Coventry Building Society

Account and Transaction API Specification V2.0

Contents

Version control

Version	Date	Updated by	Changes made
1.0	07 Feb 2018	Coventry Building Society	Baseline version
1.1	03 Oct 2018	Coventry Building Society	Addition of new Sandbox APIs
1.2	13 Feb 2019	Coventry Building Society	Addition of Token endpoints
2.0	19 Feb 2019	Coventry Building Society	New error contract for all APIs Addition of Scheduled Payments API.

Release Note

This release note explains what's new in The Account and Transaction API Specifications between versions.

Version 2.0 – Changes

Our APIs follow OpenBanking Account and Transaction API Specification v1.1 plus the error response structure and any additional endpoints as defined in OpenBanking Account and Transaction API Specification v3.1. These comprise of:

- The error contract for each API has been modified to comply with the OpenBanking Read/Write Data API Specification v3.1. defined contract. - https://openbanking.atlassian.net/wiki/spaces/DZ/pages/937656404/Read+Write+Data+API+Specification+-+v3.1#Read/WriteDataAPISpecification-v3.1-ErrorResponseStructure
- A new scheduled payments API has been added as per OpenBanking Account and Transaction API Specification v3.1 – Scheduled Payments v3.1 - Openhttps://openbanking.atlassian.net/wiki/spaces/DZ/pages/937066541/Scheduled+Payments+v3.1.
- A new data item, Name, has been added for the accounts{AccountId} endpoint.

Overview

This specification describes the Account Information and Transaction API flows and payloads.

The API endpoints described here allow an AISP to:

- Register an 'intent' to retrieve account information by creating an "account request". This registers the data "permissions", expiration and transaction history timeframe the customer (PSU) has consented to provide to the AISP; and
- Subsequently retrieve account and transaction data

Document Overview

This document consists of the following parts:

Overview: Provides an overview of the scope of the API and the key decisions and principles that contributed to the specification.

Basics: The section identifies the resources, operations that are permitted on those resources, and various special cases.

Security & Access Control: Specifies the means for AISPs and PSUs to authenticate themselves and provide consent.

Swagger Specifications: Provides links to the swagger specifications for the APIs.

Data Model: Describes the data model for the API payloads.

Usage Examples: Examples for normal flows, and alternate flows.

Design Principles

RESTful APIs

The API adheres to RESTful API concepts where possible and sensible to do so.

However, the priority is to have an API that is simple to understand and easy to use. In instances where following RESTful principles would be convoluted and complex, the principles have not been followed.

References:

- The highest level Data Description Language used is the JSON Schema : http://json-schema.org/
- Best Practice has also been taken from the Data Description Language for APIs; JSON API : http://jsonapi.org/
- The Interface Description Language used is the Swagger Specification version 2.0 (also known as Open API) : http://swagger.io/ and https://github.com/OAI/OpenAPI-Specification

Standards

The CBS principles for developing the new API standards:

- CBS will adopt existing standards where relevant/appropriate.
- CBS has adopted Open Banking Standards in the development and use of the APIs https://www.openbanking.org.uk/standards/

Idempotency

The API for creating an account-request resource is *not* idempotent. Once the API has been called, the state of the underlying resource is subject to changes.

If a time-out error occurs - then we would expect an AISP to create a new account-request resource - rather than try with the same resource.Scope

The APIs specified in this document provide the ability for AISPs to access a PSU's account and transaction information for domestic PCA accounts.

Basics

Overview

The figure below provides a general outline of an account information request and flow using the Account Info APIs.
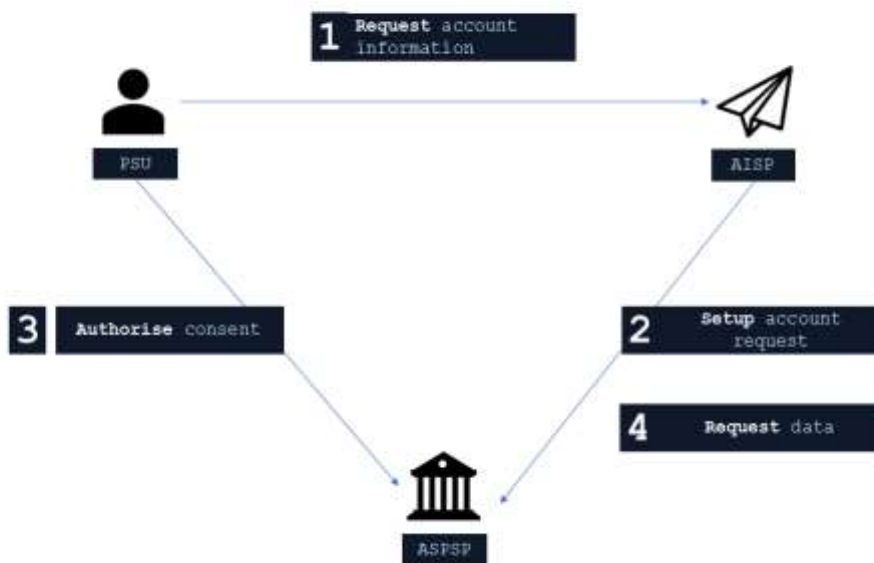
Steps

Step 1: Request Account Information

- This flow begins with a PSU consenting to allow an AISP to access account information data.

Step 2: Setup Account Request

- The AISP connects to CBS who services the PSU's account(s) and creates an **account-request** resource. This informs CBS that one of its PSUs is granting access to account and transaction information to an AISP. CBS responds with an identifier for the resource (the AccountRequestId - which is the intent identifier).
- This step is carried out by making a **POST** request to /account-requests endpoint
- The setup payload will include these fields - which describe the data that the PSU has consented with the AISP:
  - Permissions - a list of data clusters that have been consented for access
  - Expiration Date - an optional expiration for when the AISP will no longer have access to the PSU's data
  - Transaction Validity Period - the From/To date range which specifies a transaction history period which can be accessed by the AISP
- An AISP may be a broker for data to other 4th parties, and so it is valid for a customer to have multiple account-requests for the same accounts, **with different consent/authorisation parameters agreed**.

Step 3: Authorise Consent

- The AISP redirects the PSU to CBS. The redirect includes the AccountRequestId generated in the previous step. This allows CBS to correlate the account-request that was setup. CBS authenticates the PSU. CBS updates the state of the **account-request** resource internally to indicate that the account request has been authorised.
- Consent is managed between the PSU and the AISP - so the account-request details cannot be changed (with CBS) in this step. The PSU will only be able to authorise or reject the account-request details in its entirety.
- During authorisation - the PSU selects accounts that are authorised for the AISP request (in CBS's banking interface)
- The PSU is redirected back to the AISP.

Step 4: Request Data

- This is carried out by making a **GET** request to the relevant **resource**.
- The unique AccountId(s) that are valid for the account-request will be returned with a call to GET /accounts. **This will always be the first call once an AISP has a valid access token.**

Sequence Diagram

sd AIS End to End Flow

Actors/Participants: PSU | AISP | CBS Authorisation Server | CBS Resource Server

- PSU → AISP: Request CBS Account Information()
- AISP → CBS Authorisation Server: Establish()
  - «TLS 1.2 MA»
- AISP → CBS Authorisation Server: Initiate Client Credentials Grant(ClientId and Secret)
- CBS Authorisation Server → AISP: Access Token()
- AISP → CBS Resource Server: Establish()
  - «TLS 1.2 MA»
- AISP → CBS Resource Server: POST /account-requests(Access Token, Consent(s) request)
- CBS Resource Server → AISP: AccountRequestId()
- AISP: Create a JWT Token containing the AccountRequestId()
- AISP → PSU: HTTP 302, Redirect(send JWT Token containing AccountRequestId in request)
- PSU → CBS Authorisation Server: Follow redirect to CBS Authorize endpoint(JWT Token containing AccountRequestId())
- CBS Authorisation Server → PSU: Request stage 1 of authentication()
- PSU → CBS Authorisation Server: Submit Stage 1 Authentication Data()
- CBS Authorisation Server → PSU: Request Stage 2 Authentication()
- PSU → CBS Authorisation Server: Submit Stage 2 Authentication()
- CBS Authorisation Server → PSU: Request Consent Authorisation()
- PSU → CBS Authorisation Server: Submit Consent Authorisation(Consent Acknowledgement, Selected Account)
- CBS Authorisation Server → PSU: HTTP 302, AISP Redirect (authorization code)
- PSU → AISP: Follow redirect()
- AISP → CBS Authorisation Server: Establish()
  - «TLS 1.2 MA»
- AISP → CBS Authorisation Server: Exchange Authorization code for Access Token()
- CBS Authorisation Server → AISP: Access Token()
- AISP → CBS Resource Server: Establish()
  - «TLS 1.2 MA»
- AISP → CBS Resource Server: GET /accounts()
- CBS Resource Server → AISP: List of accounts containing AccountIds()
- AISP → CBS Resource Server: GET /accounts/{AccountId}/transactions()
- CBS Resource Server → AISP: List of Transactions()

Actors

Actor	Abbreviation	Type	Specializes	Description
Payment Service User	PSU	Person	N/A	A natural or legal person making use of a payment service as a payee, payer or both (PSD2 Article 4(10))
Payment Service Provider	PSP	Legal Entity	N/A	A legal entity (and some natural persons) that provide payment services as defined by PSD2 Article 4(11)
Account Servicing Payment Service Provider	ASPSP	Legal Entity	PSP	An ASPSP is a PSP that provides and maintains a payment account for a payment services user (PSD 2 Article 4(15). CBS is an ASPSP.
Third Party Providers / Trusted Third Parties	TPP	Legal Entity	PSP	A party other than an ASPSP that provides payment related services. The term is not actually defined in PSD2, but is generally deemed to include all payment service providers that are 3rd parties (CBS and the PSU to whom the account belongs being the first two parties)
Payment Initiation Service Provider	PISP	Legal Entity	TPP	A TPP that provides Payment Initiation Services. PSD2 does not offer a formal definition. Article 4(18) quite circularly defines a PISP as a PSP that provides Payment Initiation Services.
Account Information Service Provider	AISP	Legal Entity	TPP	A TPP that provides Account Information Services. Again, PSD2 defines AISPs in Article 4(19) circularly as a PSP that provides account information services
Card Based Payment Instrument Issuer	CBPII	Legal Entity	TPP	A TPP that provides Card Based Payment

Character Encoding

The API requests and responses **must** use a UTF-8 character encoding. This is the default character encoding for JSON (RFC 7158 - Section 8.1).

Date Formats

All dates in the JSON payloads are represented in ISO 8601 date-time format. All date-time fields in responses **must** include the timezone. An example is below:

2017-04-05T10:43:07+00:00

All dates in the HTTP headers are represented as RFC 7231 Full Dates. An example is below:

Sun, 10 Sep 2017 19:43:31 UTC

JWT claims are expressed as a JSON number representing the number of seconds from 1970-01-01T0:0:0Z as measured in UTC until the date/time.

Resource URI Path Structure

The resources defined by these APIs can be addressed through a path structure consisting of the following parts:

- The version of the APIs expressed as /v[major-version].[minor-version]/
- The resource name

Examples:

- https://resourcema.coventrybuildingsociety.co.uk/pd/open-banking/open-banking/v2.0/account-requests
- https://resourcema.coventrybuildingsociety.co.uk/pd/open-banking/open-banking/v2.0/accounts
- https://resourcema.coventrybuildingsociety.co.uk/pd/open-banking/open-banking/v2.0/accounts/{AccountId}/balances

Headers

Request Headers

The following headers SHOULD be inserted by the TPP in each API call:

Header Value	Notes	POST	GET	DELETE
x-fapi-financial-id	Should be set to "CBSOpenBanking"	Mandatory	Mandatory	Mandatory
x-fapi-customer-last-logged-time	The time when the PSU last logged in with the TPP.	Optional	Optional	Optional
x-fapi-customer-ip-address	The PSU's IP address if the PSU is currently logged in with the TPP.	Optional	Optional	Optional
x-fapi-interaction-id	An RFC4122 UID used as a correlation id. If provided, CBS **will** "play back" this value in the x-fapi-interaction-id response header.	Optional	Optional	Optional
Authorization	Standard HTTP Header; Allows Credentials to be provided to the Authorisation / Resource Server depending on the type of resource being requested. For OAuth 2.0 / OIDC, this comprises of either the Basic / Bearer Authentication Schemes.	Mandatory	Mandatory	Mandatory
Content-Type	Standard HTTP Header; Represents the format of the payload being provided in the request. This **must** be set to application/json.	Mandatory	Do not use	Do not use
Accept	Standard HTTP Header; Determine the Content-Type that is required from the Server. If set, it **must** have the value application/json. If set to any other value, CBS **will** respond with a 406 Not Acceptable.	Optional	Optional	Optional

(Reference: Section 6.3 - Financial API — Part 1: Read Only API Security Profile (Implementer's Draft).)

Whether the PSU is present or not-present is identified via the x-fapi-customer-ip-address header. If the PSU IP address is supplied, it is inferred that the PSU is present during the interaction.

