Íslenskir staðlar

ÍST TS 311:2021

Gildistaka: 2021-03-15

ICS. 3.060

Tækniforskrift - Yfirlit debet og kreditkorta

Technical specification - Debit and credit cards details and statements

Íslenskir staðlar

Staðfest af Staðlaráði Íslands

ÍST TS 311:2021

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1. edition

Foreword

This IST Technical Specification was developed in accordance with "ÍST Reglur um tækniforskriftir, tækniskýrslur og vinnustofusamþykktir" (*e.* IST rules on Technical Specifications, Technical Reports and Workshop Agreements). The TS (Technical specification) was prepared by the technical committee TN-FMÞ within FUT (Sector committee for ICT standardisation) following a public call for participation within TN-FMÞ. Committee draft was sent to TN-FMÞ on the 2020-12-08 and approved by correspondence on the 2020-12-22.

The ÍST – Technical Specification (ÍST TS) was mainly funded by Íslandsbanki, Arion Banki and Landsbankinn and as well by Alskil hf, Eignaumsjón hf, Payday ehf, Wise lausnir ehf and Seðlabanki Íslands.

This ÍST TS is based on the results of the work of workgroup TN-FMÞ-VH-1 Business claims.

The text of ÍST TS-311 was based on the work of following specialists working in TN-FMÞ-VH1 in cooperation with the consultant Guðmundur Jón Halldórsson.

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The text of ÍST TS-311 was submitted to IST for publication on 2021-01-15.

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Introduction

This Technical Specification (TS) is written to present a preferred way to implement debit and credit card details and statements according to the requirements of the Icelandic banks and will extend the European initiative Berlin Group for implementing PSD2 in Icelandic finance and banking transactions.

API interfaces enable accounting systems, payment systems, information systems and other systems to exchange data with the banks without registering in traditional online banking. An example of exchanging data with the banks can be through the accounting systems interface. With a click of a button in the accounting system, exchange of data is performed by the system in background and latest relevant data is shown in the accounting system.

The Icelandic banks together with RB (Clearing House of Iceland), Central Bank of Iceland, software companies, billing companies, fintech companies and other stakeholders within the TN FMÞ at the Icelandic Standards Council have written a standard on how the banks should conduct electronic interconnection in the construction of interfaces APIs. The first version of that standard was published in 2007 and was named IOBWS (Icelandic Online Banking Web Service). Six years later, version 2, IOBWS 2.0 of the standard was published. The work was developed to make corrections and upgrade to business operations that were not foreseen in the earlier standard. This document describes the partial results of the third phase of the third IOBWS project, IOBWS 3.0.

It was decided on a TN-FMÞ meeting to give fintech companies and other stakeholders the ability to get more detailed information about both debit and credit cards. This ability will support requesting information details and statement detail about specific cards and answering questions such as when this card will expire. And even details about the kind of withdrawal were done. For example: payment from a smart device.

This document is based on the results from the working group of the TN-FMÞ, VH-1 Business claims. The following technical specification describes domestic extensions to Berlin-group NextGenPSD2 technical specifications version 1.3.6.

The purpose is to supplement the debit and credit cards in the IOBWS standard to better support the Payment Service Directive 2 (PSD2) by a domestic open banking and thereby enable stakeholders to trust the Icelandic banking environment.

1. Scope

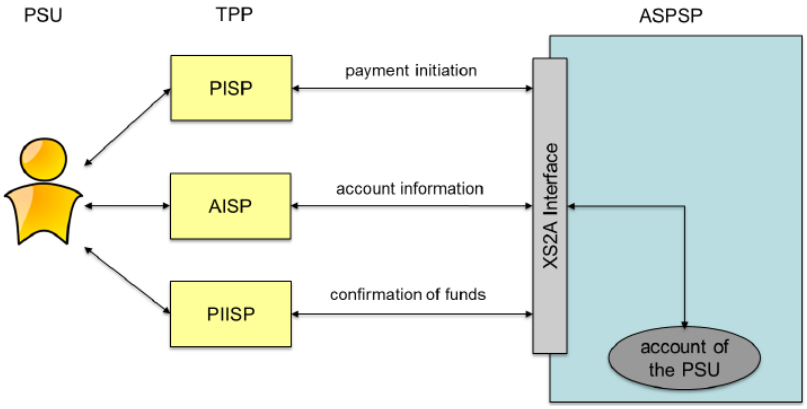
The joint effort to create third version of the IOBWS (Icelandic Online Banking Web Service) is described in ÍST-WA-310. This document describes the debit, credit card and card account product and is a part of the third version of IOBWS that will also support the domestic implementation of the Payment Service Directive (EU 2015/2366, also known as PSD2). In this document, debit and credit cards will be referred to as cards.

This document reflects the agreement made by TN-FMÞ and is based on the analysis of the working group TN-FMÞ-VH1 business claims.

2. Normative references, definitions and symbols

2.1 Definitions

- **Kennitala**: The Icelandic identification number (Icelandic: kennitala, abbreviated kt.) is a unique national identification number used by the Icelandic government to identify individuals and organisations in Iceland.
- **Icelandic IBAN** definition https://en.wikipedia.org/wiki/International_Bank_Account_Number ISO 13616:1997
- **ISO 20022** is an ISO standard for electronic data interchange between financial institutions.
- **eIDAS** – Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC
- **AISP** – Account Information Service Provider – Being an authorised AISP means that business can ask for permission to connect to a bank account and use that bank account information to provide a service.
- **PISP** – Payment Initiation Service Provider – Businesses that are authorised PISP's can ask for permission to connect to a bank account and initiate payments on the customer's behalf, from their bank account.
- **3D** – 3D Secure (3DS) is an additional layer of security for online credit and debit card payments – the most well-known examples being Verified by Visa, Mastercard SecureCode and American Express SafeKey. At the final stage of checkout, it asks the buyer for a password so the bank can authorise the payment.
- **IOBWS 3.0** – This is the acronym of the third version of the Icelandic Open Banking Web Services project and its product.
- **FUT** is the IT sector council at Icelandic standards.
- **TN-FMÞ** - Technical committee on finance services, working under FUT.
- **Berlin group** – The 'Berlin Group' is a pan-European payments interoperability standards and harmonisation initiative with the primary objective of defining open and common scheme- and processor-independent standards in the inter-banking domain between Creditor Bank (Acquirer) and Debtor Bank (Issuer), complementing the work carried out by e.g. the European Payments Council. As such, the Berlin Group has been established as a pure technical standardisation body, focusing on detailed technical and organisational requirements to achieve this primary objective.
- **NextGenPSD2 framework - PSD2** – With [PSD2] the European Union has published a new directive on payment services in the internal market. Among others [PSD2] contains regulations of new services to be operated by so-called Third-Party Payment Service Providers (TPP) on behalf of a Payment Service User (PSU). These new services are:
    - **Payment Initiation Service** (PIS) to be operated by a Payment Initiation Service Provider (PISP) TPP as defined by article 66 of [PSD2]
    - **Account Information Service** (AIS) to be operated by an Account Information Service Provider (AISP) TPP as defined by article 67 of [PSD2], and
    - **Confirmation of the Availability of Funds Service** to be used by Payment Instrument Issuing Service Provider (PIISP) TPP as defined by article 65 of [PSD2].
- **PSU** – Payment Service User. The end-user of payment service.
- **SCA** – Strong Customer Authentication. Defined by the EBA in its RTS on SCA as "an authentication based on the use of two or more elements categorised as knowledge (something only the user knows [for example, a password]), possession (something only the user possesses [for example, a particular cell phone and number]) and inherence (something the user is [or has, for example, a fingerprint or iris pattern]) that are independent, [so] the breach of one does not compromise the others, and is designed in such a way as to protect the confidentiality of the authentication data."
- **Payment service directive** – PSD2 overview.



