THE *Berlin* GROUP
A EUROPEAN STANDARDS INITIATIVE

openFinance API Framework

Implementation Guidelines for Extended Services

AIS for Securities Accounts

Version 1.0

16 November 2022

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[*] The 'Joint Initiative pan-European PSD2-Interface Interoperability' brings together participants of the Berlin Group with additional European banks (ASPSPs), banking associations, payment associations, payment schemes and interbank processors.

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1 Introduction

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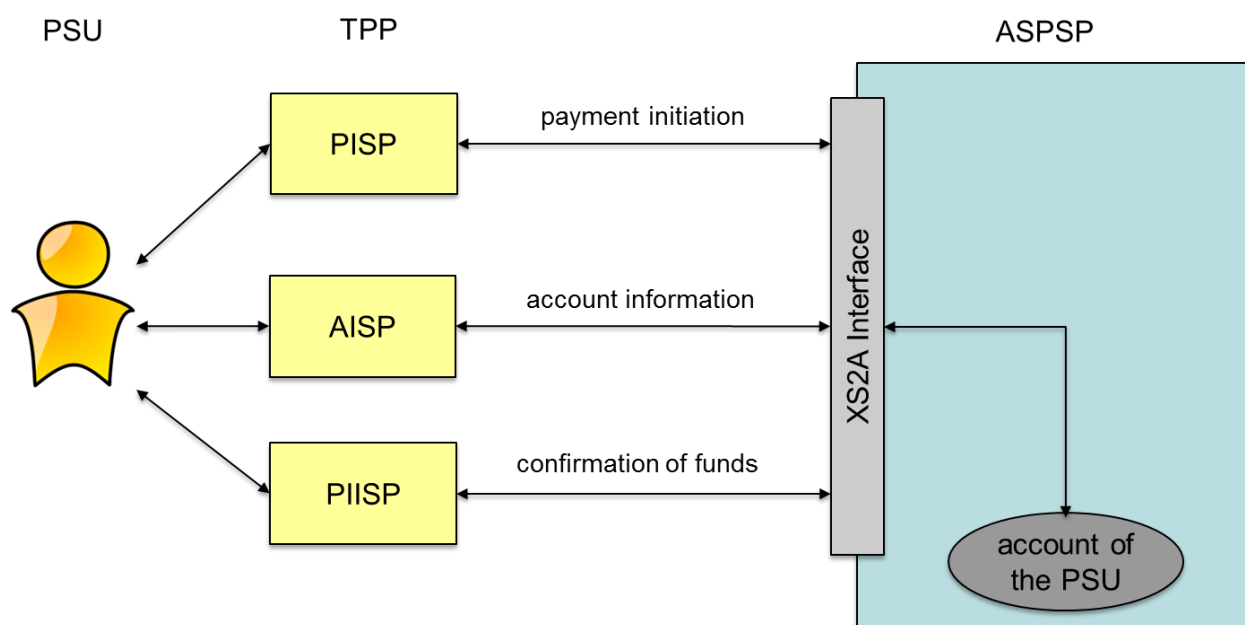
Further requirements on the implementation and usage of this interface are defined by a Regulatory Technical Standard (short RTS) from the European Banking Authority (short EBA), published in the Official Journal of the European Commission.

Initially, an account was assumed to be a payment account. Recently, special endpoints for card accounts, (single) cards, savings and loan accounts have also been defined. Meanwhile, the current endpoints do not provide a data model to cover the relevant information of a securities account.

This point will be addressed in the following extension of the AIS protocol. For this aim, new endpoints will be defined for **securities account**s.

Also an extension of the consent model to restrict access to only accounts of one type (e.g. savings accounts or loan accounts) will be defined. This extension will be compatible to other extensions with a similar aim.

To achieve this, three downward compatible changes will be made to the protocol:

1. A mechanism to specifically request access to only one accountType is defined.
2. New endpoints are defined to specifically request information on securities accounts.

Remark: Within the data model of version 2, the issue of addressing accounts and access rights for consent establishment will be solved in a more precise way, allowing for more detailed and straightforward consent establishment.

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:
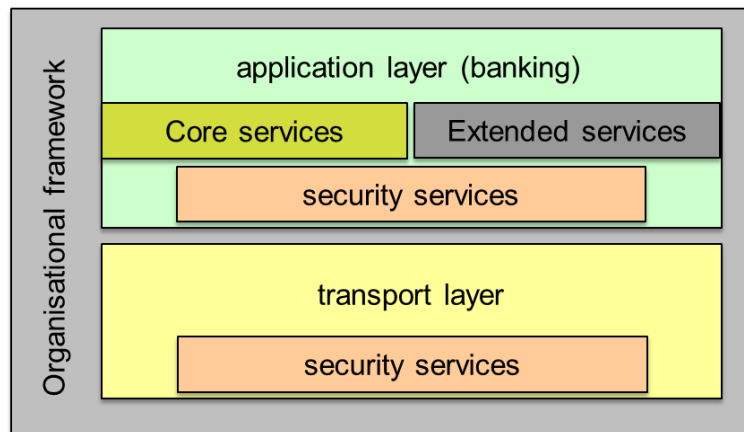
This document now describes how the existing services for account information can be extended to provide account information on securities accounts. Therefore, new endpoints are defined in order to provide the information.

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.

1.3 Document History

Version	Change/Note	Approved
0.9_DRAFT	Final Draft for Market Consultation	01 July 2022
1.0_	Adjustment by introducing transaction related fees and fee rules on account level	16 November by openFinance TF

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].

2.1 Additional Notations

As an extension of the notations in Chapter 3 in [XS2A-IG], the following conditions may be used. The additional conditions apply to both, requests from the client to the server as well as responses from the server to the client:

Attribute	Type	Condition	Description
		{Or	
		Or	
		Or}	
		{Or – Optional	
		Or – Optional	
		Or – Optional}	

- {Or: The **first** element in a sequence of elements of which **exactly one** has to be included.

- Or: An element in a sequence of elements of which **exactly one** has to be included. The element is **neither the first nor the last** within this sequence.

- Or}: The **last** element in a sequence of elements of which **exactly one** has to be included.

- {Or – Optional: The **first** element in a sequence of elements of which **at most one** may be included.

- Or – Optional: An element in a sequence of elements of which **at most one** may be included. The element is **neither the first nor the last** within this sequence.

- Or – Optional}: The **last** element in a sequence of elements of which **at most one** may be included.

3 Transport Layer

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

4 Application Layer: Guiding Principles

The following extension will define requests for a TPP to get information on securities accounts. Securities accounts, their positions, transactions and orders are addressed via newly defined endpoints.

4.1 Sealing Requirements

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 securities accounts.

4.2 Specifics in Submission of Consents

In order to achieve a maximum compatibility with the already existing data model, the consent data model will not be changed. Still, for securities accounts new types need to be defined (see section 4.3). Access rights to these new endpoints will be derived from already existing access rights as described in section 4.3.

Like a (regular payment) account, specific securities accounts can be addressed in a consent request by identifying the account by its IBAN. In some cases, a securities account might not be connected to any globally defined identifier. Therefore, the additional element "other" is used, which might be provided instead of or in addition to an IBAN thereby identifying the specific account, for which a consent is requested. The "other" element has already been introduced for domestic purposes in [XS2A-DOM-IG].

As a third / fourth way to establish a securities specific consent, the TPP can request a bank-offered consent or a global consent but restricting the requested access to a certain type of account. The type of account is identified by the data element cashAccountType. As the corresponding ISO code set does not provide a code for securities accounts, a proprietary code needs to be defined by the ASPSP or local regulation.

Within corresponding examples of this document, the code "SCTS" will be used to indicate securities accounts.

Examples for Establish Consent Requests

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

Request for a dedicated consent on transactions and balances of a dedicated securities account (uniquely identified by its IBAN)

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": {
      "balances": [
          { "iban": "DE40100100103307118608" }, /* positions of a
securities account
        ],
        "transactions": [
          { "iban": "DE40100100103307118608" }, /* transactions and orders
of a securities account
        ]
    },
  "recurringIndicator": true,
  "validUntil": "2017-11-01",
  "frequencyPerDay": 4

}
```

Request for a dedicated consent on transactions and balances of a dedicated securities account identified by a proprietary id (here "Depotnummer")

```
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": {
      "balances": [
          { "other": {
              "identification": "123456789012",
              "schemeNameProprietary": "Depotnummer",
              "issuer": "testbank"
            }
        } ],
        "transactions": [
          { "other": {
              "identification": "123456789012",
```

```
                    "schemeNameProprietary": "Depotnummer",
                    "issuer": "testbank"
                }
        }  ]
    },
  "recurringIndicator": true,
  "validUntil": "2017-11-01",
  "frequencyPerDay": 4

}
```

Request for access to all securities accounts with a common, dedicated IBAN

```
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": {
      "balances": [
          { "iban": "DE40100100103307118608" }, /* balances / positions of
an account irrespective of its type
          { "iban": "DE02100100109307118603",
            "cashAccountType": "SCTS" /* balances / positions of all
securities accounts behind this IBAN
          }
        ],
      "transactions": [
          { "iban": "DE02100100109307118603",
            "cashAccountType": "SCTS"} /* transactions / orders of all
securities accounts behind this IBAN
        ]
    },
  "recurringIndicator": true,
  "validUntil": "2017-11-01",
  "frequencyPerDay": 4

}
```

Request for a bank driven consent, restricted to the related securities accounts

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

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

```
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 endpoints different from cash accounts (e.g. securities accounts, savings accounts, loan accounts, card accounts). In other markets, this restriction attribute is not supported.