Response Headers

Header Value	Notes	Mandatory ?
Content-Type	Standard HTTP Header; Represents the format of the payload returned in the response. CBS **will** return Content-type: application/json as a content header in response to requests that return a HTTP body (all post and get requests)	Conditionally Mandatory
x-fapi-interaction-id	An RFC4122 UID used as a correlation id. This **must** be the same value provided in the x-fapi-interaction-id request header. Mandatory if provided in the request.	Conditionally Mandatory
Retry-After	Header indicating the time (in seconds) that the TPP should wait before retrying an operation. CBS **will** include this header along with responses with the HTTP status code of 429 (Too many requests).	Optional

Return & Error Codes

The following are the HTTP response codes for the different HTTP methods - across all Account Info API endpoints.

Situation	HTTP Status	Notes	Returned by POST	Returned by GET	Returned by DELETE
Query completed successfully	200 OK		No	Yes	No
Normal execution. The request has succeeded.	201 Created	The operation results in the creation of a new resource.	Yes	No	No
Delete operation completed successfully	204 No Content		No	No	Yes
Account Request has malformed, missing or non-compliant JSON body or URL parameters	400 Bad Request	The requested operation will not be carried out.	Yes	No	No
Authorization header missing or invalid token	401 Unauthorized	The operation was refused access. Re-authenticating the PSU may result in an appropriate token that can be used.	Yes	Yes	Yes
Token has incorrect scope or a security policy was violated.	403 Forbidden	The operation was refused access. Re-authenticating the PSU is unlikely to	Yes	Yes	Yes

		remediate the situation.			
The TPP tried to access the resource with a method that is not supported.	405 Method Not Allowed		Yes	Yes	Yes
The request contained an accept header that requested a content-type other than application/json and a character set other than UTF-8	406 Not Acceptable		Yes	Yes	Yes
Schema errors	422 Invalid	The requested operation will not be carried out due to an error with the schema The moreInformation section provides additional information as to where the schema validation has failed.	Yes	No	
The operation was refused as too many requests have been made within a certain timeframe.	429 Too Many Requests	Throttling is a NFR. CBS **will** include a Retry-After header in the response indicating how long the TPP must wait before retrying the operation.	Yes	Yes	Yes
Something went wrong on the API gateway or micro-service	500 Internal Server Error	The operation failed.	Yes	Yes	Yes

400 (Bad Request) v/s 404 (Not Found)

When a TPP tries to request a resource URL with a resource Id that does not exist, CBS **will** respond with a 400 (Bad Request) rather than a 404 (Not Found).

E.g., if a TPP tries to GET /accounts/22289 where 22289 is not a valid AccountId, CBS **will** respond with a 400.

When a TPP tries to request a resource URL that results in no business data being returned (e.g. a request to retrieve standing order on an account that does not have standing orders) CBS **will** respond with a 200 (OK) and set the array to be empty.

If the TPP tries to access a URL for a resource that is not defined by these specifications (e.g. GET /card-accounts), CBS **will** respond with a 404 (Not Found).

The table below illustrates some examples of expected behaviour:

Situation	Request	Response
TPP attempts to retrieve an account with	GET /accounts/1001	400 (Bad Request)

an AccountId that does not exist		
TPP attempts to retrieve a resource that is not defined	GET /credit-cards	404 (Not Found)
TPP attempts to retrieve standing orders for an AccountId that does not exists	GET /accounts/1001/standing-orders	400 (Bad Request)

TPP attempts to retrieve standing orders for an AccountId that exists, but does not have any standing orders	GET /accounts/1000/standing-orders	200 OK
		{
		  "Data": {
		   "StandingOrder": []
		  },
		  "Links": {
		   "Self": "/accounts/1000/standing-orders/"
		  },
		  "Meta": {
		   "TotalPages": 1
		  }
		}

403 (Forbidden)

When a TPP tries to access a resource that it does not have permission to access, CBS **will** return a 403 (Forbidden).

The situation could arise when:

- The TPP uses an access token that does not have the appropriate scope to access the requested resource.
- The TPP does not have a consent authorisation for the AccountId
  E.g., an attempt to access GET /accounts/2001 or /accounts/2001/transactions when the PSU has not selected AccountId 2001 for authorisation.
- The TPP does not have a consent authorisation with the right permissions to access the requested resource.
  E.g., an attempt to access GET /standing-orders when the ReadStandingOrdersBasic permission was not included in the consent authorisation.
- The TPP attempted to access a resource with an Id that it does not have access to.
  E.g., an attempt to access GET /account-requests/1001 where an account-request resource with Id 1001 belongs to another TPP.

When the TPP uses an access token that is no longer valid, the situation could potentially be remedied by asking the PSU to re-authenticate. This should be indicated by a 401 (Unauthorized) status code.

422 (Invalid)
When there are schema errors CBS will return a 422 (invalid) response.

The situation could arise when:

- The TPP includes an additional field in the request.
- The TPP uses an invalid data type
- The TPP has not included a required field

Example:

```
{

  "httpCode": "422",

  "httpMessage": "Invalid",

  "moreInformation": "Validate REST: xa35://tmp/temp_962878:1: [JSV0002] Invalid object: the property 'Code' is missing."

}
```

429 (Too Many Requests)

When a TPP tries to access a resource too frequently CBS may return a 429 (Too Many Requests).

This situation could arise when:

- The TPP has not implemented caching, it requests transactions for a PSU account, and constantly re-requests the same transactions
- Similarly for any of the PSU information endpoints

Pre-Conditions

The following pre-conditions must be satisfied in order to use these APIs:

Pre-conditions for TPPs

1. The TPP must have completed onboarding with CBS and have been issued with a ClientId and Secret
2. The software application registered with CBS must have "accounts" as one of the required scopes.
3. The TPP must have valid network certificates issued by CBS.

Filtering

Limited support for filtering is provided on the **transactions** resource.

Transactions can be filtered based on their Booking Date using the **fromBookingDateTime** and **toBookingDateTime** parameters

The dates **MUST** be specified in ISO8601 format. The date **MUST NOT** include a timezone.

The filter values will be assumed to refer to the same timezone as the timezone in which the booking date for the account is maintained.

The following are treated as valid input:

- non-working days (e.g. a sunday or a bank holiday) or any other days on which no transactions are recorded
- dates that fall outside the range for which transaction information is provided through APIs
- dates that fall outside the range for which a consent authorisation is available.

In the above situations, CBS will return data for the remaining valid period specified by the filter.

Examples for filtering transactions
// All transactions from 1st Jan, 2015

GET /transactions?fromBookingDateTime=2015-01-01T00:00:00&pg=3

// All transactions in 2016

GET /transactions?fromBookingDateTime=2016-01-01T00:00:00&toBookingDateTime=2016-12-31T23:59:59&pg=3

// All transactions in a specific account upto 31-Mar-2017

GET /accounts/1/transactions?toBookingDateTime=2017-03-31T23:59:59&pg=3

Pagination

For paginated responses CBS will return 50 records per page.

- If a subsequent page of resource records exists, CBS will provide a link to the next page of resources in the **Links.Next** field of the response. The absence of a next link would indicate that the current page is the last page of results.
- If a previous page of resource records exists, CBS will provide a link to the previous page of resources in the **Links.Prev** field of the response. The absence of a prev link would indicate that the current page is the first page of results.
- The total number of pages will be populated in the **Meta.TotalPages** field
- CBS will provide a link to the first page of results in the **Links.First** field
- CBS will provide a link to the last page of results in the **Links.Last** field
- CBS will provide a self link to the current page of results in the **Links.Self** field

Note: The underlying data-set may change between two subsequent requests. This may result in situations where the same transaction is returned on more than one page.

All available Endpoints

	Resource	HTTP Operation	Endpoint
1	token	POST	POST /mga/sps/oauth/oauth20/token
2	account-requests	POST	POST /account-requests
3	account-requests	GET	GET /account-requests/{AccountRequestId}
4	account-requests	DELETE	DELETE /account-requests/{AccountRequestId}
5	accounts	GET	GET /accounts
6	accounts	GET	GET /accounts/{AccountId}
7	balances	GET	GET /accounts/{AccountId}/balances
8	beneficiaries	GET	GET /accounts/{AccountId}/beneficiaries
9	direct-debits	GET	GET /accounts/{AccountId}/direct-debits
10	products	GET	GET /accounts/{AccountId}/product
11	standing-orders	GET	GET /accounts/{AccountId}/standing-orders
12	Scheduled-payments	GET	GET /accounts/{AccountId}/scheduled-payments
13	transactions	GET	GET /accounts/{AccountId}/transactions

POST /token

- This flow begins with a TPP requesting a Client Credentials Access Token from the token endpoint:

  https://resourcema.coventrybuildingsociety.co.uk/mga/sps/oauth/oauth20/token

  Request must include:

  grant_type="Client Credentials"

  scope="openId accounts"

  client_id={clientId provided by CBS when TPP on-boarded}

  client_secret={client secret provided by CBS when TPP on-boarded}

POST /account-requests

The API allows the AISP to ask CBS to create a new **account-request** resource.

- This API effectively allows the AISP to send a copy of the consent to CBS to authorise access to account and transaction information.
- CBS creates the account-request resource and responds with a unique AccountRequestId to refer to the resource.
- Prior to calling the API, the AISP must have an access token issued by CBS using a client credentials grant.

Data Model

Request

Data Dictionary

Name	Card-inality	DataType	Notes
Request			
Request/Data	1..1		

Request/Data/Permissions	1..n	ExternalPermissions1Code Enumeration (see enumeration section below for details)	This is a list of the data clusters being consented by the PSU, and requested for authorisation with CBS.
Request /Data/ExpirationDateTime	0..1	ISODateTime	Specified date and time the permissions will expire. If this is not populated, the permissions will be open ended.
Request/Data/TransactionFromDateTime	0..1	ISODateTime	Specified start date and time for the transaction query period. If this is not populated, the start date will be open ended, and data will be returned from the earliest available transaction.
Request/Data/TransactionToDateTime	0..1	ISODateTime	Specified end date and time for the transaction query period. If this is not populated, the end date will be open ended, and data will be returned to the latest available transaction.
Request/Risk	1..1	OBRisk2	The Risk section is sent by the initiating party to CBS. It is used to specify additional details for risk scoring for Account Info.

Response

Name	Card-inality	DataType	Notes
Response			
Response/Data	1..1		
Response/Data/AccountRequestId	1..1	Max128Text	Unique identification as assigned to identify the account request resource.
Response/Data/Status	0..1	ExternalRequestStatusCode Enumeration (see enumeration section below for details)	Specifies the status of the account request resource. Enumeration • Authorised • AwaitingAuthorisation • Rejected • Revoked
Response/Data/CreationDateTime	1..1	ISODateTime	Date and time at which the resource was created.
Response/Data/Permissions	1..n	ExternalPermissions1Code Enumeration (see enumeration section below for details)	This is a list of the data clusters being consented by the PSU, and requested for authorisation with CBS.
Response/Data/ExpirationDateTime	0..1	ISODateTime	Specified date and time the permissions will expire. If this is not populated, the permissions will be open ended.
Response/Data/TransactionFromDateTime	0..1	ISODateTime	Specified start date and time for the transaction query period. If this is not populated, the start date will be open ended, and data will be returned from the earliest available transaction.
Response/Data/TransactionToDateTime	0..1	ISODateTime	Specified end date and time for the transaction query period. If this is not populated, the end date will be open ended, and data will be returned to the latest available transaction.
Response/Risk	1..1	OBRisk2	The Risk section is sent by the initiating party to CBS. It is used to specify additional details for risk scoring for Account Info.

Error Information

ErrorCode	Message	Notes
1001	We're unable to complete this request due to an issue with the consent details received	The scope for the software application does not include accounts which is required to access these APIs
1002	We're unable to complete this request due to an issue with the consent details received	Invalid consent end date time
1003	We're unable to complete this request due to an issue with the consent details received	Invalid transaction consent end date time.
1004	We're unable to complete this request due to an issue with the consent details received	The consent details are missing from the request
1007	We're unable to complete this request due to an issue with the Organisation details provided	There is a problem with the details we hold about the organisation.
1008	We're unable to complete this request due to an issue with the Software Application details provided	There is a problem with the software application.
1014	We're unable to complete this request due to a technical issue	There was a technical problem which occurred within CBS.
99997	We're unable to complete this request due to an Invalid Header Check	The headers in the request were incomplete
99998 99999	We're unable to complete this request due to a technical issue	There was a technical problem which occurred within CBS.

Account Request Status

The account-request resource that is created successfully must have one of the following Status code-list enumerations:

	Status	Status Description
1	Rejected	The account request has been rejected.
2	AwaitingAuthorisation	The account request is awaiting authorisation.

GET /account-requests/{AccountRequestId}

- An AISP can optionally retrieve a **account-request** resource that they have created to check its status.
- Prior to calling the API, the AISP must have an access token issued by CBS using a client credentials grant.

Account Request Status

Once the PSU authorises the account-request resource - the Status of the account-request resource will be updated with "Authorised".