2.2 Definition of the debit and credit card product

The following elements are used to define the card product. It is important to understand the meaning of each element to see how it fits in the big picture:

The following list contains schema changes:

- cardDetails
  - expDate: Debit or credit card expiration date
  - issueDate: Issuing date of the debit or credit card
  - cardholderName: Cardholder name as displayed on the debit or credit card
  - panId: Reference string of the debit or credit card
  - branch: The bank's branch number, where the debit or credit card was issued.
- cardTransactions
  - posEntryMode: Pos entry mode describes the origin of a debit or credit card transaction. Origin of the transactions possible values are:
    - "UNKNOWN": The origin or the transaction is unknown
    - "MAGIC_STRIP": Magic strip reader
    - "CHIP": Chip reader
    - "TOUCHLESS": Touchless
    - "RECURRING": Recurring
    - "MANUAL": Manual record
    - "MOTO": When the customer gives the debit or credit card PAN over the phone or internet.

The following list contains changes to the request part of methods

- withBalance: The ability to choose if balance of entity is returned. With balance is only used in the context of account and cards.

3. Icelandic domestic adaptions

This chapter concludes the domestic adaptation to the card products and data model changes.

3.1 Card products

The workgroup concluded to define the following debit and credit card product, defined in detail in Annex:

- **Card product:** Card details and transactions for a single card.

3.2 Functional changes & data model changes

The Icelandic adaption to the Berlin Group data model NextGenPSD2 framework is described in the latest version of the document IOBWS3-0.yaml located https://github.com/stadlar/IST-FUT-FMTH/tree/master/Deliverables

4 Presumptions, future work, maintenance

4.1 Presumptions

The Icelandic financial sector wants to have unified way to get debit and credit card details and transactions.

4.2 Future work

- TN-FMÞ has the intention to keep working on developing this document amongst others developed in the IOBWS 3.0 project based on domestic needs and Berlin Group changes of cited documents.
- TN-FMÞ have arranged for that the delivery of the yaml document will in the Github located https://github.com/stadlar/IST-FUT-FMTH/tree/master/Deliverables with the filename IOBWS3-0.yaml for the first version and following described naming convention for future versions.

4.3 Maintenance

As other products of the IOBWS 3.0 project will the maintained by TN-FMÞ.

TN FMÞ agrees that FUTs Github (https://github.com/stadlar/IST-FUT-FMTH/wiki) should be used in this maintenance task and issues shall be raised and processed by TN-FMÞ.

Annex A

The following annex comes from the Berlin group document:

NextGenPSD2 XS2A Framework Implementation Guidelines, Extended Services AIS for Single Cards" version 1.0 and NextGenPSD2 Access to Account Interoperability Framework - Implementation Guidelines V1.3.6 20200203.pdf

It has been modified to fulfil the Icelandic credit and debit card requirements.

A.1. Introduction

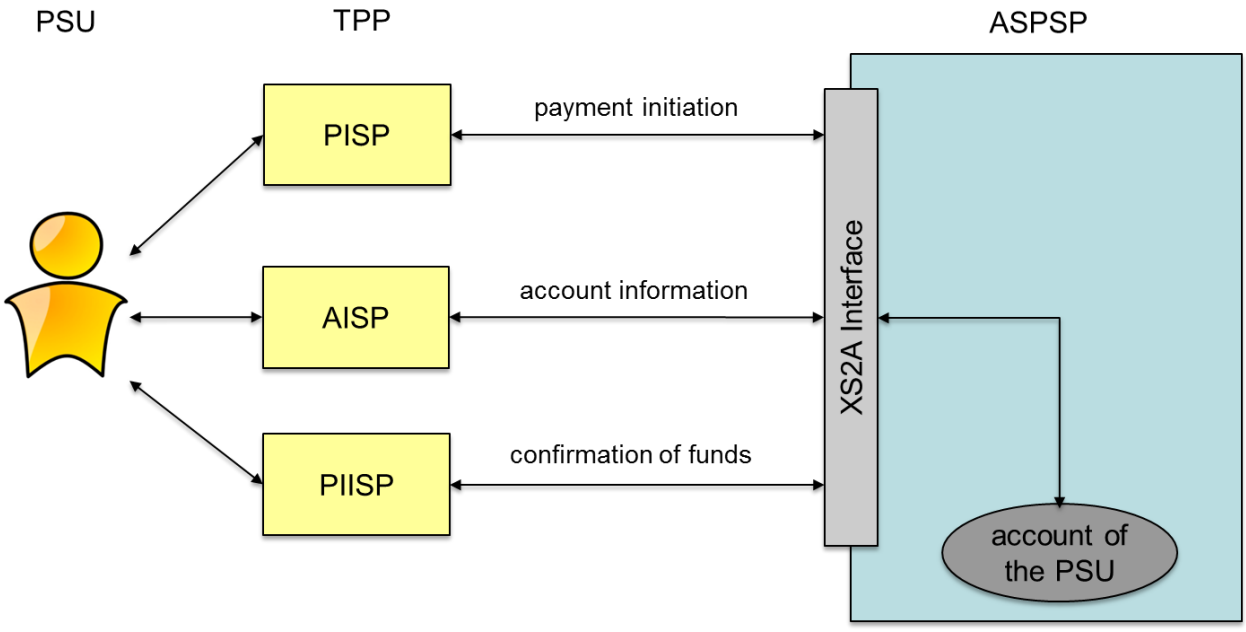
A.1.1 Background

With [PSD2] the European Union has published a new directive on payment services in the internal market. Member States had to adopt this directive into their national law until 13th of January 2018.

Among others [PSD2] contains regulations of new services to be operated by so-called Third-Party Payment Service Providers (TPP) on behalf of a Payment Service User (PSU). These new services are:

- Payment Initiation Service (PIS) to be operated by a Payment Initiation Service Provider (PISP) TPP as defined by article 66 of [PSD2],
- Account Information Service (AIS) to be operated by an Account Information Service Provider (AISP) TPP as defined by article 67 of [PSD2], and
- Confirmation of the Availability of Funds service to be used by Payment Instrument Issuing Service Provider (PIISP) TPP as defined by article 65 of [PSD2].

For operating the new services, a TPP needs to access the account of the PSU which is usually managed by another PSP called the Account Servicing Payment Service Provider (ASPSP). As shown in the following figure, an ASPSP has to provide an interface (called "PSD2 compliant Access to Account Interface" or short "XS2A Interface") to its systems to be used by a TPP for necessary accesses regulated by [PSD2]:



Further requirements on the implementation and usage of this interface are defined by a Regulatory Technical Standard (short RTS) from the European Banking Authority (short EBA), published in the Official Journal of the European Commission.

Specifically, the Account Information Service offers the possibility for a TPP to request Information of so-called "card-accounts", i.e. accounts that are used to reconcile credit card transactions with the PSU. Currently, a card account does not provide further possibility of distinction. If, for example, a card account is identified by a leading PAN P_1 but also covers a secondary PAN P_2, then all requests for information on this card account will always contain information on P_1 and P_2.