Multicurrency Accounts

For securities accounts, there are no specific multicurrency accounts defined. Securities of various currencies can be connected to the same securities account.

4.3 API Access Methods for Securities Endpoints

As described in chapter 4.2, the consent data model is not fundamentally changed. However, the securities AIS endpoints are not always straightforwardly associated with one of the three access rights "accounts", balances" and "transactions". Therefore, column "access rights" indicates for each endpoint / resource which access right needs to be included in the corresponding consent in order to request the resource.

Remark: Consents that have been established for all access rights imply access to all endpoints / resources listed below.

Endpoints/ Resources	Method	Condition	Access right	Description
securities-accounts	GET	Mandatory	accounts	Read all identifiers of the securities accounts, to which an access has been granted to through the /consents endpoint by the PSU. In addition, relevant information about the accounts and hyperlinks to corresponding account information resources are provided if a related consent has been already granted. Section 5.1.
securities-accounts/ {securities-account-id}	GET	Mandatory	accounts	Give detailed information about the addressed securities account Section 5.2
securities-accounts/ {securities-account-id}/positions	GET	Mandatory	balances	Give an overview of the positions contained in the addressed securities account. Section 5.3
securities-accounts/ {securities-	GET	Mandatory	transactions	Read transaction lists of the addressed securities account. For a given account, additional parameters are

Endpoints/ Resources	Method	Condition	Access right	Description
account-id}/ transactions				e.g. the attributes "dateFrom" and "dateTo". In the context of securities "transactions" refers to movement of positions that have already taken place, such as buying transactions, selling transactions. Orders that the PSU has placed for this account will not be reported under "transactions". Instead, orders will be available under an additional "orders" endpoint. Monetary movements that originated in a security (such as dividends) are currently not supported by the interface. They are not part of this endpoint and no specific endpoint for such movements is defined. However, a later version might extend the service by including a way to request monetary movements related to securities. Section 5.4
securities-accounts/{ securities-account-id}/ transactions/ {transaction-id}	GET	Optional	transactions	Read transaction details of an addressed transaction. Section 5.5
securities-accounts/ {securities-account-id}/ orders	GET	Mandatory	transactions	Read order lists of a given securities account. Section 5.6
securities-accounts/ {securities-account-id}/	GET	Optional	transactions	Read order details of an addressed order. Section 5.7

Endpoints/ Resources	Method	Condition	Access right	Description
orders/ {order-id}				

4.4 Additional Error Information

In addition to the error messages defined in [XS2A-IG], section 14.11, the following additional error information is needed for the extended service securities accounts:

Message Code	HTTP Response Code	Description
CONTENT_TEMPORARILY_NOT_AVAILABLE	404	The contents of the response can (temporarily) not be obtained because a service, the interface depends on is currently not available.

4.5 Status Information

Status Information for the AIS within the Establish Consent Process

No specific consent status information needed for the extended service for securities accounts.

5 New Message Types for Securities Accounts

New message types / endpoints are defined for this extended service as follows.

5.1 Read Securities Accounts List

Overall, this service will provide the same information on a PSU's securities accounts as the Read Account List service provides for a regular payment account.

5.1.1 Request

Call

```
GET /v1/securities-accounts?{query-parameters}
```

Reads a list of securities accounts potentially with additional 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 securities accounts depends then on the stored consent addressed by consentId, respectively the OAuth2 access token.

Query Parameters

Attribute	Type	Condition	Description
evaluationCurrency	String	Optional	ISO Alpha-3 currency code to request evaluation of the balances in a specific currency. This query parameter might be ignored by the ASPSP, if evaluation is not supported for variable currencies or does not support evaluation in the requested currency.

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.

5.1.2 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
securitiesAccounts	Array of Account Details	Mandatory	Descriptions of the accessible securities accounts. As "Account Details", the extended data model described in section 6.1.1 will be used.

5.1.3 Example

Request (without PSU involvement)

```
GET https://api.testbank.com/v1/securities-accounts?evaluationCurrency=EUR
```

```
Accept:            application/json
X-Request-ID:            99391c7e-ad88-49ec-a2ad-99ddcb1f7756
Consent-ID:              qwer3456tzui7890
PSU-User-Agent:          Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0)
Gecko/20100101 Firefox/54.0
Date:                    Thu, 29 Oct 2020 15:05:37 GMT
```

Response

```
HTTP/1.x 200 Ok
X-Request-ID:          99391c7e-ad88-49ec-a2ad-99ddcb1f7756
Content-Type:          application/json
Date:                  Thu, 29 Oct 2020 15:05:38 GMT
{
  "securitiesAccounts":
    [{
      "resourceId": "3dc3d5b3-7023-4848-9853-f5400a64e81g",
      "other": {"identification": "MyProprietaryID-0001"},
      "currency": "EUR",
      "ownerName": "Paul Simpson",
      "name": "Securities 1a",
      "balances": [
        {
          "balanceAmount" : { "currency" : "EUR", "amount" : "22901.00" },
          "balanceType": "closingBooked"
        },
        {
          "balanceAmount": { "currency" : "EUR", "amount" : "22910.00" },
          "balanceType": "interimAvailable",
          "referenceDateTime" : "2020-10-29T14:00:00.011Z"
        }
       ],
      "_links":
      {
        "securitiesAccount": {"href": "/v1/securities-accounts/3dc3d5b3-
7023-4848-9853-f5400a64e81g" },
        "positions": {"href": "/v1/securities-accounts/3dc3d5b3-7023-4848-
9853-f5400a64e81g/positions" },
        "transactions": {"href": "/v1/securities-accounts/3dc3d5b3-7023-
4848-9853-f5400a64e81g/transactions" },
        "orders": {"href": "/v1/securities-accounts/3dc3d5b3-7023-4848-
9853-f5400a64e81g/orders" }
      }
    },
    {
      "resourceId": "3dc3d5b3-7023-4848-9853-f5400a64e813",
      "other": {"identification": "MyProprietaryID-0002"},
      "currency": "EUR",
      "ownerName": "Paul Simpson",
      "name": "Securities 1b",
      "balances": [
```

```
        {
          "balanceAmount" : { "currency" : "EUR", "amount" : "1000.00" },
          "balanceType": "closingBooked"
        },
        {
          "balanceAmount": { "currency" : "EUR", "amount" : "987.60" },
          "balanceType": "interimAvailable",
          "referenceDateTime" : "2020-10-29T14:00:00.011Z"
        }
      ],
     "_links":
     {
        "securitiesAccount": {"href": "/v1/securities-accounts/3dc3d5b3-
7023-4848-9853-f5400a64e813 " },
        "positions": {"href": "/v1/securities-accounts/3dc3d5b3-7023-4848-
9853-f5400a64e813/positions" },
        "transactions": {"href": "/v1/securities-accounts/3dc3d5b3-7023-
4848-9853-f5400a64e813/transactions" },
        "orders": {"href": "/v1/securities-accounts/3dc3d5b3-7023-4848-
9853-f5400a64e813/orders" }
      }
    }
  ]
}
```

5.2 Read Securities Account Details

5.2.1 Request

Call

```
GET /v1/securities-accounts/{securities-accounts-id}?{query-parameters}
```

Reads details about a securities 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 depends then on the stored consent addressed by consentId, respectively the OAuth2 access token.

Path Parameters

Attribute	Type	Description
securities-account-id	String	This identification is denoting the addressed securities account. The securities-account-id is retrieved by using a

Attribute	Type	Description
		"Read Securities Account List". The securities-account-id is the "resourceId" attribute of the securities account structure. Its value is constant at least throughout the lifecycle of a given consent.

Query Parameters

Attribute	Type	Condition	Description
evaluationCurrency	String	Optional	ISO Alpha-3 currency code to request evaluation of the balances in a specific currency. This query parameter might be ignored by the ASPSP, if evaluation is not supported for variable currencies or does not support evaluation in the requested currency.

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.

5.2.2   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
securitiesAccount	Account Details	Mandatory	Description of the addressed securities account.

Remark: The same syntactical structure is used to transport securities account information as (payment) account information.

