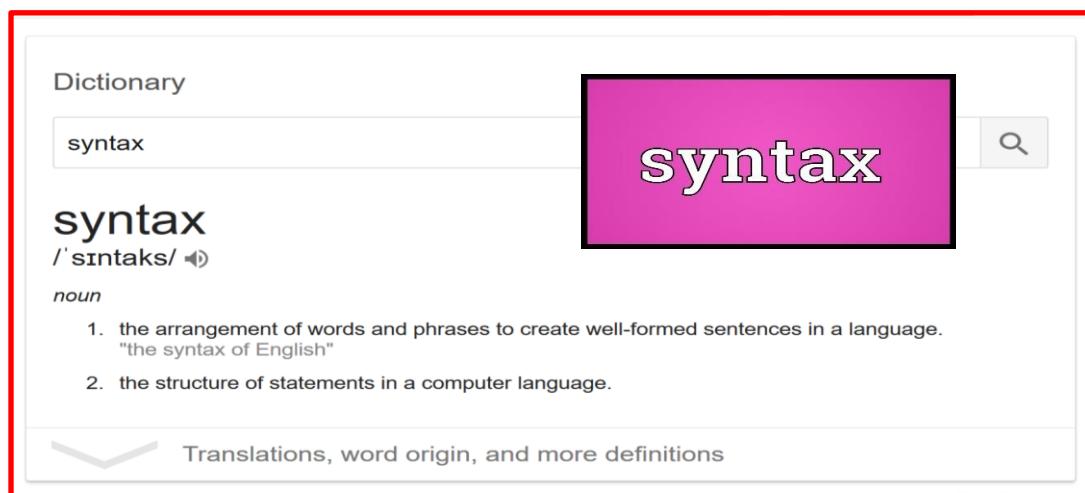
- Using these business concepts, ISO 20022 then defines **logical messages, or message models**, which **are the middle layer**.
- A logical message is a **description of all the information** that is needed **to perform a specific business activity**, independent of syntax.
- A message component contains one or more message elements and is derived from a business component by using one, some or all of its elements.

**logical
MESSAGE**



Third layer : Syntax

- The third layer, **the syntax**, is the physical representation of the logical message.
- ISO 20022 uses **XML as the primary syntax** and has specified how to convert a message model to XML.
- All of the content is stored in a common repository.
- A dictionary forms part of this repository. The ISO 20022 dictionary, lists the name of a component, its structure, and what it means and how it should be used or interpreted.



Dictionary

syntax

syntax /'sɪntaks/ ⓘ

noun

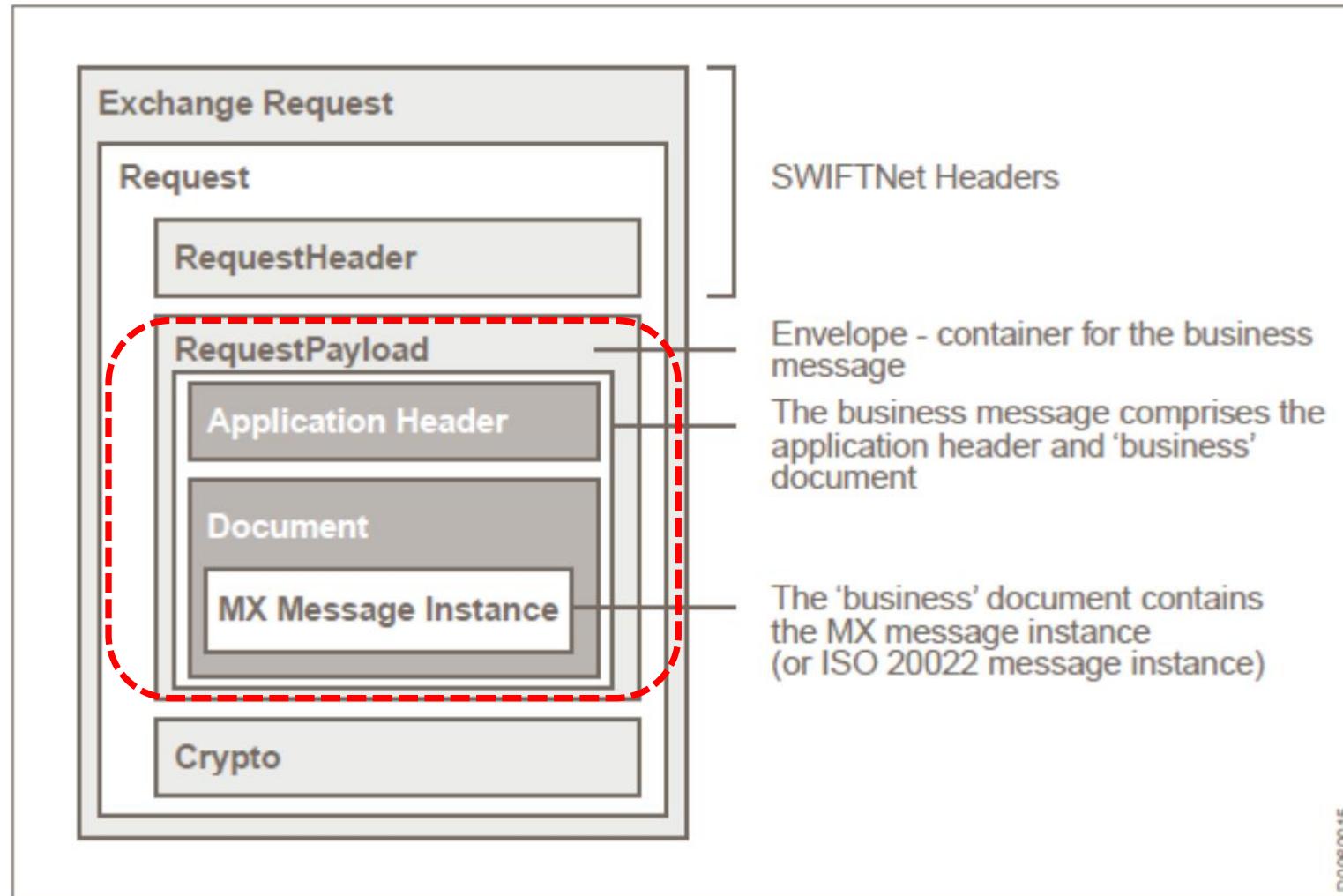
1. the arrangement of words and phrases to create well-formed sentences in a language.
"the syntax of English"

2. the structure of statements in a computer language.

Translations, word origin, and more definitions

A screenshot of a dictionary application showing the entry for 'syntax'. The word is highlighted in a pink box. The definition is provided in two parts. A search bar is visible at the top right.

ISO 20022/SWIFT Standards MX message structure



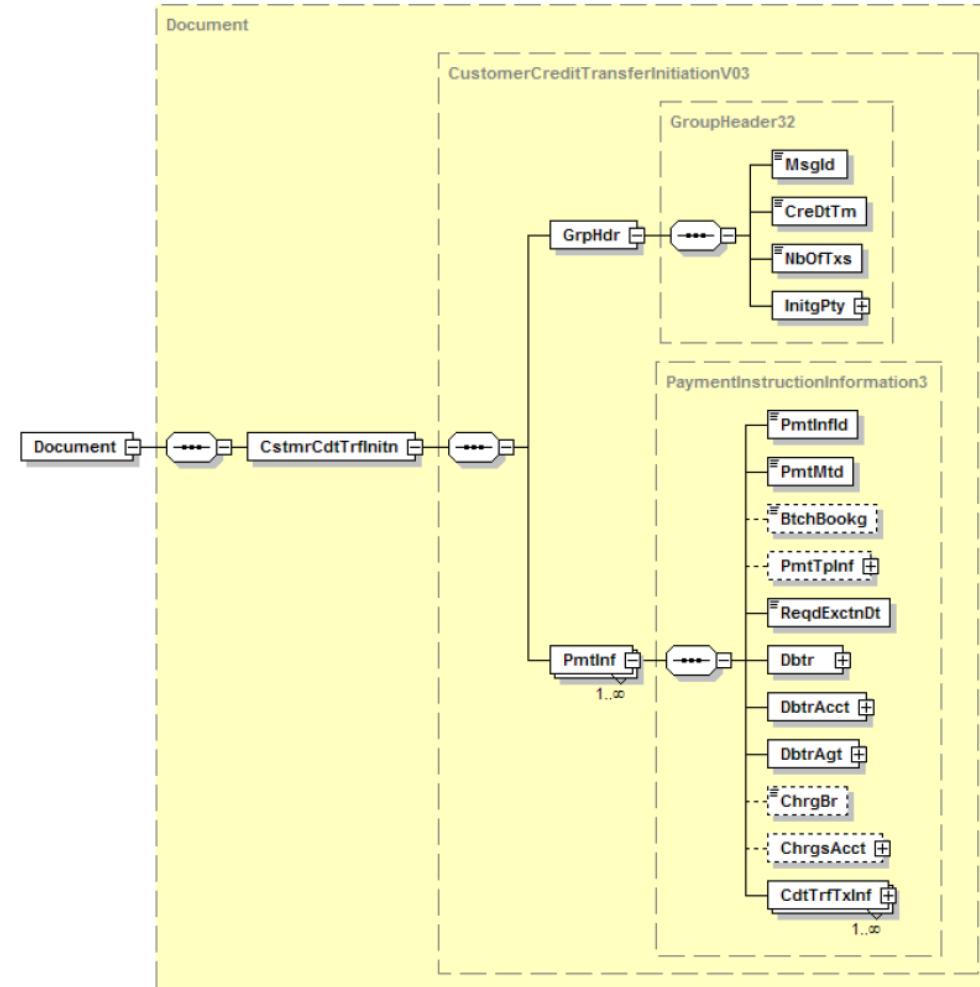
ISO 20022 message structure

Sample Tree Structure

- Root
 - Parent
 - Child1
 - Child2
 - Child n....

