

## 14.10 Challenge

Attribute	Type	Condition	Description
image	String	Optional	PNG data (max. 512 kilobyte) to be displayed to the PSU, Base64 encoding, cp. [RFC4648].  This attribute is used only, when PHOTO OTP or CHIP OTP is the selected SCA method.
data	Array of Strings	Optional	A collection of challenge data
imageLink	String	Optional	A link where the ASPSP will provide the challenge image for the TPP.
otpMaxLength	Integer	Optional	The maximal length for the OTP to be typed in by the PSU.
otpFormat	String	Optional	The format type of the OTP to be typed in. The admitted values are "characters" or "integer".
additional Information	String	Optional	Additional explanation for the PSU to explain e.g. fallback mechanism for the chosen SCA method. The TPP is obliged to show this to the PSU.

## 14.11 Message Code

The permitted message error codes and related HTTP response codes are listed below.

### 14.11.1 Service Unspecific HTTP Error Codes

Message Code	HTTP Response Code	Description
CERTIFICATE_INVALID	401	The contents of the signature/corporate seal certificate are not matching PSD2 general PSD2 or attribute requirements.
ROLE_INVALID	401	The TPP does not have the correct PSD2 role to access this service.
CERTIFICATE_EXPIRED	401	Signature/corporate seal certificate is expired.
CERTIFICATE_BLOCKED	401	Signature/corporate seal certificate has been blocked by the ASPSP or the related NCA.
CERTIFICATE_REVOKED	401	Signature/corporate seal certificate has been revoked by QSTP.
CERTIFICATE_MISSING	401	Signature/corporate seal certificate was not available in the request but is mandated for the corresponding.
SIGNATURE_INVALID	401	Application layer eIDAS Signature for TPP authentication is not correct.
SIGNATURE_MISSING	401	Application layer eIDAS Signature for TPP authentication is mandated by the ASPSP but is missing.
ROLE_INVALID	401	The TPP does not have the correct PSD2 role to access this service
FORMAT_ERROR	400	Format of certain request fields are not matching the XS2A requirements. An explicit path to the corresponding field might be added in the return message.  This applies to headers and body entries. It also applies in cases where these entries are

Message Code	HTTP Response Code	Description
		referring to erroneous or not existing data instances, e.g. a malformed IBAN.
PARAMETER_NOT_CONSISTENT	400	Parameters submitted by TPP are not consistent. This applies only for query parameters.
PARAMETER_NOT_SUPPORTED	400	The parameter is not supported by the API provider. This code should only be used for parameters that are described as "optional if supported by API provider."
PSU_CREDENTIALS_INVALID	401	The PSU-ID cannot be matched by the addressed ASPSP or is blocked, or a password resp. OTP was not correct. Additional information might be added.
SERVICE_INVALID	400 (if payload) 405 (if HTTP method)	The addressed service is not valid for the addressed resources or the submitted data.
SERVICE_BLOCKED	403	This service is not reachable for the addressed PSU due to a channel independent blocking by the ASPSP. Additional information might be given by the ASPSP.
CORPORATE_ID_INVALID	401	The PSU-Corporate-ID cannot be matched by the addressed ASPSP.
CONSENT_UNKNOWN	403 (if path) 400 (if header)	The Consent-ID cannot be matched by the ASPSP relative to the TPP.
CONSENT_INVALID	401	The consent was created by this TPP but is not valid for the addressed service/resource.
CONSENT_EXPIRED	401	The consent was created by this TPP but has expired and needs to be renewed.

Message Code	HTTP Response Code	Description
TOKEN_UNKNOWN	401	The OAuth2 token cannot be matched by the ASPSP relative to the TPP.
TOKEN_INVALID	401	The OAuth2 token is associated to the TPP but is not valid for the addressed service/resource.
TOKEN_EXPIRED	401	The OAuth2 token is associated to the TPP but has expired and needs to be renewed.
RESOURCE_UNKNOWN	404 (if account-id in path)  403 (if other resource in path)  400 (if payload)	The addressed resource is unknown relative to the TPP.  An example for a payload reference is creating a signing basket with an unknown resource identification.
RESOURCE_EXPIRED	403 (if path)  400 (if payload)	The addressed resource is associated with the TPP but has expired, not addressable anymore.
RESOURCE_BLOCKED	400	The addressed resource is not addressable by this request, since it is blocked e.g. by a grouping in a signing basket.
TIMESTAMP_INVALID	400	Timestamp not in accepted time period.
PERIOD_INVALID	400	Requested time period out of bound.
SCA_METHOD_UNKNOWN	400	Addressed SCA method in the Authentication Method Select Request is unknown or cannot be matched by the ASPSP with the PSU.
SCA_INVALID	400	Method Application on authorisation resource (e.g. Confirmation Request) blocked since SCA status of the resource equals "failed".

Message Code	HTTP Response Code	Description
STATUS_INVALID	409	The addressed resource does not allow additional authorisation.

#### 14.11.2 PIS Specific HTTP Error Codes

Message Code	HTTP Response Code	Description
PRODUCT_INVALID	403	The addressed payment product is not available for the PSU .
PRODUCT_UNKNOWN	404	The addressed payment product is not supported by the ASPSP.
PAYMENT_FAILED	400	The payment initiation POST request failed during the initial process. Additional information may be provided by the ASPSP.
KID_MISSING	401	The payment initiation has failed due to a missing KID. This is a specific message code for the Norwegian market, where ASPSP can require the payer to transmit the KID.
EXECUTION_DATE_INVALID	400	The requested execution date is not a valid execution date for the ASPSP.
CANCELLATION_INVALID	405	The addressed payment is not cancellable e.g. due to cut off time passed or legal constraints.
BENEFICIARY_WHITELISTING_REQUIRED	201	Only used in responses to a Payment Initiation Request (see Section 5.3).  Indicates that in order to execute the payment, the PSU needs to explicitly add the beneficiary to a credit transfer whitelist via a banking channel.