The available Status code-list enumerations for the account-request resource are:

	Status	Status Description
1	Rejected	The account request has been rejected.
2	AwaitingAuthorisation	The account request is awaiting authorisation.
3	Authorised	The account request has been successfully authorised.
4	Revoked	The account request has been revoked.

DELETE /account-requests/{AccountRequestId}

If the PSU revokes consent to data access with the AISP - the AISP should delete the account-request resource.

- This is done by making a call to DELETE the **account-request** resource.
- Prior to calling the API, the AISP must have an access token issued by CBS using a client credentials grant.

Error Information

ErrorCode	Message	Notes
1000	We're unable to complete this request due to an issue with the consent details received	The consent Id does not exist
1001	We're unable to complete this request due to an issue with the consent details received	The consent Id has already been revoked
99997	We're unable to complete this request due to an Invalid Header Check	The headers in the request were incomplete
99998 99999	We're unable to complete this request due to a technical issue	There was a technical problem which occurred within CBS.

GET /accounts

The first step for an AISP after an account-request is authorised - is to call the GET /accounts endpoint.

- The AISP will use an access token associated with the PSU issued through an authorization code grant.
- The AISP will use an access token associated with a client credentials grant.

Note: The current implementation only allows a ConsentId (aka AccountRequestId) to be associated to a single AccountId.

Data Model

Resource Definition

This will give the full list of accounts (the AccountId(s)) that the PSU has authorised the AISP to access. The AccountId(s) returned can then be used to retrieve other resources for an account.

Data Dictionary

Name	Card- inality	DataType	Permission Code Restrictions	Notes
Response			ReadAccountsBasic ReadAccountsDetail	
Response/Data	1..1			
Response/Data/Account	0..n		ReadAccountsBasic ReadAccountsDetail	
Response/Data/Account /AccountId	1..1	Max40Text	ReadAccountsBasic ReadAccountsDetail	A unique and immutable identifier used to identify the account resource. This identifier has no meaning to the account owner.
Response/Data/Account /Currency	1..1	^[A-Z]{3,3}$	ReadAccountsBasic ReadAccountsDetail	Identification of the currency in which the account is held. Usage: Currency should only be used in case one and the same account number covers several currencies and the initiating party needs to identify which currency needs to be used for settlement on the account.
Response/Data/Account /Account	0..1		ReadAccountsDetail	Provides the details to identify an account.
Response/Data/Account /Account/SchemeName	1..1	ExternalAccount Identification2C ode Enumeration (see enumeration section below for details)	ReadAccountsDetail	Name of the identification scheme, in a coded form as published in an external list.
Response/Data/Account /Account/Identification	1..1	Max34Text	ReadAccountsDetail	Identification assigned by an institution to identify an account. This identification is known by the account owner.

ErrorCode	Message	Notes
1001 1003	We're unable to complete this request due to an issue with the consent details received	The consent Id does not exist
1002 1009	We're unable to complete this request due to an issue with the consent details received	The consent id provided was not created with an accounts scope
1004 1005	We're unable to complete this request due to an issue with the account details received	There is a problem with the account details for this consent id
1007	We're unable to complete this request due to an issue with the Organisation details provided	
1008	We're unable to complete this request due to an issue with the Software Application details provided	
	We're unable to complete this request due to a Parser exception in your request	
99997	We're unable to complete this request due to an Invalid Header Check	
99998 99999	We're unable to complete this request due to a technical issue	

GET Resources for a Specific Account

The following resources all use an access token associated with the PSU issued through an authorization code grant.

GET /accounts/{AccountId}

Data Model

Resource Definition

The resource that represents the account to which credit and debit entries are made.

Each account resource will have a unique and immutable AccountId.

Data Dictionary

Name	Card-inality	DataType	Permission Code Restrictions	Notes
Response			ReadAccountsBasic ReadAccountsDetail	
Response/Data	1..1			
Response/Data/Account	0..n		ReadAccountsBasic ReadAccountsDetail	
Response/Data/Account /AccountId	1..1	Max40Text	ReadAccountsBasic ReadAccountsDetail	A unique and immutable identifier used to identify the account resource. This identifier has no meaning to the account owner.
Response/Data/Account /Currency	1..1	^[A-Z]{3,3}$	ReadAccountsBasic ReadAccountsDetail	Identification of the currency in which the account is held. Usage: Currency should only be used in case one and the same account number covers several currencies and the initiating party needs to identify which currency needs to be used for settlement on the account.
Response/Data/Account /Account	0..1		ReadAccountsDetail	Provides the details to identify an account.
Response/Data/Account /Account/SchemeName	1..1	ExternalAccount Identification2C ode Enumeration (see enumeration section below for details)	ReadAccountsDetail	Name of the identification scheme, in a coded form as published in an external list.
Response/Data/Account /Account/Identification	1..1	Max34Text	ReadAccountsDetail	Identification assigned by an institution to identify an account. This identification is known by the account owner.
Response/Data/Account /Account/Name	1..1	Max70Text	ReadAccountsDetail	Name of the account, as assigned by the account servicing institution. Usage: The account name is the name or names of the account owner(s) represented at an account level. The account name is not the product name or the nickname of the account.

Error Information

ErrorCode	Message	Notes
1001	We're unable to complete this request due to an issue with the consent details received	The consent id has not been authorized by the PSU
1002	We're unable to complete this request due to an issue with the consent details received	The consent Id does not exist
3003 3004	We're unable to complete this request with the account selected	There is a problem with the selected account. This could be due to a number of reasons which may have occurred after consent was initially provided by the PSU
3005	We're unable to complete this request due to an issue with the consent details received	The consent id associated to this request was not created with an accounts scope
99997	We're unable to complete this request due to a Parser exception in your request	There is a problem with the request.
99998	We're unable to complete this request due to an Invalid Header Check	
99999	We're unable to complete this request due to a technical issue	

GET /accounts/{AccountId}/balances

Data Model

Resource Definition

A resource that contains balance information for an account.

- Where a DateTime element has been used instead of a complex choice element of Date and DateTime. Where time elements do not exist - the time portion of the DateTime element will be defaulted to 00:00:00+00:00

Name	Card-inality	DataType	Permission Code Required	Notes
Response			ReadBalances	
Response/Data	1..1		ReadBalances	
Response/Data/Balance	1..n		ReadBalances	Set of elements used to define the balance details.
Response/Data/Balance /AccountId	1..1	Max40Text	ReadBalances	A unique and immutable identifier used to identify the account resource. This identifier has no meaning to the account owner.
Response/Data/Balance /Amount	1..1	^\d{1,13}\.\d{1,5}$	ReadBalances	Amount of money of the cash balance.
Response/Data/Balance /Amount/Currency	1..1	^[A-Z]{3,3}$	ReadBalances	A code allocated to a currency by a Maintenance Agency under an international identification scheme, as described in the latest edition of the international standard ISO 4217 "Codes for the representation of currencies and funds".
Response/Data/Balance /CreditDebitIndicator	1..1	CreditDebitCode Enumeration (see enumeration section below for details)	ReadBalances	Indicates whether the balance is a credit or a debit balance. Usage: A zero balance is considered to be a credit balance.
Response/Data/Balance /Type	1..1	BalanceTypeCode Enumeration (see enumeration section below for details)	ReadBalances	Balance type, in a coded form.
Response/Data/Balance /DateTime	1..1	ISODateTime	ReadBalances	Indicates the date (and time) of the balance.

Error Information

ErrorCode	Message	Notes
1001	We're unable to complete this request due to an issue with the consent details received	The consent id has not been authorized by the PSU
1002	We're unable to complete this request due to an issue with the consent details received	The consent Id does not exist
3003 3004	We're unable to complete this request with the account selected	There is a problem with the selected account. This could be due to a number of reasons which may have occurred after consent was initially provided by the PSU
3005	We're unable to complete this request due to an	The consent id associated to this request was not created with an accounts scope

	issue with the consent details received			
99997	We're unable to complete this request due to a Parser exception in your request	There is a problem with the request.		

GET /accounts/{AccountId}/beneficiaries

DataModel

Resource Definition

A resource that contains a set of elements that describe the list of trusted beneficiaries linked to a specific account (AccountId). An account can have no trusted beneficiaries set up, or may have multiple beneficiaries set up.

Data Dictionary

Name	Card-inality	DataType	PermissionCode Required	Notes
Response			ReadBeneficiariesBasic ReadBeneficiariesDetail	
Response/Data	1..1		ReadBeneficiariesBasic ReadBeneficiariesDetail	
Response/Data/Beneficiary	0..n		ReadBeneficiariesBasic ReadBeneficiariesDetail	
Response/Data/Beneficiary /AccountId	0..1	Max40Text	ReadBeneficiariesBasic ReadBeneficiariesDetail	A unique and immutable identifier used to identify the account resource. This identifier has no meaning to the account owner.
Response/Data/Beneficiary /Reference	0..1	Max35Text	ReadBeneficiariesBasic ReadBeneficiariesDetail	Unique reference, as assigned by the creditor, to unambiguously refer to the payment transaction. Usage: If available, the initiating party should provide this reference in the structured remittance information, to enable reconciliation by the creditor upon receipt of the amount of money. If the business context requires the use of a creditor reference or a payment remit identification, and only one identifier can be passed through the end-to-end chain, the creditor's reference or payment remittance identification should be quoted in the end-to-end transaction identification.
Response/Data/Beneficiary /CreditorAccount	0..1		ReadBeneficiariesDetail	Provides the details to identify the beneficiary account.
Response/Data/Beneficiary /CreditorAccount/SchemeName	1..1	ExternalAccountIdentification2Code Enumeration	ReadBeneficiariesDetail	Name of the identification scheme, in a coded form as published in an external list.

Response/Data/Beneficiary /CreditorAccount/Identificat ion	1..1	Max35Text	ReadBeneficiariesDetail	Identification assigned by an institution to identify an account. This identification is known by the account owner.
Response/Data/Beneficiary /CreditorAccount/Name	0..1	Max70Text	ReadBeneficiariesDetail	Name of the account, as assigned by the account servicing institution, in agreement with the account owner in order to provide an additional means of identification of the account. Usage: The account name is different from the account owner name. The account name is used in certain user communities to provide a means of identifying the account, in addition to the account owner's identity and the account number.

Error Information

ErrorCode	Message	Notes
1001	We're unable to complete this request due to an issue with the consent details received	Consent details are missing
1002	We're unable to complete this request due to an issue with the consent details received	The consent id associated to this request was not created with an accounts scope
1030 1031 1051 1082 1084	We're unable to complete this request due to an issue with the account details received	There is a problem with the selected account. This could be due to a number of reasons which may have occurred after consent was initially provided by the PSU
1081	We're unable to complete this request due to an issue with the consent details received	The consent id has not been authorized by the PSU
1086	We're unable to complete this request due to an issue with the consent details received	The consent id has expired
3003 3004	We're unable to complete this request with the account selected	There is a problem with the selected account. This could be due to a number of reasons which may have occurred after consent was initially provided by the PSU
99998	We're unable to complete this request due to a Parser exception in your	There is a problem with the request.

		request	
1083 99999		We're unable to complete this request due to a technical issue	

GET /accounts/{AccountId}/direct-debits

Data Model

Resource Definition

A resource that contains a set of elements that describes the list of direct-debits that have been set up on a specific account (AccountId).

An account (AccountId) can have no direct debits set up, or may have multiple direct debits se

- Where a DateTime element has been used - so that there is consistency across all API endpoints using dates. Where time elements do not exist - the time portion of the DateTime element will be defaulted to 00:00:00+00:00

Data Dictionary

Name	Card- inality	DataType	Permission Code Required	Notes
Response			ReadDirectDebits	
Response/Data	1..1		ReadDirectDebits	
Response/Data/DirectDebit	0..n		ReadDirectDebits	Account to or from which a cash entry is made.
Response/Data/DirectDebit /AccountId	1..1	Max40Text	ReadDirectDebits	A unique and immutable identifier used to identify the account resource. This identifier has no meaning to the account owner.
Response/Data/DirectDebit /MandateIdentification	1..1	Max35Text	ReadDirectDebits	Direct Debit reference.
Response/Data/DirectDebit /DirectDebitStatusCode	0..1	ExternalDirectD ebitStatus1Code Enumeration (see enumeration section below for details)	ReadDirectDebits	Specifies the status of the direct debit in code form.
Response/Data/DirectDebit /Name	1..1	Max70Text	ReadDirectDebits	Name of Service User.
Response/Data/DirectDebit /PreviousPaymentDateTim e	0..1	ISODateTime	ReadDirectDebits	Date of most recent direct debit collection.
Response/Data/DirectDebit /PreviousPaymentAmount	0..1	^\d{1,13}\.\d{1,5} $	ReadDirectDebits	The amount of the most recent direct debit collection.
Response/Data/DirectDebit /PreviousPaymentAmount/ Currency	1..1	^[A-Z]{3,3}$	ReadDirectDebits	A code allocated to a currency by a Maintenance Agency under an international identification scheme, as described in the latest edition of the international standard ISO 4217 "Codes for the representation of

Error Information

ErrorCode	Message	Error Condition
1001	We're unable to complete this request due to an issue with the consent details received	Consent details are missing
1002	We're unable to complete this request due to an issue with the consent details received	The consent id associated to this request was not created with an accounts scope
1030 1031 1051 1082 1084	We're unable to complete this request due to an issue with the account details received	There is a problem with the selected account. This could be due to a number of reasons which may have occurred after consent was initially provided by the PSU
1081	We're unable to complete this request due to an issue with the consent details received	The consent id has not been authorized by the PSU
1086	We're unable to complete this request due to an issue with the consent details received	The consent id has expired
3003 3004	We're unable to complete this request with the account selected	There is a problem with the selected account. This could be due to a number of reasons which may have occurred after consent was initially provided by the PSU
99998	We're unable to complete this request due to a Parser exception in your request	There is a problem with the request.
1083 99999	We're unable to complete this request due to a technical issue	

GET /accounts/{AccountId}/standing-orders

Data Model

Resource Definition

A resource that contains a set of elements that describe the list of standing-orders that have been set up on a specific account (AccountId).