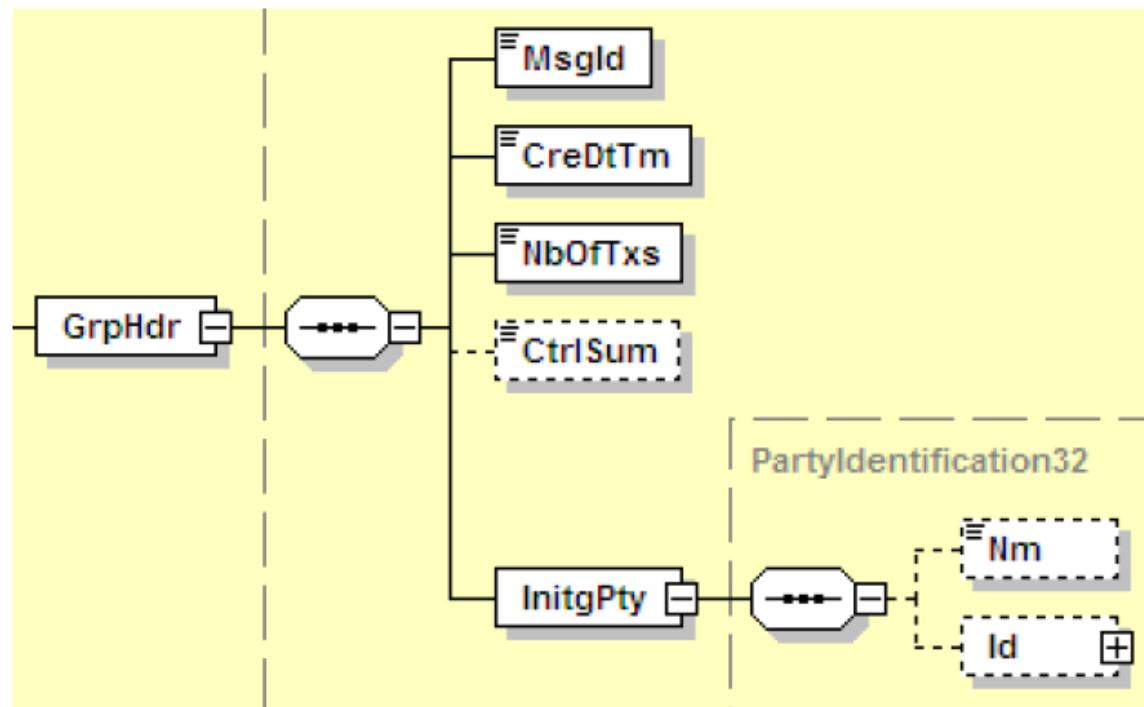
XML Representation

- <Root>
 - <Parent>
 - <Child1>content</Child1>
 - <Child2>content</Child2>
 - <Childn>content</Childn>
 - </Parent>
- </Root>



1.0 GroupHeader

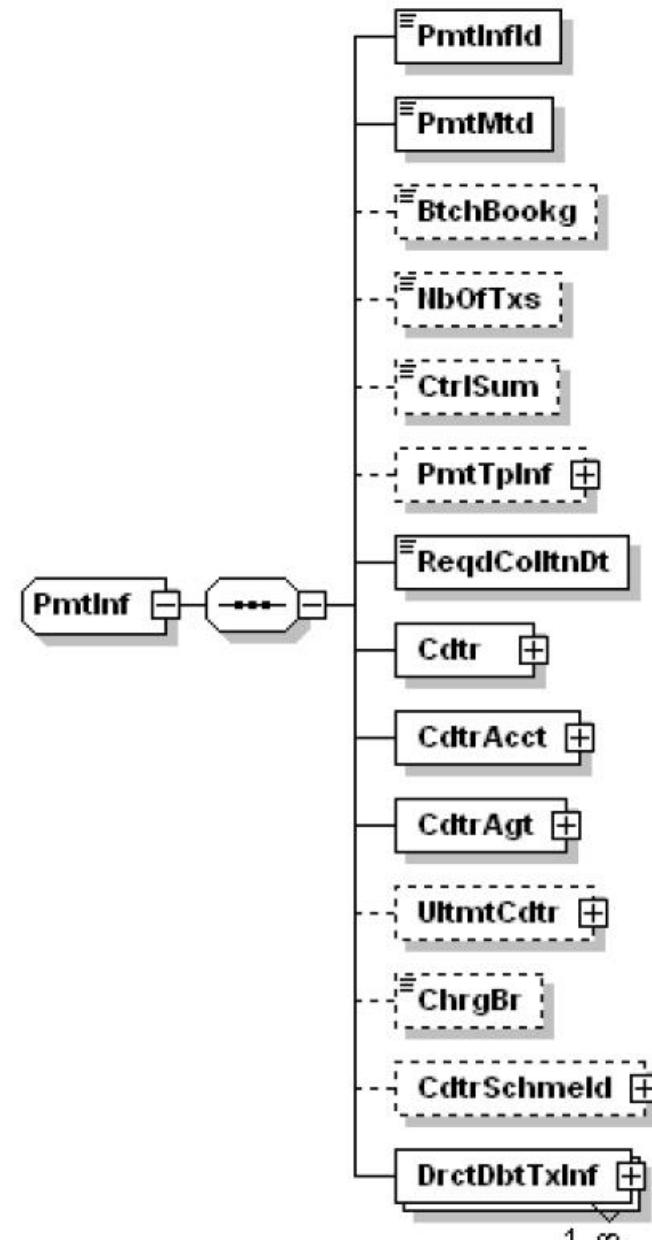
2.0 PaymentInformation

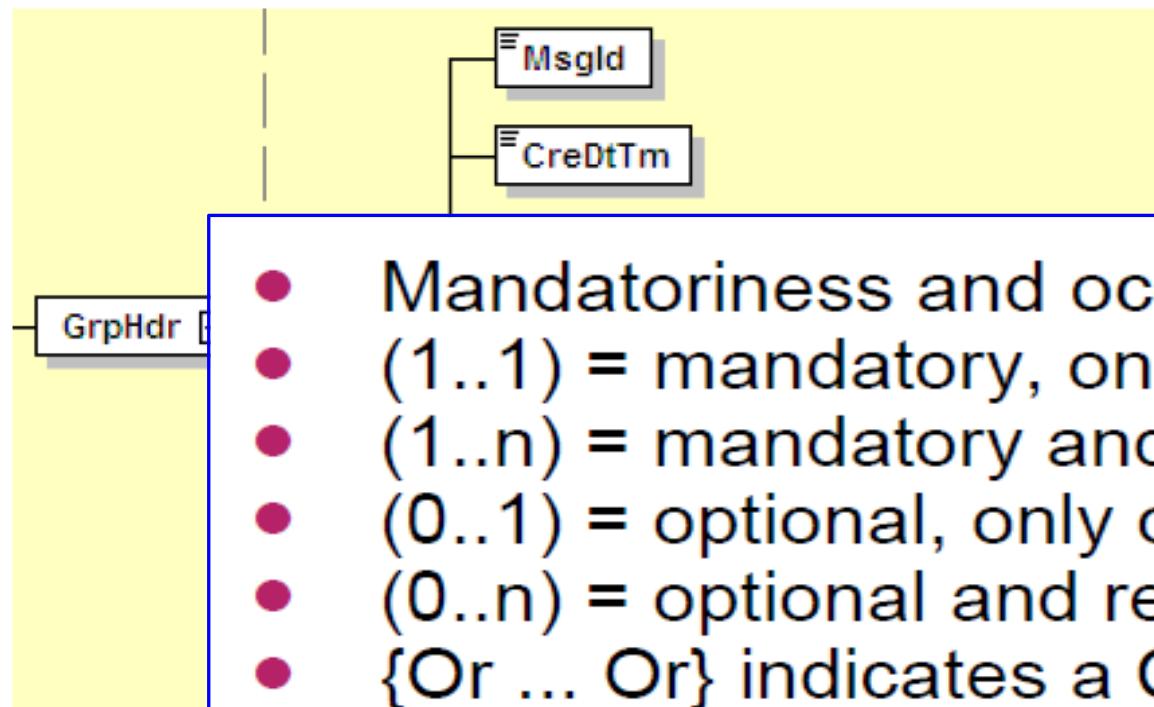


Definition : Set of characteristics shared by all transactions included in the message.

XML Tag : <GrpHdr>

Occurrences : [1..1]

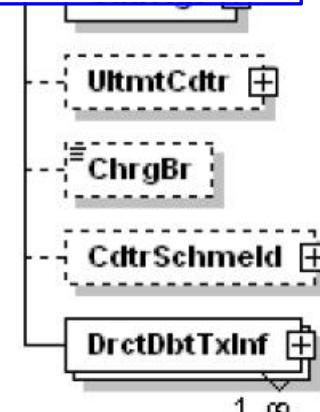
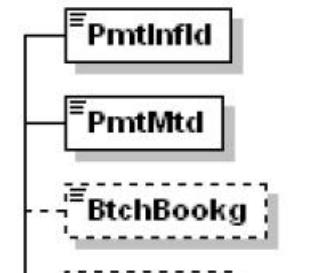


**Definition**

- Mandatoriness and occurrences of element
- (1..1) = mandatory, only one occurrence
- (1..n) = mandatory and repetitive
- (0..1) = optional, only one occurrence
- (0..n) = optional and repetitive
- {Or ... Or} indicates a Choice of elements.

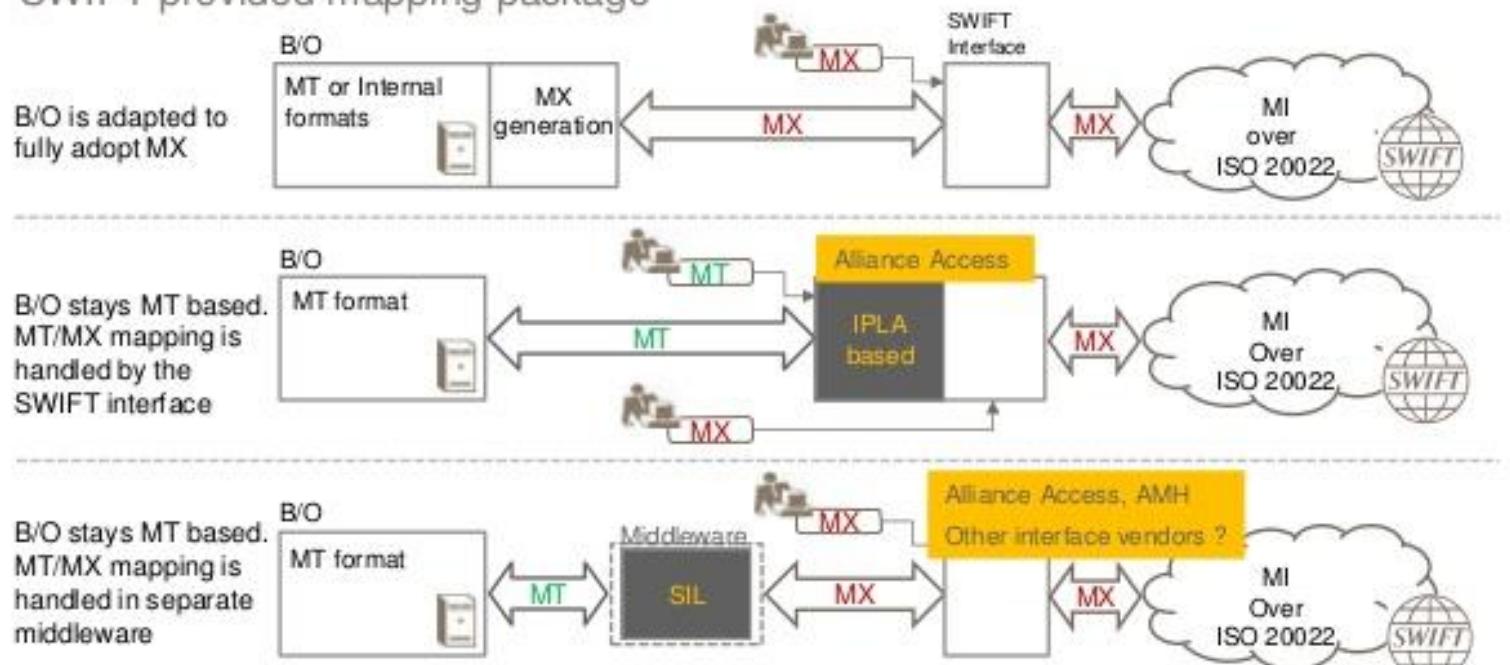
XML Tag : <GrpHdr>

Occurrences : [1..1]



ISO 20022 for High-Value Payments

SWIFT provided mapping package



 SOFE 2014 – Integration & Cloud

13

Business areas covered

Domains covered

- Payments
- Securities
- Trade services
- Cards
- Foreign exchange



ISO 20022 message dashboard

The ISO 20022 message dashboard gives an overall picture of the five financial business domains in scope of ISO 20022. Its purpose is to show which business processes are already supported either by existing ISO 20022 message definitions or by candidate message definitions covered by an approved Business Justification.