5.2.3   Example

Request (without PSU involvement)

```
GET https://api.testbank.com/v1/securities-accounts/3dc3d5b3-7023-4848-
9853-f5400a64e81g
```

```
Accept:             application/json
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7756
Consent-ID:             qwer3456tzui7890
PSU-User-Agent:         Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0)
Gecko/20100101 Firefox/54.0
Date:                   Thu, 29 Oct 2020 15:05:37 GMT
```

Response

```
HTTP/1.x 200 Ok
X-Request-ID:          99391c7e-ad88-49ec-a2ad-99ddcb1f7756
Content-Type:          application/json
Date:                  Thu, 29 Oct 2020 15:05:38 GMT
```

```json
{
  "securitiesAccount":
    {
      "resourceId": "3dc3d5b3-7023-4848-9853-f5400a64e81g",
      "other": {
        "identification": "123456789012",
        "schemeNameProprietary": "Depotnummer",
        "issuer": "testbank"
      },
      "ownerName": "Paul Simpson",
      "name": "Securities 1",
      "product": "Securities Account",
      "status": "enabled",
      "applicableFees": [
        {
          "typeCode": "managementFee"
          "feeRules": [
              { "amount": { "currency": "EUR", "amount": "10.00" } }
           ]
          "applicableFrom: "2020-01-01"
          "applicableTo: "2025-12-31"
        },
        {
          "typeCode": "courtage"
          "feeRules": [
            {
              "toBaseAmount": {"currency": "EUR", "amount": "19999.99"},
              "percentage": "1.0",
              "minimumAmount": {"currency": "EUR", "amount": "10.00"}
            },
            {
              "fromBaseAmount": {"currency": "EUR", "amount": "20000.00"},
              "percentage": "0.8",
              "maximumAmount": {"currency": "EUR", "amount": "300.00"}
            }
```

```
        ]
      }
    ]
   "balances": [
     {
       "balanceAmount" : { "currency" : "EUR", "amount" : "22901.00" },
       "balanceType": "closingBooked"
     },
     {
       "balanceAmount": { "currency" : "EUR", "amount" : "22910.00" },
       "balanceType": "interimAvailable",
       "referenceDateTime" : "2020-10-29T14:00:00.011Z"
     }
   ],
   "_links":
   {
     "positions": {"href": "/v1/securities-accounts/3dc3d5b3-7023-4848-
9853-f5400a64e81g/positions" },
     "transactions": {"href": "/v1/securities-accounts/3dc3d5b3-7023-
4848-9853-f5400a64e81g/transactions" },
     "orders": {"href": "/v1/securities-accounts/3dc3d5b3-7023-4848-
9853-f5400a64e81g/orders" }
   }
}
```

5.3 Read Securities Account Positions

5.3.1 Request

Call

```
GET /v1/securities-accounts/{securities-accounts-id}/positions
```

This message reads the portfolio of a securities account.

Path Parameters

Attribute	Type	Description
securities-account-id	String	This identification is denoting the addressed securities account. The securities-account-id is retrieved by using a "Read Securities Account List" call. The securities-account-id

Attribute	Type	Description
		is the "resourceId" attribute of the account structure. Its value is constant at least throughout the lifecycle of a given consent.

Query Parameters

No specific query parameter.

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.

5.3.2   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
securitiesAccount	Account Reference	Optional	Identifier of the addressed securities-account. **Remark for Future**: Might be mandated in a later version.
reportDateTime	ISODateTime	Mandatory	Date and time of the report. That is, all listed positions are provided in their quantity within the account as reflected by the ASPSP at the reportDateTime. Might differ from the current date and time in situations where a real time information of the deposit's positions is not available.
balances	Array of Balance	Optional	Calculated value of all securities in account currency. For the usage of "Balance" items compare chapter 6.1.3.
positionList	Array of Securities Position	Mandatory	If the deposit does not contain any positions, the "positionList" element must contain an empty array.

5.3.3 Example

Request (without PSU involvement)

```
GET https://api.testbank.com/v1/securities-accounts/3dc3d5b3-7023-4848-
9853-f5400a64e81g/positions
```

```
Accept:            application/json
X-Request-ID:          99391c7e-ad88-49ec-a2ad-99ddcb1f7756
Consent-ID:            qwer3456tzui7890
PSU-User-Agent:        Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0)
Gecko/20100101 Firefox/54.0
Date:              Fri, 25 Mar 2022 15:05:37 GMT
```

Response

```
HTTP/1.x 200 Ok
X-Request-ID:          99391c7e-ad88-49ec-a2ad-99ddcb1f7756
Content-Type:          application/json
Date:              Fri, 25 Mar 2022 15:05:38 GMT
```

```json
{
  "securitiesAccount":
    {
      "iban": "DE23100100010123456788"
    }
  "reportDateTime": "2022-03-25T00:00:00.000Z"
  "balances": [
        {
          "balanceAmount" : { "currency" : "EUR", "amount" : "22901.00" },
          "balanceType": "closingBooked"
        },
        {
          "balanceAmount": { "currency" : "EUR", "amount" : "22910.00" },
          "balanceType": "interimAvailable",
          "referenceDateTime" : "2020-10-29T14:00:00.011Z"
        }
        ],

    "positionList": [
      {
        "financialInstrument": {
```

```
        "isin": "DE000BASF111",
        "name": "BASF SE Namens-Aktien o.N.",
        "normalisedPrice": {
          "amount": { "currency": "EUR", "amount": "70.88" },
          "priceDateTime" : "2022-03-25T00:00:00.000Z",
          "priceType" : "MRKT",
          "sourceOfPrice" : { "type": "LMAR", "mic": "XETR"}
        }
      },
      "unitsNumber": 100,
      "balanceType": "AVAI",
      "averageBuyingPrice": { "currency": "EUR", "amount": "60.17" }
    },
    {
      "financialInstrument": {
        "isin": "DE000A0Z2ZZ5",
        "name": "freenet AG Namens-Aktien o.N.",
        "normalisedPrice": {
          "amount": { "currency": "EUR", "amount": "29.88" },
          "priceDateTime" : "2022-03-25T00:00:00.000Z",
          "priceType" : "MRKT",
          "sourceOfPrice" : { "type": "LMAR", "mic": "XETR"}
        }
      },
      "unitsNumber": 200,
      "balanceType": "AVAI",
      "averageBuyingPrice": { "currency": "EUR", "amount": "30.17" }
    }},
    {
      "financialInstrument": {
        "isin": "XS1893631769",
        "name": "VOLKSWAGEN FINANCIAL SERVICES AG 2,25% 18/26",
        //percentage sign not in the official character set,
        //but might still be used by ASPSP
        "normalisedPrice": {
          "percentage": "99.855" ,
          "priceDateTime" : "2022-03-25T00:00:00.000Z",
          "priceType" : "MRKT",
          "sourceOfPrice" : { "type": "LMAR", "mic": "XETR"}
        }
      },
      "unitsNominal": { "currency": "EUR", "amount": "10000.00" },
      "balanceType": "AVAI",
      "totalBuyingPrice": { "currency": "EUR", "amount": "10100.00" }
    }
```

```
    ]
}
```

5.4 Read Securities Account Transaction List

5.4.1 Request

Call

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

This message reads the transaction list from a given securities account addressed by "securities-account-id". Transactions in this context only refer to events that include the movement of securities.

Path Parameters

Attribute	Type	Description
securities-account-id	String	This identification is denoting the addressed securities account. The securities-account-id is retrieved by using a "Read Securities Account List" call. The securities-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

Remark: Compared to Requests for balances in other AIS services, the query parameter **bookingStatus** is not supported:

Attribute	Type	Condition	Description
dateFrom	ISODate	Conditional	Starting date (inclusive the date dateFrom) of the transaction list, mandated if no delta access is required . dateFrom always relates to one of the dates covered by element Securities related Date or Time. The ASPSP shall provide a documentation, which type of date is used.

Attribute	Type	Condition	Description
dateTo	ISODate	Optional	End date (inclusive the date dateTo) of the transaction list, default is "now" if not given. Might be ignored if a delta function is used.
entryReferenceFrom	String	Optional if supported by API provider	This data attribute is indicating that the AISP is in favour to get all transactions after the transaction with identification entryReferenceFrom alternatively to the above defined period. This is a implementation of a delta access.

If this data element is contained, the entries "dateFrom" and "dateTo" might be ignored by the ASPSP if a delta report is supported. |
| deltaList | Boolean | Optional if supported by API provider | This data attribute is indicating that the AISP is in favour to get all transactions after the last report access for this PSU on the addressed account. This is another implementation of a delta access-report.

This delta indicator might be rejected by the ASPSP if this function is not supported.

If this data element is contained, the entries "dateFrom" and "dateTo" might be ignored by the ASPSP if a delta report is supported. |

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

Attribute	Type	Condition	Description
			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.

5.4.2 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

A JSON response is defined as follows:

Attribute	Type	Condition	Description
securitiesAccount	Account Reference	optional	Identifier of the addressed securities account. Remark for Future: It is recommended to use this data element. The condition might

Attribute	Type	Condition	Description
			change to "mandatory" in a next version of the specification.
transactions	Array of Securities Transaction	Optional	As a distinction between "booked", "pending" and "information" type of transactions does not make sense for securities, this intermediary level is omitted
_links	Links	Optional	A list of hyperlinks to be recognised by the TPP. Type of links admitted in this response: "first": Navigation link for paginated transaction lists. "next:" Navigation link for paginated transaction lists. "previous": Navigation link for paginated transaction lists. "last": Navigation link for paginated transaction lists.