In some cases, information provided for one card-account cannot be assigned to one specific PAN by the TPP and / or PSU.

Also, current global consent models cannot be used to restrict access to only accounts of one type (e.g. card-accounts). In addition, the bank offered consent model does currently not support a restriction of the consent request to a type of accounts. That is, if a PSU wants to grant a TPP access to all his card-accounts he might end up granting the TPP access to all his accounts instead.

These two points will be addressed in the following extension of the AIS protocol. For this aim, the term "multi card-account" will be introduced to describe card accounts that might cover more than one PAN. Complementary, a "single card account" will be the term used for a card account covering only one PAN. Note that even a single card account may represent more than one card, e.g. an old physical card and its renewal generally are identified via the same PAN and therefore would be covered by the same single card account.

To achieve these two downward compatible changes will be made to the protocol:

- The response to a request for a card account list will be extended such that an ASPSP can provide single card accounts or multi card accounts and mark single card accounts distinguishable from multi card accounts.
- The request for a consent will be adjusted such that a TPP can specifically request access to only one accountType (e.g. card accounts).

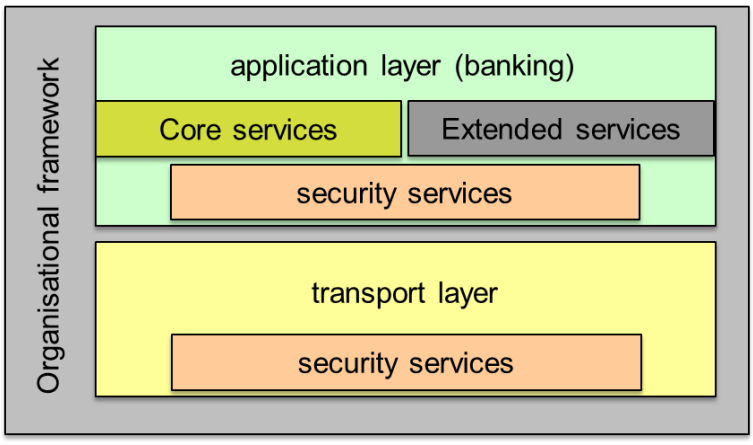
A.1.2 XS2A Interface Specification

This document is an extension of the NextGenPSD2 XS2A Specification which defines a standard for an XS2A Interface and by this reaching interoperability of the interfaces of ASPSPs at least for the core services defined by [PSD2].

The XS2A Interface is designed as a B2B interface between a TPP server and the ASPSP server. For the time being, the protocol defined in this document is a pure client-server protocol, assuming the TPP server being the client, i.e. all API calls are initiated by the TPP. In future steps, this protocol might be extended to a server-server protocol, where also the ASPSP initiates API calls towards the TPP.

The Interoperability Framework defines operational rules, requirements on the data model and a process description in [XS2A-OR].

This document details the standard in defining messages and detailed data structures for **extended services** of the XS2A Interface. For the specification, the two layers shown in the following figure are distinguished:



This document now describes how the existing services for account information can be extended to specifically grant consent only on card accounts and to specifically provide information on card accounts on the level of PANs.

Remark for Future: Please note that the Berlin Group NextGenPSD2 XS2A interface is still under constant development. Technical issues, which are already in discussion within the Berlin Group NextGenPSD2 working structure are mentioned in this document by "Remark for Future" to make the reader aware of upcoming potential changes.

A.2. Character Sets and Notations

For definition on character Sets and Notations as well as for request and response notations refer to Chapter 2 of [XS2A-IG].

A.3. Transport Layer

For details on the transport Layer, please refer to Chapter 3 in [XS2A-IG].

A.4. Application Layer: Guiding Principles

The following extension will define requests for a TPP to get information on one single card. However, in this context "single card" does not necessary refer to only one physical card. Specifically, if a card is renewed and its successor does have the same PAN as the first card, both will be treated as one single card. There is (intentionally) no method to distinguish the two.

To specifically request information on one single card, a new "/cards" endpoint is defined. Access to the "/cards" endpoint works in almost any regard analogously to access to a card accounts endpoint with the exception, that the "/card" endpoint provides information on one single card instead of a card account, that might consist of more than one card.

A.4.1 Signing Messages at Application Layer

The ASPSP may require the TPP to sign request messages. This requirement shall be stated in the ASPSP documentation. The signing requirements are defined in [XS2A-IG]. No specific requirements are defined for the Account Information Services on Single Cards.

A.4.2 API Access Methods

The following table gives an overview on the HTTP access methods supported by the new API endpoint and by resources created through this API.

Endpoints/Resources	Method	Condition	Description
cards	GET	Mandatory	Read all identifiers of the card (usually a credit card), to which an access has been granted to through the /consents endpoint by the PSU. In addition, relevant information about the cards and hyperlinks to corresponding card information resources are provided if a related consent has been already granted. Section A.5.1
cards/{cardid}	GET	Mandatory	Read detailed information about the addressed card. Section A.5.2
cards/{cardid}/balances	GET	Mandatory	Read detailed balance information about the addressed card. Section A.5.3
cards/{card-id}/transactions	GET	Mandatory	Read transaction reports or transaction lists related to a given card. For a given card, additional parameters are e.g. the attributes "dateFrom" and "dateTo". Section A.5.4

card-accounts	GET	Mandatory	Read all identifiers of the card accounts, to which an account access has been granted to through the /consents endpoint by the PSU. In addition, relevant information about the card accounts and hyperlinks to corresponding account information resources are provided if a related consent has been already granted. Section A.6.1
card-accounts/{account-id}	GET	Mandatory	Give detailed information about the addressed card account. Section A.6.2
card-accounts/{account-id}/ balances	GET	Mandatory	Give detailed balance information about the addressed card account. Section A.6.3
card-accounts/{account-id}/ transactions	GET	Mandatory	Read transaction reports or transaction lists related to a given card account. For a given card account, additional parameters are e.g. the attributes "dateFrom" and "dateTo".

A.4.3 Card Specifics in Submission of Consents

As before, specific card reconciliation accounts (called “card accounts” in [XS2A-IG]) can be addressed in a consent request by identifying the card account by its corresponding masked PAN. Please note that the card accounts are providing card information in an accumulated way.

In addition, this specification adds to this consent model, that a masked PAN is addressing a single card.

It is up to the ASPSP if this consent grants access:

- to the single card identified by the masked PAN,
- the card account identified by the masked PAN or
- both,

delivering this information on the related endpoints /card-accounts or /cards. The ASPSP's respective decision must be documented by the ASPSP.

Additionally, a card account or single cards can be addressed by an Account Access Object containing an identifier of the reconciliation account accompanied by the specification of the cashAccountType to Type "CARD" (see Section A.6.3). A consent of this type will grant the respective access to both,

- all cards reconciled through this account and
- the related card account,

if the ASPSP supports the corresponding endpoints at all.

As a third / fourth way to establish a card specific consent, the TPP can request a bank-offered consent or a global consent but restricting the requested access to a certain cashAccountType – e.g. CARD. A consent of this type will grant the respective access to both:

- cards and
- card accounts,

if the ASPSP supports the related endpoints at all.

Examples for Establish Consent Requests

Remark: No specific requirements for responses, for examples for responses cp. Section A.6.3.1 of [XS2A-IG].