Payments

Messages supporting cash account management, payments initiation, clearing and settlement, and cash management, etc.

[Read more](#)

Securities

Messages supporting pre-trade, trade, post-trade, clearing and settlement, securities management, securities account management, reconciliation, asset servicing, collateral management, etc.

[Read more](#)

Trade Services

Messages supporting procurement, trade finance products and services, forecasting, reconciliation, accounting, remittance information, etc.

[Read more](#)

Cards

Messages supporting card transactions between acceptor and acquirer, acquirer and issuer, sale system and POI, terminal management, clearing and settlement, fee collection, etc

[Read more](#)

FX

Messages supporting pre-trade, trade, post-trade, notification, clearing and settlement, reporting and reconciliation of FX products

[Read more](#)

ISO 20022 Message Identifier :

Message naming convention



- **Current syntax is as following: xxxx.nnn.aaa.bb**
 - xxxx is an alphabetic code (4!a) in four positions (fixed length) identifying the **Business Process**,
 - nnn is an alphanumeric code (3!c) in three positions (fixed length) identifying the **Message Functionality**,
 - aaa is a numeric code (3!n) in three positions (fixed length) identifying a particular **variant of Message Functionality**,
 - bb is a numeric code (2!n) in two positions (fixed length) identifying **the version**. The version number is always incremented starting from version 01.
- **Consider the example:**

pacs.008.001.08

- pacs refers to ‘Payment Clearing And Settlement’ – **Business area**
- 008 refers to ‘FItoFICustomerCreditTransfer’ – **Market practice**
- 001 refers to the variant – **Market process**
- 08 refers to the version message format, in this case version 8 of ‘FItoFICustomerCreditTransfer’ type

- **MX pacs.008.001.08**
FIToFICustomerCreditTransferV08
Message Variant

of Message Functionality,

- bb is a numeric code (2!n) in two positions (fixed length) identifying **the version**. The

FIToFICustomerCreditTransfer.EPCCoreV03	\$pacs.008.002.03.xsd
FIToFICustomerDirectDebit.EPCCoreV03	\$pacs.003.002.03.xsd
PaymentStatusReport.EPCCoreV03	\$pacs.002.002.03.xsd
PaymentReturn.EPCCoreV03	\$pacs.004.002.03.xsd
FIToFIPaymentReversal.EPCCoreV03	\$pacs.007.002.03.xsd

Where is it implemented **ISO20022 existing implementation**

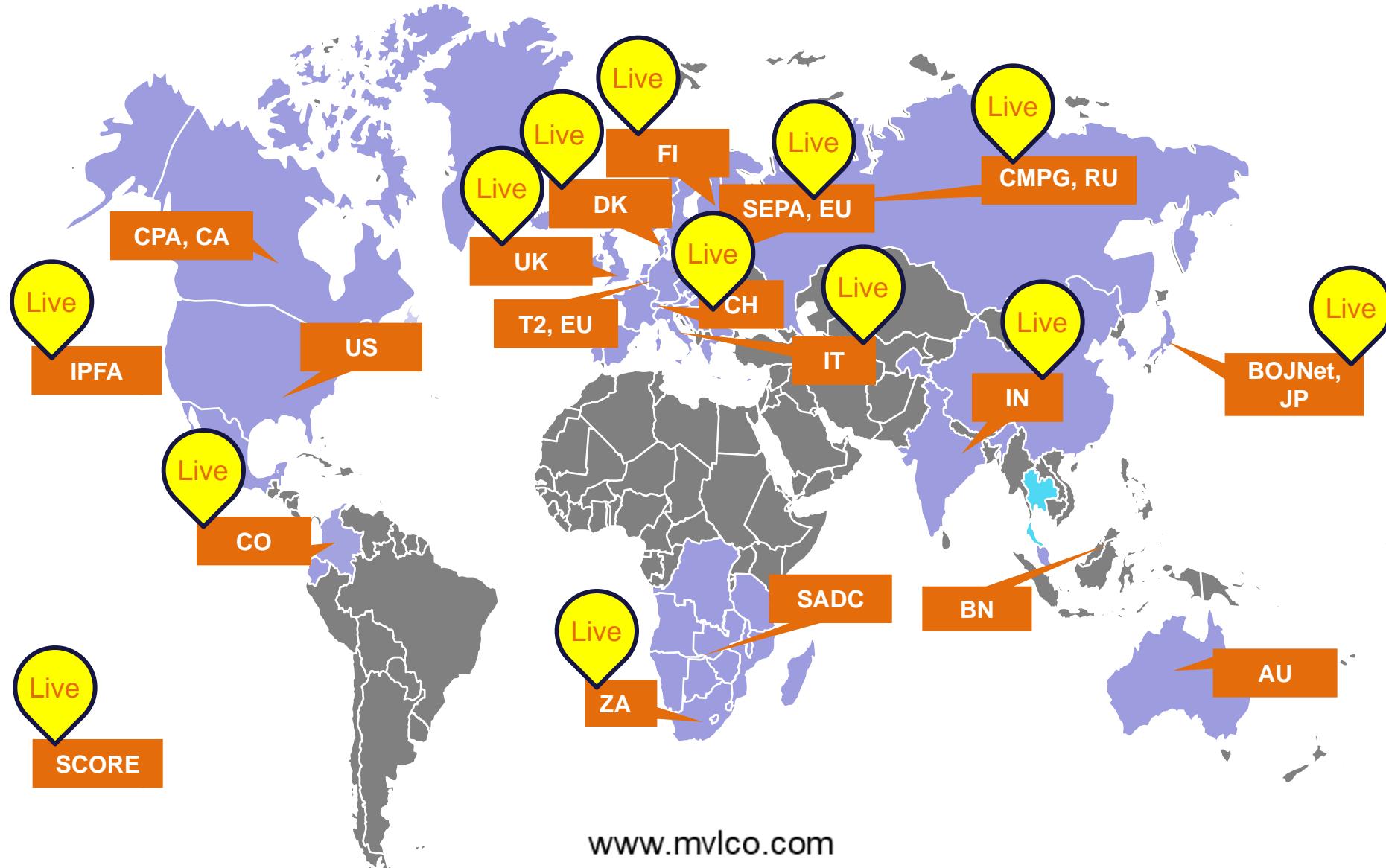
ISO 20022 existing implementations



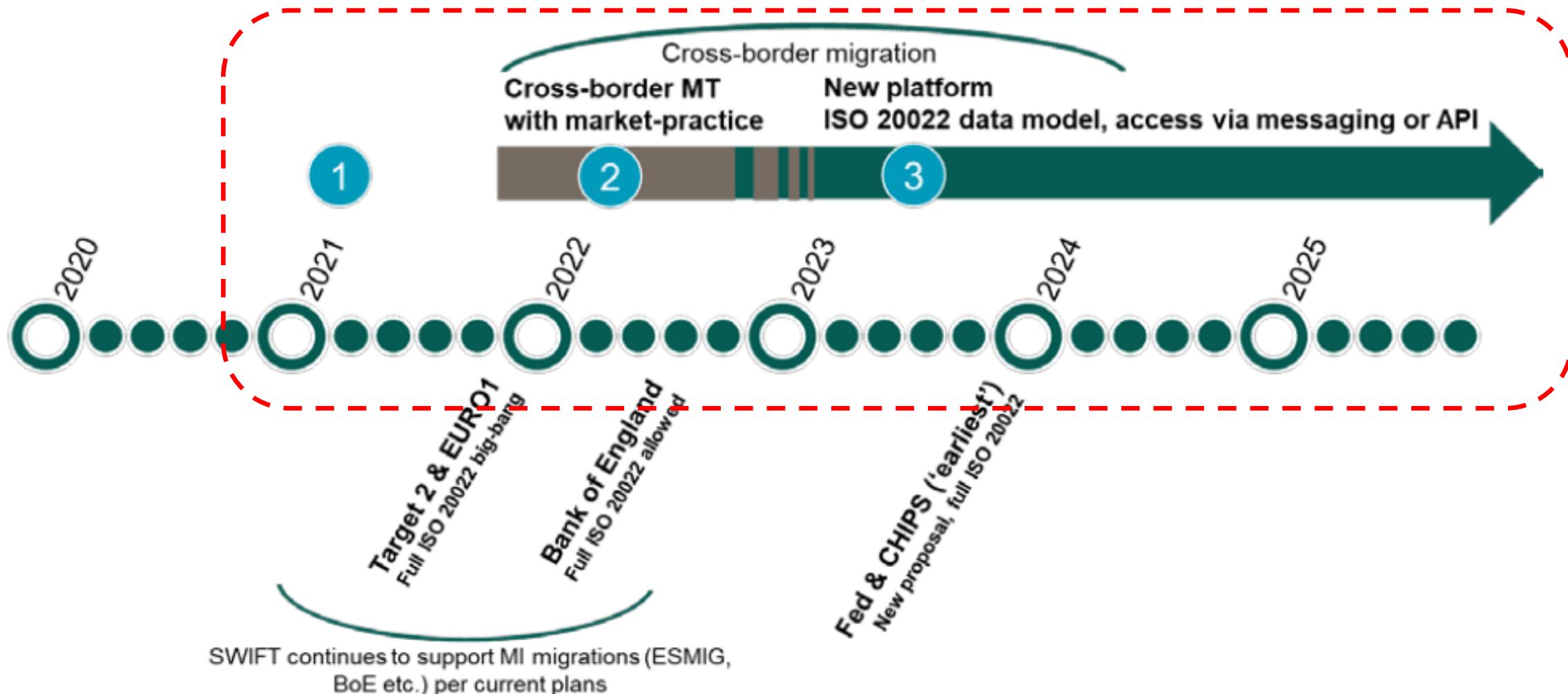
- ISO 20022 is a global success. **It has been adopted by market infrastructures in more than 70 countries**, for payments and securities business, replacing domestic or legacy formats.
- In the next 5 years, if currently announced deadlines are met, ISO 20022 will dominate high-value payments, supporting 79% of the volume and 87% of the value of transactions worldwide.
- ISO 20022 is also the **principal standard in the instant payments market**, implemented in Europe, Australia, US, Canada, Sweden, Denmark, Singapore and elsewhere.
- ISO 20022 **is present in the securities and FX markets too**. The investment funds industry has adopted ISO 20022 for funds distribution and other processes.
- TARGET2-Securities, the Eurosystem's securities settlement system, processes over 1 million instructions per day using ISO 20022, and other securities MIs also use the standard, including DTCC (for Corporate Actions), and the Singapore Exchange. CLS specifies ISO 20022 for its FX settlement business.