5.4.3 Example

Request (without PSU involvement)

```
GET https://api.testbank.com/v1/securities-accounts/3dc3d5b3-7023-4848-
9853-f5400a64e81g/transactions?dateFrom=2022-03-01


Accept:          application/json
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7756
Consent-ID:       qwer3456tzui7890
PSU-User-Agent:         Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0)
Gecko/20100101 Firefox/54.0
Date:                 Fri, 25 Mar 2022 15:05:37 GMT
```

Response

```
HTTP/1.x 200 Ok
X-Request-ID:          99391c7e-ad88-49ec-a2ad-99ddcb1f7756
Content-Type:          application/json
Date:                  Fri, 25 Mar 2022 15:05:38 GMT
```

```
{
  "securitiesAccount":
    {
      "iban": "DE2310010010123456788"
    },
    "transactions": [
      {
          "transactionId": "1234567",
          "relevantDates": [
             { "type": "transactionDate", "dateAndTime": "2022-02-
28T17:00:05.000Z"},
             { "type": "effectiveSettlementDate", "date": "2022-03-01"}
          ],
          "financialInstrument": {
            "isin": "DE000BASF111",
            "name": "BASF SE Namens-Aktien o.N."
           },
           "unitsNumber": 100,
           "_links": { "transactionDetails": {"href":
"https://api.testbank.com/v1/securities-accounts/3dc3d5b3-7023-4848-9853-
f5400a64e81g/transactions/1234567" } }
      },
      {
          "transactionId": "1234568",
          "relevantDates": [
            { "type": "effectiveSettlementDate", "date": "2022-03-01"}
          ],
          "financialInstrument": {
            "isin": "US1912161007",
            "name": "Coca-Cola Registered Shs"
           },
           "unitsNumber": -100,
           "_links": { "transactionDetails": {"href":
"https://api.testbank.com/v1/securities-accounts/3dc3d5b3-7023-4848-9853-
f5400a64e81g/transactions/1234568" } }
      }
    ]
```

```
}
```

5.5 Read Securities Transaction Details

5.5.1 Request

Call

```
GET /v1/securities-accounts/{securities-account-
id}/transactions/{transaction-id}
```

Reads transaction details from a given transaction addressed by "transactionId" on a given securities account addressed by "securities-account-id". This call is only available on transactions as reported in a JSON format.

Path Parameters

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

Query Parameters

No Query Parameters.

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

Attribute	Type	Condition	Description
			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.

5.5.2   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

A JSON response is defined as follows:

Attribute	Type	Condition	Description
transactionDetails	Securities Transaction	Mandatory	

5.5.3 Example

Request (without PSU involvement)

```
GET https://api.testbank.com/v1/securities-accounts/3dc3d5b3-7023-4848-
9853-f5400a64e81g/transactions/1234568


Accept:            application/json
X-Request-ID:            99391c7e-ad88-49ec-a2ad-99ddcb1f7756
Consent-ID:            qwer3456tzui7890
PSU-User-Agent:            Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0)
Gecko/20100101 Firefox/54.0
Date:                Fri, 25 Mar 2022 15:05:37 GMT
```

Response

```
HTTP/1.x 200 Ok
X-Request-ID:            99391c7e-ad88-49ec-a2ad-99ddcb1f7756
Content-Type:            application/json
Date:                Fri, 25 Mar 2022 15:05:38 GMT



{
    "transactionDetails":
      {
        "transactionId": "1234568",
        "relevantDates": [
          { "type": "transactionDate", "dateAndTime": "2022-03-
10T19:22:05.000Z"},
          { "type": "effectiveSettlementDate", "date": "2022-03-01"}
        "financialInstrument": {
         "isin": "US1912161007",
         "name": "Coca-Cola Registered Shs"
        },
        "unitsNumber": -100,
        "placeOfTrade": { "mic": "XETR"},
        "amountIncludesFees" : true,
        "amountIncludesTaxes": false,
        "amount": { "currency": "EUR", "amount": "5202.00"},
        "unitsNumberBeforeTx": 100,
        "unitsNumberAfterTx": 0
      }
}
```

5.6 Read Securities Order List

5.6.1 Request

Call

```
GET /v1/securities-accounts/{securities-account-id}/orders
```

Reads all orders that are still kept in the ASPSP's data base. The ASPSP may restrict the response values (e.g. restriction to all orders that are still active or all orders that were inactivated no earlier than last month). These restrictions must be documented by the ASPSP in its general documentation of the ASPSP's interface for securities.

Path Parameters

Attribute	Type	Description
securities-account-id	String	This identification is denoting the addressed securities account. The securities-account-id is retrieved by using a "Read Securities Account List" call. The securities-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

Remark: Compared to Requests for balances in other AIS services, the query parameter **bookingStatus** is not supported:

Attribute	Type	Condition	Description
dateFrom	ISODate	Optional	Starting date (inclusive the date dateFrom) of the transaction list, mandated if no delta access is required . dateFrom always relates the creation date of the order.
dateTo	ISODate	Optional	End date (inclusive the date dateTo) of the transaction list, default is "now" if not given. Might be ignored if a delta function is used.

Attribute	Type	Condition	Description
orderStatus	Comma separated list of Order Status Code	Optional	Restricts the result to orders that are currently assigned to one of the status values provided in this query parameter. If the parameter is not provided, orders are provided without restriction to their respective status.

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.

5.6.2   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

A JSON response is defined as follows:

Attribute	Type	Condition	Description
securitiesAccount	Account Reference	Optional	Identifier of the addressed securities account. Remark for Future: It is recommended to use this data element. The condition might change to "mandatory" in a next version of the specification.
orders	Array of Securities Order	Optional	List of orders placed for this securities account.
_links	Links	Optional	A list of hyperlinks to be recognised by the TPP. Type of links admitted in this response: "first": Navigation link for paginated order lists. "next:" Navigation link for paginated order lists. "previous": Navigation link for order transaction lists. "last": Navigation link for paginated order lists.

5.6.3 Example

Request (without PSU involvement)

```
GET https://api.testbank.com/v1/securities-accounts/3dc3d5b3-7023-4848-
9853-f5400a64e81g/orders


Accept:            application/json
X-Request-ID:          99391c7e-ad88-49ec-a2ad-99ddcb1f7756
Consent-ID:            qwer3456tzui7890
PSU-User-Agent:        Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0)
Gecko/20100101 Firefox/54.0
Date:                  Fri, 25 Mar 2022 15:05:37 GMT
```

Response

```
HTTP/1.x 200 Ok
X-Request-ID:          99391c7e-ad88-49ec-a2ad-99ddcb1f7756
Content-Type:          application/json
Date:                  Fri, 25 Mar 2022 15:05:38 GMT



{
  "securitiesAccount":
    {
      "iban": "DE2310010010123456788"
    },
    "orders": [
      {
        "orderId": "1234567",
        "side": "buy",
        "financialInstrument": {
          "isin": "DE000BASF111",
          "name": "BASF SE Namens-Aktien o.N."
         },
         "unitsNumber": 100,
         "orderStatus": "filed",
         "_links": {
           "orderDetails": {"href": "https://api.testbank.com
/v1/securities-accounts/3dc3d5b3-7023-4848-9853-f5400a64e81g
/orders/1234567" },
```

```
        "relatedTransactions": [{"href": "https://api.testbank.com
/v1/securities-accounts/3dc3d5b3-7023-4848-9853-f5400a64e81g
/transactions/1234567" }] }
      },
      {
        "orderId": "1234568",
        "side": "buy",
        "financialInstrument": {
         "isin": "DE0007480204",
         "name": "Deutsche EuroShop AG Namens-Aktien o.N."
        },
        "unitsNumber": 200,
        "orderStatus": "acceptedForBidding",
        "_links": { "orderDetails": {"href":
"https://api.testbank.com/v1/securities-accounts/3dc3d5b3-7023-4848-9853-
f5400a64e81g/orders/1234568" } }
      },
    ]
}
```

5.7 Read Securities Order Details

5.7.1 Request

Call

```
GET /v1/securities-accounts/{securities-account-id}/orders/{orderId}
```

Reads order details from a given order addressed by "orderId" on a given securities account addressed by "securities-account-id.

Path Parameters

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

Query Parameters

No Query Parameters.

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.

5.7.2 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

A JSON response is defined as follows:

Attribute	Type	Condition	Description
orderDetails	Securities Order	Mandatory	Details of the requested securities order.

5.7.3 Example

Request (without PSU involvement)

```
GET https://api.testbank.com/v1/securities-accounts/3dc3d5b3-7023-4848-
9853-f5400a64e81g/transactions/1234568
```

```
Accept:            application/json
X-Request-ID:          99391c7e-ad88-49ec-a2ad-99ddcb1f7756
Consent-ID:            qwer3456tzui7890
PSU-User-Agent:        Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0)
Gecko/20100101 Firefox/54.0
Date:              Fri, 25 Mar 2022 15:05:37 GMT
```

Response

```
HTTP/1.x 200 Ok
X-Request-ID:          99391c7e-ad88-49ec-a2ad-99ddcb1f7756
Content-Type:          application/json
Date:              Fri, 25 Mar 2022 15:05:38 GMT
```

```
{
    "orderId": "1234568",
    "side": "buy",
    "financialInstrument": {
      "isin": "DE0007480204",
      "name": "Deutsche EuroShop AG Namens-Aktien o.N."
     },
     "unitsNumber": 200,
     "placeOfTrade": { "mic": "XETR"},
     "limitPriceAmount": { "currency": "EUR", "amount": "36.50" },
     "typesOfOrder": [ "limitOrder", "allOrNone" ],
```

```
        "timeInForce": "goodForMonth",
        "expiryDateTime": "2022-03-31T23:59:59.999+1:00",
        "relatedCashAccount": { "iban": "DE40100100103307118608" }
        "orderModifyable": true,
        "orderStatus": "acceptedForBidding"
}
```

6   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. Changes to the existing definition are <mark>highlighted</mark>.