An account (AccountId) can have no standing orders set up, or may have multiple standing orders set up.

- Where a DateTime element has been used - so that there is consistency across all API endpoints using dates. Where time elements do not exist - the time portion of the DateTime element will be defaulted to 00:00:00+00:00

Data Dictionary

Name	Cardinality	Data Type	Permission Code Required	Notes
Response			ReadStandingOrdersBasic ReadStandingOrdersDetail	
Response/Data	1..1		ReadStandingOrdersBasic ReadStandingOrdersDetail	
Response/Data/Standing Order	0..n		ReadStandingOrdersBasic ReadStandingOrdersDetail	Account to or from which a cash entry is made.
Response/Data/Standing Order/AccountId	1..1	Max40Text	ReadStandingOrdersBasic ReadStandingOrdersDetail	A unique and immutable identifier used to identify the account resource. This identifier has no meaning to the account owner.
Response/Data/Standing Order/Frequency	1..1	Max35Text ^(EvryDay)$\|^(Evry WorkgDay)$|^(Intrvl WkDay:0[1-9]:0[1-7])$\|^(WkInMnthDay:0[1-5]:0[1-7])$|^(IntrvlMnthDay:(0[1-6]|12|24):(-0[1-5]|0[1-9]|[12][0-9]|3[01]))$\|^(QtrDay:(ENGLISH\|SCOTTISH\|RECEIVED))$	ReadStandingOrdersBasic ReadStandingOrdersDetail	Individual Definitions: EvryDay - Every day EvryWorkgDay - Every working day IntrvlWkDay - An interval specified in weeks (01 to 09), and the day within the week (01 to 07) WkInMnthDay - A monthly interval, specifying the week of the month (01 to 05) and day within the week (01 to 07) IntrvlMnthDay - An interval specified in months (between 01 to 06, 12, 24), specifying the day within the month (-5 to -1, 1 to 31) QtrDay - Quarterly (either

				ENGLISH, SCOTTISH, or RECEIVED)
				Individual Patterns:
				EvryDay (ScheduleCode)
				EvryWorkgDay (ScheduleCode)
				IntrvlWkDay:IntervalInWeeks: DayInWeek (ScheduleCode + IntervalInWeeks + DayInWeek)
				WkInMnthDay:WeekInMonth:DayInWeek (ScheduleCode + WeekInMonth + DayInWeek)
				IntrvlMnthDay:IntervalInMonths:DayInMonth (ScheduleCode + IntervalInMonths + DayInMonth)
				QtrDay: + either (ENGLISH, SCOTTISH or RECEIVED) ScheduleCode + QuarterDay
				The regular expression for this element combines five smaller versions for each permitted pattern. To aid legibility - the components are presented individually here:
				EvryDay
				EvryWorkgDay
				IntrvlWkDay:0[1-9]:0[1-7]
				WkInMnthDay:0[1-5]:0[1-7]
				IntrvlMnthDay:(0[1-6]|12|24):(-0[1-5]|0[1-9]|[12][0-9]|3[01])
				QtrDay:(ENGLISH|SCOTTISH|RECEIVED)
Response/Data/Standing Order/Reference	0..1	Max35Text	ReadStandingOrdersBasic ReadStandingOrdersDetail	Unique reference, as assigned by the creditor, to unambiguously refer to the payment transaction.

				Usage: If available, the initiating party should provide this reference in the structured remittance information, to enable reconciliation by the creditor upon receipt of the amount of money. If the business context requires the use of a creditor reference or a payment remit identification, and only one identifier can be passed through the end-to-end chain, the creditor's reference or payment remittance identification should be quoted in the end-to-end transaction identification.
Response/Data/Standing Order/ FirstPaymentDateTime	0..1	ISODateTime	ReadStandingOrdersBasic ReadStandingOrdersDetail	The date on which the first payment for a Standing Order schedule will be made.
Response/Data/Standing Order/FirstPaymentAmount	0..1	^\d{1,13}\.\d{1,5}$	ReadStandingOrdersBasic ReadStandingOrdersDetail	The amount of the first Standing Order
Response/Data/Standing Order/FirstPaymentAmount/Currency	1..1	^[A-Z]{3,3}$	ReadStandingOrdersBasic ReadStandingOrdersDetail	A code allocated to a currency by a Maintenance Agency under an international identification scheme, as described in the latest edition of the international standard ISO 4217 "Codes for the representation of currencies and funds".
Response/Data/Standing Order/NextPaymentDateTime	1..1	ISODateTime	ReadStandingOrdersBasic ReadStandingOrdersDetail	The date on which the next payment for a Standing Order schedule will be made.
Response/Data/Standing Order/NextPaymentAmount	1..1	^\d{1,13}\.\d{1,5}$	ReadStandingOrdersBasic ReadStandingOrdersDetail	The amount of the next Standing Order
Response/Data/Standing Order/NextPaymentAmount/Currency	1..1	^[A-Z]{3,3}$	ReadStandingOrdersBasic ReadStandingOrdersDetail	A code allocated to a currency by a Maintenance Agency under an international identification scheme, as described in the latest edition of the international standard ISO 4217 "Codes for the representation of currencies and funds".
Response/Data/Standing Order/FinalPaymentDateTime	0..1	ISODateTime	ReadStandingOrdersBasic ReadStandingOrdersDetail	The date on which the final payment for a Standing Order schedule will be made.
Response/Data/Standing Order/FinalPaymentAmo	0..1	^\d{1,13}\.\d{1,5}$	ReadStandingOrdersBasic ReadStandingOrdersDetail	The amount of the final Standing Order

unt				
Response/Data/Standing Order/ FinalPaymentAmount/Currency	1..1	^[A-Z]{3,3}$	ReadStandingOrdersBasic ReadStandingOrdersDetail	A code allocated to a currency by a Maintenance Agency under an international identification scheme, as described in the latest edition of the international standard ISO 4217 "Codes for the representation of currencies and funds".
Response/Data/Standing Order/CreditorAccount	0..1		ReadStandingOrdersDetail	Provides the details to identify the beneficiary account.
Response/Data/Standing Order/CreditorAccount/SchemeName	1..1	ExternalAccountIdentification2Code Enumeration (see enumeration section for details)	ReadStandingOrdersDetail	Name of the identification scheme, in a coded form as published in an external list.
Response/Data/Standing Order/CreditorAccount/Identification	1..1	Max34Text	ReadStandingOrdersDetail	Beneficiary account identification.
Response/Data/Standing Order/CreditorAccount/Name	0..1	Max70Text	ReadStandingOrdersDetail	Name of the account, as assigned by the account servicing institution, in agreement with the account owner in order to provide an additional means of identification of the account. Usage: The account name is different from the account owner name. The account name is used in certain user communities to provide a means of identifying the account, in addition to the account owner's identity and the account number.

Error Information

ErrorCode	Message	Notes
1001	We're unable to complete this request due to an issue with the consent details received	Consent details are missing
1002	We're unable to complete this request due to an issue with the consent details received	The consent id associated to this request was not created with an accounts scope
1030 1031 1051 1082	We're unable to complete this request due to an issue with the account details received	There is a problem with the selected account. This could be due to a number of reasons which may have occurred after consent was initially provided by the PSU

1084		
1081	We're unable to complete this request due to an issue with the consent details received	The consent id has not been authorized by the PSU
1086	We're unable to complete this request due to an issue with the consent details received	The consent id has expired
3003 3004	We're unable to complete this request with the account selected	There is a problem with the selected account. This could be due to a number of reasons which may have occurred after consent was initially provided by the PSU
99998	We're unable to complete this request due to a Parser exception in your request	There is a problem with the request.
1083 99999	We're unable to complete this request due to a technical issue	

GET /accounts/{AccountId}/scheduled-payments

Data Model

Resource Definition

A resource that contains a set of elements that describes the scheduled payments that have been set up on a specific account (AccountId). A scheduled payment is a single one-off payment scheduled for a future date.

An account (AccountId) may have no scheduled payments set up, or may have multiple scheduled payments set up.

- Where a DateTime element has been used - so that there is consistency across all API endpoints using dates. Where time elements do not exist - the time portion of the DateTime element will be defaulted to 00:00:00+00:00

Data Dictionary

Name	Cardinality	Data Type	Permission Code Required	Notes
Response			ReadScheduledPaymentBasic ReadScheduledPaymentDetail	
Response/Data	1..1		ReadScheduledPaymentBasic ReadScheduledPaymentDetail	
Response/Data/ScheduledPayment	0..n		ReadScheduledPaymentBasic ReadScheduledPaymentDetail	
Response/Data/ScheduledPayment/AccountId	1..1		ReadScheduledPaymentBasic ReadScheduledPaymentDetail	A unique and immutable identifier used to identify the account resource. This identifier has no meaning to the account owner.
Response/Data/ScheduledPayment/ScheduledPay	1..1		ReadScheduledPaymentBasic ReadScheduledPaymentDetail	The date on which the scheduled payment will be

mentDateTime			made.
Response/Data/Schedule dPayment/ScheduledTyp e	1..1	ReadScheduledPaymentBasic ReadScheduledPaymentDetail	Specifies the scheduled payment date type requested
Response/Data/Schedule dPayment/Reference	0..1	ReadScheduledPaymentBasic ReadScheduledPaymentDetail	Unique reference, as assigned by the creditor, to unambiguously refer to the payment transaction. Usage: If available, the initiating party should provide this reference in the structured remittance information, to enable reconciliation by the creditor upon receipt of the amount of money. If the business context requires the use of a creditor reference or a payment remit identification, and only one identifier can be passed through the end-to-end chain, the creditor's reference or payment remittance identification should be quoted in the end-to-end transaction identification.
Response/Data/Schedule dPayment/InstructedAmo unt	1..1	ReadScheduledPaymentBasic ReadScheduledPaymentDetail	Amount of money to be moved between the debtor and creditor, before deduction of charges, expressed in the currency as ordered by the initiating party. Usage: This amount has to be transported unchanged through the transaction chain.
Response/Data/Schedule dPayment/InstructedAmo unt/Amount	1..1	ReadScheduledPaymentBasic ReadScheduledPaymentDetail	A number of monetary units specified in an active currency where the unit of currency is explicit and compliant with ISO 4217.
Response/Data/Schedule dPayment/InstructedAmo unt/Currency	1..1	ReadScheduledPaymentBasic ReadScheduledPaymentDetail	A code allocated to a currency by a Maintenance Agency under an international identification scheme, as described in the latest edition of the international standard ISO 4217 "Codes for the representation of currencies and funds".
Response/Data/Schedule	0..1	ReadScheduledPaymentDetail	Provides the details to identify

dPayment/CreditorAccount				the beneficiary account.
Response/Data/ScheduledPayment/CreditorAccount/SchemeName	1..1		ReadScheduledPaymentDetail	Name of the identification scheme, in a coded form as published in an external list.
Response/Data/ScheduledPayment/CreditorAccount/Identification	1..1		ReadScheduledPaymentDetail	Beneficiary account identification.
Response/Data/ScheduledPayment/CreditorAccount/Name	0..1		ReadScheduledPaymentDetail	Name of the account, as assigned by the account servicing institution. Usage: The account name is the name or names of the account owner(s) represented at an account level. The account name is not the product name or the nickname of the account.

Error Information

ErrorCode	Message	Error Condition
1001	We're unable to complete this request due to an issue with the consent details received	Consent details are missing
1002	We're unable to complete this request due to an issue with the consent details received	The consent id associated to this request was not created with an accounts scope
1030 1031 1051 1082 1084	We're unable to complete this request due to an issue with the account details received	There is a problem with the selected account. This could be due to a number of reasons which may have occurred after consent was initially provided by the PSU
1081	We're unable to complete this request due to an issue with the consent details received	The consent id has not been authorized by the PSU
1086	We're unable to complete this request due to an issue with the consent details received	The consent id has expired
3003 3004	We're unable to complete this request with the account selected	There is a problem with the selected account. This could be due to a number of reasons which may have occurred after consent was initially provided by the PSU
99998	We're unable to complete this request due to a Parser exception in your request	There is a problem with the request.
1083	We're unable to complete	

99999	this request due to a technical issue

GET /accounts/{AccountId}/transactions

Data Model

Resource Definition

A resource that describes a posting to an account that results in an increase or decrease to a balance.