7.3 Annex 3: ISO 20022 adoption by Payments Market Infrastructures

ISO 20022 Adoption – Payments initiatives



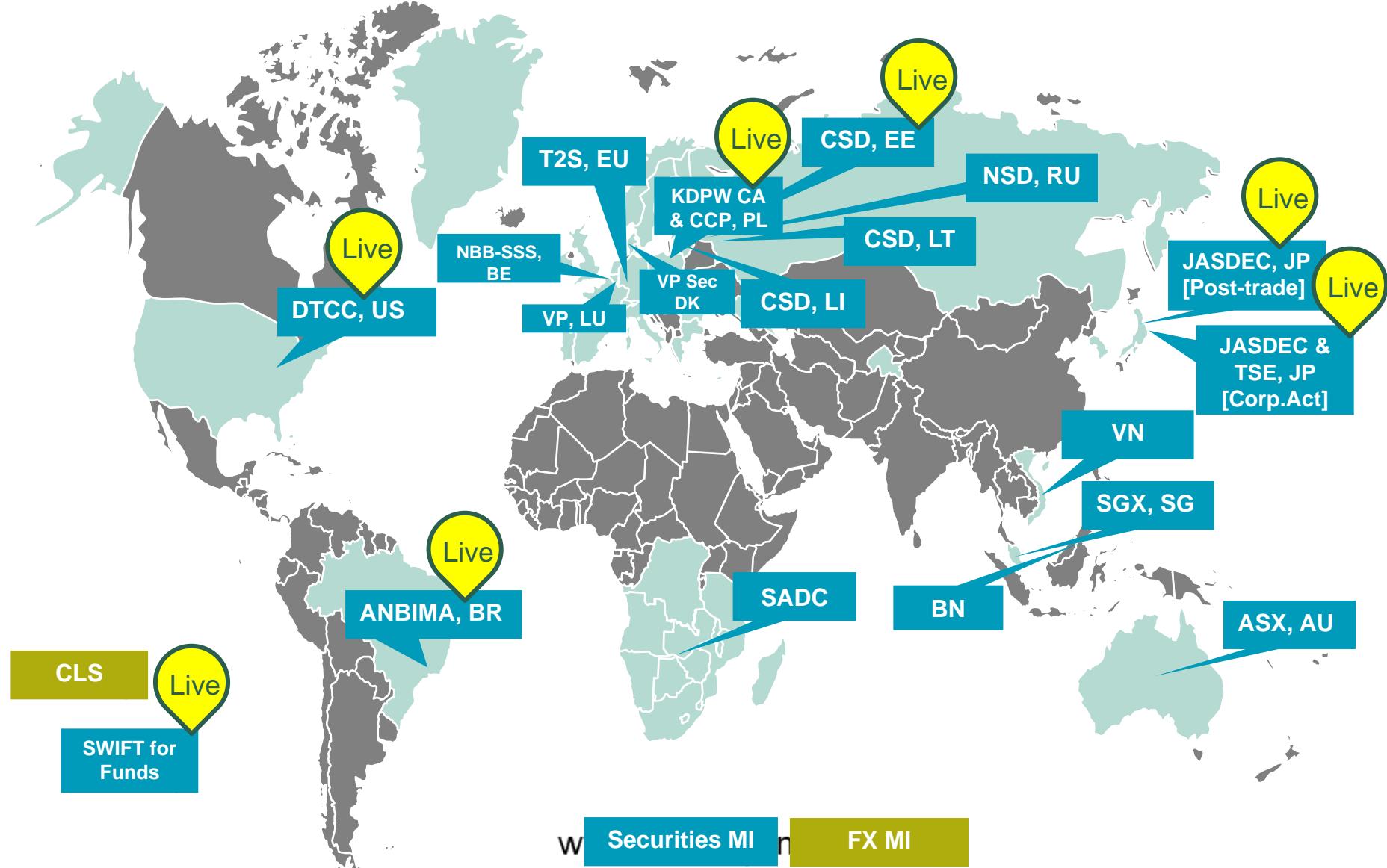
ISO 20022 adoption plan



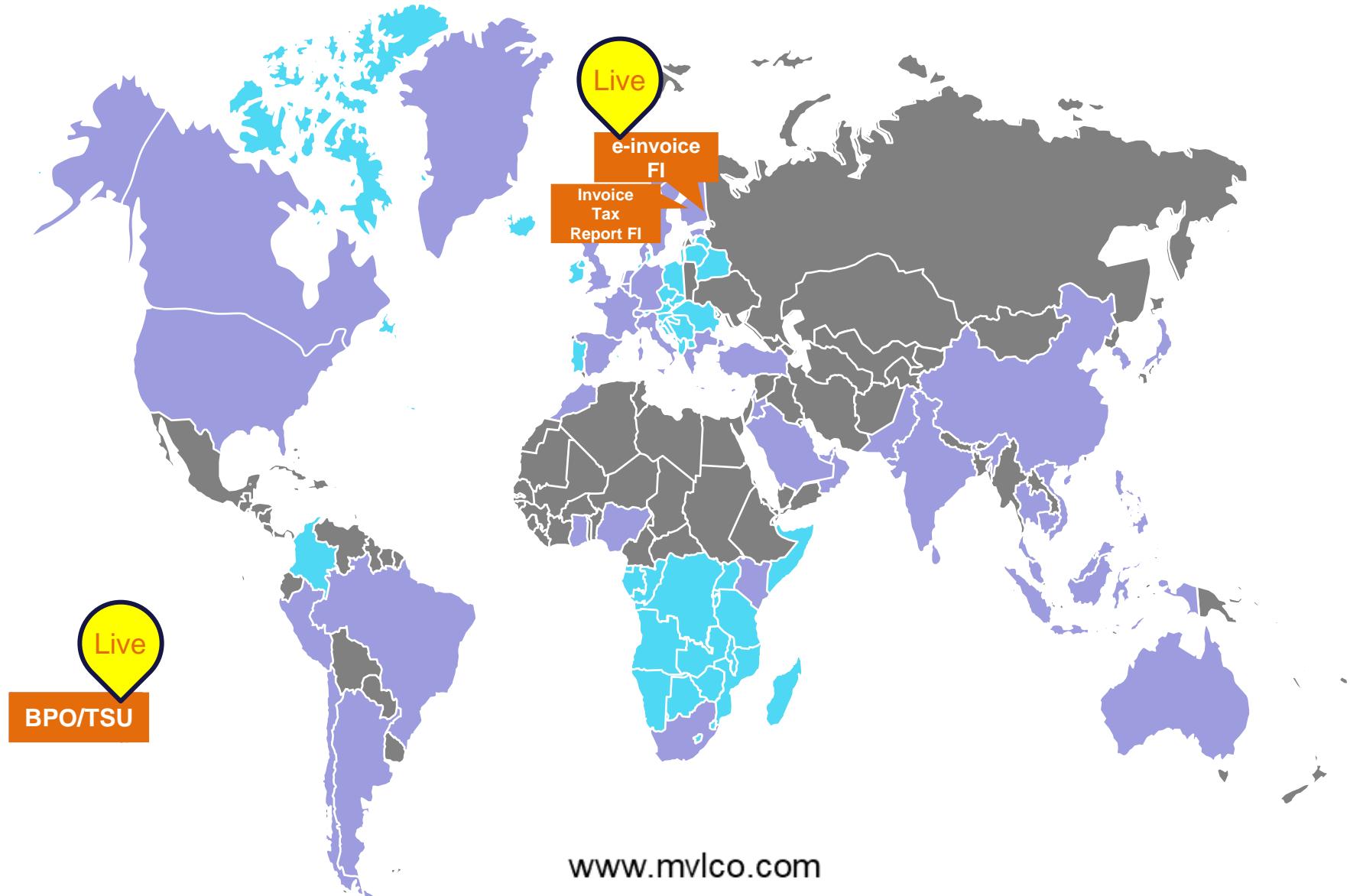
ISO 20022 adoption plans of HVPS

		2019	2020	2021	2022	2023
		Nov	Nov	Nov	Nov	Nov
T2	Specs (UDFS)		T2 community deploying ISO Assessment connectivity functionality		Live on ISO - rich	
EURO1	Guidelines in Nov 2019		EURO1 community deploying ISO Assessment connectivity functionality		Live on ISO - rich	
CHAPS	Guidelines in Nov 2019		CHAPS community deploying ISO Assessment connectivity functionality	Live on ISO – Like for like or rich	Live on ISO – rich	
Fed & TCH			ISO preparation in legacy format Assessment connectivity functionality		Like4Like	ISO rich
HKICL			CHATS community deploying ISO Assessment connectivity functionality		Live on ISO	

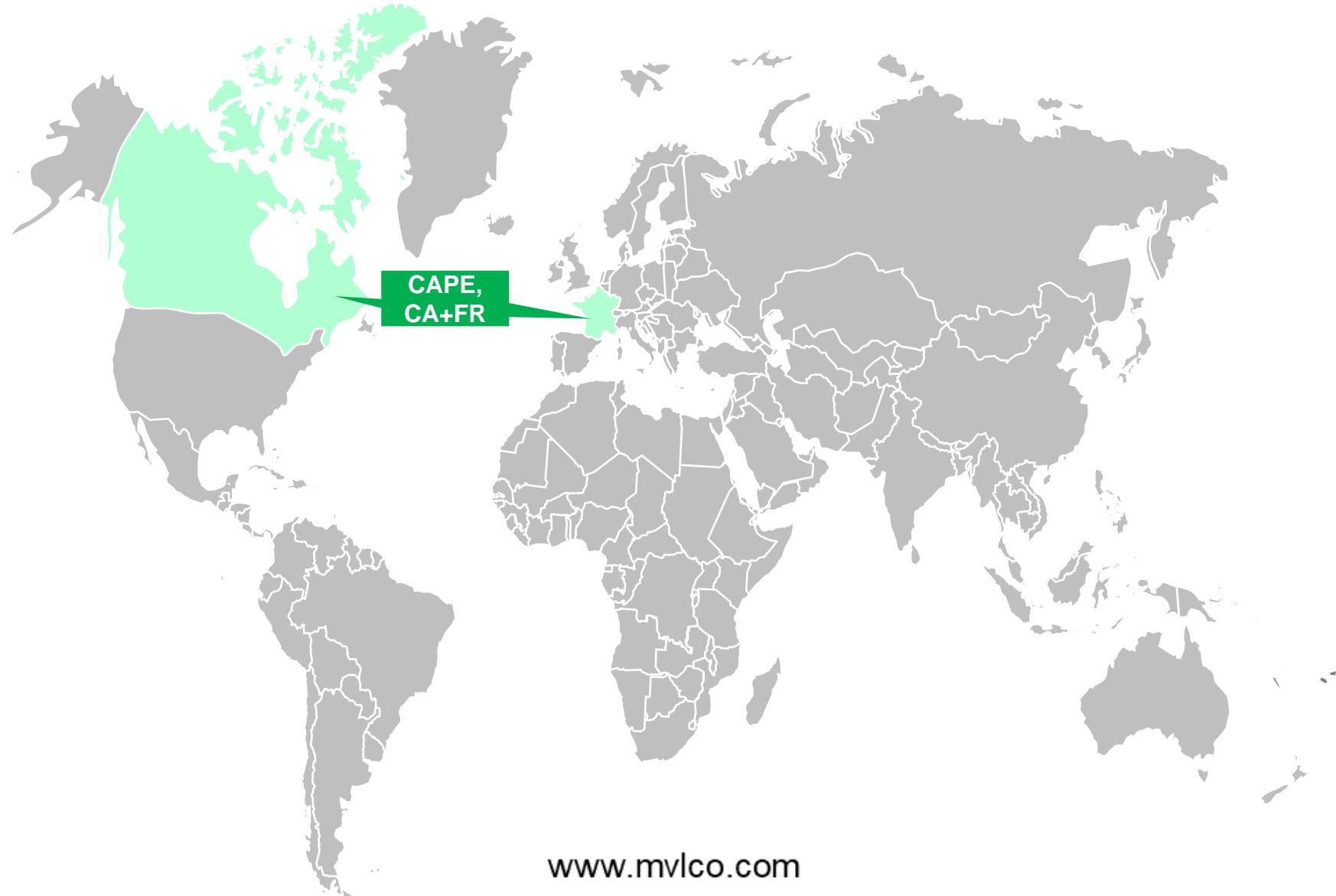
ISO 20022 Adoption – Securities & FX Initiatives