<b>Message Code</b>	<b>HTTP Response Code</b>	<b>Description</b>
FUNDS_NOT_AVAILABLE	200	<p>Only used in responses to a Get Transaction Status Request (see Section 5.4) or a Get Payment Request (see Section 5.4) in case of "transactionStatus"= "RJCT".</p> <p>Indicates that the reason for rejecting the payment is that the required funds have been found to be not available for the specific (e.g due to missing funds or due to configured limits) during processing after the initial acceptance of the payment initiation.</p>
CONTENT_INVALID	200	<p>Only used in responses to a Get Transaction Status Request (see Section 5.4) or a Get Payment Request (see Section 5.4) in case of "transactionStatus"= "RJCT".</p> <p>Indicates that the reason for rejecting the payment is that the content of the payment initiation has been found invalid during processing after the initial acceptance of the payment initiation.</p>

#### 14.11.3 AIS Specific HTTP Error Codes

<b>Message Code</b>	<b>HTTP Response Code</b>	<b>Description</b>
CONSENT_INVALID	401	<p>The consent definition is not complete or invalid. In case of being not complete, the bank is not supporting a completion of the consent towards the PSU.</p> <p>Additional information will be provided.</p>

<b>Message Code</b>	<b>HTTP Response Code</b>	<b>Description</b>
SESSIONS_NOT_SUPPORTED	400	The combined service flag may not be used with this ASPSP.
ACCESS_EXCEEDED	429	The access on the account has been exceeding the consented multiplicity without PSU involvement per day.
REQUESTED_FORMATS_INVALID	406	The requested formats in the Accept header entry are not matching the formats offered by the ASPSP.

#### 14.11.4 PIIS Specific Error Codes

<b>Message Code</b>	<b>HTTP Response Code</b>	<b>Description</b>
CARD_INVALID	400	Addressed card number is unknown to the ASPSP or not associated to the PSU.
NO_PIIS_ACTIVATION	400	The PSU has not activated the addressed account for the usage of the PIIS associated with the TPP.

#### 14.11.5 Signing Basket Specific Error Codes

<b>Message Code</b>	<b>HTTP Response Code</b>	<b>Description</b>
REFERENCE_MIX_INVALID	400	The used combination of referenced objects is not supported in the ASPSPs signing basket function.
REFERENCE_STATUS_INVALID	409	At least one of the references is already fully authorised.

## 14.12 Error Information

This is a data element to support the declaration of additional errors in the context of [RFC7807].

Attribute	Type	Condition	Description
title	Max70Text	Optional	Short human readable description of error type. Could be in local language. To be provided by ASPSPs.
detail	Max500Text	Optional	Detailed human readable text specific to this instance of the error. XPath might be used to point to the issue generating the error in addition.  <b>Remark for Future:</b> In future, a dedicated field might be introduced for the XPath.
code	Message Code	Mandatory	Message code to explain the nature of the underlying error.

## 14.13 Transaction Status

The transaction status is filled with codes of the ISO 20022 data table:

Code	Name	ISO 20022 Definition
ACCC	AcceptedSettlementCompleted	Settlement on the creditor's account has been completed.
ACCP	AcceptedCustomerProfile	Preceding check of technical validation was successful. Customer profile check was also successful.
ACSC	AcceptedSettlementCompleted	Settlement on the debtor's account has been completed. <b>Usage:</b> this can be used by the first agent to report to the debtor that the transaction has been completed. <b>Warning:</b> this status is provided for transaction status reasons, not for financial information. It can only be used after bilateral agreement

Code	Name	ISO 20022 Definition
ACSP	AcceptedSettlementInProcess	All preceding checks such as technical validation and customer profile were successful and therefore the payment initiation has been accepted for execution.
ACTC	AcceptedTechnicalValidation	Authentication and syntactical and semantical validation are successful
ACWC	AcceptedWithChange	Instruction is accepted but a change will be made, such as date or remittance not sent.
ACWP	AcceptedWithoutPosting	Payment instruction included in the credit transfer is accepted without being posted to the creditor customer's account.
RCVD	Received	Payment initiation has been received by the receiving agent.
PDNG	Pending	Payment initiation or individual transaction included in the payment initiation is pending. Further checks and status update will be performed.
RJCT	Rejected	Payment initiation or individual transaction included in the payment initiation has been rejected.
CANC	Cancelled	Payment initiation has been cancelled before execution
ACFC	AcceptedFundsChecked	Pre-ceeding check of technical validation and customer profile was successful and an automatic funds check was positive .
PATC	PartiallyAcceptedTechnical Correct	The payment initiation needs multiple authentications, where some but not yet all have been performed. Syntactical and semantical validations are successful.
PART	PartiallyAccepted	A number of transactions have been accepted, whereas another number of transactions have not yet achieved 'accepted' status. <b>Remark:</b> This code may be used only in case of bulk payments. It is only used in a situation where all mandated authorisations have been applied, but some payments have been rejected.

#### 14.14 Original Transaction Information and Status

Attribute	Type	Condition	Description
originalInstructionId	Max35Text	Conditional	Unique identification, as assigned by the original instructing party for the original instructed party, to unambiguously identify the original instruction.
originalUetr	UUID	Conditional	Universally unique identifier to provide the original end-to-end reference of a payment transaction.

Attribute	Type	Condition	Description
transactionStatus	Transaction Status	Mandatory	Specifies the status of a transaction, as published in an external payment transaction status code list.
statusReasonInformationCode	Status Reason Code	{Or-Optional}	Provides detailed information on the status reason.
statusReasonInformationProprietary	Max35Text	Or Optional	Proprietary additional information on the reason for e.g. rejecting the request.  Remark: If an ISO Code is available it should be used instead of Proprietary Reasons. Further restrictions could be defined by API Access Schemes.
statusReasonAdditionalInformation	Max105Text	Optional	Further details on the status reason.

## 14.15 Consent Status

Code	Description
received	The consent data have been received and are technically correct. The data is not authorised yet.
rejected	The consent data have been rejected e.g. since no successful authorisation has taken place.
partiallyAuthorised	The consent is due to a multi-level authorisation, some but not all mandated authorisations have been performed yet.
valid	The consent is accepted and valid for GET account data calls and others as specified in the consent object.
revokedByPsu	The consent has been revoked by the PSU towards the ASPSP.
expired	The consent expired.
terminatedByTpp	The corresponding TPP has terminated the consent by applying the DELETE method to the consent resource.