Request for a dedicated consent on transactions and balances of a single card

```
POST https://api.openbanking.com/v1/consents
Content-Type:        application/json
X-Request-ID:                  99391c7e-ad88-49ec-a2ad-99ddcb1f7756
PSU-IP-Address:      192.168.8.78
PSU-User-Agent:      Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0)
Gecko/20100101 Firefox/54.0
Date:                Sun, 06 Aug 2017 15:05:37 GMT

{
  "access": {
      "balances": [
          {"maskedPAN": "123456******1234"}, /* balances of a single card
      ],
       "transactions": [
          {"maskedPAN": "123456******1234"}, /* trans. of a single card
      ]
    },
  "recurringIndicator": true,
  "validUntil": "2017-11-01",
  "frequencyPerDay": "4"
}
```

Request for access to all single cards behind a specific reconciliation account

```
POST https://api.openbanking.com/v1/consents
Content-Type:                  application/json
X-Request-ID:                  99391c7e-ad88-49ec-a2ad-99ddcb1f7756
PSU-IP-Address:                192.168.8.78
PSU-User-Agent:      Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0)
Gecko/20100101 Firefox/54.0
Date:                          Sun, 06 Aug 2017 15:05:37 GMT

{
  "access": {
      "balances": [
          {"iban": "DE40100100103307118608"},
```

```
          /* balances of a dedicated payment account
          {"iban": "DE02100100109307118603",
           "cashAccountType": "CARD"
           /* balances of all cards behind this reconciliation account, e.g.            main card and
partner card
          }
      ],
       "transactions": [
          {"iban": "DE02100100109307118603",
           "cashAccountType": "CARD"}
           /* transactions of all cards behind this reconciliation account,
              e.g. main card and partner card
       ]
    },
  "recurringIndicator": true,
  "validUntil": "2017-11-01",
  "frequencyPerDay": "4"
}
```

Request for a bank driven consent, restricted to the related credit cards

```
POST https://api.openbanking.com/v1/consents
Content-Type                    application/json
X-Request-ID                    99391c7e-ad88-49ec-a2ad-99ddcb1f7756
PSU-IP-Address                  192.168.8.78
PSU-User-Agent                   Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0)
Gecko/20100101 Firefox/54.0
Date                            Sun, 06 Aug 2017 15:05:37 GMT

{"access":
    {
        "balances": [],
        "transactions": [],
        "restrictedTo": ["CARD"]
    },
    "recurringIndicator": true,
    "validUntil": "2017-11-01",
    "frequencyPerDay": "4"
}
```

Request for a global consent, restricted to cash account types (ignoring cards)

```
POST https://api.testbank.com/v1/consents
Content-Type         application/json
X-Request-ID         99391c7e-ad88-49ec-a2ad-99ddcb1f7756
PSU-IP-Address       192.168.8.78
PSU-User-Agent       Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0)
Gecko/20100101 Firefox/54.0
```

```
Date                Sun, 06 Aug 2017 15:05:37 GMT


{"access":
    {
        "allPSD2": "allAccounts",
        "restrictedTo": ["CACC"]
    },
    "recurringIndicator": true,
    "validUntil": "2017-11-01",
    "frequencyPerDay": "4"
}
```

Remark: The latter example is relevant only in communities or for ASPSP which are offering the single card endpoint.

Card Specifics in Reading Consents

Additionally, to _links element of type "account" or "cardAccount", the hyperlink section may also contain "card" links to request specific information on single cards.

Multicurrency cards

Some ASPSPs offer credit card products where transactions can be booked in several currencies, typically in local currency and in the related reconciliation currency of the card system (e.g. US Dollar), depending on the usage of the card (e.g. domestic transactions or inter-regional transactions).
In difference to the current account approach, this specification only supports to show the results on addressed multicurrency cards in an aggregated level, ie. the card details will be associated with the “XYZ” currency and balances and transactions will be provided aggregated on one card endpoint in all the related transaction currencies.
For this reason, consent submissions, where card related Account Information Services are requested and where a currency is added to the card account reference will be rejected.

A.4.4 Additional Error Information

No specific addition error information is needed for this extended service.

Status Information

Status Information for the AIS within the Establish Consent Process

No specific status information needed for this extended service.

A.5. Read Card Data Requests

Endpoints are defined for this extended service:

A.5.1 Read Card List

Request

Call

```
GET /v1/cards
```

Reads a list of cards potentially with additional information, e.g. balance information. It is assumed that a consent of the PSU to this access is already given and stored on the ASPSP system. The addressed list of cards depends then on the stored consent addressed by consentId, respectively the OAuth2 access token.

Query Parameters

Attribute	Type	Condition	Description
withBalance	Boolean	Optional	If contained, this function reads the list of accessible payment accounts including the booking balance, if granted by the PSU in the related consent and available by the ASPSP. This parameter might be ignored by the ASPSP.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
PSU-IP-Address	String	Conditional	The forwarded IP Address header field consists of the corresponding HTTP request IP Address field between PSU and TPP. It shall be contained if and only if this request was actively initiated by the PSU.
Consent-ID	String	Mandatory	Identification of the corresponding consent as granted by the PSU.
Authorization	String	Conditional	Is contained only, if an OAuth2 based SCA was performed in the corresponding mandate transaction or if OAuth2 has been used in a pre-step.

Request Body

No request body.

Response

Response Code

HTTP Response Code equals 200.

Response Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.

Response Body

Attribute	Type	Condition	Description
cards	Array of Card Details	Mandatory	Descriptions of the accessible cards.

Remark: The same syntactical structure is used to transport card information as card account information. In difference to the card-accounts context, in some attributes properties of the dedicated card are provided instead of properties of the underlying reconciliation account. This applies for examples to the status attribute.

NOTE: If one of the cards is a multicurrency card, then the account currency equals “XYZ” as for current accounts.

Examples


```
{
  "cards": [
    {
      "resourceId": "4d9a81b3-a47d-4130-8765-a9c0ff861b99",
      "maskedPan": "525412******3241",
      "currency": "EUR",
      "name": "Main",
      "product": "Basic Credit Card",
      "status": "enabled",
      "creditLimit": {"currency": "EUR", "amount": "5000"},
      "balances": [
        {
          "balanceType": "interimBooked",
          "balanceAmount": {"currency": "EUR", "amount": "1390.10"}
        },{
          "balanceType": "interimAvailable",
              “creditLimitIncluded”: true
          "balanceAmount": {"currency": "EUR", "amount": "3609.90"}
        }
      ]
    },
    {
      "resourceId": "4d9a81b3-a47d-4130-8765-a9c0ff861b98",
      "maskedPan": "525412******3242",
      "currency": "EUR",
      "name": "PartnerCard",
      "product": "Basic Credit Card",
      "status": "enabled",
      "creditLimit": {"currency": "EUR", "amount": "5000"},
      "balances": [
        {
```

```
          "balanceType": "interimBooked",
          "balanceAmount": {"currency": "EUR", "amount": "559.10"}
        },{
          "balanceType": "interimAvailable",
              “creditLimitIncluded”: true
          "balanceAmount": {"currency": "EUR", "amount": "4440.90"}
        }
      ]
    }
  ]
}
```


A.5.2 Read Card Details

Request

Call

`GET /v1/cards/{card-id}`

Reads details about a card. It is assumed that a consent of the PSU to this access is already given and stored on the ASPSP system. The addressed details of this account depend then on the stored consent addressed by consentId, respectively the OAuth2 access token. **Path Parameters**

Attribute	Type	Description
card-id	String	This identification is denoting the addressed card. The cardid is retrieved by using a "Read Card List" call. The card-id is the "resourceId" attribute of the card structure. Its value is constant at least throughout the lifecycle of a given consent.