6.1   Extension of existing Data Types

6.1.1   Account Details

Attribute	Type	Condition	Description
resourceId	String	Mandatory	This is the data element to be used in the path when retrieving data from a dedicated account, cp. [XS2A-IG], Section 6.5.3 or Section 6.5.4 below.
iban	IBAN	Optional	This data element can be used in the body of the Consent Request Message for retrieving account access consent from this account, cp. [XS2A-IG], 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. [XS2A-IG], Section 6.3.1.1. This data elements is used for payment accounts which have no IBAN.
msisdn	Max35Text	optional	An alias to access an account via a registered mobile phone number. This alias might be needed e.g. in the payment initiation service, cp. [XS2A-IG], Section 5.3.1. The support of this alias must be explicitly documented by the ASPSP for the corresponding API Calls.
<mark>other</mark>	<mark>Other Type</mark>	<mark>Conditional</mark>	<mark>In cases where the criteria listed above (IBAN, BBAN, MSISDN) are not provided to identify an instance of the respective account type (e.g. a securities account), the ASPSP shall</mark>

Attribute	Type	Condition	Description
			include a proprietary ID of the respective account that uniquely identifies the account for this ASPSP.
currency	Currency Code	Mandatory	Account currency. If the securities account does not have a dedicated account currency, code "XXX" is used.
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 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 ASPSP for this account, proprietary definition
cashAccountType	Cash Account Type	Optional	ExternalCashAccountType1Code from ISO 20022. Might be extended by an additional code to indicate securities accounts. A global definition of a code for securities accounts is intentionally not provided by this document.

Attribute	Type	Condition	Description
status	String	Optional	Account status. The value is one of the following: • "enabled": account is available • "deleted": account is terminated • "blocked": account is blocked e.g. for legal reasons If this field is not used, than the account is available in the sense of this specification.
bic	BICFI	Optional	The BIC associated with the account.
linkedAccounts	Max70 Text	Optional	This data attribute is a field, where an ASPSP can name a cash account associated with the securities account.
usage	Max4 Text	Optional	Specifies the usage of the account • PRIV: private personal account • ORGA: professional account
details	Max500 Text	Optional	Specifications that might be provided by the ASPSP • characteristics of the account • characteristics of the securities account • characteristics of the relevant card
balances	Array of Balance	Conditional	To provide an estimated total value of the positions under this account.
tariffs	Max1000Text	Optional	Text information on tariffs related to this securities account.
applicableFees	Array of Securities Account Fee	Optional	Array of elements, each representing one fee (rule) that is individually applicable for this Securities account. If, for example, an ASPSP applies a standard "managementFee" X, but the consumer negotiated a discount D, an

Attribute	Type	Condition	Description
			element should represent (X-D), but neither X nor D.
_links	Links	Optional	Links to the account, which can be directly used for retrieving account information from this dedicated account. Links to "positions", "orders" and/or "transactions" These links are only supported, when the corresponding consent has been already granted. For the used link keywords, see section 6.1.4.

6.1.2   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 can be used for accounts when no IBAN is provided.
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.

Attribute	Type	Condition	Description
msisdn	Max35Text	Conditional	An alias to access a payment account via a registered mobile phone number.
other	Other Type	Conditional	In cases where the criteria listed above (IBAN, BBAN,MSISDN) are not provided to identify the account (e.g. a securities account), the ASPSP shall support delivery of a proprietary ID of the respective account that uniquely identifies the account for this ASPSP. This ID will be delivered within the "other" structure. In this case, the ASPSP specifically shall support consent establishment for an account identified by its proprietary ID. **Remark:** An ASPSP does not have to support the "other" element for (regular payment) accounts.
currency	Currency Code	Optional	ISO 4217 Alpha 3 currency code
cashAccountType	Cash Account Type	Optional, if supported by API provider.	ExternalCashAccountType1Code from ISO 20022. Might be extended by an additional code to indicate securities accounts. A global definition of a code for securities accounts is intentionally not provided by this document. The API provider may restrict the accepted values further (e.g. only "SVGS" 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).

Attribute	Type	Condition	Description
			If the cashAccountType is not present, it indicates the cashAccountType • "Card Account" in case of the account identification being provided as a maskedPan or a pan and • "Current Account" (CACC) otherwise.

6.1.3 Balance

In the context of securities, balances are used to represent an estimation of the securities account's total value. As the value of single financial instruments and therefore the sum of all such values is constantly changing, the estimation does particularly depend on the time of its creation. Therefore, it is strongly recommended (and in some instances mandated) to include the new element referenceDateTime.

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

Attribute	Type	Condition	Description
balanceAmount	Amount	Mandatory	
balanceType	Balance Type	Mandatory	On the usage of balanceType, see section 6.1.3.1.
creditLimitIncluded	Boolean	Optional	A flag indicating if the credit limit of the corresponding account is included in the calculation of the balance, where applicable. Not used for balances of securities accounts.
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	{Or- Optional	indicates the date of the balance

Attribute	Type	Condition	Description
referenceDateTime	ISODateTime	Or – Optional}	indicates the date and time of the balance. Mandated, if balance Type = interimAvailable.
lastCommitted Transaction	Max35Text	Optional	entryReference of the last committed transaction to support the TPP in identifying whether all PSU transactions are already known.

6.1.3.1 Usage of Balance and Balance Type

The used balance type is restricted to the balancesTypes not marked in grey. balanceTypes marked in grey do not apply to securities.

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, this is composed of • invoiced, but not yet paid entries For securities accounts: estimation based in the last fully finished trading date as interpreted by the ASPSP.
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)

Type	Description
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 on the basis of booked credit and debit items during the calculation time/period specified. For securities accounts, an intermediate estimation of the amounts value. If a balance with type "interimAvailable" is used, it must indicate the date and time of the evaluation in field referenceDateTime.
interimBooked	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.
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.

6.1.4 Links

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

Attribute	Type	Condition	Description
securitiesAccount	href Type	Optional	A link to the resource providing the details of one securitiesAccount.
positions	href Type	Optional	A link to the resource providing the list of positions of one securitiesAccount.
orders	href Type	Optional	A link to the resource providing the list of orders of one securitiesAccount.

Attribute	Type	Condition	Description
orderDetails	href Type	Optional	A link to the resource providing details of one specific order.

6.2   New Data Types

6.2.1   Other Type

The "other" type is defined in the same way as in [XS2A-DOM-IG]:

Attribute	Type	Condition	Description
identification	Max35Text	Mandatory	
schemeName Code	Code	{Or - Optional	An entry provided by an external ISO code list
schemeName Proprietary	Max35Text	Or – Optional}	A scheme name defined in a proprietary way.
issuer	Max35Text	Optional	Issuer of the identification

6.2.2 Evaluated Amount

This data structure represents an evaluated amount (without indicating the method of evaluation) when an unambiguous balance cannot be provided, but an evaluation, e.g. the total value of a securities deposit:

Attribute	Type	Condition	Description
amount	Amount	mandatory	Amount that is evaluated
evaluationDateTime	ISODateTime	{Or	Date / date and time of the evaluation.
evaluationDate	ISODate	Or}	

6.2.3 Securities Position

This data structure represents one position within a securities account:

Attribute	Type	Condition	Description
financialInstrument	Financial Instrument	Mandatory	Financial Instrument that is contained in this position.
unitsNumber	Number	{Or	Nominal or numeric quantification of the financial instrument within this position, negative values for short positions.
unitsNominal	Amount	Or}	
externalIdentifier	Max35Text	Optional	Name or identifier with an intrinsic meaning for the PSU to be displayed.
safekeepingPlace	BICFI	Optional	BIC of the place where the securities are safe-kept, physically or notionally.
safekeepingCountry	Country Code	Optional	Country where the securities are safe-kept.
balanceType	SecuritiesBalanceType_1_2_11_12_CodeSecuritiesBalanceType_1_2_11_12_Code	Optional	Specifies the nature of the securities or investment fund balance.

Type of balance in case of multiple positions for the same financial instrument for further distinction.

Remark: In consequence, several positions |

Attribute	Type	Condition	Description
			with the same financial instrument may occur in the same position list, having different values of balanceType".
averageBuyingPrice	Amount	Optional	Average buying price of the position excluding any fees or taxes.
averageSellingPrice	Amount	Optional	Average selling price of the position, e.g. in case of a short position Price excluding any fees or taxes.
totalBuyingPrice	Amount	Optional	In case of bonds, an average buying price does not make sense. Therefore, the total buying price excluding any fees or taxes can be displayed instead.
estimatedCurrentValue	Evaluated Amount	Optional	Estimated value of the position and timestamp of the estimation.
accruedInterest	Accrued Interest	Optional	Accrued interest by the position.
currencyExchange	Array of Report Exchange Rate	Optional	The ASPSP might include exchange rates e.g. if the security is denoted in another currency

Attribute	Type	Condition	Description
			than the account itself.
details	Max500Text	Optional	Additional details to the position.