For a specific date range - an account (AccountId) can have no transactions booked, or can have multiple transactions booked.

- A DateTime element has been used instead of a complex choice element of Date and DateTime. Where time elements do not exist - the time portion of the DateTime element will be defaulted to 00:00:00+00:00
- The BookingDateTime is the date the transaction is booked (or posted) and becomes immutable - which is not the date the transaction took place.

Data Dictionary

Name	Card-inality	Data Type	Permission Code Required	Notes
Response			ReadTransactionsBasic ReadTransactionsDetail	
Response/Data	1..1		ReadTransactionsBasic ReadTransactionsDetail	
Response/Data/Transaction	0..n		ReadTransactionsBasic ReadTransactionsDetail	Provides further details on an entry in the report.
Response/Data/Transaction/AccountId	1..1	Max40Text	ReadTransactionsBasic ReadTransactionsDetail	A unique and immutable identifier used to identify the account resource. This identifier has no meaning to the account owner.
Response/Data/Transaction/TransactionReference	0..1	Max35Text	ReadTransactionsBasic ReadTransactionsDetail	Unique reference for the transaction. This reference is optionally populated, and may as an example be the FPID in the Faster Payments context.
Response/Data/Transaction/Amount	1..1	$^\d{1,13}\.\d{1,5}$$	ReadTransactionsBasic ReadTransactionsDetail	Amount of money in the cash transaction entry.
Response/Data/Transaction/Amount/Currency	1..1	$^[A-Z]{3,3}$$	ReadTransactionsBasic ReadTransactionsDetail	A code allocated to a currency by a Maintenance Agency under an international identification scheme, as described in the latest edition of the international standard ISO 4217 "Codes for the

				representation of currencies and funds".
Response/Data/Transaction/Credit DebitIndicator	1..1	CreditDebitCo de Enumeration (see enumeration section for details)	ReadTransactionsBasic ReadTransactionsDetail	Indicates whether the transaction is a credit or a debit entry.
Response/Data/Transaction/Status	1..1	TransactionEn tryCode Enumeration (see enumeration section for details)	ReadTransactionsBasic ReadTransactionsDetail	Status of a transaction entry on the books of the account servicer.
Response/Data/Transaction/Bookin gDateTime	1..1	ISODateTime	ReadTransactionsBasic ReadTransactionsDetail	Date and time when a transaction entry is posted to an account on the account servicer's books. Usage: Booking date is the expected booking date, unless the status is booked, in which case it is the actual booking date.
Response/Data/Transaction/Trans actionInformation	0..1	Max500Text	ReadTransactionsDetail	Further details of the transaction. This is the transaction narrative, which is unstructured text.
Response/Data/Transaction/Balanc e	0..1		ReadTransactionsDetail	Set of elements used to define the balance as a numerical representation of the net increases and decreases in an account after a transaction entry is applied to the account.
Response/Data/Transaction/Balanc e/Amount	1..1	^\d{1,13}\.\d{1, 5}$	ReadTransactionsDetail	Amount of money of the cash balance after a transaction entry is applied to the account..
Response/Data/Transaction/Balanc e/Amount/Currency	1..1	^[A-Z]{3,3}$	ReadTransactionsDetail	A code allocated to a currency by a Maintenance Agency under an international identification scheme, as described in the latest edition of the international standard ISO 4217 "Codes for the

				representation of currencies and funds".
Response/Data/Transaction/Balance/CreditDebitIndicator	1..1	CreditDebit Enumeration (see enumeration section for details)	ReadTransactionsDetail	Indicates whether the balance is a credit or a debit balance. Usage: A zero balance is considered to be a credit balance.
Response/Data/Transaction/Balance/Type	1..1	BalanceTypeCode Enumeration (see enumeration section for details)	ReadTransactionsDetail	Balance type, in a coded form.

Error Information

ErrorCode	Message	Notes
1001	We're unable to complete this request due to an issue with the consent details received	Consent details are missing
1002	We're unable to complete this request due to an issue with the consent details received	The consent id associated to this account id request is invalid
1003	We're unable to complete this request due to an issue with the consent details received	Requested permissions has not been granted for this request
1004	We're unable to complete this request due to an issue with the consent details received	The consent id has not been authorized by the PSU
3003 3004	We're unable to complete this request with the account selected	There is a problem with the selected account. This could be due to a number of reasons which may have occurred after consent was initially provided by the PSU
99998	We're unable to complete this request due to a Parser exception in your request	There is a problem with the request.
99999	We're unable to complete this request due to a technical issue	

GET /accounts/{AccountId}/product

Data Model

Resource Definition

A resource that contains a set of elements that describe the product details specific to the account (AccountId).

An account (AccountId) can only have a single product.

- An AccountId will only have **one product** - so the singe account endpoint will return only one product (for /accounts/{AccountId}/product)

Data Dictionary

Name	Card-inality	Data Type	Permission Code Required	Notes
Response			ReadProducts	
Response/Data	1..1		ReadProducts	
Response/Data/Product	0..1		ReadProducts	
Response/Data/Product/ AccountId	1..1	Max40Text	ReadProducts	A unique and immutable identifier used to identify the account resource. This identifier has no meaning to the account owner.
Response/Data/Product/ ProductIdentifier	1..1	Max40Text	ReadProducts	Identifier within the parent organisation for the product. Must be unique in the organisation.
Response/Data/Product/ ProductType	1..1	ExternalProductType1Code Enumeration (see enumeration section below for details)	ReadProducts	Descriptive code for the product category.

Error Information

ErrorCode	Message	Notes
1001	We're unable to complete this request due to an issue with the consent details received	The consent id has not been authorized by the PSU
1002	We're unable to complete this request due to an issue with the consent details received	The consent Id does not exist
3003 3004	We're unable to complete this request with the account selected	There is a problem with the selected account. This could be due to a number of reasons which may have occurred after consent was initially provided by the PSU
3005	We're unable to complete this request due to an issue with the consent details received	The consent id associated to this request was not created with an accounts scope
99997	We're unable to complete this request due to a Parser exception in your request	There is a problem with the request.

Sandbox API Endpoints

Sandbox APIs have been provided to assist with testing connectivity. The APIs all return mocked data; they are only accessible using the TLS 1.2 MA with the certificate provided to you by Coventry Building Society or a valid eIDAS QWAC/QSealC Certificate (uses Client Credentials Grant only)

Please refer to the separate Coventry SandBox API Specification for further details.

Security & Access Control

API Scopes

The access tokens required for accessing the Account Info APIs must have at least the following scope:

Scopes
accounts

Grants Types

AISPs **must** use a client credentials grant to obtain a token to access the account-requests resource.

AISPs **must** use an authorization code grant to obtain a token to access all other resources.

Consent Authorisation

OAuth 2.0 scopes are coarse grained and the set of available scopes are defined at the point of client registration. There is no standard method for specifying and enforcing fine grained scopes (e.g. a scope to specify that account information should only be provided for certain time periods).

A *consent authorisation* is used to define the fine-grained scope that is granted by the PSU to the AISP.

The AISP **must** create an **account-request** resource through a **POST** operation. This resource indicates the *consent* that the AISP claims it has been given by the PSU to retrieve account and transaction information. At this stage, the consent is not yet authorised as CBS has not yet verified this claim with the PSU.

CBS responds with an AccountRequestId. This is the intent-id that is used when initiating the authorization code grant (as described in the [Trust Framework](#)).

As part of the authorization code grant:

- CBS authenticates the PSU.
- CBS plays back the consent (registered by the AISP) back to the PSU - to get consent authorisation. The PSU may accept or reject the consent in its entirety (but not selectively).
- CBS presents the PSU a list of accounts to which the consent will apply.

Once these steps are complete, the consent is considered to have been authorised by the PSU.

Consent Elements

The Account Request resource consists of the following fields, which together form the elements of the consent provided by the PSU to the AISP:

- **Permissions:** The set of data clusters that the PSU has consented to allow the AISP to access
- **ExpirationDateTime:** The date-time up to which the consent is valid.
- **TransactionFromDateTime:** The earliest booking date of transactions that the PSU has consented to provide access to the AISP.
- **TransactionToDateTime:** The last booking date of transactions that the PSU has consented to provide access to the AISP.

Permissions

Permissions codes will be used to limit the data that is returned in response to a resource request.

When a permission is granted for a "Detail" permission code (e.g., ReadAccountsDetail), it implies that access is also granted to the corresponding "Basic" permission code (e.g., ReadAccountsBasic)

The following combinations of permissions are disallowed and CBS **will not** allow such account-requests to be created:

- Account requests with an empty Permissions array
- Account requests with a Permissions array that contains **ReadTransactionBasic** but does not contain at least one of **ReadTransactionCredits** and **ReadTransactionDebits**.
- Account requests with a Permissions array that contains **ReadTransactionDetail** but does not contain at least one of **ReadTransactionCredits** and **ReadTransactionDebits**.
- Account requests with a Permissions array that contains **ReadTransactionCredits** but does not contain at least one of **ReadTransactionBasic** and **ReadTransactionDetails**.
- Account requests with a Permissions array that contains **ReadTransactionDebits** but does not contain at least one of **ReadTransactionBasic** and **ReadTransactionDetails**.

Permission	Endpoints	Business Logic	Data Cluster Description
ReadAccountsBasic	/accounts /accounts/{AccountId}		Ability to read basic account information
ReadAccountsDetail	/accounts /accounts/{AccountId}	Access to additional elements in the payload (the additional data elements are listed in the table below)	Ability to read account identification details
ReadBalances	/balances /accounts/{AccountId}/balances		Ability to read **all** balance information
ReadBeneficiariesBasic	/beneficiaries /accounts/{AccountId}/beneficiaries		Ability to read basic beneficiary details
ReadBeneficiariesDetail	/beneficiaries /accounts/{AccountId}/beneficiaries	Access to additional elements in the payload	Ability to read account identification details for the

			beneficiary
ReadDirectDebits	/direct-debits /accounts/{AccountId}/direct-debits		Ability to read **all** direct debit information
ReadStandingOrdersBasic	/standing-orders /accounts/{AccountId}/standing-orders		Ability to read standing order information
ReadStandingOrdersDetail	/standing-orders /accounts/{AccountId}/standing-orders	Access to additional elements in the payload	Ability to read account identification details for beneficiary of the standing order
ReadTransactionsBasic	/transactions /accounts/{AccountId}/transactions	Permissions must also include at least one of: ReadTransactions**Credits** ReadTransactions**Debits**	Ability to read basic transaction information
ReadTransactionsDetail	/transactions /accounts/{AccountId}/transactions	Access to additional elements in the payload Permissions must also include at least one of ReadTransactions**Credits** ReadTransactions**Debits**	Ability to read transaction data elements which may hold silent party details
ReadTransactionsCredits	/transactions /accounts/{AccountId}/transactions	Access to credit transactions. Permissions must also include one of: ReadTransactionsBasic ReadTransactionsDetail	Ability to read **only** credit transactions
ReadTransactionsDebits	/transactions /accounts/{AccountId}/transactions	Access to debit transactions. Permissions must also include one of: ReadTransactionsBasic ReadTransactionsDetail	Ability to read **only** debit transactions
ReadProducts	/products /accounts/{AccountId}/product		Ability to read **all** product information relating to the account
ReadScheduledPaymentsBasic	/scheduled-payments /accounts/{AccountId}scheduled-payments		Ability to read scheduled payment information
ReadScheduledPaymentsDetail	/scheduled-payments /accounts/{AccountId}scheduled-payments	Access to additional elements in the payload	Ability to read scheduled payment information

Reversing Entries

It is expected that transactions will be returned in the payload irrespective of whether they are reversing entries as long as the PSU has provided consent for that type of transaction.

If the PSU has provided permission for ReadTransactionsCredits, CBS **will** include all credits including debit reversals.

If the PSU has provided permission for ReadTransactionDebits, CBS **will** include all debits including credit reversals.

Expiration Date Time

The ExpirationDateTime is an optional field which specifies the expiration for AISP access to the PSU's data.

The field is optional - as the consent for AISP access to a PSU's data can be indefinite. The ExpirationDateTime is different to the RTS requirement for a PSU to re-authorise after 90 days - which is clarified in the "RTS and SCA Exemptions" section. The same account-request resource will be re-authenticated - with the same ExpirationDateTime as the original request.

The ExpirationDateTime applies to all Permissions (data clusters) being consented.

Transaction To/From Date Time

The TransactionToDateTime and the TransactionFromDateTime specify the period for consented transaction history. The AISP will be restricted to accessing transactions within this period when accessing the transactions resource.

Both the fields are optional and one can be specified without the other.