Query Parameters

Attribute	Type	Condition	Description
withBalance	Boolean	Optional	If contained, this function reads the list of accessible payment accounts including the booking balance, if granted by the PSU in the related consent and available by the ASPSP. This parameter might be ignored by the ASPSP.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
PSU-IP-Address	String	Conditional	The forwarded IP Address header field consists of the corresponding HTTP request IP Address field between PSU and TPP. It shall be contained if and only if this request was actively initiated by the PSU.
Consent-ID	String	Mandatory	Identification of the corresponding consent as granted by the PSU.
Authorization	String	Conditional	Is contained only, if an OAuth2 based SCA was performed in the corresponding mandate transaction or if OAuth2 has been used in a pre-step.

Request Body

No request body.

Response

Response Code

HTTP Response Code equals 200.

Response Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.

Response Body

Attribute	Type	Condition	Description
card	Card Details	Mandatory	Description of the addressed card.

Remark: The same syntactical structure is used to transport card information as card account information.

NOTE: If the card is a multicurrency card, then the account currency equals “XYZ” as for current accounts.

Example 1 (standard card)

```
{
  "card":
    {
      "resourceId": "4d9a81b3-a47d-4130-8765-a9c0ff861b99",
      "maskedPan": "525412******3241",
      "currency": "EUR",
      "name": "Main",
      "product": "Basic Credit Card",
      "status": "enabled",
      "creditLimit": {"currency": "EUR", "amount": "5000"},
      "balances": [
        {
          "balanceType": "interimBooked",
          "balanceAmount": {"currency": "EUR", "amount": "1390.10"}
        },{
          "balanceType": "interimAvailable",
              “creditLimitIncluded”: true
          "balanceAmount": {"currency": "EUR", "amount": "3609.90"}
        }
      ],
      "_links": {
        "self": {
          "href": "/v1/cards/4d9a81b3-a47d-4130-8765-a9c0ff861b99"
        },
        "transactions": {
          "href": "/v1/cards/4d9a81b3-a47d-4130-8765a9c0ff861b99/transactions"
        }
      }
    }
}
```

Example 2 (multicurrency card with balances)

```
{
  "card":
    {
      "resourceId": "4d9a81b3-a47d-4130-8765-a9c0ff861b99",
      "maskedPan": "525412******3241",
      "currency": "XXX",
      "name": "Main",
      "product": "Basic Credit Card",
      "status": "enabled",
      "creditLimit": {"currency": "EUR", "amount": "5000"},
      "balances": [
        {
```

```
          "balanceType": "interimBooked",
          "balanceAmount": {"currency": "EUR", "amount": "1390.10"}
        },{
          "balanceType": "interimAvailable",
              “creditLimitIncluded”: true
          "balanceAmount": {"currency": "EUR", "amount": "3155.17"}
        },
        {
          "balanceType": "interimBooked",
          "balanceAmount": {"currency": "USD", "amount": "500.20"}
          /*454,73 EUR equivalent with exchange rate 1,10 USD for 1 Euro*/
        },{
          "balanceType": "interimAvailable",
          "creditLimitIncluded": true
          "balanceAmount": {"currency": "EUR", "amount": "3470.69"}
        } /* equivalent of 3.155.17 Euro*/
      ],
      "_links": {
        "self": {
          "href": "/v1/cards/4d9a81b3-a47d-4130-8765-a9c0ff861b99"
        },
        "transactions": {
          "href": "/v1/cards/4d9a81b3-a47d-4130-8765a9c0ff861b99/transactions"
        }
      }
    }
}
```

A.5.3 Read Card Balances

Request

Call

`GET /v1/cards/{card-id}/balances`

Reads balance data from a given card addressed by "card-id". Please note, that the current credit line of a given card might be tighter than what a response to this request will suggest due to general credit limits on the card account and transactions by other cards to the same card account.

Path Parameters

Attribute	Type	Description
card-id	String	This identification is denoting the addressed card. The cardid is retrieved by using a "Read Card List" call. The card-id is the "resourceId" attribute of the card structure. Its value is constant at least throughout the lifecycle of a given consent.

Query Parameters

Attribute	Type	Condition	Description
withBalance	Boolean	Optional	If contained, this function reads the list of accessible payment accounts including the booking balance, if granted by the PSU in the related consent and available by the ASPSP. This parameter might be ignored by the ASPSP.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
PSU-IP-Address	String	Conditional	The forwarded IP Address header field consists of the corresponding HTTP request IP Address field between PSU and TPP. It shall be contained if and only if this request was actively initiated by the PSU.
Consent-ID	String	Mandatory	Identification of the corresponding consent as granted by the PSU.
Authorization	String	Conditional	Is contained only, if an OAuth2 based SCA was performed in the corresponding mandate transaction or if OAuth2 has been used in a pre-step.

Request Body

No request body.

Response

Response Code

HTTP Response Code equals 200.

Response Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.

Response Body

Attribute	Type	Condition	Description
card	Account Reference	Optional	Identifier of the addressed card.
balances	Array of Balance	Mandatory	

Examples

```
{
  "card": {"maskedPan": "525412******3241"},
  "balances": [
    {
      "balanceType": "intermAvailable",
      "creditLimitIncluded": true,
      "balanceAmount": {"currency": "EUR", "amount": "14355.78"}
    },
    {
      "balanceType": "interimBooked",
      "balanceAmount": {"currency": "EUR", "amount": "4355.78"}
    }
  ]
}
```

A.5.4 Read Card Transaction List

Request

Call

GET /v1/cards /{card-id}/transactions {query-parameters}

Reads account data from a given card addressed by "card-id".

Remark: This card-id can be a tokenized identification due to data protection reason since the path information might be logged on intermediary servers within the ASPSP sphere. This card-id then can be retrieved by the "GET Card List" call, cp. Section 5.1.

Note: The ASPSP might use standard compression methods on application level for the response message as indicated in the content encoding header.

Remark: Please note that the PATH might be already given in detail by the response of the "Read Card List" call within the _links subfield.

Path Parameters

Attribute	Type	Description
card-id	String	This identification is denoting the addressed card. The cardid is retrieved by using a "Read Card List" call. The card-id is the "resourceId" attribute of the card structure. Its value is constant at least throughout the lifecycle of a given consent.

Query Parameters

Attribute	Type	Condition	Description

dateFrom	ISODate	Conditional	Starting date (inclusive the date dateFrom) of the transaction list, mandated if no delta access is required.
dateTo	ISODate	Optional	End date (inclusive the data dateTo) of the transaction list, default is "now" if not given.
bookingStatus	String	Mandatory	Permitted codes are • "booked", • "pending" and • "both" "booked" shall be supported by the ASPSP. To support the "pending" and "both" feature is optional for the ASPSP, Error code if not supported in the online banking frontend.
withBalance	Boolean	Optional	If contained, this function reads the list of accessible payment accounts including the booking balance, if granted by the PSU in the related consent and available by the ASPSP. This parameter might be ignored by the ASPSP.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
PSU-IP-Address	String	Conditional	The forwarded IP Address header field consists of the corresponding HTTP request IP Address field between PSU and TPP. It shall be contained if and only if this request was actively initiated by the PSU.
Consent-ID	String	Mandatory	Identification of the consent for this access as granted by the PSU.
Authorization	String	Conditional	Is contained only, if an OAuth2 based authentication was performed in a pre-step or an OAuth2 based SCA was performed in the related consent authorisation.