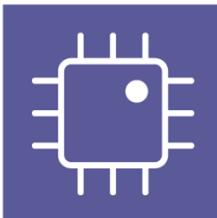


ISO 20022 Adoption – Trade



ISO 20022 adoption - Cards





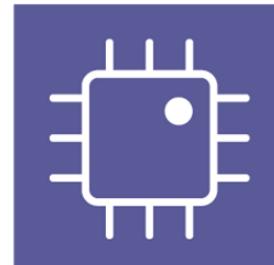
Module 3



Using ISO 20022 for Payments

Module 3 : Using ISO 20022 for Payments

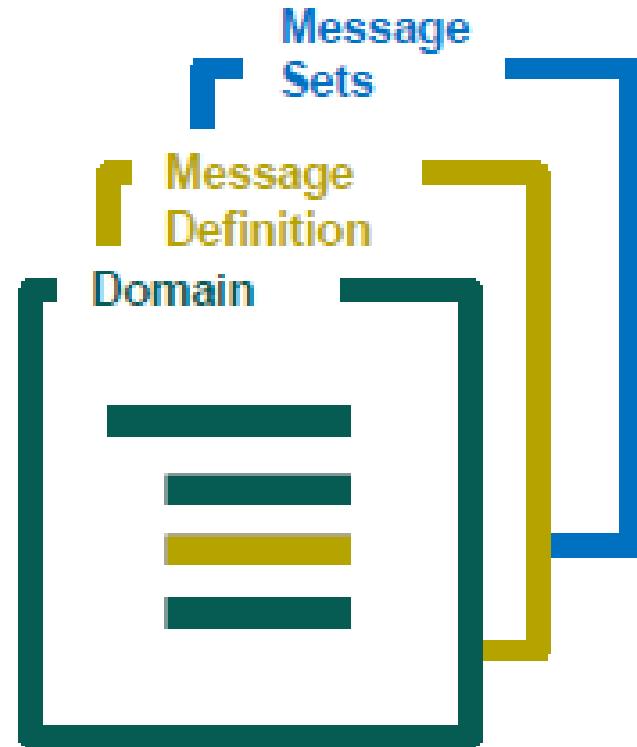
- Overview of ISO 20022 messages for payments
- Concepts of debtor, creditor, ultimate debtor/creditor, debtor/creditor agent
- Understanding pacs, pain, camt and remt
- Use of ISO 20022 messages in push, pull and collaborative payments



Module 3

Message sets for payments domain

- The ISO 20022 message catalogue hierarchically begins with **business domain** containing various sets of **message definitions** which in turn contain a variety of **message sets**.
- actm : Account Management
- auth : Authorities
- camt : Cash Management
- pacs : Payment Clearing and Settlement
- pain : Payment Initiation
- remt : Remittance Advice



Message sets for payments domain

- The ISO 20022 message catalogue hierarchically begins with **business domain** containing various sets of **message definitions** which in turn contain a variety of **message sets**.

- actm : Account Management
- auth : Authorities
- camt : Cash Management
- pacs : Payment Clearing and Settlement
- pain : Payment Initiation
- remt : Remittance Advice

Message Sets

camt.052 Bank to Customer Account Report
camt.053 Bank to Customer Statement
camt.054 Bank to Customer Debit Credit Notification
camt.056 FI to FI Payment Cancelation Request
camt.057 Notification to Receive

pacs.002 FI to FI Payment Status Report
pacs.004 Payment Return
pacs.008 FI to FI Customer Credit Transfer
pacs.009 Financial Institution Credit Transfer

pain.001 Customer Credit Transfer
pain.002 Customer Payment Status Report
pain.012 Creditor Payment Activation Request

1 Category 1 – Customer Payments and Cheques

MT Number	MT Name	MX ID	MX Name
MT 101	Request for Transfer	pain.001	CustomerCreditTransferInitiation
MT 102 MT 102 STP	Multiple Customer Credit Transfer		
MT 103 MT 103 STP MT 103 REMIT	Single Customer Credit Transfer		
MT 104	Direct Debit and Request for Debit Transfer Message		
MT 105	EDIFACT Envelope		
MT 107	General Direct Debit Message		
MT 110	Advice of Cheque(s)		
MT 111	Request for Stop Payment of a Cheque		
MT 112	Status of a Request for Stop Payment of a Cheque		
Common Group			
MT 190	Advice of Charges, Interest and Other Adjustments		
MT 191	Request for Payment of Charges, Interest and Other Expenses		
MT 192	Request for Cancellation		
MT 195	Queries		
MT 196	Answers		
MT 198	Proprietary Message		

2 Category 2 – Financial Institution Transfers

MT Number	MT Name	MX ID	MX Name
MT 200	Financial Institution Transfer for its Own Account	pacs.009	FinancialInstitutionCreditTransfer
MT 201	Multiple Financial Institution Transfer for its Own Account	pacs.009	FinancialInstitutionCreditTransfer
MT 202 MT 202 COV	General Financial Institution Transfer	pacs.009	FinancialInstitutionCreditTransfer
MT 203	Multiple General Financial Institution Transfer	pacs.009	FinancialInstitutionCreditTransfer
MT 204	Financial Markets Direct Debit Message	pacs.010	FinancialInstitutionDirectDebit
MT 205 MT 205 COV	Financial Institution Transfer Execution	pacs.009	FinancialInstitutionCreditTransfer
MT 210	Notice to Receive	camt.057	NotificationToReceive
Common Group			
MT 290	Advice of Charges, Interest and Other Adjustments		None available
MT 291	Request for Payment of Charges, Interest and Other Expenses		None available
MT 292	Request for Cancellation	camt.056	FIToFIPaymentCancellationRequest
MT 295	Queries	camt.026	UnableToApply
		camt.027	ClaimNonReceipt
		camt.033	RequestForDuplicate
MT 296	Answers	camt.034	Duplicate
		camt.028	AdditionalPaymentInformation
		camt.031	RejectInvestigation
		camt.029	ResolutionOfInvestigation
MT 298	Proprietary Message		None available
MT 299	Free Format Message		None available

Migration of Payments Messages

What will change in payments : MT1XX

Standards MT	Standards MX (ISO 20022) equivalent
MT 101 – Request for Transfer	Not within the scope of the migration
MT 102 – Multiple Customer Credit Transfer	pacs.008.001.XX – FIToFICustomerCreditTransfer
MT 103 – Single Customer Credit Transfer	pacs.008.001.XX – FIToFICustomerCreditTransfer
MT 103 RETURN	pacs.004.001.XX – PaymentReturn
MT 103 REVERSE	pacs.007.001.XX – FIToFIPaymentReversal
Business ACK/NAK and status	pacs.002.001.XX – FIToFIPaymentStatusReport
FIN Message Header	head.001.001.XX – BusinessApplicationHeader

Category 1 - Customer Payments and Cheques

What will change in payments : MT2XX

Standards MT	Standards MX (ISO 20022) equivalent
MT 200 – Financial Institution Transfer for its Own Account	pacs.009.001.XX – FinancialInstitutionCreditTransfer
MT 201 – Multiple Financial Institution Transfer for its Own Account	pacs.009.001.XX – FinancialInstitutionCreditTransfer
MT 202 – General Financial Institution Transfer	pacs.009.001.XX – FinancialInstitutionCreditTransfer
MT 202 COV – General Financial Institution Transfer	pacs.009.001.XX – FinancialInstitutionCreditTransfer
MT 203 – Multiple General Financial Institution Transfer	pacs.009.001.XX – FinancialInstitutionCreditTransfer
MT 204 – Financial Markets Direct Debit Message	pacs.010.001.XX – FinancialInstitutionDirectDebit
MT 205 – Financial Institution Transfer Execution	pacs.009.001.XX – FinancialInstitutionCreditTransfer
MT 210 – Notice to Receive	camt.057.001.XX – NotificationToReceive

Category 2 - Financial Institution Transfers

What will change in payments : MT9XX

Standards MT	Standards MX (ISO 20022) equivalent
MT 900 – Confirmation of Debit	camt.054 – BankToCustomerDebitCreditNotification
MT 910 – Confirmation of Credit	camt.054 – BankToCustomerDebitCreditNotification
MT 940 – Customer Statement	camt.053 – BankToCustomerStatement
MT 941 – Balance Report	camt.052 – BankToCustomerAccountReport
MT 942 – Interim Transaction Report	camt.052 – BankToCustomerAccountReport
MT 950 – Statement Message	camt.053 – BankToCustomerStatement
MT 210 – Notice to Receive	camt.057 – NotificationToReceive

Category 9 - Cash Management and Customer Status

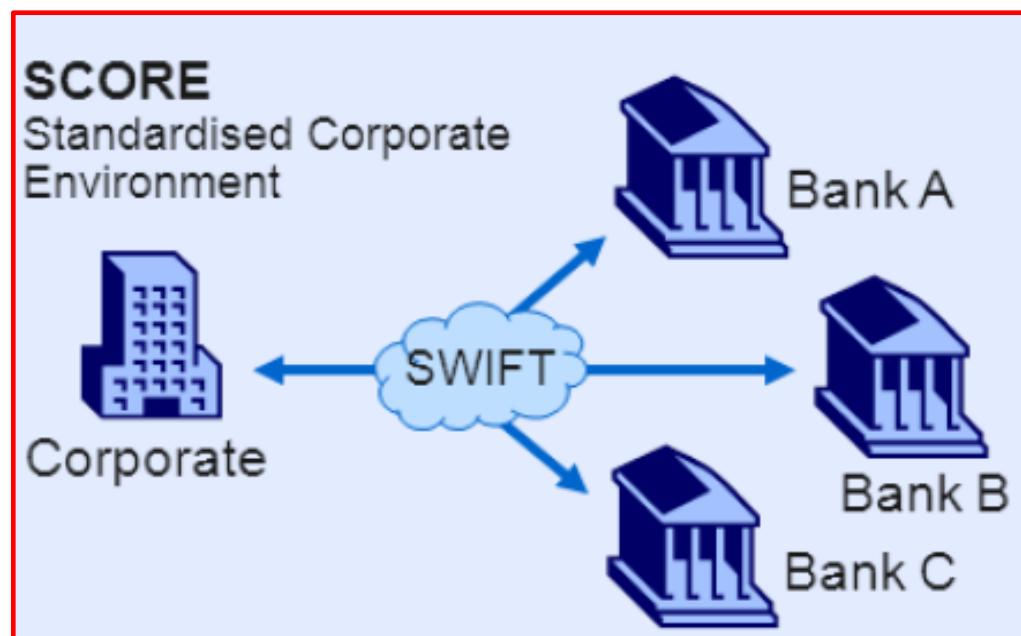
What will change in payments : MTnXX

Standards MT	Standards MX (ISO 20022) equivalent
MT n92 – Request for Cancellation	camt.056 – FIToFIPaymentCancellationRequest
MT n95 – Queries	camt.026 – UnableToApply
MT n95 – Queries	camt.087 – RequestToModifyPayment
MT n96 – Answers	camt.029 – ResolutionOfInvestigation

Common

What will NOT migrate from MT for payments?