6.2.4 Financial Instrument

This data structure represents financial instrument.

Attribute	Type	Condition	Description
isin	ISIN	{Or	ISIN of the financial Instrument.
other	Other Financial Instrument Identification	Or}	If an ISIN is not available, the ASPSP may instead include an identification by other means.
name	Max70Text	Optional	Name of the financial instrument.
normalisedPrice	Evaluated Price	Optional	Price per unit of the financial instrument in case of a price amount. Percentage price otherwise. If used in the context of a transaction, the price here shall indicate the applied price (without fees) for the trade.

Remark: Publicly available information on the financial instrument like interests (e.g. in the case of bonds), various dates (maturity date, issue date,..) or details on options will not be supported in the data model. However, individual markets might extend the definition, for example to meet certain regulatory requirements.

6.2.5 Other Financial Instrument Identification

This data structure represents the identification of a financial instrument by means other than ISIN.

Attribute	Type	Condition	Description
identification	Max35Text	Mandatory	Identification of a security.
suffix	Max16Text	Optional	Identifies the suffix of the security identification.
typeCode	ExternalFinancialInstrumentIdentificationType1Code	{Or	Unique and unambiguous identification source, as assigned via a pre-determined code list.
typeProprietary	Max35Text	Or}	Unique and unambiguous identification source using a proprietary identification scheme.

6.2.6 Evaluated Price

This data structure represents an evaluated price (e.g. of a security) when an unambiguous balance cannot be provided, but an evaluation, e.g. the total value of a securities deposit

Attribute	Type	Condition	Description
amount	Amount	{Or	If the price is evaluated as an amount, amount of the price in its respective currency
percentage	String	Or}	Percentage of the price with (optional) fractional digits. Up to 20 significant figures. Negative amounts are signed by minus. The decimal separator is a dot. Trailing zeroes must be truncated.
priceDateTime	ISODateTime	{Or	Date / date and time of the evaluation of this price.
priceDate	ISODate	Or}	
priceType	TypeOfPrice17Code	Optional	Type of the price

Attribute	Type	Condition	Description
sourceOfPrice	Source of Price	Optional	Indicates the source of the respective price
description	Max500Text	Optional	Additional description of the source of price. E.g., if the source of price indicates a local market, the ASPSP can include the local market's name in this field.
exchangeRates	Array of Report Exchange Rate	Optional	Relevant exchange rates for the determined price

Remark: An additional "valuation" substructure as in openWealth (https://openwealth-portal.apps.ndgit.com/#/apis/16/67) is not supported

6.2.7 Accrued Interest

Represents the accrued interest by a securities position:

Attribute	Type	Condition	Description
daysAccrued	number	Optional	Specifies the number of days used for calculating the accrued interest amount.
amounts	Array of Amount	Optional	Amount of the accrued interest. Each item represents the same monetary value in different currencies, e.g. account currency, currency of the security's denomination.

6.2.8 Securities Transaction

Represents a securities transaction.

Remark: Bank Transaction Code is missing in the following definition intentionally. To the current understanding, the Bank Transaction Code is specifically designed for cash movements (and not for the movement of securities).

Attribute	Type	Condition	Description
transactionId	String	Optional	Can be used as access-ID in the API, where more details on a 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 Read Securities Transaction Details Request as defined in section 5.5.
entryReference	Max35Text	Optional	Identification of the transaction as used e.g. for reference for deltafunction on application level.
relevantDates	Array of Securities related Date or Time	Mandatory	At least one of the listed date types must be present.
financialInstrument	Financial Instrument	Mandatory	Financial instrument that was transferred within the transaction.
orderId	String	Optional	Resource Id of the order resource that triggered this transaction, if applicable.
unitsNumber	Number	{Or	Nominal or numeric quantification of the financial instrument that has been transferred within this transaction.

Negative values indicate that the respective quantity of the financial instrument has been taken from the securities account, positive values indicate that the quantity has been added. |
| unitsNominal | Amount | Or} | |

Attribute	Type	Condition	Description
transactionType Code	TransactionActivit yType1Code	{Or	Type of the transaction as code or as a proprietary string. For the code, the following values are supported:
transactionType Proprietary	Max35Text	Or}	**BOLE** Transaction relates to lending/borrowing. **CLAI** Transaction relates to a market claim following a corporate action. **COLL** Transaction relates to collateral. **CORP** Transaction relates to corporate action. **SETT** Transaction relates to settlement and clearing.
placeOfTrade	Market Identification	Optional	
amountIncludes Fees	Boolean	Optional	Indicates whether the transactionAmount (see below) is including fees. Default: false
amountIncludes Taxes	Boolean	Optional	Indicates whether the transactionAmount (see below) is including taxes. Default: false
transactionAmo unt	Amount	Optional	Transaction amount for the transferred security for the PSU. Potential fees or taxes are reflected as indicated by elements

Attribute	Type	Condition	Description
			"amountIncludesFees" and "amountIncludesTaxes". **Remark:** The price denoted here is the price for the whole lot of securities within this transaction, not for a single item.
relatedFees	Array of Securities related Fee	Optional	Only allowed if amountIncludesFees = true. In that case Details of the fees that have been applied to this transaction (and therefore represent additional costs of the transaction beyond the transactionAmount). Fees with positive amount are debited by the PSU, only in the rare case of a fee credited to the PSU (e.g. in case of a reversal) negative amounts are used.
currencyExchange	Array of Report Exchange Rate	Optional	The ASPSP might include exchange rates e.g. if the transaction has been settled in another currency than the PSU's currency.
reversalIndicator	Boolean	Optional	Indicates whether it is the reversal of a previously reported movement. Default: false
reversedTransactionId	String	Optional	"transactionId" of the reversed transaction, if applicable and supported by the ASPSP.
unitsNumberBeforeTx	Number	{Or - Optional	Nominal or numeric quantification of the financial

Attribute	Type	Condition	Description
unitsNominalBeforeTx	Amount	Or - Optional }	instrument within the primary position before the transaction, negative values for short positions.
unitsNumberAfterTx	Number	{Or - Optional	Nominal or numeric quantification of the financial instrument within the primary position after the transaction, negative values for short positions.
unitsNominalAfterTx	Amount	Or - Optional }	
accruedInterest	Accrued Interest	Optional	accrued interest of the position to make transparent what the PSU really lost within this transaction.
details	Max500Text	Optional	Additional details to the transaction
_links	Links	Optional	The following types of links are supported: "transactionDetails": **Single** link for retrieving details on this specific transaction. Only applicable, if the ASPSP supports the Read Securities Transaction Details endpoint, see section 5.5.

6.2.9 Securities related Date or Time

Attribute	Type	Condition	Description
type	String	Mandatory	Type of the date / date time. The following values are supported: • effectiveSettlementDate, • settlementDate, • valueDate,

Attribute	Type	Condition	Description
			• performanceDate, • bookingDate, • transactionDate
date	ISODate	{Or	
dateAndTime	ISODateTime	Or}	

6.2.10 Market Identification

Attribute	Type	Condition	Description
mic	Max4Text	{Or	ISO 10383 code of the market place
market Identifier Proprietary	Max35Text	Or}	Proprietary Identifier of the market place.

6.2.11 Source of Price

Attribute	Type	Condition	Description
type	MarketType4Code	mandatory	
mic	Max4Text	{Or - Optional	If the type indicates local Market (Code: "LMAR"), the identification of the market should additionally be included here.
market Identifier Proprietary	Max35Text	Or - Optional }	
			Technically, Source of Price is an extension of Market Identification.

6.2.12 Securities Account Fee

Represents a Fee rule that is applicable to a securities account:

Attribute	Type	Condition	Description
typeCode	Securities Fee Type Code	{Or	Type of the fee as a code. Might be adjusted in the future based on market experience.
typeProprietary	Max35Text	Or}	Type of the fee as a proprietary string.
feeRules	Array of Securities Account Fee Rule	Mandatory	Array of fee rules. Each rule represents ow the amount of the fee is determined either explicitly by stating the amount or implicitly by providing a percentage, minimum and maximum amount. This array will usually only contain one entry to represent the whole rule. Only in the case of the fee being calculated as a tiered percentage, several entries are included to represent the several tiers of the fee rule.
applicableFrom	ISODate	Optional	First date, when this fee is applicable. If not present, the fee is applicable starting with the creation of this account / the latest reporting date supported by the ASPSP
applicableTo	ISODate	Optional	Last date, when this fee is applicable. If not present, the fee is applicable indefinitely.
additionalInformation	Max500Text	Optional	

6.2.13 Securities Account Fee Rule

Attribute	Type	Condition	Description
amount	Amount	{Or	Amount of the fee.
percentage	String	Or}	Percentage of the fee. Up to 20 significant figures. The decimal separator is a dot. Trailing zeroes must be truncated.Fee as a percentage
fromBaseAmount	Amount	Optional	To be used for fees where a tiered percentage is used to calculate the fee relative to an implicitly defined base amount (such as a transaction's volume being the base amount for a courtage). The range of one tier is defined as all applicable entities with base amounts X and fromBaseAmount ≤ X ≤ toBaseAmount In any array of fee rules, only one of these entries may be missing the "fromBaseAmount" element (indicating that the rule represented by this entry is used without a lower bound to the base amount) and only one entry may be missing the "toBaseAmount" element (indicating that the rule represented by this entry is
toBaseAmount	Amount	Optional	

Attribute	Type	Condition	Description
			applied without an upper limit to the base amount). In cases, where the fee is not calculated as a tiered percentage, only one entry in array "feeRules" is included. This entry must be missing the subelements "fromBaseAmount" and "toBaseAmount".
minimumAmount	Amount	Optional	Minimum amount of the fee in each billing period / for each billed event, if applicable.
maximumAmount	Amount	Optional	Maximum amount of the fee in each billing / for each billed event period, if applicable.