Request Body

No request body.

Response

Response Code

HTTP Response Code equals 200.

Response Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.

Response Body

Attribute	Type	Condition	Description
card	Account Reference	Optional	Identifier of the addressed card. **Remark for Future**: Might be mandated in a later version.
cardTransactions	Card Account Report	Optional	JSON based account report including only transactions for the specifically requested card. For more details, see [XS2A-IG].
balances	Array of Balance	Optional	A list of balances regarding this card, which might be restricted to the current balance.
_links	Links	Optional	A list of hyperlinks to be recognised by the TPP. Type of links admitted in this response: "download": a link to a resource, where the transaction report might be downloaded from in case where transaction reports have a huge size.

Example

```
GET https://api.openbanking.is/v1/cards /4d9a81b3-a47d-4130-8765a9c0ff861b99/transactions?dateFrom=2017
-10-01&dateTo= 2017-10-30
Accept: application/json
X-Request-ID:                   99391c7e-ad88-49ec-a2ad-99ddcb1f7721
```

Response (Example 1)

Response in JSON format for an access on a regular account

```
HTTP/1.x 200 Ok
X-Request-ID:                   99391c7e-ad88-49ec-a2ad-99ddcb1f7757
Date:                           Sun, 06 Aug 2017 15:05:47 GMT
Content-Type:                   application/json

{
  "card": {
    "maskedPan": "525412******3241"
  },
  "cardTransactions": {
    "booked": [
      {
        "cardTransactionId": "201710020036959",
        "transactionAmount": {"currency": "EUR", "amount": "256.67"},
        "transactionDate": "2017-10-25",
        "bookingDate": "2017-10-26",
        "originalAmount": {"currency": "SEK", "amount": "2499"},
        "cardAcceptorAddress": {
          "city": "STOCKHOLM",
```

```
          "country": "SE"
        },
        "proprietaryBankTransactionCode": "PURCHASE",
        "invoiced": false,
        "transactionDetails": "WIFIMARKET.SE"
      }, {
        "cardTransactionId": "201710020091863",
        "transactionAmount": {"currency": "EUR", "amount": "10.72"},
        "transactionDate": "2017-10-25",
        "bookingDate": "2017-10-26",
        "originalAmount": {"currency": "SEK", "amount": "99"},
        "cardAcceptorAddress": {
          "city": "STOCKHOLM",
          "country": "SE"
        },
        "proprietaryBankTransactionCode": "PURCHASE",
        "invoiced": false,
        "transactionDetails": "ICA SUPERMARKET SKOGHA"
      }
    ],
    "pending": [
    ],
    "_links": {
      "card": {
        "href": "/v1/cards/4d9a81b3-a47d-4130-8765-a9c0ff861b99"
      }
    }
  }
}
```

A.6 Read Card Account Data Requests

A.6.1 Read Card Account List

Request

Call

```
GET /v1/card-accounts
```

Reads a list of card accounts with additional information, e.g. balance information. It is assumed that a consent of the PSU to this access is already given and stored on the ASPSP system. The addressed list of card accounts depends then on the PSU ID and the stored consent addressed by consentId, respectively the OAuth2 access token.

Query Parameters

Attribute	Type	Condition	Description
withBalance	Boolean	Optional	If contained, this function reads the list of accessible payment accounts including the booking balance, if granted by the PSU in the related consent and available by the ASPSP. This parameter might be ignored by the ASPSP.

.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
PSU-IP-Address	String	Conditional	The forwarded IP Address header field consists of the corresponding HTTP request IP Address field between PSU and TPP. It shall be contained if and only if this request was actively initiated by the PSU.
Consent-ID	String	Mandatory	Identification of the corresponding consent as granted by the PSU.
Authorization	String	Conditional	Is contained only, if an OAuth2 based authentication was performed in a pre-step or an

Attribute	Type	Condition	Description
			OAuth2 based SCA was performed in the related consent authorisation.

Request Body

No request body.

Response

Response Code

HTTP Response Code equals 200.

Response Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.

Response Body

Attribute	Type	Condition	Description
cardAccounts	Array of Card Account Details	Mandatory	The accounts returned from the query

Example

Response body


```
{
  "cardAccounts": [
    {
      "resourceId": "3d9a81b3-a47d-4130-8765-a9c0ff861b99",
      "maskedPan": "525412******3241",
      "currency": "EUR",
      "name": "Main",
      "product": "Basic Credit",
      "status": "enabled",
      "creditLimit": {"currency": "EUR", "amount": "15000"},
      "balances": [
        {
          "balanceType": "interimBooked",
          "balanceAmount": {"currency": "EUR", "amount": "14355.78"}
        },{
```

```
          "balanceType": "nonInvoiced",
          "balanceAmount": {"currency": "EUR", "amount": "4175.86"}
        }
      ],
      "_links": {
        "transactions": {
          "href": "/v1/card-accounts/3d9a81b3-a47d-4130-
8765a9c0ff861b99/transactions"
        }
      }
    }
  ]
}
```


A.6.2 Read Card Account Details

Call

```
GET /v1/card-accounts/{account-id}
```

Reads details about a card account. It is assumed that a consent of the PSU to this access is already given and stored on the ASPSP system. The addressed details of this account depend then on the stored consent addressed by consentId, respectively the OAuth2 access token.

Query Parameters

Attribute	Type	Condition	Description
withBalance	Boolean	Optional	If contained, this function reads the list of accessible payment accounts including the booking balance, if granted by the PSU in the related consent and available by the ASPSP. This parameter might be ignored by the ASPSP.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
PSU-IP-Address	String	Conditional	The forwarded IP Address header field consists of the corresponding HTTP request IP Address field between PSU and TPP. It shall be contained if and only if this request was actively initiated by the PSU.
Consent-ID	String	Mandatory	Identification of the access consent as granted by the PSU.
Authorization	String	Conditional	Is contained only, if an OAuth2 based authentication was performed in a pre-step or an OAuth2 based SCA was performed in the related consent authorisation.

Request Body

No request body.

Response

Response Code

HTTP Response Code equals 200.

Response Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.

Response Body

Attribute	Type	Condition	Description
cardAccount	Card Account Details	Mandatory	The requested account with details. It depends on if withBalance is used in the query if balances object is returned.

Example


```
{
  "cardAccount":
    {
      "resourceId": "3d9a81b3-a47d-4130-8765-a9c0ff861b99",
      "maskedPan": "525412******3241",
"currency": "EUR",
      "ownerName": "Heike Mustermann",
      "name": "Main",
      "product": "Basic Credit",
      "status": "enabled",
      "creditLimit": { "currency": "EUR", "amount": "15000" },
      "balances": [
        {
          "balanceType": "interimBooked",
          "balanceAmount": { "currency": "EUR", "amount": "14355.78" }
        },{
          "balanceType": "nonInvoiced",
          "balanceAmount": { "currency": "EUR", "amount": "4175.86" }
        }
      ],
      "_links": {
        "transactions": {
          "href": "/v1/card-accounts/3d9a81b3-a47d-4130-
8765a9c0ff861b99/transactions"
        }
```

```
        }
      }
}
```

A.6.3 Read Card Account Balance

Request

Call

```
GET /v1/card-accounts/{account-id}/balances
```

Reads balance data from a given card account addressed by "account-id".
Remark: This account-id can be a tokenized identification due to data protection reason since the path information might be logged on intermediary servers within the ASPSP sphere. This account-id then can be retrieved by the "GET Card Account List" call, cp. Section A.6.6.1.
The account-id is constant at least throughout the lifecycle of a given consent.