Account Request Status

The Account Request resource can have one of the following status codes after authorisation has taken place:

	Status	Description
1	Authorised	The account request has been successfully authorised.
2	Rejected	The account request has been rejected.
3	Revoked	The account request has been revoked.

Consent Revocation

A PSU can revoke consent for accessing account information at any point in time.

The PSU can revoke authorisation directly with CBS via OnlineServices or the Contact Centre.

The PSU can request the AISP to revoke consent that it has authorised. If consent is revoked with the AISP:

- The AISP **must** cease to access the APIs at that point (otherwise it may be in breach of GDPR).
- The AISP **should** call the **DELETE** operation on the account-request resource to indicate to CBS that the PSU has revoked consent.

Error Condition

If the PSU does not complete a successful consent authorisation (e.g. if the PSU is not authenticated successfully), the authorization code grant ends with a redirection to the TPP with an error response as described in RFC 6749 Section 4.1.2.1. The PSU is redirected to the TPP with an error parameter indicating the error that occurred.

Handling Expired Access Tokens

Access Token issued through Client Credentials Grant

When an access token issued through a Client Credentials Grant expires, the TPP must get a new access token by executing a client credential grant again.

Access Token issued through Authorization Code Grant

CBS will issue an access token for accounts scope which will expire after 90 days after which a new access token will be required using a new consentId.

Risk Scoring Information

Information for risk scoring and assessment will come via:

- FAPI HTTP headers. These are defined in Section 6.3 of the FAPI specification and in the Headers section above.
- Additional fields identified by the industry as business logic security concerns - which will be passed in the Risk section of the payload in the JSON object.

No fields for business logic security concerns have been identified for the Account Info APIs.

Data Model

High Level Payload Structure

This section gives an overview of the top level structure for the API payloads for the Account Info APIs.

Request Structure

The top level request structure for Account Info APIs:

Account API Request
```
{

  "Data": {

    ...

  },

  "Risk": {

    ...

  }

}
```

The top level structure for the Account Info API POST requests will be:

- Data
- Risk

The Data section contains the request details.

A Risk section for the request structure has been separated out - so that this can evolve in isolation from request section of the payload.

Response Structure

The top level response structure for Account Info APIs:

Account API Response

```
{
  "Data": {
    ...
  },
  "Risk": {
    ...
  },
  "Links": {
    ...
  ],
  "Meta": {
    ...
  }
}
```

In line with the principle on RESTful API practices - we are replaying the resource as part of the response.

Two additional top level sections are included for:

- Links
- Meta

Links

The Links section is mandatory and will always contain URIs to related resources,

The "Self" member is mandatory, the other members "First", "Prev", "Next", "Last" are optional.

For example:

Example Links

```
 "Links": {

   "Self": "/open-banking/accounts/123456/transactions?pg=3,

   "First": "/open-banking/accounts/123456/transactions?pg=1",

   "Prev": "/open-banking/accounts/123456/transactions?pg=2",

   "Next": "/open-banking/accounts/123456/transactions?pg=4",

   "Last": "/open-banking/accounts/123456/transactions?pg=10"

 }
```

Meta

The Meta section is mandatory, but can be empty.

An optional member is "TotalPages" which is specified as an integer (int32) and shows how many pages of results (for pagination) are available.

For example:

Example Meta

```
 "Meta": {

   "TotalPages": 10

 }
```

Identifying Available Transaction Period

The transactions for a particular range of dates may be excluded from the response because:

- CBS does not provide historical transactions during that date range.
- The PSU has not consented to transactions for that date range.

The absence of transactions in the payload does not indicate that there were no transactions during that period.

Data Payload - Enumerations

This section gives the definitions for enumerations used in the Account Info APIs.

TransactionEntryCode

Name	Definition
Booked	Booked means that the transfer of money has been completed between account servicer and account owner Usage: Status Booked does not necessarily imply finality of money as this depends on other factors such as the payment system used, the completion of the end- to-end transaction and the terms agreed between account servicer and owner. Status Booked is the only status that can be reversed.
Pending	Booking on the account owner's account in the account servicer's ledger has not been completed. Usage: this can be used for expected items, or for items for which some conditions still need to be fulfilled before they can be booked. If booking takes place, the entry will be included with status Booked in subsequent account report or statement. Status Pending cannot be reversed.

CreditDebitCode

Name	Definition
Credit	Operation is a credit
Debit	Operation is a debit

BalanceTypeCode

Name	Definition
ClosingAvailable	Closing balance of amount of money that is at the disposal of the account owner on the date specified.
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.
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.
ForwardAvailable	Forward available balance of money that is at the disposal of the account owner on the date specified.
Information	Balance for informational purposes.
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.
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.

OpeningAvailable	Opening balance of amount of money that is at the disposal of the account owner on the date specified.
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.
PreviouslyClosedBooked	Balance of the account at the previously closed account reporting period. The opening booked balance for the new period has to be equal to this balance. Usage: the previously booked closing balance should equal (inclusive date) the booked closing balance of the date it references and equal the actual booked opening balance of the current date.

ExternalAccountIdentification2Code

Name	Definition
SortCodeAccountNumber	Sort Code and Account Number - identifier scheme used in the UK by financial institutions to identify the account of a customer. The identifier is the concatenation of the 6 digit UK sort code and 8 digit account number. The regular expression for this identifier is: ^[0-9]{6}[0-9]{8}$

ExternalDirectDebitStatus1Code

Name	Definition
Active	The direct debit mandate is active.
Inactive	The direct debit mandate is inactive.

ExternalPermissions1Code

Name	Definition
ReadAccountsBasic	Permission to read basic account information.
ReadAccountsDetail	Access to additional elements in the account payload.
ReadBalances	Permission to read all balance information.
ReadBeneficiariesBasic	Permission to read basic beneficiary details.
ReadBeneficiariesDetail	Access to additional elements in the beneficiaries payload.
ReadDirectDebits	Permission to read all direct debit information.
ReadStandingOrdersBasic	Permission to read standing order information.
ReadStandingOrdersDetail	Access to additional elements in the standing-orders payload.
ReadTransactionsBasic	Permission to read basic transaction information.
ReadTransactionsDetail	Access to additional elements in the transactions payload.
ReadTransactionsCredits	Access to only credit transactions.
ReadTransactionsDebits	Access to only debit transactions.
ReadProducts	Permission to read all product information.
ReadScheduledPaymentsBasic	Permission to read scheduled payments information.
ReadScheduledPaymentsDetail	Access to additional elements in the scheduled payments payload.

ExternalProductType1Code

Name	Definition
PCA	Personal Current Account

ExternalRequestStatus1Code

Name	Definition
Authorised	The account request has been successfully authorised.
AwaitingAuthorisation	The account request is awaiting further authorisation.
Rejected	The account request has been rejected.
Revoked	The account request has been revoked via CBS interface.

Data Payload – Error Response Structure

Example

```
{
  "Code": "...",
  "Id": "...",
  "Message": "...",
  "Errors": [
    {
      "ErrorCode": "...",
      "Message": "...",
      "Path": "...",
      "Url": "..."
    }
  ]
}
```

Data Dictionary

Name	Card-inality	DataType	Notes
ErrorResponse			An array of detail error codes, and messages, and URLs to documentation to help remediation.
ErrorResponse /Code	1..1		High level textual error code, to help categorize the errors.
ErrorResponse /Message	1..1	Max128Text	Brief Error message, e.g., 'There is something wrong with the request parameters provided'
ErrorResponse /Errors	0..1		
ErrorResponse /Errors/ErrorCode	1..1	ISODateTime	Low level textual error code
ErrorResponse /Errors/Message	1..n		A description of the error that occurred

Usage Examples

All Permissions Granted

This set of payload examples is for an AISP:

- Setting up an account-request
- Getting the status of an account-request
- Retrieving data from each of the Account Info API endpoints
- Deleting the account-request

In this scenario:

- All permissions have been granted to access all Account Info API resources

POST Account Request

POST Account Requests Request

```
POST /account-requests HTTP/1.1
Authorization: Bearer
2YotnFZFEjr1zCsicMWpAA
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time: Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json
Accept: application/json
{
  "Data": {
    "Permissions": [
      "ReadAccountsDetail",
      "ReadBalances",
      "ReadBeneficiariesDetail",
      "ReadDirectDebits",
      "ReadProducts",
      "ReadStandingOrdersDetail",
      "ReadTransactionsCredits",
      "ReadTransactionsDebits",
      "ReadTransactionsDetail",
      "ReadScheduledPaymentsDetail"
    ],
    "ExpirationDateTime": "2017-05-
02T00:00:00+00:00",
    "TransactionFromDateTime": "2017-05-
03T00:00:00+00:00",
    "TransactionToDateTime": "2017-12-
03T00:00:00+00:00"
  },
  "Risk": {}}
```

POST Account Requests Response

```
HTTP/1.1 201 Created
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json
{
  "Data": {
    "AccountRequestId": "88379",
    "Status": "AwaitingAuthorisation",
    "CreationDateTime": "2017-05-
02T00:00:00+00:00",
    "Permissions": [
      "ReadAccountsDetail",
      "ReadBalances",
      "ReadBeneficiariesDetail",
      "ReadDirectDebits",
      "ReadProducts",
      "ReadStandingOrdersDetail",
      "ReadTransactionsCredits",
      "ReadTransactionsDebits",
      "ReadTransactionsDetail",
      "ReadScheduledPaymentsDetail"
    ],
    "ExpirationDateTime": "2017-08-
02T00:00:00+00:00",
    "TransactionFromDateTime": "2017-05-
03T00:00:00+00:00",
    "TransactionToDateTime": "2017-12-
03T00:00:00+00:00"
  },
  "Risk": {},
  "Links": {
    "Self": "/account-requests/88379"
}}
```

Status - AwaitingAuthorisation

This is an example of a GET request which is made **before** the account request resource is authorised.

GET Account Requests Request

```
GET /account-requests/88379 HTTP/1.1
Authorization: Bearer
2YotnFZFEjr1zCsicMWpAA
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time: Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Accept: application/json
```

GET Account Requests Response

```
HTTP/1.1 200 OK
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json

{
  "Data": {
    "AccountRequestId": "88379",
    "Status": "AwaitingAuthorisation",
    "CreationDateTime": "2017-05-
02T00:00:00+00:00",
    "Permissions": [
      "ReadAccountsDetail",
      "ReadBalances",
      "ReadBeneficiariesDetail",
      "ReadDirectDebits",
      "ReadProducts",
      "ReadStandingOrdersDetail",
      "ReadTransactionsCredits",
      "ReadTransactionsDebits",
      "ReadTransactionsDetail",
      "ReadScheduledPaymentsDetail"
    ],
    "ExpirationDateTime": "2017-08-
02T00:00:00+00:00",
    "TransactionFromDateTime": "2017-05-
03T00:00:00+00:00",
    "TransactionToDateTime": "2017-12-
03T00:00:00+00:00"
  },
  "Risk": {},
  "Links": {
    "Self": "/account-requests/88379"
  },
  "Meta": {
    "TotalPages": 1
  }
}
```

Status - Authorised

This is an example of a GET request which is made **after** the account request resource is authorised.

GET Account Requests Request

```
GET /account-requests/88379 HTTP/1.1
Authorization: Bearer
2YotnFZFEjr1zCsicMWpAA
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time: Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Accept: application/json
```

GET Account Requests Response

```
HTTP/1.1 200 OK
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json
{
  "Data": {
    "AccountRequestId": "88379",
    "Status": "Authorised",
    "CreationDateTime": "2017-05-
02T00:00:00+00:00",
    "Permissions": [
      "ReadAccountsDetail",
      "ReadBalances",
      "ReadBeneficiariesDetail",
      "ReadDirectDebits",
      "ReadProducts",
      "ReadStandingOrdersDetail",
      "ReadTransactionsCredits",
      "ReadTransactionsDebits",
      "ReadTransactionsDetail",
      "ReadScheduledPaymentsDetail"
    ],
    "ExpirationDateTime": "2017-08-
02T00:00:00+00:00",
    "TransactionFromDateTime": "2017-05-
03T00:00:00+00:00",
    "TransactionToDateTime": "2017-12-
03T00:00:00+00:00"
  },
  "Risk": {},
  "Links": {
    "Self": "/account-requests/88379"
  }
}
```

GET Accounts - Bulk

The call to GET /accounts is the first step after an account-request is authorised.

This will allow the AISP to discover which accounts (and AccountId values) are associated with the authorisation of consent.