6.2.14 Securities related Fee

Attribute	Type	Condition	Description
typeCode	Securities Fee Type Code	{Or	
typeProprietary	Max35Text	Or}	
amount	Amount	Mandatory	
_links	Links	Optional	Links to resources, where the ASPSP can provide additional information on the fee, e.g. an overview on the general fee rules of the underlying securities account. Currently, no specific href types are defined in this context.

6.2.15 Securities Order

Represents a securities order.

Remark: Fees and taxes are not included in the order.

Attribute	Type	Condition	Description
orderId	String	Optional	Can be used as access-ID in the API, where more details on an order is offered. If this data attribute is provided, this shows that the AIS can get access on more details about this transaction using the Read Securities Transaction Details Request as defined in section 5.7. **Remark:** In anticipation of future services where orders might be placed or revoked via the openFinance API, the orderId should be defined in a way that it will also identify an order in the case of a placement / cancellation, if the ASPSP intends to support those use cases, as well.
side	Securities Order Side	Mandatory	Type of transaction that is associated with this order.
financialInstrument	Financial Instrument	Mandatory	Financial instrument the order refers to.
unitsNumber Order	Number	{Or	Nominal or numeric quantification of the financial instrument that is ordered.
unitsNominal Order	Amount	Or}	
unitsNumber Display	Number	{Or – Optional	

Attribute	Type	Condition	Description
unitsNominal Display	Amount	Or - Optional}	Nominal or numeric quantification of the order that shall be displayed.
placeOfTrade	Market Identification	Optional	
limitPrice Amount	Amount	{Or- Optional	Limit price displayed either as an amount or a percentage rate (decimal separator: ".")
limitPrice Percent	String	Or – Optional}	
stopPriceAmount	Amount	{Or- Optional	Stop price displayed either as an amount or a percentage rate (decimal separator: ".")
stopPrice Percent	String	Or – Optional}	
tradingSessionIndicator	Trading Session Type Code	Optional	
typesOfOrder	Array of Type of Order Code	Optional	One or more Codes to indicate characteristics of the order.
timeInForce	Order Time Limit Code	Optional	If the order is restricted by a time limit, the type time limit is indicated by a value of the corresponding code set.
expiryDate	ISODate	{Or - Optional	Date, when the order expires, if applicable.
expiryDateTime	ISODateTime	Or – Optional}	Date and time, when the order expires, if applicable.
relatedCashAccount	Account Reference	Optional	If the execution of this order implies the transfer of money, cash account to be affected by this transfer from the PSU's side.
orderSplit	Boolean	Optional	Value true indicates that this order is the result of an order

Attribute	Type	Condition	Description
			split. Missing values indicate "false".
orderModifyable	Boolean	Optional	Value true indicates that this order can (still) be modified. Missing values indicate "false".
orderStatus	Order Status Code	Mandatory	
details	Max500Text	Optional	Additional details to the position
_links	Links	Optional	The following types of links are supported: "relatedOrders": An **array** of links to request order details of related orders (e.g. other orders that originated from the same order split as this order). Only applicable, if the ASPSP supports the Read Securities Order Details endpoint, see section 5.7. "relatedTransactions": An **array** of links to request securities transaction details of transactions that resulted from this order. Only applicable, if the ASPSP supports the Read Securities Transaction Details endpoint (see section 5.5). "orderDetails": **Single** link for retrieving details on this specific order. Only applicable, if the ASPSP supports the Read Securities

Attribute	Type	Condition	Description
			Order Details endpoint, see section 5.7.

7 Primitive data types

New data types

7.1 ISIN

ISIN as defined in ISO20022 (ISINIdentifier).

Definition: International Securities Identification Number (ISIN). A numbering system designed by the United Nation's International Organisation for Standardisation (ISO). The ISIN is composed of a 2-character prefix representing the country of issue, followed by the national security number (if one exists), and a check digit. Each country has a national numbering agency that assigns ISIN numbers for securities in that country.

Format: String

Pattern: [A-Z0-9]{12,12}

7.2 Trading Session Type Code

Code set to identify the "type of a trading session, in which an order shall be executed. Possible values:

- **auctions**   Orders that are traded in regularly occurring auctions: orders are accumulated and executed on the basis of defined algorithms.
- **continuous**   Orders that are executed directly against each other as they hit the marketplace.

7.3 Securities Order Side

Code set to identify the "side" / intended action for the respective order. Possible values:

- **buy**
- **sell**
- **subscription**
- **redemption**

7.4 Type of Order Code

Code set to indicate characteristics of an order.

- **allOrNone**   A round-lot market or limit-price order which must be executed in its entirety or not at all; unlike 'fill or kill', these orders are not cancelled if not executed as soon as received.
- **buyContraShortExempt**   Order to buy contra short exempt.
- **buyContraShort**:   Order to buy contra short.
- **buyMinus**:   Order to buy at a price lower than the current market price. This is an order to buy a stated amount of a financial instrument provided that its price is not higher than the last sale if the last sale was a minus or zero minus tick, not higher than the last sale minus the minimum fractional change in the stock if the last sale was a plus or zero plus tick. The price limit indicates the highest price at which the order can be executed.
- **carefully**:   Order that is not to be executed as a whole because it may disturb the price.
- **combinationOrder**   Order that is linked to another order to buy or sell and must be executed as a unit, both or none, or cancelled as a unit.
- **discretionary**:   Order where the executing broker or investment manager decides on the quantity or price.
- **doNotIncrease**   Limit order to buy or stop order to sell or stop limit order that is not to be increased in shares on the ex-dividend date as a result of a stock dividend or distribution.
- **doNotReduce**   Limit order to buy or stop order to sell, or stop-limit order to sell that is not to be reduced in price by the amount of an ordinary cash dividend. Applies only to ordinary stock dividends; should be reduced for other distributions.
- **icebergOrder** Type of limit order whose overall quantity is not transparent to the market. Rather, only a client-defined part of the order is shown to the market (the 'tip of the iceberg'). Upon execution of the first 'tip' (that is partial execution to the client while for the market it does not appear to be a 'partial') the system releases the next 'tip' of the same size to the market until the 'iceberg' has been melted down successfully. Different from a usual care order.
- **limitWith**   Order to be executed at a limit price, with a round-lot (or board-lot) sales; valid only for odd lot orders.
- **limitWithout** Order to be executed at a limit price, without a round-lot (or board-lot) sales; valid only for odd lot orders.
- **limitOrder**   Order to buy at the indicated price limit or lower or an order to sell at the indicated limit price or higher.
- **atMarket**   Order to buy or sell a specified amount of a financial instrument at the quoted market price or better.
- **marketNotHeld**   Order to buy or sell a specified amount of a financial instrument at the quoted market price or better with some discretion on the price limit.
- **marketToLimitOrder** Type of order that couples the high possibility of execution (Market Order) with a protection against unwanted price fluctuations (Limit Order).

- **marketUntilTouched**   Order to buy or sell a specified amount of a financial instrument at the quoted market price or better with some discretion on the price limit.
- **notHeld**   Order that may be executed in partials or outside the hours of the exchange or other exchange rules.
- **orderLie**   Order that is related to another order where the second order may be cancelled without cancelling the first. Normally, the sell order must be executed before the buy order.
- **stopLimit**   Stop order to buy (sell) that becomes a limit order at the limit price when the financial instrument trades at or above (below) the stop price after the order is submitted.
- **stopOrder**   Order to buy that becomes a market order when the financial instrument trades at or above the stop price after the order is submitted or an order to sell which becomes a market order when the financial instrument trades at or below the stop price.
- **stopLoss**   Order to sell that sets the sell price below the market price.
- **sellPlus**   Order to sell a stated amount provided that the price is not lower than the last sale price if the last sale was a plus or zero plus tick and not lower than the last sale minus the minimum fractional change in the financial instrument if the last sale was a minus or zero minus tick.
- **sellShortExempt**   Order to sell short which is exempt from short-sale rules.
- **sellShort**   Order to sell a financial instrument that the seller does not own; a sale effected by delivering a financial instrument borrowed by or for the account of the seller.