- MTs used by Corporate Payments (SCORE MTs)
- MTs used in Market Infrastructure Administered Closed User Groups (MI-CUG)

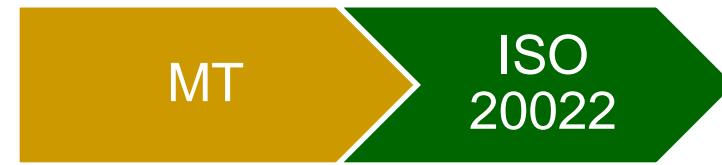
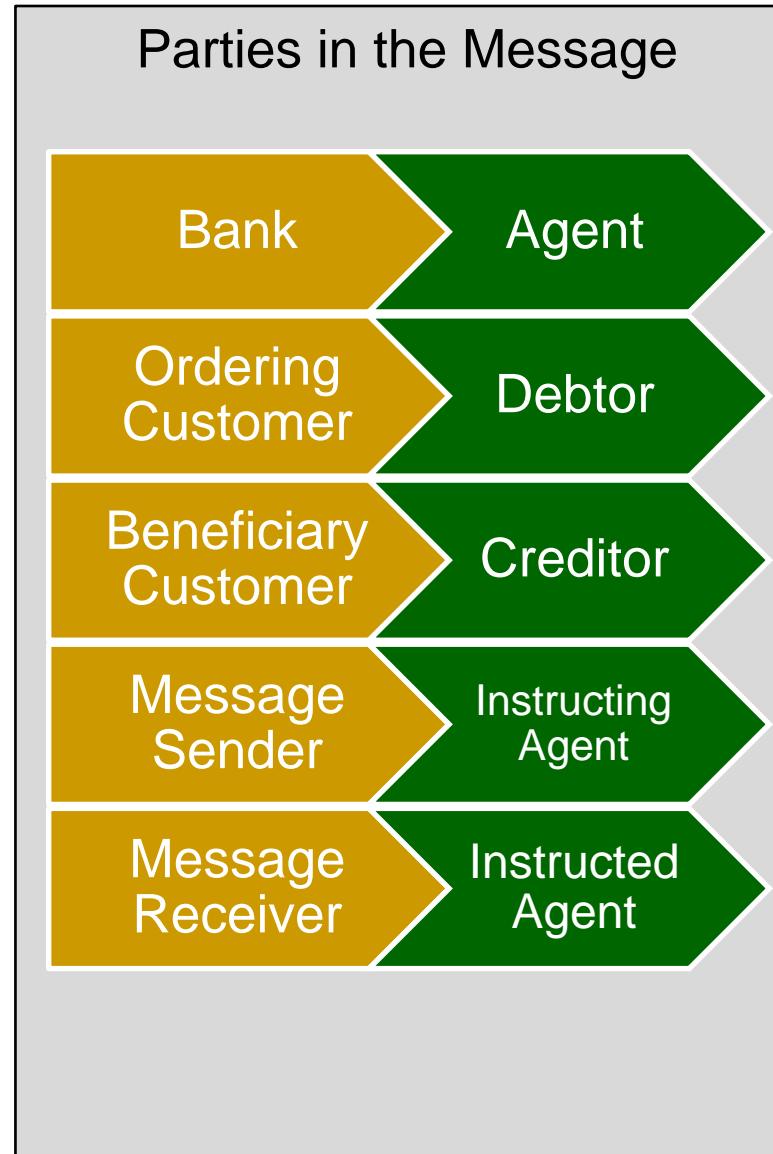
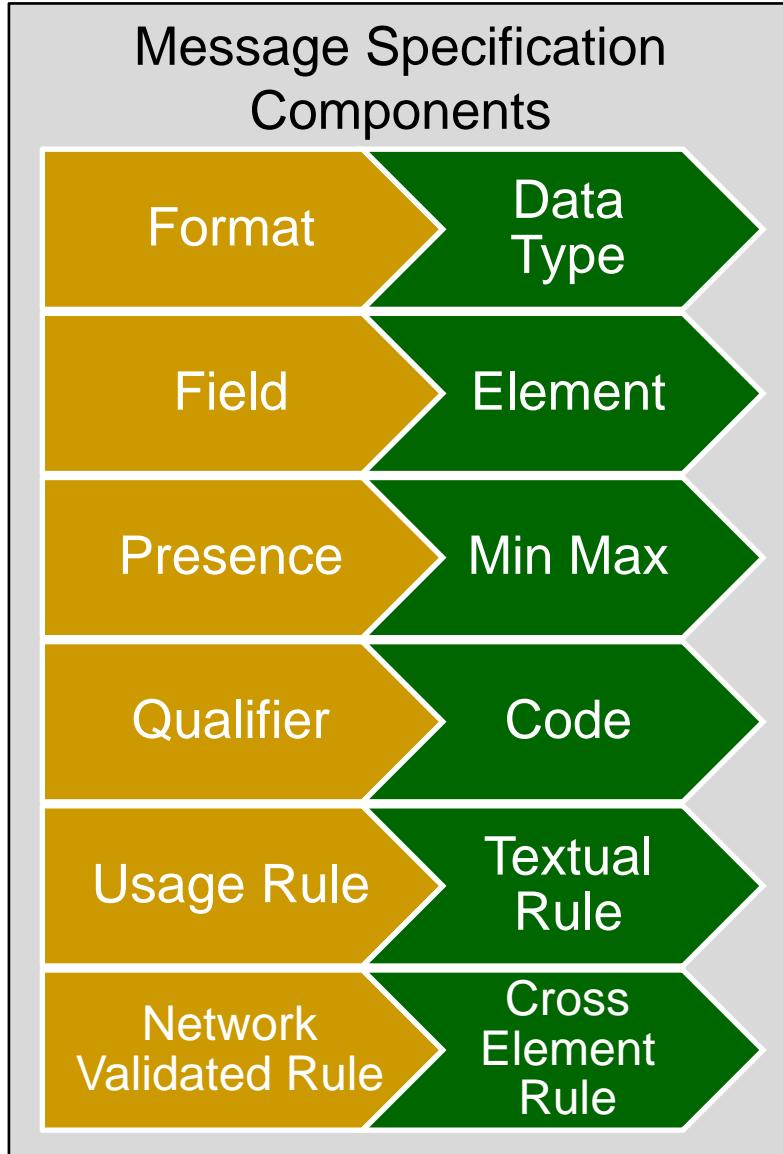


NO MIGRANTS

TERMINOLOGY

ISO 20022 terminology

Terminology comparison : MT to ISO 20022



Terminology related to debtor and creditors

- Debtor / Statement account owner
- Ultimate debtor
- Creditor / Statement account owner
- Ultimate creditor
- Initiating party/third party
- Debtor agent / Statement account servicer
- Creditor agent / Statement account servicer



Understanding terminology using example of push

- Jack has taken a mortgage loan from HDFC Limited. Servicing of HDFC mortgage loans is done by Star Financial Services .
- Jack has an account with NatWest Bank. Gemini Corporation has its bank account with HSBC. HDFC has its bank account with Citibank, New York. Star Financial Services has an account with Wells Fargo New York.
- Jack has instructed his employer Gemini Corporation to deduct his mortgage loan EMI from his salary and make a payment to Star Financial Services



NatWest

Gemini

HSBC

HDFC
citibank

STAR
FINANCIAL SERVICES

WELLS
FARGO



PUSH

Ultimate Debtor

Debtor



Debtor

Gemini

Initiating Party

HDFC

Ultimate Creditor

Debtor Agent

NatWest

Fedwire
Wired to deliver.