The ASPSP might add further codes. These codes then shall be contained in the ASPSP's documentation of the XS2A interface.

#### 14.16 SCA Status

The following codes are defined for this data type.

Remark for Future: A rework of the coding will follow, first Codes are given below:

<b>Code</b>	<b>Description</b>
received	An authorisation or cancellation-authorisation resource has been created successfully.
psuIdentified	The PSU related to the authorisation or cancellation-authorisation resource has been identified.
psuAuthenticated	The PSU related to the authorisation or cancellation-authorisation resource has been identified and authenticated e.g. by a password or by an access token.
scaMethodSelected	The PSU/TPP has selected the related SCA routine. If the SCA method is chosen implicitly since only one SCA method is available, then this is the first status to be reported instead of "received".
started	The addressed SCA routine has been started.
unconfirmed	SCA is technically successfully finalised by the PSU, but the authorisation resource needs a confirmation command by the TPP yet.
finalised	The SCA routine has been finalised successfully (including a potential confirmation command). This is a final status of the authorisation resource.
failed	The SCA routine failed. This is a final status of the authorisation resource.
exempted	SCA was exempted for the related transaction, the related authorisation is successful. This is a final status of the authorisation resource.

## 14.17 Account Access

Attribute	Type	Condition	Description
accounts	Array of Account Reference	Optional	<p>Is asking for detailed account information.</p> <p>If the array is empty in a request, the TPP is asking for an accessible account list. This may be restricted in a PSU/ASPSP authorization dialogue. If the array is empty, also the arrays for balances, additionalInformation sub attributes or transactions shall be empty, if used.</p>
balances	Array of Account Reference	Optional	<p>Is asking for balances of the addressed accounts.</p> <p>If the array is empty in the request, the TPP is asking for the balances of all accessible account lists. This may be restricted in a PSU/ASPSP authorization dialogue. If the array is empty, also the arrays for accounts, additionalInformation sub attributes or transactions shall be empty, if used.</p>
transactions	Array of Account Reference	Optional	<p>Is asking for transactions of the addressed accounts.</p> <p>If the array is empty in the request, the TPP is asking for the transactions of all accessible account lists. This may be restricted in a PSU/ASPSP authorization dialogue. If the array is empty, also the arrays for accounts, additionalInformation sub attributes or balances shall be empty, if used.</p>
additional Information	Additional Information Access	Optional if supported by API provider	<p>Is asking for additional information as added within this structured object.</p> <p>The usage of this data element requires at least one of the entries "accounts", "transactions" or "balances" also to be contained in the object. If detailed accounts are referenced, it is required in addition that any account addressed within the additionalInformation attribute is also</p>

Attribute	Type	Condition	Description
			addressed by at least one of the attributes "accounts", "transactions" or "balances".
availableAccounts	String	Optional if supported by API provider	The values "allAccounts" and "allAccountsWithOwnerName" are admitted. The support of the "allAccountsWithOwnerName" value by the ASPSP is optional.
availableAccountsWithBalance	String	Optional, if supported by API provider	The values "allAccounts" and "allAccountsWithOwnerName" are admitted. The support of the "allAccountsWithOwnerName" value by the ASPSP is optional.
allPsd2	String	Optional if supported by API provider	The values "allAccounts" and "allAccountsWithOwnerName" are admitted. The support of the "allAccountsWithOwnerName" value by the ASPSP is optional.

#### 14.18 Additional Information Access

Attribute	Type	Condition	Description
ownerName	Array of Account Reference	Optional	<p>Is asking for account owner name of the accounts referenced within.</p> <p>If the array is empty in the request, the TPP is asking for the account owner name of all accessible accounts. This may be restricted in a PSU/ASPSP authorization dialogue. If the array is empty, also the arrays for accounts, balances or transactions shall be empty, if used.</p> <p>The ASPSP will indicate in the consent resource after a successful authorisation, whether the ownerName consent can be accepted by providing the accounts on which the ownerName will be delivered. This array can be empty.</p>

**Remark for Future:** In future, other additional informations might be addressable through new sub attributes of the additionalInformation consent attribute.

## 14.19 Account Reference

This type is containing any account identification which can be used on payload-level to address specific accounts. The ASPSP will document which account reference type it will support. Exactly one of the attributes defined as "conditional" shall be used.

**Remark:** The currency of the account is needed, where the currency is an account characteristic identifying certain sub-accounts under one external identifier like an IBAN. These sub-accounts are separated accounts from a legal point of view and have separated balances, transactions etc.

Attribute	Type	Condition	Description
iban	IBAN	Conditional	
bban	BBAN	Conditional	This data elements is used for payment accounts which have no IBAN.
pan	Max35Text	Conditional	Primary Account Number (PAN) of a card, can be tokenised by the ASPSP due to PCI DSS requirements.
maskedPan	Max35Text	Conditional	Primary Account Number (PAN) of a card in a masked form.
msisdn	Max35Text	Conditional	An alias to access a payment account via a registered mobile phone number.
currency	Currency Code	Optional	ISO 4217 Alpha 3 currency code

## 14.20 Account Details

**Remark:** The ASPSP shall give at least one of the account reference identifiers listed as optional below.

Attribute	Type	Condition	Description
resourceId	String	Conditional	This is the data element to be used in the path when retrieving data from a dedicated account, cp. Section 6.5.3 or Section 6.5.4 below. This shall be filled, if addressable

<b>Attribute</b>	<b>Type</b>	<b>Condition</b>	<b>Description</b>
			resource are created by the ASPSP on the /accounts endpoint.
iban	IBAN	Optional	This data element can be used in the body of the Consent Request Message for retrieving account access consent from this payment account, cp. Section 6.3.1.1.
bban	BBAN	Optional	This data element can be used in the body of the Consent Request Message for retrieving account access consent from this account, cp. Section 6.3.1.1. This data elements is used for payment accounts which have no IBAN.
msisdn	Max35Text	optional	An alias to access a payment account via a registered mobile phone number. This alias might be needed e.g. in the payment initiation service, cp. Section 5.3.1. The support of this alias must be explicitly documented by the ASPSP for the corresponding API Calls.
currency	Currency Code	Mandatory	Account currency
ownerName	Max140Text	Optional	<p>Name of the legal account owner. If there is more than one owner, then e.g. two names might be noted here.</p> <p>For a corporate account, the corporate name is used for this attribute.</p> <p>Even if supported by the ASPSP, the provision of this field might depend on the fact whether an explicit consent to this specific additional account information has been given by the PSU.</p>
ownerNames	Array of Account Owner	Optional	List of owner names.