7.5 Order Time Limit Code

Code set to identify the time an order shall be in force. Possible values:

- day,
- goodTillCancel,
- atTheOpening,
- immediateOrCancel,
- fillOrKill,
- fillAndKill,
- goodTillCrossing,
- goodTillDate,
- atTheClose,
- goodThroughCrossing,
- atCrossing,
- goodForTime,
- goodForAuction,
- goodForMonth

7.6 Order Status Code

Code set to identify the status of an order:

- **unknown**   the status of this order can currently not be determined
- **new**   Outstanding order with no executions
- **partiallyFilled**   Outstanding order with executions and remaining quantity
- **filled**   Order completely filled, no remaining quantity
- **doneForDay** Order not, or partially, filled; no further executions forthcoming for the trading day
- **canceled**   Cancelled order with or without executions
- **replaced**   Cancelled order due to a replacement with or without executions
- **pendingCancel**   Order with a request for cancellation pending. Does not indicate that the order has been cancelled.
- **stopped**   Order has been stopped at the exchange. Used when guaranteeing or protecting a price and quantity
- **rejected**   Order has been rejected by sell-side (broker, exchange, ECN). NOTE: An order can be rejected subsequent to order acknowledgment, i.e. an order can pass from New to Rejected status.
- **suspended**   Order has been placed in suspended state at the request of the client.
- **pendingNew** Order has been received by sell-side's (broker, exchange, ECN) system but not yet accepted for execution.
- **calculated**   Order has been completed for the day (either filled or done for day). Commission or currency settlement details have been calculated
- **expired**   Order has been cancelled in broker's system due to time in force instructions.
- **acceptedForBidding**   Order has been received and is being evaluated for pricing.
- **pendingReplace**   Order with an Order Cancel/Replace Request pending.

7.7 Securities Fee Type Code

Initially, the following codes are defined to indicate different fee types in the context of Securities transactions. Please note, that these codes are not based on an ISO code list and might be changed in later versions of this document:

- transactionFee
- brokerageFee
- managementFee
- courtage
- custodyFee
- exchangeFee
- thirdPartyFee
- otherFee

8 Referenced ISO Codes

In addition to the ISO Codes already referred to in [XS2A-IG], the following Codes from the ISO-20022 standard are adopted:

- MarketType4Code

- TypeOfPrice17Code

- TransactionActivityType1Code

- ExternalFinancialInstrumentIdentificationType1Code

For Balance Type, SecuritiesBalanceType_1_2_11_12_Code is defined as the code list, containing all codes from ISO 20022 code lists

- SecuritiesBalanceType1Code (see [ISO20022_IF])

- SecuritiesBalanceType2Code (see [ISO20022_IF])

- SecuritiesBalanceType11Code (see [ISO20022_SR])

- SecuritiesBalanceType12Code (see [ISO20022_SR])

9   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

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Annex A   Best Practices for Converting Codes from ISO 15022 Messages

Currently, a widely used format for displaying security related information is ISO15022, particularly:

- MT502 to display orders
- MT535 to display holdings
- MT536 to display securities transactions

Annex A.1.   Mapping of Securities Balance Codes

Most of the values of the Qualifier of an MT535 messages field 93a (compare https://www.iso20022.org/15022/uhb/mt535-43-field-93a.htm) are also valid values of the SecuritiesBalanceType_1_2_11_12_Code. They can therefore be transferred to element balanceType without any conversion. Only for the following values, a conversion is necessary:

Code MT535	Description	SecuritiesBalanceType_1_2_11_12_Code	Description
AGGR	Aggregate	Not used, the security balance code is only used for individual positions in the context of the document at hand.	
NAVL	Not Available Balance	BLOK	

Annex A.2.   Mapping Of TransactionActivityType1Code

The values of TransactionActivityType1Code are identical to the values of the transaction indicator of MT536: (38) Field 22a: Indicator (https://www.iso20022.org/15022/uhb/mt536-38-field-22a.htm). They can therefore be transferred without further conversion.

Annex A.3.   Mapping of MarketType4Code

The values of MarketType4Code are identical to the values of the source of price code used in MT536: (25) Field 94B: Place: Source of Price (https://www.iso20022.org/15022/uhb/mt536-25-field-94b.htm) and in MT535: (39) Field 94B (https://www.iso20022.org/15022/uhb/mt535-39-field-94b.htm). They can therefore be transferred without further conversion. For Security Orders (MT502) no corresponding information exists. The missing information in orders is no blocker for serving the interface, as the sourceOfPrice is only used as an optional element within this framework.

Annex A.4.   Mapping of TypeOfPrice17Code

The values of TypeOfPrice17Code cover the values of the qualifier in field "price" (90a) of MT535 (see https://www.iso20022.org/15022/uhb/mt535-46-field-90a.htm) and MT536 (see https://www.iso20022.org/15022/uhb/mt536-24-field-90a.htm) messages. They can therefore be transferred without further conversion. For Security Orders (MT502) no corresponding

information exists. The missing information in orders is no blocker for serving the interface, as the priceType is only used as an optional within this framework.

Annex A.5.   Mapping of ExternalFinancialInstrumentIdentificationType1Code

No specific fields are defined in MT messages to represent financial instrument identification other than ISIN. The field shall be filled according to the local conditions of usage.

Annex A.6.   Mapping of Trading Session Type Code

Trading Session Type Code can be derived from the **Trading Session Indicator** of an MT502 message (see https://www.iso20022.org/15022/uhb/mt502-18-field-22a.htm). The mapping can be done in a straightforward fashion as shown in the following table:

Code MT502	Description	Trading Session Type Code
AUCT	Auctions	auctions
CONT	Continuous	continuous

Annex A.7.   Mapping of Securities Order Side

Securities Order Side can, on principle, be derived from the Buy/Sell Indicator of an MT502 message (see https://www.iso20022.org/15022/uhb/mt502-18-field-22a.htm). However, currently not all of the MT502 indicators are reflected in the Securities Order Side code list.

Informative: List of MT502 Buy/Sell Indicator values:

Code MT502	Description	Securities Order Side
BUYI	Buy	buy
CROF	Cross From	[not supported]
CROT	Cross To	[not supported]
DIVR	Reinvestment of Dividend Order	[not supported]
FPOO	FPO Order	[not supported]

Code MT502	Description	Securities Order Side
IPOO	IPO Order	[not supported]
IPPO	IPP Order	[not supported]
REDM	Redemption	redemption
SELL	Sell	sell
SUBS	Subscription	subscription
SWIF	Switch From	[not supported]
SWIT	Switch To	[not supported]

Annex A.8.   Mapping of Type of Order Code

Type of Order Code can be derived from the **Type of Order Indicator** of an MT502 message (see https://www.iso20022.org/15022/uhb/mt502-18-field-22a.htm). The mapping can be done in a straightforward fashion as shown in the following table:

Code MT502	Description	Type of Order Code
ALNO	All or None	allOrNone
BCSE	Buy Contra Short Exempt	buyContraShortExempt
BCSH	Buy Contra Short	buyContraShort
BMIN	Buy Minus	buyMinus:
CARE	Carefully	carefully
COMB	Combination Order	combinationOrder
DISC	Discretionary	discretionary
DNIN	Do Not Increase	doNotIncrease
DNRE	Do Not Reduce	doNotReduce
ICEB	Iceberg Order	icebergOrder
LIWI	Limit With	limitWith

Code MT502	Description	Type of Order Code
LIWO	Limit Without	limitWithout
LMTO	Limit Order	limitOrder
MAKT	At Market	atMarket
MANH	Market Not Held	marketNotHeld
MTLO	Market to Limit Order	marketToLimitOrder
MUTO	Market Until Touched	marketUntilTouched
NOHE	Not Held	notHeld
ORLI	Order Lie	orderLie
SLOS	Stop Loss	stopLoss
SPLU	Sell Plus	sellPlus
STLI	Stop Limit	stopLimit
STOP	Stop Order	stopOrder
SSEX	Sell Short Exempt	sellShortExempt
SSHO	Sell Short	sellShort

Annex A.9. Mapping of Order Time Limit Code

Order Time Limit Code can be derived from the **Time Limit Indicator** of an MT502 message (see https://www.iso20022.org/15022/uhb/mt502-18-field-22a.htm). The mapping can be done in a straightforward fashion as shown in the following table:

Code MT502	Description	Order Time Limit Code
CLOS	At the Closing	atTheClose,
FAKI	Fill and Kill	fillAndKill
FIKI	Fill or Kill	fillOrKill,
GDAY	Good for the Day	day

Code MT502	Description	Order Time Limit Code
GTCA	Good until Cancelled	goodTillCancel
GTHD	Good through Date	goodTillDate
GTMO	Good for the Month	goodForMonth
GTNM	Good until the End of Next Month	goodTillDate (+ specification of the end of next month in expiryDateTime)
GTXO	Good till Crossed	goodTillCrossing,
IOCA	Immediate or Cancel	immediateOrCancel,
OPEN	At the Opening	atTheOpening,
-	-	goodThroughCrossing,
-	-	atCrossing
-	-	goodForTime
-	-	goodForAuction,

Annex A.10.   Mapping of Order Status Code

As the order Status is not part of an MT502 message, no mapping can be provided.