MI

**WELLS
FARGO**

Creditor

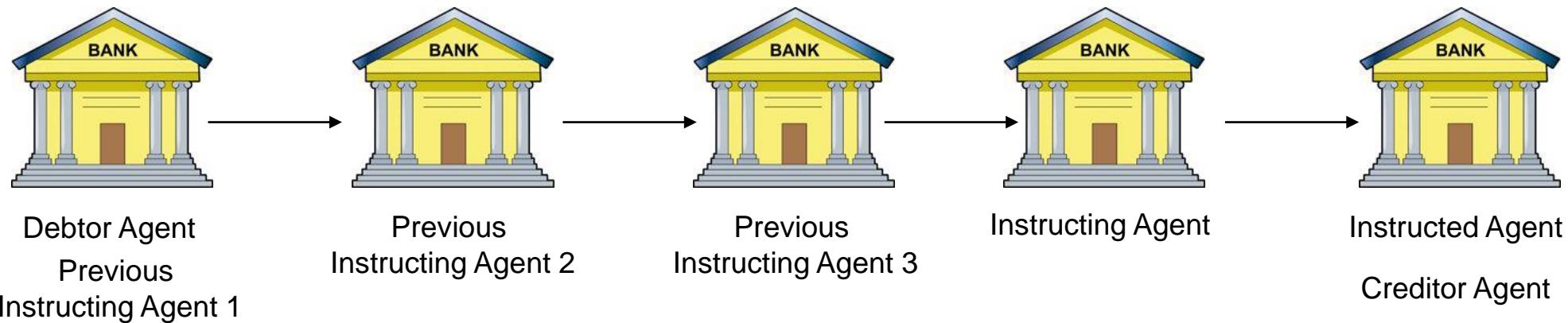
Creditor Agent

STAR
FINANCIAL SERVICES

Initiating Party

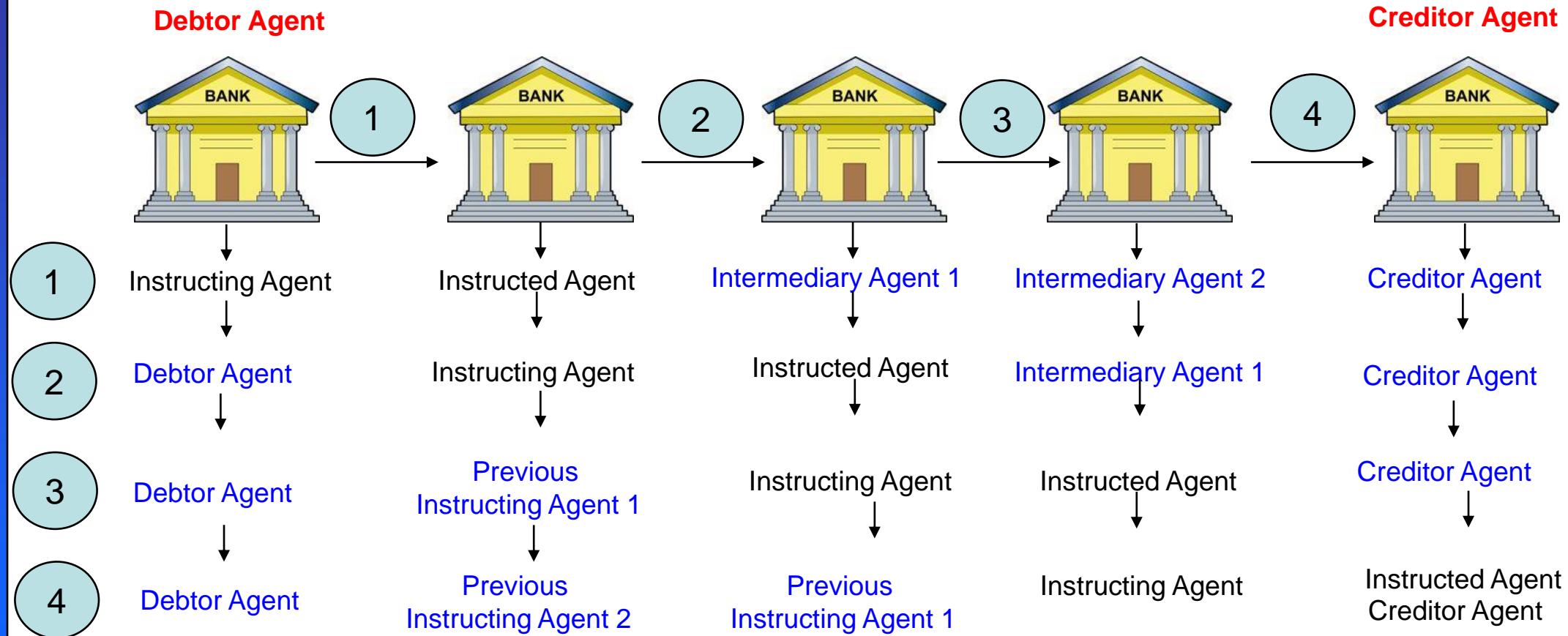


Instructing Agents and Instructed Agents



- As the payment moves ahead, the roles of Instructing Agent and Instructed Agent keeps shifting to the next pair.
- The earlier Agent, who instructed the current Instructing Agent is known as the Previous Instructing Agent. The Previous Instructing Agents are defined in increasing numeric order.

Instructing Agents and Instructed Agents and changes in their role



Payments Initiation

(Recommended Message Transport Mode: Active)

— pain - Payments Initiation

Message Name	Msg ID (Schema)	Submitting Organisation
CustomerCreditTransferInitiationV09	pain.001.001.09	ISTH
CustomerPaymentStatusReportV10	pain.002.001.10	ISTH
CustomerPaymentReversalV09	pain.007.001.09	SWIFT
CustomerDirectDebitInitiationV08	pain.008.001.08	ISTH

Last updated on: 19 February 2019

ISO 20022 message types for payments



Payments Mandates

(Recommended Message Transport Mode: Active)

— pain - Payments Initiation

Message Name	Msg ID (Schema)	Submitting Organisation
MandateInitiationRequestV06	pain.009.001.06	SWIFT
MandateAmendmentRequestV06	pain.010.001.06	SWIFT
MandateCancellationRequestV06	pain.011.001.06	SWIFT
MandateAcceptanceReportV06	pain.012.001.06	SWIFT
MandateCopyRequestV02	pain.017.001.02	SWIFT & SABS
MandateSuspensionRequestV02	pain.018.001.02	SWIFT & SABS

Last updated on: 19 February 2019

Creditor Payment Activation Request

(Recommended Message Transport Mode: Active)

— pain - Payments Initiation

Message Name	Msg ID (Schema)	Submitting Organisation
CreditorPaymentActivationRequestV07	pain.013.001.07	CBI
CreditorPaymentActivationRequestStatusReportV07	pain.014.001.07	CBI

Last updated on: 19 February 2019

ISO 20022 message types for payments



Payments Clearing and Settlement

(Recommended Message Transport Mode: Active)

pacs - Payments Clearing and Settlement

Use of the message definitions below in a real-time payment environment are supported by message usage in RTPG.

Message Name	Msg ID (Schema)	Submitting Organisation
FIToFIPaymentStatusReportV10	pacs.002.001.10	SWIFT
FIToFICustomerDirectDebitV08	pacs.003.001.08	SWIFT
PaymentReturnV09	pacs.004.001.09	SWIFT
FIToFIPaymentReversalV09	pacs.007.001.09	SWIFT
FIToFICustomerCreditTransferV08	pacs.008.001.08	SWIFT
FinancialInstitutionCreditTransferV08	pacs.009.001.08	SWIFT
FinancialInstitutionDirectDebitV03	pacs.010.001.03	SWIFT
FIToFIPaymentStatusRequestV03	pacs.028.001.03	SWIFT & EPC

Last updated on: 19 February 2019



Bank-to-Customer Cash Management

(Recommended Message Transport Mode: Active)

- camt - Cash Management

Message Name	Msg ID (Schema)	Submitting Organisation
BankToCustomerAccountReportV08	camt.052.001.08	ISTH
BankToCustomerStatementV08	camt.053.001.08	ISTH
BankToCustomerDebitCreditNotificationV08	camt.054.001.08	ISTH
AccountReportingRequestV05	camt.060.001.05	SWIFT

Last updated on: 19 February 2019

Notification to Receive

(Recommended Message Transport Mode: Active)

— camt - Cash Management

Message Name	Msg ID (Schema)	Submitting Organisation
NotificationToReceiveV06	camt.057.001.06	SWIFT
NotificationToReceiveCancellationAdviceV06	camt.058.001.06	SWIFT
NotificationToReceiveStatusReportV06	camt.059.001.06	SWIFT

Last updated on: 19 February 2019

Stand-alone Remittance Advice

(Recommended Message Transport Mode: Active)

— remt - Payments Remittance Advice

Message Name	Msg ID (Schema)	Submitting Organisation
RemittanceAdviceV04	remt.001.001.04	IFX/OAGi
RemittanceLocationAdviceV02	remt.002.001.02	IFX/OAGi

Last updated on: 19 February 2019

ISO 20022 / MX message types for payments



Exceptions and Investigations

(Recommended Message Transport Mode: Active)

— camt - Cash Management

Message Name	Msg ID (Schema)	Submitting Organisation
UnableToApplyV07	camt.026.001.07	SWIFT
ClaimNonReceiptV07	camt.027.001.07	SWIFT
AdditionalPaymentInformationV09	camt.028.001.09	SWIFT
ResolutionOfInvestigationV09	camt.029.001.09	SWIFT
NotificationOfCaseAssignmentV05	camt.030.001.05	SWIFT
RejectInvestigationV06	camt.031.001.06	SWIFT
CancelCaseAssignmentV04	camt.032.001.04	SWIFT
RequestForDuplicateV06	camt.033.001.06	SWIFT
DuplicateV06	camt.034.001.06	SWIFT
ProprietaryFormatInvestigationV05	camt.035.001.05	SWIFT
DebitAuthorisationResponseV05	camt.036.001.05	SWIFT
DebitAuthorisationRequestV07	camt.037.001.07	SWIFT
CaseStatusReportRequestV04	camt.038.001.04	SWIFT
CaseStatusReportV05	camt.039.001.05	SWIFT
CustomerPaymentCancellationRequestV08	camt.055.001.08	SWIFT
FIToFIPaymentCancellationRequestV08	camt.056.001.08	SWIFT
RequestToModifyPaymentV06	camt.087.001.06	SWIFT

Last updated on: 19 February 2019

Summary : Payments important messages



- pain : payment initiation
- pacs: payment clearing and settlement
- camt : cash management

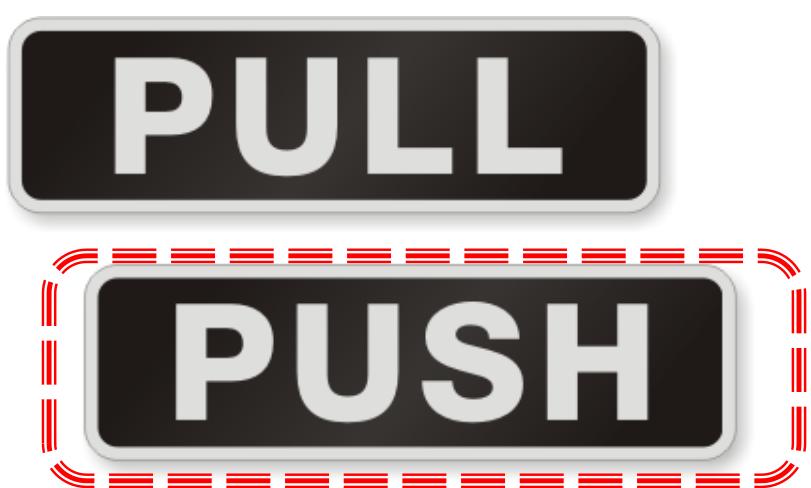
Summary



Payment Processing



Using ISO20022 messages in payment processing



credit transfer - push

Case Study #1

Delta Corporation wants to pay Gamma



- Delta Limited is located in New York USA and banks with First Bank, New York.
- Gamma Limited is located in Chicago, USA. Gamma banks with Last Bank, Chicago.
- Delta wants to pay USD 500,000 to Gamma by RTGS.
- Its assumed that the RTGS uses ISO20022 messages.
- Let's look at the process on the next slide.