<b>Attribute</b>	<b>Type</b>	<b>Condition</b>	<b>Description</b>
psuName	Max140Text	Optional	Name of the PSU <sup>17</sup>  In case of a corporate account, this might be the person acting on behalf of the corporate.
name	Max70Text	Optional	Name of the account, as assigned by the ASPSP, in agreement with the account owner in order to provide an additional means of identification of the account.
displayName	Max70Text	Optional	Name of the account as defined by the PSU within online channels.
product	Max35Text	Optional	Product Name of the Bank for this account, proprietary definition
cashAccountType	Cash Account Type	Optional	ExternalCashAccountType1Code from ISO 20022
status	String	Optional	Account status. The value is one of the following: <ul style="list-style-type: none"><li>• "enabled": account is available</li><li>• "deleted": account is terminated</li><li>• "blocked": account is blocked e.g. for legal reasons</li></ul> If this field is not used, than the account is available in the sense of this specification.
bic	BICFI	Optional	The BIC associated to the account.
linkedAccounts	Max70 Text	Optional	This data attribute is a field, where an ASPSP can name a cash account associated to pending card transactions.
usage	Max4 Text	Optional	Specifies the usage of the account

<sup>17</sup> Usage is following the mandate resulting from EBA Q&A 2020\_5165.

<b>Attribute</b>	<b>Type</b>	<b>Condition</b>	<b>Description</b>
			<ul style="list-style-type: none"> <li>- PRIV: private personal account</li> <li>- ORGA: professional account</li> </ul>
details	Max500 Text	Optional	<p>Specifications that might be provided by the ASPSP</p> <ul style="list-style-type: none"> <li>- characteristics of the account</li> <li>- characteristics of the relevant card</li> </ul>
balances	Array of Balances	Conditional	
_links	Links	Optional	<p>Links to the account, which can be directly used for retrieving account information from this dedicated account.</p> <p>Links to "balances" and/or "transactions"</p> <p>These links are only supported, when the corresponding consent has been already granted.</p>

#### 14.21 Card Account Details

<b>Attribute</b>	<b>Type</b>	<b>Condition</b>	<b>Description</b>
resourceId	String	Conditional	This is the data element to be used in the path when retrieving data from a dedicated account, cp. Section 6.6.2, Section 6.6.3 or 6.6.4 below. This shall be filled, if addressable resource are created by the ASPSP on the /card-accounts endpoint.
maskedPan	Max35Text	Mandatory	Primary Account Number (PAN) of the main card in masked form. This data element can be used in the body of the Consent Request Message for retrieving

<b>Attribute</b>	<b>Type</b>	<b>Condition</b>	<b>Description</b>
			account access consent from this card, cp. Section 6.3.1.1.
currency	Currency Code	Mandatory	Account currency
ownerName	Max140Text	Optional	<p>Name of the legal account owner. If there is more than one owner, then e.g. two names might be noted here.</p> <p>For a corporate account, the corporate name is used for this attribute.</p> <p>Even if supported by the ASPSP, the provision of this field might depend on the fact whether an explicit consent to this specific additional account information has been given by the PSU.</p>
name	Max70Text	Optional	Name of the account, as assigned by the ASPSP, in agreement with the account owner in order to provide an additional means of identification of the account.
displayName	Max70Text	Optional	Name of the account as defined by the PSU within online channels.
product	Max35Text	Optional	Product Name of the Bank for this account, proprietary definition
debitAccounting	Boolean	Optional	<p>If true, the amounts of debits on the reports are quoted positive with the related consequence for balances.</p> <p>If false, the amount of debits on the reports are quoted negative.</p>



<b>Attribute</b>	<b>Type</b>	<b>Condition</b>	<b>Description</b>
status	String	Optional	<p>Account status. The value is one of the following:</p> <ul style="list-style-type: none"> <li>• "enabled": account is available</li> <li>• "deleted": account is terminated</li> <li>• "blocked": account is blocked e.g. for legal reasons</li> </ul> <p>If this field is not used, than the account is available in the sense of this specification.</p>
usage	Max140 Text	Optional	<p>Specifies the usage of the account</p> <ul style="list-style-type: none"> <li>- PRIV: private personal account</li> <li>- ORGA: professional account</li> </ul>
details	Max1000 Text	Optional	<p>Specifications that might be provided by the ASPSP</p> <ul style="list-style-type: none"> <li>- characteristics of the account</li> <li>- characteristics of the relevant card</li> </ul>
creditLimit	Amount	Optional	Defines the credit limit of the PSU aggregated for all cards related to this card account in total.
balances	Array of Balances	Optional	The specific card account balances associated to this card accounts.
_links	Links	Optional	<p>Links to the cardAccount, which can be directly used for retrieving account information from this dedicated account.</p> <p>Links to "balances" and/or "cardTransactions"</p> <p>These links are only supported, when the corresponding consent has been already granted.</p>

## 14.22 Balance Type

The following balance types are excluding credit limits unless the creditLimitIncluded element is present and equals true in the corresponding balance element.