GET Accounts Request

```
GET /accounts HTTP/1.1
Authorization: Bearer Az90SAOJklae
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time: Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Accept: application/json
```

GET Accounts Response

```
HTTP/1.1 200 OK
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json
{
  "Data": {
    "Account": [
      {
        "AccountId": "88379",
        "Currency": "GBP",
        "Nickname": "Bills",
        "Account": {
          "SchemeName":
"SortCodeAccountNumber",
          "Identification":
"40630112345678",
          "Name": "Mr Kevin"
        }
      }
    ]
  },
  "Links": {
    "Self": "/accounts/"
  }
}
```

GET Accounts - Specific Account

An AISP can also retrieve the account resource details specifically for AccountId 88379

GET Accounts Request

```
GET /accounts/88379 HTTP/1.1
Authorization: Bearer Az90SAOJklae
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time: Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Accept: application/json
```

GET Accounts Response

```
HTTP/1.1 200 OK
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json
{
  "Data": {
    "Account": [
      {
        "AccountId": "88379",
        "Currency": "GBP",
        "Account": {
          "SchemeName":
"SortCodeAccountNumber",
          "Identification":
"40630112345678",
          "Name": "Mr Kevin
        }
      }
    ]
  },
  "Links": {
    "Self": "/accounts/88379"
  },
  "Meta": {
    "TotalPages": 1
  }
}
```

GET Balances - Specific Account

GET Account Balances Request

```
GET /accounts/88379/balances HTTP/1.1
Authorization: Bearer Az90SAOJklae
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time: Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Accept: application/json
```

GET Account Balances Response

```
HTTP/1.1 200 OK
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json

{
  "Data": {
    "Balance": [
      {
        "AccountId": "88379",
        "Amount": {
          "Amount": "1230.00",
          "Currency": "GBP"
        },
        "CreditDebitIndicator": "Credit",
        "Type": "InterimAvailable",
        "DateTime": "2017-04-
05T10:43:07+00:00"
      }
    ]
  },
  "Links": {
    "Self": "/accounts/88379/balances/"
  },
  "Meta": {
    "TotalPages": 1
  }
}
```

GET Beneficiaries - Specific Account

GET Account Beneficiaries Request

```
GET /accounts/88379/beneficiaries HTTP/1.1
Authorization: Bearer Az90SAOJklae
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time:  Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Accept: application/json
```

Get Account Beneficiaries Response

```
HTTP/1.1 200 OK
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json
{
  "Data": {
    "Beneficiary": [
      {
        "AccountId": "88379",
        "BeneficiaryId": "Ben1",
        "Reference": "Towbar Club",
        "CreditorAccount": {
          "SchemeName":
"SortCodeAccountNumber",
          "Identification":
"80200112345678",
          "Name": "Mrs Juniper"
        }
      }
    ]
  },
  "Links": {
    "Self":
"/accounts/88379/beneficiaries/"
  }
}
```

GET Direct Debits - Specific Account

```
GET Account Direct Debits Request

GET /accounts/88379/direct-debits HTTP/1.1
Authorization: Bearer Az90SAOJklae
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time:  Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Accept: application/json
```

```
GET Account Direct Debits Response

HTTP/1.1 200 OK
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json
{
  "Data": {
    "DirectDebit": [
      {
        "AccountId": "88379",
        "MandateIdentification":
"Caravanners",
        "DirectDebitStatusCode": "Active",
        "Name": "Towbar Club 3 - We Love
Towbars",
        "PreviousPaymentDateTime": "2017-
04-05T10:43:07+00:00",
        "PreviousPaymentAmount": {
          "Amount": "0.57",
          "Currency": "GBP"
        }
      }
    ]
  },
  "Links": {
    "Self": "/accounts/88379/direct-
debits/"
  }
}
```

GET Scheduled Payments - Specific Account

GET Account Scheduled Payments Request

```
GET /accounts/88379/scheduled-payments
HTTP/1.1
Authorization: Bearer Az90SAOJklae
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time:  Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Accept: application/json
```

GET Account Scheduled Payments Response

```
HTTP/1.1 200 OK
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json
{
  "Data": {
    "ScheduledPayment": [
      {
        "AccountId": "88379",
        "ScheduledPaymentDateTime": "2019-
04-05T10:43:07+00:00",
        "ScheduledType": "Execution",
        "InstructedAmount": {
          "Amount": "10.00",
          "Currency": "GBP"
        },
        "CreditorAccount": {
          "SchemeName":
"SortCodeAccountNumber",
          "Identification":
"80200112345678",
          "Name": "Mrs Juniper"
        }
      }
    ]
  },
  "Links": {
    "Self": "/accounts/88379/scheduled-
payments/"
  }
}
```

GET Product - Specific Account

GET Account Product Request

```
GET /accounts/88379/product HTTP/1.1
Authorization: Bearer Az90SAOJklae
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time:  Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Accept: application/json
```

GET Account Product Response

```
HTTP/1.1 200 OK
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json
{
  "Data": {
    "Product": [
      {
        "AccountId": "88379",
        "ProductIdentifier": "51B",
        "ProductType": "PCA"
      }
    ]
  },
  "Links": {
    "Self": "/accounts/88379/product"
  },
  "Meta": {
    "TotalPages": 1
  }
}
```

GET Standing Orders - Specific Account

```
GET Accounts Standing Orders Request

GET /accounts/88379/standing-orders
HTTP/1.1
Authorization: Bearer Az90SAOJklae
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time:  Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Accept: application/json
```

```
GET Accounts Standing Orders Response

HTTP/1.1 200 OK
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json
{
   "Data": {
     "StandingOrder": [
       {
         "AccountId": "88379",
         "Frequency": "IntrvlMnthDay:01:02",
         "Reference": "Towbar Club 2 - We
Love Towbars",
         "FirstPaymentDateTime": "2017-08-
12T00:00:00+00:00",
         "FirstPaymentAmount": {
           "Amount": "0.57",
           "Currency": "GBP"
         },
         "NextPaymentDateTime": "2017-09-
12T00:00:00+00:00",
         "NextPaymentAmount": {
           "Amount": "0.56",
           "Currency": "GBP"
         },
         "FinalPaymentDateTime": "2027-01-
12T00:00:00+00:00",
         "FinalPaymentAmount": {
           "Amount": "0.56",
           "Currency": "GBP"
         },
         "CreditorAccount": {
           "SchemeName":
"SortCodeAccountNumber",
           "Identification":
"80200112345678",
           "Name": "Mrs Juniper"
         }
       }
     ]
   },
   "Links": {
     "Self": "/accounts/88379/standing-
orders/"
   }
}
```

GET Transactions - Specific Account

GET Account Transactions Request

```
GET /accounts/88379/transactions HTTP/1.1
Authorization: Bearer Az90SAOJklae
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time:  Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Accept: application/json
```

GET Account Transactions Response

```
HTTP/1.1 200 OK
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json

{
   "Data": {
     "Transaction": [
       {
         "AccountId": "88379",
         "TransactionId": "123",
         "TransactionReference": "Ref 1",
         "Amount": {
           "Amount": "10.00",
           "Currency": "GBP"
         },
         "CreditDebitIndicator": "Credit",
         "Status": "Booked",
         "BookingDateTime": "2017-04-
05T10:43:07+00:00",
         "ValueDateTime": "2017-04-
05T10:45:22+00:00",
         "TransactionInformation": "Cash
from Aubrey",
         "BankTransactionCode": {
           "Code": "ReceivedCreditTransfer",
           "SubCode":
"DomesticCreditTransfer"
         },
         "ProprietaryBankTransactionCode": {
           "Code": "Transfer",
           "Issuer": "AlphaBank"
         },
         "Balance": {
           "Amount": {
             "Amount": "230.00",
             "Currency": "GBP"
           },
           "CreditDebitIndicator": "Credit",
           "Type": "InterimBooked"
         }
       }
     ]
   },
   "Links": {
     "Self": "/accounts/88379/transactions/"
   }
}
```

DELETE Account Request

The DELETE /account-requests call allows an AISP to delete a previously created account-request (whether it is currently authorised or not). The PSU may want to remove their consent via the AISP instead of revoking authorisation with CBS.

This API call allows the PSU to revoke consent with the AISP - and for that consent to be reflected in authorisation with CBS.

DELETE Account Requests Request

```
DELETE /account-requests/88379 HTTP/1.1
Authorization: Bearer
2YotnFZFEjr1zCsicMWpAA
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time:  Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
```

DELETE Account Requests Response

```
HTTP/1.1 204 No Content
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
```

Limited Permissions Granted

This set of payload examples is for an AISP:

- Setting up an account-request
- Retrieving data from:
  - /accounts/{AccountId}/balances
  - /accounts/{AccountId}/transactions

In this scenario:

- Only ReadAccountsBasic and ReadBalances permissions have been requested

POST Account Request

POST Account Requests Request

```
POST /account-requests HTTP/1.1
Authorization: Bearer
2YotnFZFEjr1zCsicMWpAA
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time:  Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json
Accept: application/json
{
  "Data": {
    "Permissions": [
      "ReadAccountsBasic",
      "ReadBalances"
    ],
    "ExpirationDateTime": "2017-05-
02T00:00:00+00:00",
    "TransactionFromDateTime": "2017-05-
03T00:00:00+00:00",
    "TransactionToDateTime": "2017-12-
03T00:00:00+00:00"
  },
  "Risk": {}
}
```

POST Account Requests Response

```
HTTP/1.1 201 Created
x-jws-signature:
V2hhdCB3ZSBnb3QgaGVyZQ0K..aXMgZmFpbHVyZSB0b
yBjb21tdW5pY2F0ZQ0K
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json

{
  "Data": {
    "AccountRequestId": "22289",
    "Status": "AwaitingAuthorisation",
    "CreationDateTime": "2017-05-
02T00:00:00+00:00",
    "Permissions": [
      "ReadAccountsBasic",
      "ReadBalances"
    ],
    "ExpirationDateTime": "2017-08-
02T00:00:00+00:00",
    "TransactionFromDateTime": "2017-05-
03T00:00:00+00:00",
    "TransactionToDateTime": "2017-12-
03T00:00:00+00:00"
  },
  "Risk": {},
  "Links": {
    "Self": "/account-requests/22289"
  },
  "Meta": {
    "TotalPages": 1
  }
}
```

GET Accounts - Bulk

GET Accounts Request

```
GET /accounts HTTP/1.1
Authorization: Bearer Az90SAOJklae
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time:  Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Accept: application/json
```

GET Accounts Response

```
HTTP/1.1 200 OK
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json

{
  "Data": {
    "Account": [
      {
        "AccountId": "22289",
        "Currency": "GBP"
      }
    ]
  },
  "Links": {
    "Self": "/accounts/"
  },
  "Meta": {
    "TotalPages": 1
  }
}
```

GET Balances - Specific Account

GET Account Balances Request

```
GET /accounts/22289/balances HTTP/1.1
Authorization: Bearer Az90SAOJklae
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time:  Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Accept: application/json
```

GET Account Balances Response

```
HTTP/1.1 200 OK
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json

{
   "Data": {
     "Balance": [
       {
         "AccountId": "22289",
         "Amount": {
           "Amount": "1230.00",
           "Currency": "GBP"
         },
         "CreditDebitIndicator": "Credit",
         "Type": "InterimAvailable",
         "DateTime": "2017-04-
05T10:43:07+00:00"
       }
     ]
   },
   "Links": {
     "Self": "/accounts/22289/balances/"
   }
}
```

GET Transactions - Specific Account

In this example - the AISP does not have access to call the transactions endpoint. This will result in a 403 error.

GET Account Transactions Request

```
GET /accounts/22289/transactions HTTP/1.1
Authorization: Bearer Az90SAOJklae
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time:  Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Accept: application/json
```

GET Account Transactions Response

```
HTTP/1.1 403 Forbidden
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
```

Pagination

The example below illustrates how CBS will return a paginated response.