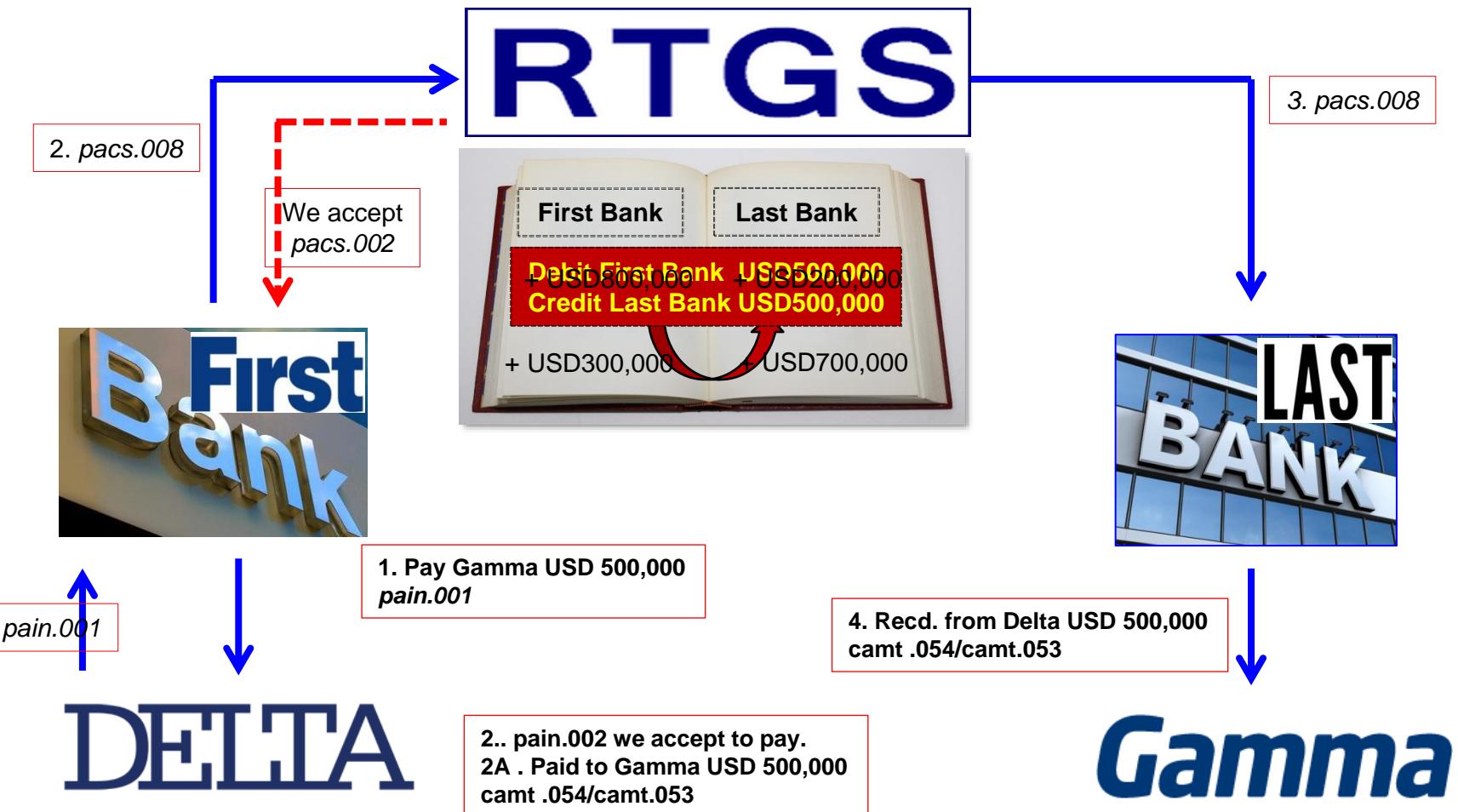
DELTA

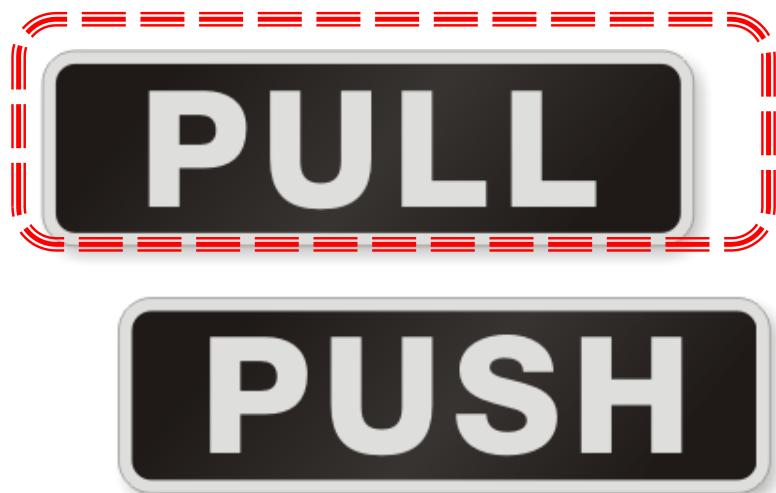


Gamma



Credit transfer : Push - Success





Direct debit - Pull

Case Study #2

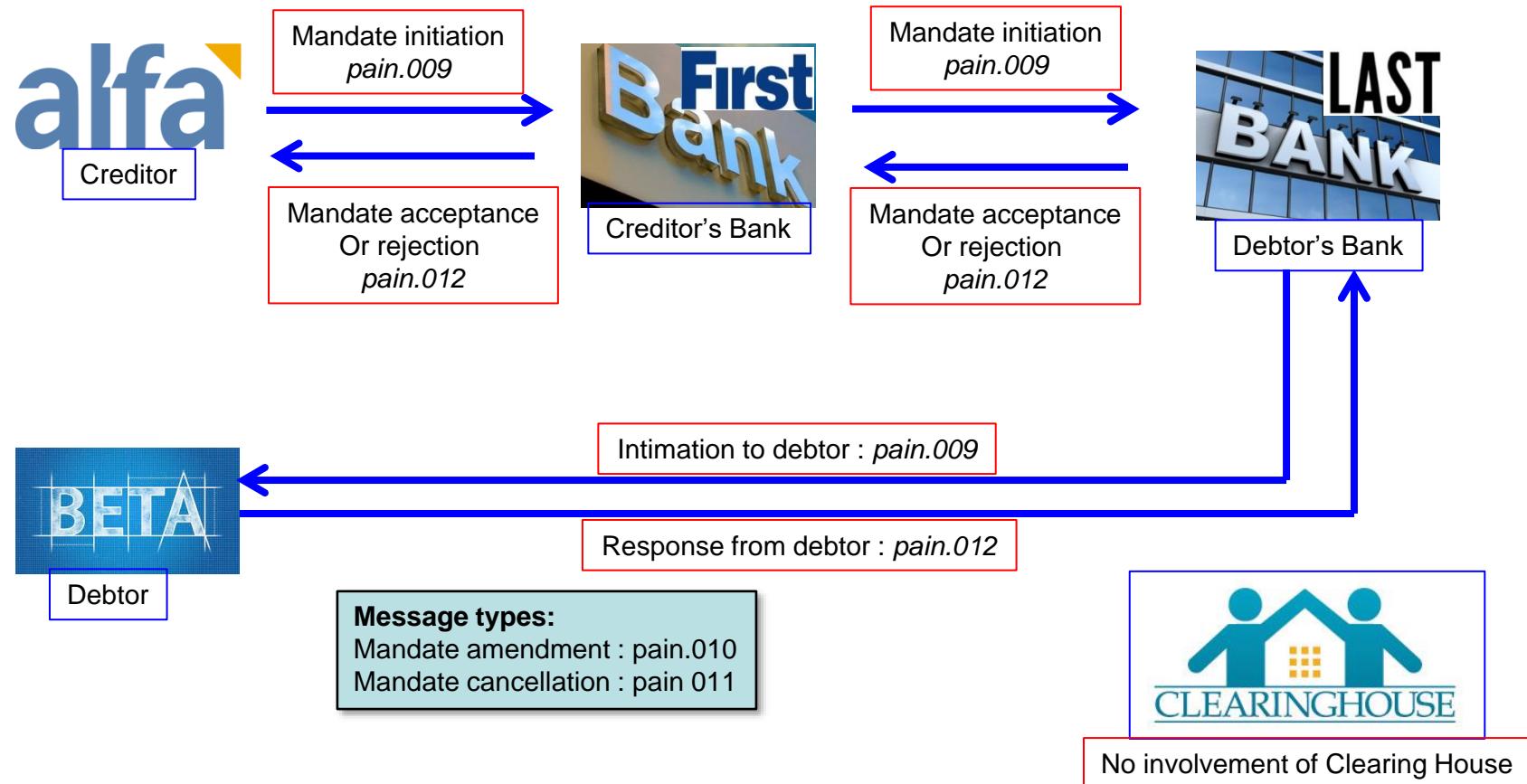
Alfa Corporation wants to collect from Beta Limited



- Alfa Corporation (Creditor) is located in London, UK and banks with First Bank, London.
- Beta Limited (Debtor) is located in Berlin, Germany. Beta banks with Last Bank, Berlin.
- Alfa wants to collect EUR 5000 from Beta by using SEPA Direct Debit (SDD).
- Both, First Bank and Last Bank are members of SDD and have their settlement accounts in TARGET2.
- We will start with mandate placement.



Direct debit mandate management

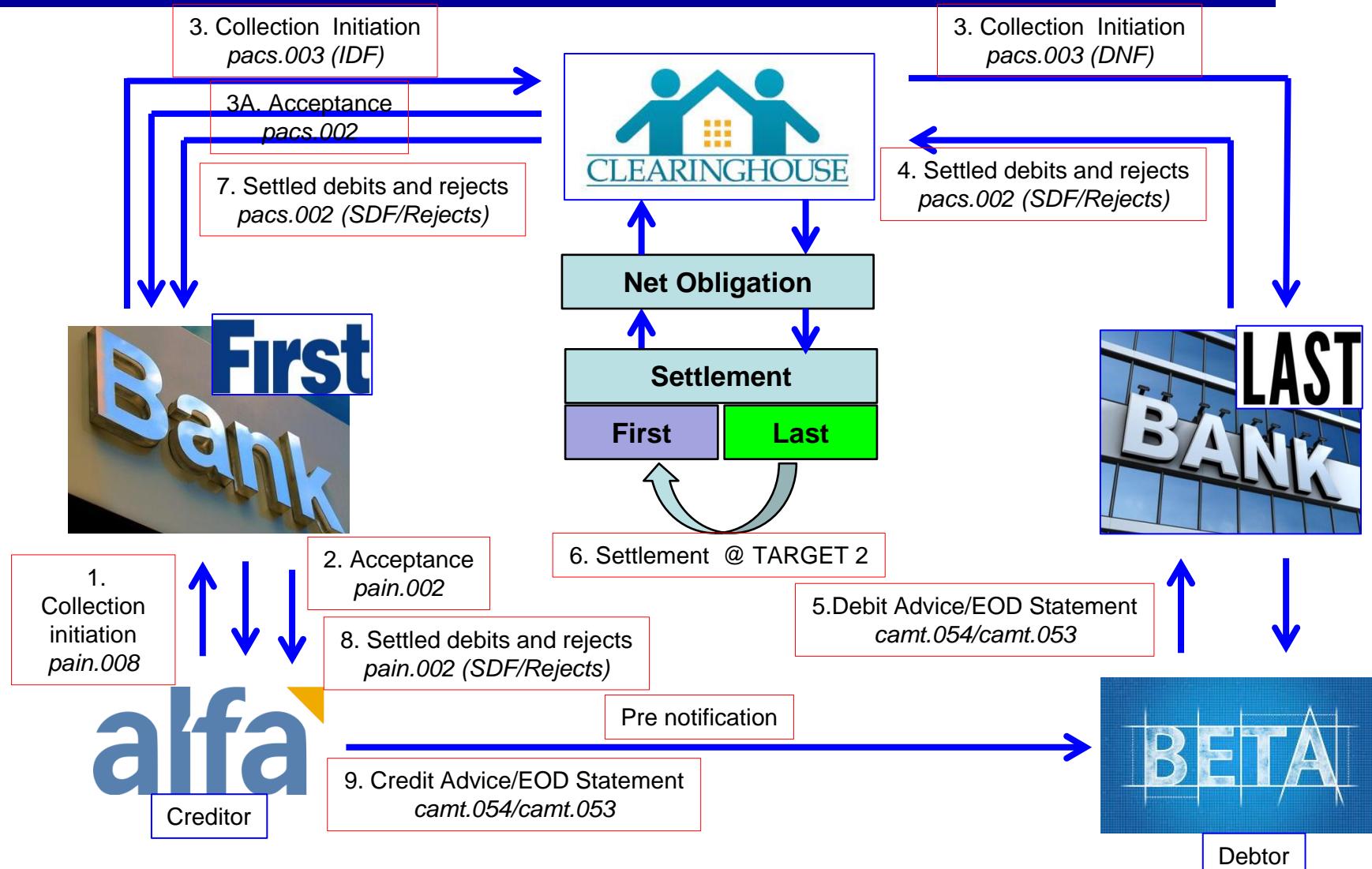


PULL



Pull transaction

Direct Debit – Pull (Success)





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