**Remark:** This definition is following ISO20022 logic for defining balance types.

Type	Description
closingBooked	<p>Balance of the account at the end of the pre-agreed account reporting period. It is the sum of the opening booked balance at the beginning of the period and all entries booked to the account during the pre-agreed account reporting period.</p> <p>For card-accounts, this is composed of</p> <ul style="list-style-type: none"> <li>• invoiced, but not yet paid entries</li> </ul>
expected	<p>Balance composed of booked entries and pending items known at the time of calculation, which projects the end of day balance if everything is booked on the account and no other entry is posted.</p> <p>For card accounts, this is composed of</p> <ul style="list-style-type: none"> <li>• invoiced, but not yet paid entries,</li> <li>• not yet invoiced but already booked entries and</li> <li>• pending items (not yet booked)</li> </ul>
openingBooked	<p>Book balance of the account at the beginning of the account reporting period. It always equals the closing book balance from the previous report.</p>
interimAvailable	<p>Available balance calculated in the course of the account 'servicer's business day, at the time specified, and subject to further changes during the business day. The interim balance is calculated on the basis of booked credit and debit items during the calculation time/period specified.</p> <p>For card-accounts, this is composed of</p> <ul style="list-style-type: none"> <li>• invoiced, but not yet paid entries,</li> <li>• not yet invoiced but already booked entries</li> </ul>
interimBooked	<p>Balance calculated in the course of the account servicer's business day, at the time specified, and subject to further changes during the business</p>

Type	Description
	day. The interim balance is calculated on the basis of booked credit and debit items during the calculation time/period specified.
forwardAvailable	Forward available balance of money that is at the disposal of the account owner on the date specified.
nonInvoiced	Only for card accounts, to be defined yet.

#### 14.23 Balance

Attribute	Type	Condition	Description
balanceAmount	Amount	Mandatory	
balanceType	Balance Type	Mandatory	
creditLimitIncluded	Boolean	Optional	A flag indicating if the credit limit of the corresponding account is included in the calculation of the balance, where applicable.
lastChangeDateTime	ISODateTime	Optional	This data element might be used to indicate e.g. with the expected or booked balance that no action is known on the account, which is not yet booked.
referenceDate	ISODate	Optional	indicates the date of the balance
lastCommitted Transaction	Max35Text	Optional	entryReference of the last committed transaction to support the TPP in identifying whether all PSU transactions are already known.

## 14.24 Account Report

Attribute	Type	Condition	Description
booked	Array of transactions	Conditional	Shall be contained if bookingStatus parameter is set to "booked", "both" or "all".
pending	Array of transactions	Optional	Not contained if the bookingStatus parameter is set to "booked" or "information".
information	Array of transactions	Optional	Only contained if the bookingStatus is set to "information" or "all" and if supported by ASPSP.
_links	Links	Mandatory	The following links might be used within this context: <ul style="list-style-type: none"> <li>• account (mandatory)</li> <li>• first (optional)</li> <li>• next (optional)</li> <li>• previous (optional)</li> <li>• last (optional)</li> </ul>

## 14.25 Transactions

Attribute	Type	Condition	Description
transactionId	String	Optional	Can be used as access-ID in the API, where more details on an transaction is offered. If this data attribute is provided this shows that the AIS can get access on more details about this transaction using the GET Transaction Details Request as defined in Section 6.5.5
entryReference	Max35Text	Optional	Is the identification of the transaction as used e.g. for reference for deltafunction on application level. The same identification as for example used within camt.05x messages.

Attribute	Type	Condition	Description
batchIndicator	Boolean	Optional	If this indicator equals true, then the related entry is a batch entry.
batchNumberOfTransactions	Integer	Conditional	Shall be used if and only if the batchIndicator is contained and equals true.
endToEndId	Max35Text	Optional	Unique end to end identity.
mandateId	Max35Text	Optional	Identification of Mandates, e.g. a SEPA Mandate ID
checkId	Max35Text	Optional	Identification of a Cheque
creditorId	Max35Text	Optional	Identification of Creditors, e.g. a SEPA Creditor ID
bookingDate	ISODate	Optional	The Date when an entry is posted to an account on the ASPSPs books.
valueDate	ISODate	Optional	Date at which assets become available to the account owner in case of a credit entry, or cease to be available to the account owner in case of a debit entry.  Usage: If entry status is pending and value date is present, then the value date refers to an expected/requested value date.
transactionAmount	Amount	Mandatory	The amount of the transaction or batch as billed to the account.
currencyExchange	Array of Report Exchange Rate	Optional	
creditorName	Max70Text	Optional	Name of the creditor if a "Debited" transaction
creditor Account	Account Reference	Conditional	

Attribute	Type	Condition	Description
creditorAgent	BICFI	Optional	
ultimate Creditor	Max70Text	Optional	
debtorName	Max70Text	Optional	Name of the debtor if a "Credited" transaction
debtorAccount	Account Reference	Conditional	
debtorAgent	BICFI	Optional	
ultimateDebtor	Max70Text	Optional	
remittance Information Unstructured	Max140Text	Optional	
remittance Information Unstructured Array	Array of Max140Text	Optional	<p><b>Remark for Future:</b></p> <p>In version 2.0 these two unstructured remittance fields might be merged.</p>
remittance Information Structured	Max140Text	Optional	<p>Reference as contained in the structured remittance reference structure (without the surrounding XML structure).</p> <p><b>Remark For Future:</b> This field will be re-typed in a future version of the interface to the structured data type Remittance or might be omitted. For migration reasons, this is not supported in version 1.3.x.</p>
remittance Information Structured Array	Array of Remittance	Optional	<p><b>NOTE:</b></p> <p>More details about the Remittance Data Type will be published in an Errata in due course.</p> <p>For usage of the fields e.g. for domestic elements, Berlin Group should be contacted. This would enable to publish</p>

Attribute	Type	Condition	Description
			usage of structured remittance information in the domestic payment documentation, cp. [XS2A-DP].
entryDetails	Array of Entry Details	Optional	Might be used by the ASPSP to transport details about transactions within a batch.
additionalInformation	Max500Text	Optional	Might be used by the ASPSP to transport additional transaction related information to the PSU
additionalInformation Structured	Structured Additional Information	Conditional	Is used if and only if the bookingStatus entry equals "information". Every active standing order related to the dedicated payment account result into one entry.
purposeCode	Purpose Code	Optional	
bank TransactionCode	Bank Transaction Code	Optional	<p>Bank transaction code as used by the ASPSP and using the sub elements of this structured code defined by ISO20022.</p> <p>For standing order reports the following codes are applicable:</p> <ul style="list-style-type: none"> <li>"PMNT-ICDT-STDO" for credit transfers,</li> <li>"PMNT-IRCT-STDO" for instant credit transfers</li> <li>"PMNT-ICDT-XBST" for cross-border credit transfers</li> <li>"PMNT-IRCT-XBST" for cross-border real time credit transfers and</li> <li>"PMNT-MCOP-OTHR" for specific standing orders which have a dynamical amount to move left funds e.g. on month end to a saving account</li> </ul>



Attribute	Type	Condition	Description
proprietaryBankTransactionCode	Max35Text	Optional	proprietary bank transaction code as used within a community or within an ASPSP e.g. for MT94x based transaction reports
balanceAfterTransaction	Balance	Optional	This is the balance after this transaction. Recommended balance type is interimBooked.
_links	Links	Optional	The following links could be used here: transactionDetails for retrieving details of a transaction.