Paginated Resource Request

Paginated Resource Response

```
Paginated Transactions Request
```

```
GET /accounts/22289/transactions HTTP/1.1
Authorization: Bearer Az90SAOJklae
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time:  Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Accept: application/json
```

```
Paginated Transactions Response
```

```
HTTP/1.1 200 OK
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json
{
   "Data": {
    ...
   },
   "Links": {
     "Self":
"/accounts/22289/transactions/",
     "Last":
"/accounts/22289/transactions?pg=20",
      "First":
"/accounts/22289/transactions/",
      "Next":
"/accounts/22289/transactions?pg=2"
   },
   "Meta": {
     "TotalPages": 20
   }
}
```

The AISP can follow the links provided in the Links section of the payload to navigate to the first, last, next and previous pages:

Request Next Page of Results

Paginated Resource Response

```
Paginated Transactions Request (Next)
```

```
GET /accounts/22289/transactions?pg=2
HTTP/1.1
Authorization: Bearer Az90SAOJklae
x-fapi-financial-id: CBSOpenBanking
x-fapi-customer-last-logged-time:  Sun, 10
Sep 2017 19:43:31 UTC
x-fapi-customer-ip-address: 104.25.212.99
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Accept: application/json
```

```
Paginated Transactions Response
```

```
HTTP/1.1 200 OK
x-jws-signature:
V2hhdCB3ZSBnb3QgaGVyZQ0K..aXMgZmFpbHVyZSB0b
yBjb21tdW5pY2F0ZQ0K
x-fapi-interaction-id: 93bac548-d2de-4546-
b106-880a5018460d
Content-Type: application/json

{
   "Data": {
    ...
   },
```

```
  "Links": {
    "Self":
"/accounts/22289/transactions?pg=2",
    "Last":
"/accounts/22289/transactions?pg=20",
      "First":
"/accounts/22289/transactions/",
      "Next":
"/accounts/22289/transactions?pg=3",
      "Prev":
"/accounts/22289/transactions?pg=1"
  },
  "Meta": {
    "TotalPages": 20
  }
}
```
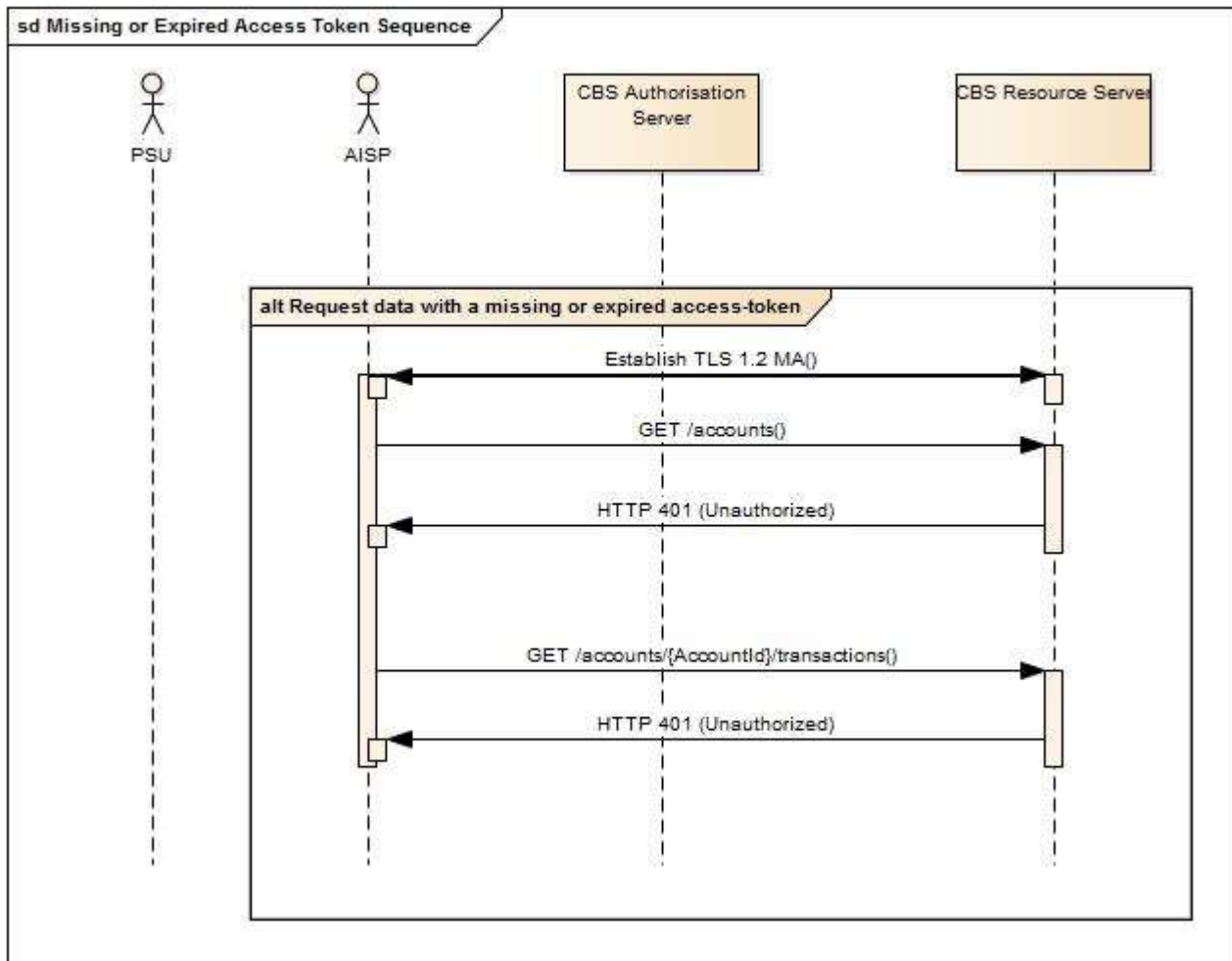
Alternate and Error Flows

Missing or Expired Access Token

This flow assumes that the following Steps have been completed successfully:

- Step 1: Request Account Information
- Step 2: Setup Account Request
- Step 3: Authorize Consent

The AISP attempts to provide an expired or missing access token to CBS in an attempt to Request Data
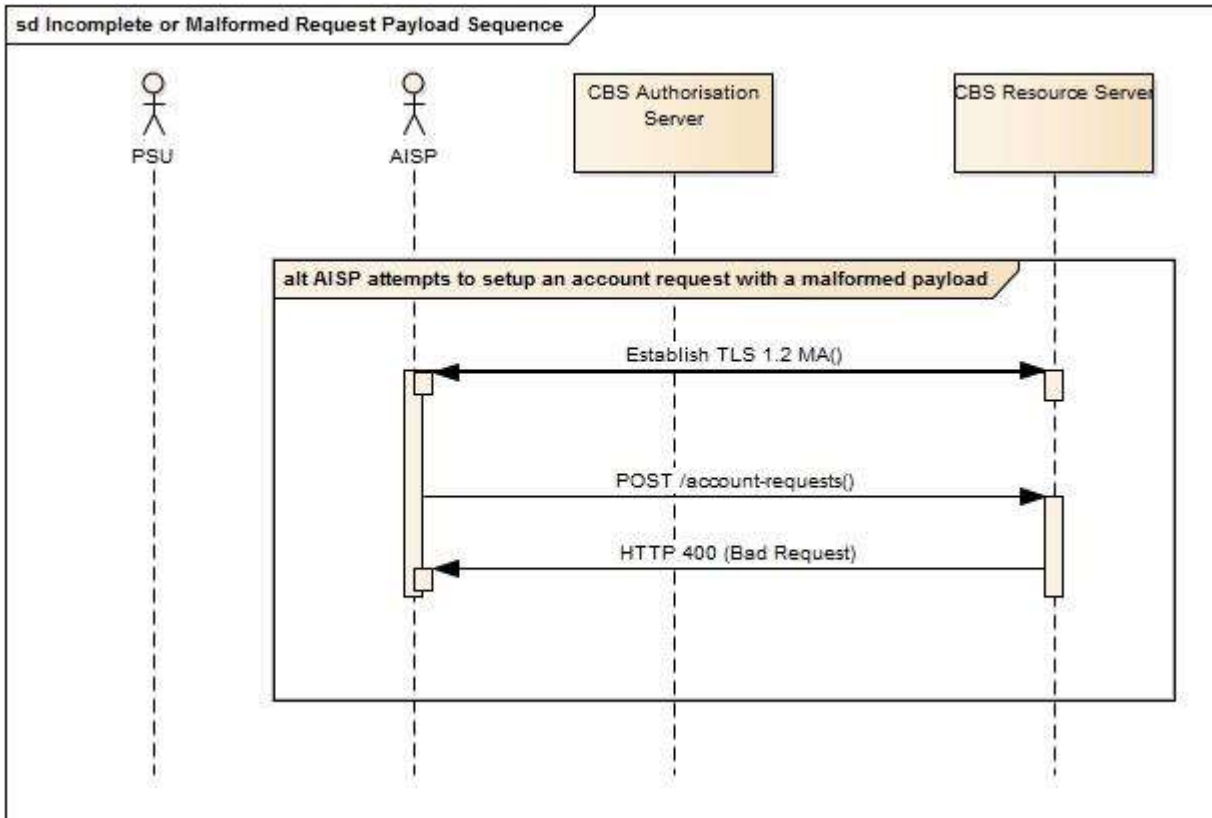
Incomplete or Malformed Request Payload

This flow assumes that the following Steps have been completed successfully:

- Step 1: Request Account Information
- Step 2: Setup Account Request
- Step 3: Authorize Consent

The AISP provides a malformed request to CBS in an attempt to setup an Account Request.

Missing or Invalid Access Token Scope

This flow assumes that the following Steps have been completed successfully:

- Step 1: Request Account Information
- Step 2: Setup Account Request
- Step 3: Authorize Consent

The AISP provides a (valid) access token which does not have a valid scope (or link to the correct Permissions) to Request Data
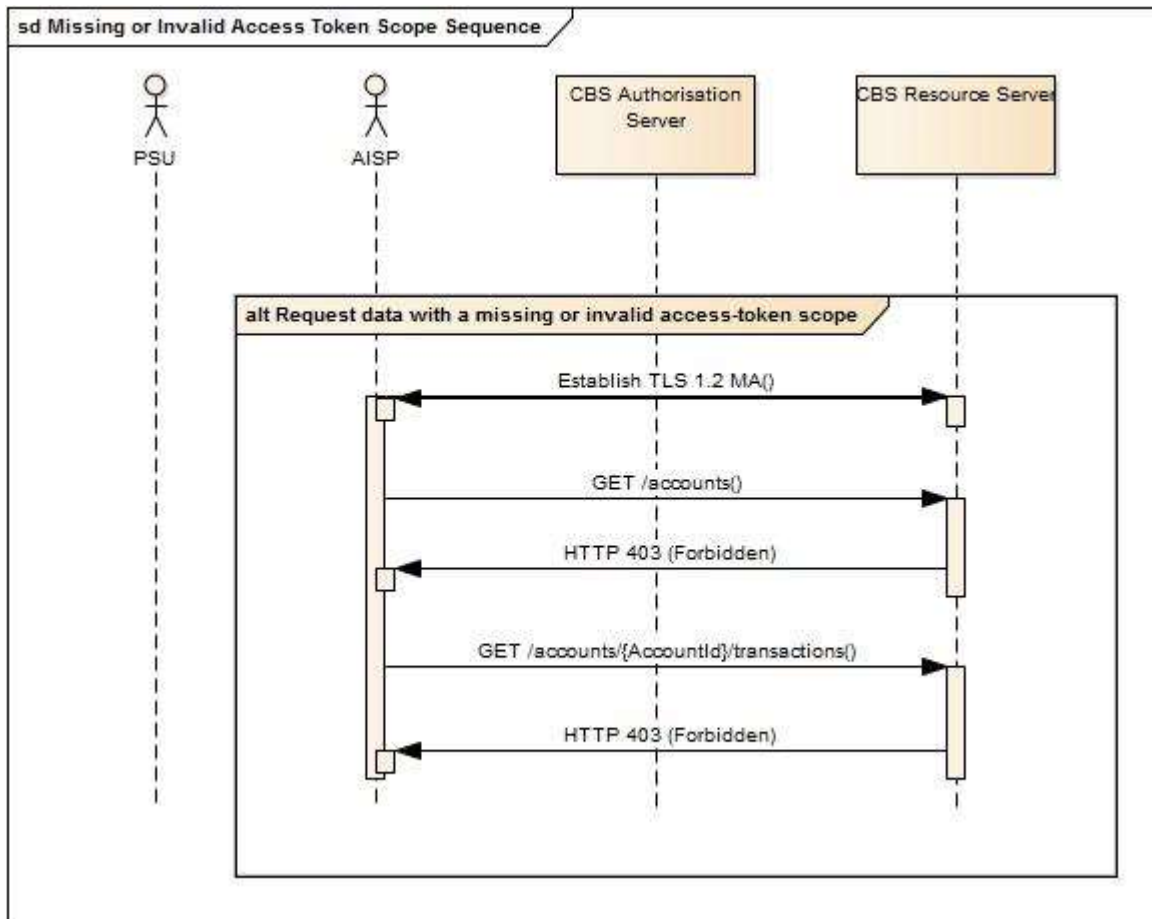

Failed Authorisation Consent

This flow assumes that the following Steps have been completed successfully:

- Step 1: Request Account Information
- Step 2: Setup Account Request

The Step 3: Authorize Consent Flow fails to succeed due to the PSU providing invalid credentials to CBS, resulting in no Authorization Code being generated.

sd Failed Authorisation Consent Sequence

PSU — AISP — CBS Authorisation Server — CBS Resource Server

Step 1: Request account information

- Get account/transaction information() — PSU → AISP

Step 2: Setup account request

- Establish TLS 1.2 MA() — AISP ↔ CBS Authorisation Server
- Initiate Client Credentials Grant() — AISP → CBS Authorisation Server
- access token() — CBS Authorisation Server → AISP
- Establish TLS 1.2 MA() — AISP ↔ CBS Resource Server
- POST /account-requests() — AISP → CBS Resource Server
- HTTP 201 (Created), AccountRequestId — CBS Resource Server → AISP
- HTTP 302 (Found), Redirect (AccountRequestId) — AISP → PSU

Step 3: Failed authentication

- Follow redirect to CBS authorize endpoint(AccountRequestId) — PSU → CBS Authorisation Server
- Request stage 1 of authentication() — CBS Authorisation Server → PSU
- Submit invalid stage 1 authentication data() — PSU → CBS Authorisation Server
- Invalid Credentials() — CBS Authorisation Server (self)
- HTTP 302 (Found), Redirect(error) — CBS Authorisation Server → PSU
- Follow redirect (error) — PSU → AISP
- Error Response() — AISP → PSU