Path Parameters

Attribute	Type	Description
account-id	String	This identification is denoting the addressed card account. The account-id is retrieved by using a "Read Account List" call. The account-id is the "resourceId" attribute of the account structure. Its value is constant at least throughout the lifecycle of a given consent.

Query Parameters

Attribute	Type	Condition	Description
withBalance	Boolean	Optional	If contained, this function reads the list of accessible payment accounts including the booking balance, if granted by the PSU in the related consent and available by the ASPSP. This parameter might be ignored by the ASPSP.

.

Response

Response Code

HTTP Response Code equals 200.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.

PSU-IP-Address	String	Conditional	The forwarded IP Address header field consists of the corresponding HTTP request IP Address field between PSU and TPP. It shall be contained if and only if this request was actively initiated by the PSU.
Consent-ID	String	Mandatory	Identification of the corresponding consent as granted by the PSU.
Authorization	String	Conditional	Is contained only, if an OAuth2 based authentication was performed in a pre-step or an OAuth2 based SCA was performed in the related consent authorisation.

Request Body

No request body.

Response Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.

Response Body

Attribute	Type	Condition	Description
cardAccount	Account Reference	optional	Identifier of the addressed card account.
balances	Array of Balance	Mandatory	A list of balances regarding this card account, e.g. the current balance, the last booked balance.

Example


```
{
  "cardAccount": {"maskedPan": "525412******3241"},
  "balances":[
    {
      "balanceType": "interimBooked",
      "balanceAmount": { "currency": "EUR", "amount": "14355.78" }
    },{
      "balanceType": "nonInvoiced",
      "balanceAmount": { "currency": "EUR", "amount": "4175.86" }
    }
  ]
}
```

A.6.4 Read Card Account Transaction List

Request

Call

```
GET /v1/card-accounts/{account-id}/transactions {query-parameters}
```

Reads account data from a given card account addressed by "account-id".
Remark: This account-id can be a tokenized identification due to data protection reason since the path information might be logged on intermediary servers within the ASPSP sphere. This account-id then can be retrieved by the "GET Card Account List" call, cp. Section 6. 1.
Note: The ASPSP might use standard compression methods on application level for the response message as indicated in the content encoding header.
Remark: Please note that the PATH might be already given in detail by the response of the "Read Card Account List" call within the _links subfield.

Path Parameters

Attribute	Type	Description
account-id	String	This identification is denoting the addressed card account. The account-id is retrieved by using a "Read Card Account List" call. The account-id is the "id" attribute of the account structure. Its value is constant at least throughout the lifecycle of a given consent.

Query Parameters

Attribute	Type	Condition	Description
dateFrom	ISODate	Conditional	Starting date (inclusive the date dateFrom) of the transaction list, mandated if no delta access is required.
dateTo	ISODate	Optional	End date (inclusive the data dateTo) of the transaction list, default is "now" if not given.
bookingStatus	String	Mandatory	Permitted codes are "booked", "pending" and "both" "booked" shall be supported by the ASPSP. To support the "pending" and "both" feature is optional for the ASPSP, Error code if not supported in the online banking frontend.
withBalance	Boolean	Optional	If contained, this function reads the list of accessible payment accounts including the booking balance, if granted by the PSU in the related consent and available by the ASPSP. This parameter might be ignored by the ASPSP.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
PSU-IP-Address	String	Conditional	The forwarded IP Address header field consists of the corresponding HTTP request IP Address field between PSU and TPP. It shall be contained if and only if this request was actively initiated by the PSU.
Consent-ID	String	Mandatory	Identification of the consent for this access as granted by the PSU.
Authorization	String	Conditional	Is contained only, if an OAuth2 based authentication was performed in a pre-step or an OAuth2 based SCA was performed in the related consent authorisation.

Request Body

No request body.

Reponse

Response Code

HTTP Response Code equals 200.

Response Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.

Response Body

Attribute	Type	Condition	Description
cardAccount	Account Reference	optional	Identifier of the addressed card account.
cardTransactions	Card Account Report	Optional	JSON based account report.
balances	Array of Balance	Optional	A list of balances regarding this account, which might be restricted to the current balance.
_links	Links	Optional	A list of hyperlinks to be recognised by the TPP. Type of links admitted in this response: "download": a link to a resource, where the transaction report might be downloaded from in case where transaction reports have a huge size.

Example

```
GET https://api.testbank.com/v1/card-accounts/3d9a81b3-a47d-4130-
8765a9c0ff861b99/transactions?dateFrom=2017-10-01&dateTo= 2017-10-30
Accept: application/json, text/plain;q=0.9, application/xml;q=0.8 X-
Request-ID:       99391c7e-ad88-49ec-a2ad-99ddcb1f7721
```

Response (Example 1)

Response in JSON format for an access on a regular account

```
HTTP/1.x 200 Ok

X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7757
Date:                   Sun, 06 Aug 2017 15:05:47 GMT
Content-Type:           application/json

{
  "cardAccount": {
    "maskedPan": "525412******3241"
  },
  "cardTransactions": {
    "booked": [
      {
        "cardTransactionId": "201710020036959",
        "transactionAmount": {"currency": "EUR", "amount": "256.67" },
        "transactionDate": "2017-10-25",
        "bookingDate": "2017-10-26",
        "originalAmount": { "currency": "SEK", "amount": "2499" },
        "cardAcceptorAddress": {
          "city" : "STOCKHOLM",
          "country" : "SE"
        },
        "maskedPan": "525412******3241",
        "proprietaryBankTransactionCode" : "PURCHASE",
        "invoiced": false,
        "transactionDetails": "WIFIMARKET.SE"
      }, {
        "cardTransactionId": "201710020091863",
        "transactionAmount": { "currency": "EUR", "amount": "10.72" },
        "transactionDate": "2017-10-25",
        "bookingDate": "2017-10-26",
        "originalAmount": { "currency": "SEK", "amount": "99" },
        "cardAcceptorAddress": {
          "city" : "STOCKHOLM",
          "country" : "SE"
        },
        "maskedPan": "525412******8999",
        "proprietaryBankTransactionCode" : "PURCHASE",
        "invoiced": false,
        "transactionDetails": "ICA SUPERMARKET SKOGHA"
```

```
      }
    ],
    "pending": [ ],
    "_links": {
      "cardAccount": {
        "href": "/v1/card-accounts/3d9a81b3-a47d-4130-8765-a9c0ff861b99"
      }
    }
  }

}
```


A.7. Extension of Complex Data Types

To support the more detailed selection of consents existing Data types must be extended. This chapter describes the new data type definitions.

A.7.1 Links

In addition to the already defined links ([XS2A-IG], cp. 14.6), the following link shall be supported:

Attribute	Type	Condition	Description
Card	hrefType	Optional	A link to the resource providing the details of the one card.
cardTransactions	href Type	Optional	A link to the resource providing the transaction history of a dedicated card or a card account.