## 14.26 Entry Details

This data type describe entry details of a batch booking entry. The details are restricted to data attributes relevant in this case.

Attribute	Type	Condition	Description
endToEndId	Max35Text	Optional	Unique end to end identifier
mandateId	Max35Text	Optional	Identification of Mandates, e.g. a SEPA Mandate ID
checkId	Max35Text	Optional	Identification of a Cheque
creditorId	Max35Text	Optional	Identification of Creditors, e.g. a SEPA Creditor ID
transactionAmount	Amount	Mandatory	The amount of the transaction as billed to the account.
currencyExchange	Array of Report Exchange Rate	Optional	
creditorName	Max70Text	Optional	Name of the creditor if a "Debited" transaction

Attribute	Type	Condition	Description
creditorAccount	Account Reference	Conditional	
creditorAgent	BICFI	Optional	
ultimateCreditor	Max70Text	Optional	
debtorName	Max70Text	Optional	Name of the debtor if a "Credited" transaction
debtorAccount	Account Reference	Conditional	
debtorAgent	BICFI	Optional	
ultimateDebtor	Max70Text	Optional	
remittanceInformationUnstructured	Max140Text	Optional	
remittanceInformationUnstructuredArray	Array of Max140Text	Optional	<p><b>Remark for Future:</b></p> <p>In version 2.0 these two unstructured remittance fields might be merged.</p>
remittanceInformationStructured	Max140Text	Optional	<p>Reference as contained in the structured remittance reference structure (without the surrounding XML structure).</p> <p><b>Remark For Future:</b> This field will be re-typed in a future version of the interface to the structured data type Remittance or might be omitted. For migration reasons, this is not supported in version 1.3.x.</p>
remittanceInformationStructuredArray	Array of Remittance	Optional	<p><b>NOTE:</b></p> <p>More details about the Remittance Data Type will be published in an Errata in due course.</p>

Attribute	Type	Condition	Description
			For usage of the fields e.g. for domestic elements, Berlin Group should be contacted. This would enable to publish usage of structured remittance information in the domestic payment documentation, cp. [XS2A-DP].
purposeCode	Purpose Code	Optional	

## 14.27 Structured Additional Information

Attribute	Type	Condition	Description
standingOrderDetails	Standing Order Details	Mandatory	Details of underlying standing orders.

## 14.28 Standing Order Details

Attribute	Type	Condition	Description
startDate	ISODate	Mandatory	The first applicable day of execution starting from this date the first payment was/will be executed.
endDate	ISODate	Optional	The last applicable day of execution If not given, it is an infinite standing order.
executionRule	String	Optional	"following" or "preceding" supported as values. This data attribute defines the behavior when a transaction date resulting from a standing order falls on a weekend or bank holiday. The payment is then executed either the "preceding" or "following" working day.
withinAMonthFlag	Boolean	Optional	This element is only used in case of frequency equals "Monthly".

Attribute	Type	Condition	Description
			<p>If this element equals false it has no effect. If this element equals true, then the execution rule is overruled if the day of execution would fall into a different month using the execution rule.</p> <p><b>Example:</b> executionRule equals "preceding", dayOfExecution equals "02" and the second of a month is a Sunday. In this case, the transaction date would be on the last day of the month before. This would be overruled if withinAMonthFlag equals true and the payment is processed on Monday the third of the Month.</p> <p><b>Remark:</b> This attribute is rarely supported in the market.</p>
frequency	Frequency Code	Mandatory	The frequency of the recurring payment resulting from this standing order.
monthsOfExecution	Array of Max2Text	Conditional	<p>The format is following the regular expression \d{1,2}. The array is restricted to 11 entries. The values contained in the array entries shall all be different and the maximum value of one entry is 12.</p> <p>This attribute is contained if and only if the frequency equals "MonthlyVariable".</p> <p>Example: An execution on January, April and October each year is addressed by ["1", "4", "10"].</p>
multiplicator	Numerical	Optional	<p>This is multiplying the given frequency resulting the exact frequency, e.g.</p> <p>Frequency=weekly and multiplicator=3 means every 3 weeks.</p> <p><b>Remark:</b> This attribute is rarely supported in the market.</p>
dayOfExecution	Max2Text	Optional	"31" is ultimo.

Attribute	Type	Condition	Description
			<p>The format is following the regular expression \d{1,2}.</p> <p>Example: The first day is addressed by "1".</p> <p>The date is referring to the time zone of the ASPSP.</p>
limitAmount	Amount	Conditional	<p>limitAmount</p> <p>Amount limit for fund skimming, e.g. skim all funds above this limit to savings account, i.e. typically a specific periodic payments with fixed remaining amount rather than fixed transaction amount. Amount may be zero as well as below zero, i.e. negative.</p> <p>Constraints: transactionAmount needs to be zero and bankTransactionCode needs to specify PMNT-MCOP-OTHR for fund skimming</p>

#### 14.29 Card Account Report

Attribute	Type	Condition	Description
booked	Array of Card Transactions	Conditional	Shall be contained if bookingStatus parameter is set to "booked" or "both".
pending	Array of Card Transactions	Optional	Not contained if the bookingStatus parameter is set to "booked".
_links	Links	Mandatory	<p>The following links might be used within this context:</p> <ul style="list-style-type: none"> <li>• cardAccount (mandatory when providing transaction reports on card reconciliation)</li> </ul>

Attribute	Type	Condition	Description
			<p>accounts under /card-accounts)</p> <ul style="list-style-type: none"> <li>• card (mandatory when providing transaction reports on single card entry level under /cards)first (optional)</li> <li>• next (optional)</li> <li>• previous (optional)</li> <li>• last (optional)</li> </ul>