A.7.2 Account Access

Attribute	Type	Condition	Description
accounts	Array of Account Reference	Optional	Is asking for detailed account information. If the array is empty, 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 or transactions shall be empty, if used.

balances	Array of Account Reference	Optional	Is asking for balances of the addressed accounts. If the array is empty, 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 or transactions shall be empty, if used.
transactions	Array of Account Reference	Optional	Is asking for transactions of the addressed accounts. If the array is empty, 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 or balances shall be empty, if used.
availableAccounts	String	Optional if supported by API provider	Only the value "allAccounts" is admitted.
availableAccounts WithBalance	String	Optional, if supported by API provider	Only the value "allAccounts" is admitted.
allPsd2	String	Optional if supported by API provider	Only the value "allAccounts" is admitted.
restrictedTo	Array of Cash Account Type	Conditional if supported by API provider.	If the TPP requests access to accounts via availableAccounts (List of available accounts), global or bank driven consents, the TPP may include this element to restrict access to the referred account types. Absence of the element is interpreted as "no restriction" (therefore access to accounts of all types is requested). The element may only occur if each of the elements: • accounts • balances • transactions is either not present or contains an empty array. **Remark for Future**: In a future version of the XS2A-Interface the data model for consents will be changed and therefore this element will most likely become obsolete.

A.7.3 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	These data elements are used for payment accounts which have no IBAN.
pan	Max35T ext	Conditional	Primary Account Number (PAN) of a card, can be tokenized by the ASPSP due to PCI DSS requirements. Note: If this element is used in a card account context, it might refer to a whole card account (covering more than one card), represented by its leading card's PAN. In the context of a (single) card, this PAN will always represent (only) the card(s) with this PAN.
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.
cashAccountType	Cash Account Type	Optional if supported	ExternalCashAccountType1Code from ISO 20022 or Type "CARD". The API provider may restrict the accepted values further (e.g. only "CARD" and "CACC" may be supported). The TPP includes this element, if the account reference may identify several accounts of different types, but the TPP only requests access to a specific type (e.g. card accounts).

A.7.4 Card Details

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. This shall be filled if addressable resources are created by the ASPSP on the /card-accounts endpoint.
maskedPan	Max35Text	Mandatory	Primary Account Number (PAN) of the main card in masked form. In the context of a response to a "/card-accounts" endpoint, this is the PAN of the main card; in the context of a "/cards" endpoint, this identifies the specific card for that the information is presented. This data element can be used in the body of the Consent Request Message for retrieving account access consent from this card.
currency	Currency Code	Mandatory	Account currency
ownerName	Max140Text	Optional	Name of the legal account owner. If there is more than one owner, then e.g. two names might be noted here. For a corporate account, the corporate name is used for this attribute. 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.
name	Max70Text	Optional	Name of the account as assigned by the ASPSP, in agreement with the account owner 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.

expDate	Expire Date	Mandatory	Debit or credit card expiration date.
issueDate	ISODate	Mandatory	Issuing date of the debit or credit card.
cardholderName	Max35Text	Mandatory	Cardholder name as displayed on the debit or credit card.
panId	Max35Text	Optional	Reference string of the debit or credit card.
product	Max35Text	Optional	Product Name of the Bank for this card account, proprietary definition.
status	String	Optional	Account status. The value is one of the following: • "enabled": account / card is available • "deleted": card is terminated • "blocked": card is blocked e.g. for legal reasons. If this field is not used, then the card is available in the sense of this specification.
usage	Max140Text	Optional	Specifies the usage of the card: • PRIV: private personal account • ORGA: professional account
creditLimit	Amount	Optional	In the context of a response to a “card-account” endpoint, this element defines the credit limit of the PSU aggregated for all cards related to this card account in total. In the context of response to a “cards” endpoint, it is up to the ASPSP whether this element contains an aggregated limit for all

			associated cards or a specific limit for the requested card. This decision must be contained in the documentation of the ASPSP.
balances	Array of Balances	Optional	The specific card account balances associated to this card. In the context of a response to a "cards" endpoint, each balance that indicates that credit limit is included must respect all applicable credit limits relevant for this card (cp. Section A.6.6).
_links	Links	Optional	The specific card account balances associated to this card.

A.7.5 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.
posEntryMode	Pos Entry Mode	Optional	Card transaction originated from: • "**UNKNOWN**": The origin or the transaction is unknown • "**MAGIC_STRIP**": Magic strip reader • "**CHIP**": Chip reader • "**TOUCHLESS**": Touchless • "**RECURRING**": Recurring • "**MANUAL**": Manual record • "**MOTO**": When the customer gives the debit or credit card PAN over the phone or internet
transactionDate	ISODate	Optional	Date of the actual card transaction.
acceptorTransactionDateTime	ISODateTime	Optional	Timestamp of the actual card transaction within the acceptance system.

bookingDate	ISODate	Optional	Booking date of the related booking on the card account.
transactionAmount	Amount	Mandatory	The amount of the transaction as billed to the card account.
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.
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.
transactionDetails	Max140Text	Optional	Additional details given for the related card transactions.
invoiced	Boolean	Optional	Flag indicating whether the underlying card transaction is already invoiced.
proprietaryBankTransactionCode	Max35Text	Optional	Proprietary bank transaction code as used within a community or within an ASPSP e.g. for MT94x based transaction reports.

A.7.6 Balance Type

The following balance types are excluding credit limits unless the creditLimitIncluded element is present and equals true in the corresponding balance element. Changes for the balances for dedicated cards are highlighted.

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

Type	Description
closingBooked	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. For card-accounts and cards, this is composed of invoiced, but not yet paid entries.
expected	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. For card accounts, this is composed of: • invoiced, but not yet paid entries, • not yet invoiced but already booked entries and • pending items (not yet booked).
openingBooked	Book balance of the account at the beginning of the account reporting period. It always equals the closing book balance from the previous report.
interimAvailable	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 based on booked credit and debit items during the calculation time/period specified. For card-accounts, this is composed of: • invoiced, but not yet paid entries, • not yet invoiced but already booked entries. For cards, this is composed of: • invoiced, but not yet paid entries • not yet invoiced but already booked entries • pending items (not yet booked).
interimBooked	Balance calculated during the account servicer's business day, at the time specified, and subject to further changes during the business day. The interim balance is calculated since 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.

A.7.7 Example: calculation of an "interimAvailable" balance on single card level

The following table give two examples on how the "interimAvailable" is calculated in case of "creditLimitIncluded" (true or false) in a setting, where Card 1 is associated with a partner card (Card 2), both cards have an individual limit and there is an additional "aggregated limit" applicable for both of them.

Note: The “interimAvaillable” balance where “creditLimitIncluded” equals true is the open to buy limit of the relevant card.

Aggregated Credit Limit	CreditLimit Card1	CreditLimit Card 2	Spendings Card 1	Spendings Card 2	Interim Available Card1 (CreditLimit included)	Interim Available Card1 (CreditLimit not included)
700	500	500	100	500	100	-100
700	500	500	400	50	100	-400

A.8. References

[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.

[PSD2] Directive (EU) 2015/2366 of the European Parliament and of the Council on payment services in the internal market, published 23 December 2015.

[XS2A-OR] NextGenPSD2 XS2A Framework, Operational Rules, The Berlin Group Joint Initiative on a PSD2 Compliant XS2A Interface, version 1.0, published 08 February 2018.

[XS2A-IG] NextGenPSD2 XS2A Framework, Implementation Guidelines, The Berlin Group Joint Initiative on a PSD2 Compliant XS2A Interface, version 1.3.6, published 3rd February 2019.

[XS2A-DP] NextGenPSD2 XS2A Framework, Domestic Payment Definitions, The Berlin Group Joint Initiative on a PSD2 Compliant XS2A Interface, current version.

[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.

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