## 14.30 Card Transactions

Attribute	Type	Condition	Description
cardTransactionId	Max35Text	Optional	Unique end to end identity.
terminalId	Max35Text	Optional	Identification of the Terminal, where the card has been used.
transactionDate	ISODate	Optional	date of the actual card transaction
acceptorTransaction DateTime	ISODate Time	Optional	Timestamp of the actual card transaction within the acceptance system
bookingDate	ISODate	Optional	booking date of the related booking on the card account
valueDate	ISODate	Optional	<p>Date at which assets become available to the account owner in case of a credit entry, or cease to be available to the account owner in case of a debit entry.</p> <p>For card transactions this is the payment due date of related booked transactions of a card.</p>

<b>Attribute</b>	<b>Type</b>	<b>Condition</b>	<b>Description</b>
transactionAmount	Amount	Mandatory	The amount of the transaction as billed to the card account.
grandTotalAmount	Amount	Optional	Total amount of the instalment including charges, insurance and taxes in addition to the funded amount.
currencyExchange	Array of Report Exchange Rate	Optional	For card accounts, this often is restricted by the ASPSP to use only one exchange rate.
originalAmount	Amount	Optional	Original amount of the transaction at the Point of Interaction in original currency
markupFee	Amount	Optional	Any fee related to the transaction in billing currency.
markupFeePercentage	String	Optional	Percentage of the involved transaction fee in relation to the billing amount, e.g. "0.3" for 0,3%
cardAcceptorId	Max35Text	Optional	Identification of the Card Acceptor (e.g. merchant) as given in the related card transaction.
cardAcceptorName	Max70Text	Optional	Name of the Card Acceptor as given in the related card transaction.
cardAcceptorAddress	Address	Optional	Address of the Card Acceptor as given in the related card transaction.
cardAcceptorPhone	Phone Number	Optional	Merchant phone number
merchantCategoryCode	Merchant Category Code	Optional	Merchant Category Code of the Card Acceptor as given in the related card transaction.
maskedPAN	Max35Text	Optional	The masked PAN of the card used in the transaction.

Attribute	Type	Condition	Description
transactionDetails	Max1000Text	Optional	Additional details given for the related card transactions.
invoiced	Boolean	Optional	Flag indicating whether the underlying card transaction is already invoiced.
proprietaryBank TransactionCode	Max35Text	Optional	proprietary bank transaction code as used within a community or within an ASPSP e.g. for MT94x based transaction reports

### 14.31 Report Exchange Rate

Attribute	Type	Condition	Description
sourceCurrency	Currency Code	Mandatory	Currency from which an amount is to be converted in a currency conversion.
exchangeRate	String	Mandatory	Factor used to convert an amount from one currency into another. This reflects the price at which one currency was bought with another currency.
unitCurrency	Currency Code	Mandatory	Currency in which the rate of exchange is expressed in a currency exchange. In the example 1EUR = xxxCUR, the unit currency is EUR.
targetCurrency	Currency Code	Mandatory	Currency into which an amount is to be converted in a currency conversion.
quotationDate	ISODate	Mandatory	Date at which an exchange rate is quoted.
contractIdentification	Max35Text	Optional	Unique identification to unambiguously identify the foreign exchange contract.

### 14.32 Payment Exchange Rate

Attribute	Type	Condition	Description
unitCurrency	Currency Code	Optional	Currency in which the rate of exchange is expressed in a currency exchange. In the example 1EUR = xxxCUR, the unit currency is EUR.
exchangeRate	String	Optional	Factor used to convert an amount from one currency into another. This reflects the price at which one currency was bought with another currency.
contractIdentification	Max35Text	Optional	Unique identification to unambiguously identify the foreign exchange contract.
rateType	Exchange Rate Type Code	Optional	Specifies the type used to complete the currency exchange.  Only SPOT, SALE and AGRD is allowed.

### 14.33 Account Owner

Attribute	Type	Condition	Description
name	Max70Text	Mandatory	Account owner name
role	Max35Text	Optional	The following proprietary codes are used:  "owner", "legalRepresentative", "authorisedUser"

### 14.34 Geo Location

Format using [RFC2426], i.e. GEO:<latitude>;<longitude >.

### 14.35 Frequency Code

The following codes from the "EventFrequency7Code" of ISO 20022 are supported:

- Daily
- Weekly
- EveryTwoWeeks

- Monthly
- EveryTwoMonths
- Quarterly
- SemiAnnual
- Annual
- MonthlyVariable

**RFU:** It needs to be checked for a later version of these Implementation Guidelines whether these codes should be in lowerCamelCase.

#### 14.36 Charge Bearer

Type	Description
DEBT	All transaction charges are to be borne by the debtor.
CRED	All transaction charges are to be borne by the creditor.
SHAR	In a credit transfer context, means that transaction charges on the sender side are to be borne by the debtor, transaction charges on the receiver side are to be borne by the creditor. In a direct debit context, means that transaction charges on the sender side are to be borne by the creditor, transaction charges on the receiver side are to be borne by the debtor.
SLEV	Charges are to be applied following the rules agreed in the service level and/or scheme.

This is following ChargeBearerType1Code from ISO20022.

#### 14.37 Other ISO-related basic Types

The following codes and definitions are used from ISO 20022

- **Purpose Code:** ExternalPurpose1Code
- **Category Purpose Code:** ExternalCategoryPurpose1Code
- **Cash Account Type:** ExternalCashAccountType1Code
- **Bank Transaction Code:** ExternalBankTransactionDomain1Code
- **BICFI:** BICFIIdentifier
- **Exchange Rate Type Code:** ExchangeRateType1Code

- **Group Status:** ExternalPaymentGroupStatus1Code
- **IBAN:** IBAN2007Identifier  
Pattern: [A-Z]{2}[0-9]{2}[A-Z0-9]{1-30}
- **BBAN:** BBANIdentifier
- **Phone Number:** PhoneNumber
- **Merchant Category Code:** Category code conform to ISO 18245
- **Service Level Code:** ExternalServiceLevel1Code
- **Status Reason Code:** ExternalStatusReason1Code

The following code is a concatenated code from ISO20022

- **BankTransactionCode:** This code type is concatenating the three ISO20022 Codes Domain Code, Family Code and SubFamily Code by hyphens, resulting in "DomainCode"-“FamilyCode”-“SubFamilyCode”.

**Example:** PMNT-RCDT-ESCT defining a transaction assigned to the PayMeNT Domain (PMNT), belonging to the family of ReceivedCreDitTransfer (RCDT) that facilitated the EuropeanSEPACreditTransfer (ESCT)

For all codes used in JSON structures, not the abbreviation defined for XML encoding, but the name of the code is used as value.

The following Codes are used from other ISO standards:

- **Currency Code:** Codes following ISO 4217 Alpha 3
- **Country Code:** Two characters as defined by ISO 3166

Further basic ISO data types:

- **ISODATETIME:** A particular point in the progression of time defined by a mandatory date and a mandatory time component, expressed in either UTC time format (YYYY-MM-DDThh:mm:ss.sssZ), local time with UTC offset format (YYYY-MM-DDThh:mm:ss.sss+-hh:mm), or local time format (YYYY-MM-DDThh:mm:ss.sss). These representations are defined in "XML Schema Part 2: Datatypes Second Edition - W3C Recommendation 28 October 2004" which is aligned with ISO 8601.

**Strong Recommendation:** Only use UTC or UTC offset format.

- **ISODATE:** A particular point in the progression of time in a calendar year expressed in the YYYY-MM-DD format.





## 15 References

- [XS2A-OR] NextGenPSD2 XS2A Framework, Operational Rules, The Berlin Group Joint Initiative on a PSD2 Compliant XS2A Interface, version 1.3, published 21 December 2018
- [XS2A-DP] NextGenPSD2 XS2A Framework, Domestic Payment Definitions, The Berlin Group Joint Initiative on a PSD2 Compliant XS2A Interface, current version
- [XS2A-COFC] NextGenPSD2 XS2A Framework, Extended Services, Confirmation of Funds Consent Service, Version 2.0, 01 March 2019
- [XS2A-RSNS] NextGenPSD2 XS2A Framework, Extended Services, Resource Status Notification Service, Version 1.0, 01 March 2019
- [XS2A-SecB] NextGenPSD2 XS2A Framework, Security Bulletin, Version 1.1, 30 October 2020
- [EBA-OP2] Opinion of the European Banking Authority on obstacles under Article 32(3) of the RTS on SCA and CSC, EBA/OP/2020/10, published 4 June 2020
- [EBA-RTS] Commission Delegated Regulation (EU) 2018/389 of 27 November 2017 supplementing Directive 2015/2366 of the European Parliament and of the Council with regard to Regulatory Technical Standards for Strong Customer Authentication and Common and Secure Open Standards of Communication, C(2017) 7782 final, published 13 March 2018
- [EBA-FR] Final Report, Draft Regulatory Technical Standards, amending Commission Delegated Regulation (EU) 2018/389 supplementing Directive (EU) 2015/2366 of the European Parliament and of the Council with regard to regulatory technical standards for strong customer authentication and common and secure open standards of communication, published 5 April 2022
- [eIDAS] Regulation (EU) No 910/2014 of the European Parliament and of the Council on Electronic Identification and Trust Services for Electronic Transactions in the Internal Market, 23 July 2014, published 28 August 2014
- [ETSI PSD2] ETSI TS 119 495 V1.1.2; Electronic Signatures and Infrastructures (ESI); Sector Specific Requirements; Qualified Certificate Profiles and TSP Policy Requirements under the payment services Directive (EU) 2015/2366
- [PSD2] Directive (EU) 2015/2366 of the European Parliament and of the Council on payment services in the internal market, published 23 December 2015
- [signHTTP] Signing HTTP messages, Network Working Group, Internet Draft version 10, <https://datatracker.ietf.org/doc/draft-cavage-http-signatures/>



- [HAL] Kelley, M., "HAL - Hypertext Application Language", 2013-09-18, [http://stateless.co/hal\\_specification.html](http://stateless.co/hal_specification.html)
- [FAPI-CBPIA] OpenID Foundation, Financial-grade API (FAPI) Working Group, Cross-Browser Payment Initiation Attack, https://bitbucket.org/openid/fapi/src/master/TR-Cross\_browser\_payment\_initiation\_attack.md, 3.01.2019
- [OA-SecTop] OAuth 2.0 Security Best Current Practice draft-ietf-oauth-security-topics-13, Lodderstedt et al., 8 July 2019, <https://tools.ietf.org/html/draft-ietf-oauth-security-topics-13>
- [RFC2426] Dawson, F. and T. Howes, T., "vCard MIME Directory Profile", September 1998, <https://tools.ietf.org/html/rfc2426>
- [RFC3230] Mogul, J. and A. Van Hoff, "Instance Digests in HTTP", RFC 3230, DOI 10.17487/RFC3230, January 2002, <https://www.rfc-editor.org/info/rfc3230>
- [RFC3986] [T. Berners-Lee, R. Fielding and L. Masinter, "Uniform Resource Identifier \(URI\): Generic Syntax", RFC 3986, January 2005, https://tools.ietf.org/html/rfc3986](#)
- [RFC4648] Josefsson, S., "The Base16, Base32, and Base64 Data Encodings", October 2006, <https://tools.ietf.org/html/rfc4648>
- [RFC5843] Bryan, A, "Additional Hash Algorithms for HTTP Instance Digests", RFC 5843, DOI 10.17487/RFC5843, April 2010, <https://www.rfc-editor.org/info/rfc5843>
- [RFC6749] Hardt, D., "The OAuth 2.0 Authorization Framework", October 2012, <https://tools.ietf.org/html/rfc6749>
- [RFC7231] [R. Fielding, J. Reschke, Hypertext Transfer Protocol \(HTTP/1.1\): Semantics and Content](#)
- [RFC7807] M. Nottingham, Akamai, E. Wilde, „Problem Details for HTTP APIs“, March 2016, <https://tools.ietf.org/html/rfc7807>
- [RFC 8414] [M. Jones, N. Sakimura, J. Bradley; "OAuth 2.0 Authorization Server Metadata": June 2018, https://www.rfc-editor.org/rfc/rfc8414.html](#)

