Cedacri NextGenPSD2 XS2A Framework Implementation v1.0

Version 1.2.4

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Index

1 Aim of the document

This document aims to detail Cedacri's implementation of the NextGenPSD2 XS2A Framework from a technical point of view.

2 References

The following document refers to the Implementation Guidelines produced by the Berlin Group.

For all parts not specified in this document, please refer to the following original documents:

- BGV1.3: NextGenPSD2 Access to Account Interoperability Framework - Implementation Guidelines V1.3_20181019.pdf
https://www.berlin-group.org/nextgenpsd2-downloads

3 Document History

Version	Change/Note	Date
1.0	First version.	13/03/2019
1.0.1	Added element payment-product in Payment Initiation Service endpoints.	14/03/2019
1.0.2	Added clarifications about time limits of authorization code and SCA redirect url.	18/03/2019
1.0.3	Added ABI 06090.	01/04/2019
1.0.4	Modified access attribute description of Consent Request.	05/04/2019
1.0.5	Removed ABIs: 03011, 03439, 03445, 32048. Added ABIs: 03263, 05704, 06220, 10631.	06/05/2019
1.0.6	Updating specifications to generate the required parameters (client_id, client_secret)	21/05/2019
1.0.7	Added ABI 10680. Modified the country code required as input in the case of a foreign bank transfer: it's not the ISO code requested by the Berlin Group but the numeric one, the Bdl code.	27/05/2019
1.0.8	Added query parameters table and examples of multi-currency with "resourceId" and "withBalance" parameters in the Account List, Account Details and Transactions	29/05/2019
1.0.9	Added chapter 7 to explain the TPP onboarding via the registration API. Added new header "PSU-IP-Address" in all AISP request calls. Explained the updating of the expiring access token	10/06/2019

1.1.0	Defined the codes of the ISO 20022 data table for "transactionStatus" in PISP request calls	13/06/2019
	Added new header "PSU-ID-Type" in the consent request on dedicated accounts and in all PISP request calls.	
1.1.1	Added "ACTC" in "transactionStatus" in PISP request calls	02/08/2019
1.1.2	Specified, in chapter 8.1, the different recovery of the parameters (client id, client secret and redirect uri), depending on the environment: Sandbox or Production.	13/08/2019
	Specified, in chapter 8.1, "cancel link" and , in chapter 10.1, "payment cancel link"	
	Added future payments in PISP request and payment cancellation request in chapter 10.4	
1.1.3	Updated ABI list	06/09/2019
1.1.4	Added notes in chapter 10.1 and 11.8	10/09/2019
1.1.5	Added a new possible value for "PSU-ID-Type" for Banca di Desio e della Brianza and Banca Popolare di Spoleto	13/09/2019
1.1.6	Modified the example of "Read Account Details", chapter 11.6	24/09/2019
1.1.7	Specified Balance Type and Balance Amount in "Read Balance" request call	27/09/2019
1.1.8	Added example of "Payment Cancellation Request"	29/10/2019

1.1.9	Renamed the file adding the specification "v1.0" related to the API version 1.0	19/11/2019
1.2.0	Decommissioned ABI 03127 by merger	24/11/2019
1.2.1	Added ABI 03598.	18/12/2019
1.2.2	Decommissioned ABI 05704 by merger with Banca Desio on October 2019.	09/01/2020
1.2.3	Modified AISP and PISP redirect url type from String to Array of String in "Tpp On Boarding"	23/04/2020
1.2.4	Add input field "cancel_link" in "Tpp On Boarding"	11/06/2020

4 Introduction

Cedacri has implemented the NextGenPSD2 XS2A Framework for several Italian Account Servicing Payment Service Providers (ASPSPs). The following table lists all the ASPSPs that rely on Cedacri's infrastructure, identified by their national bank code (*codice ABI*).

National Bank Code	Description
03048	Banca del Piemonte
03051	BARCLAYS BANK IRELAND PLC SEDE SECONDARIA
03105	Volkswagen Bank
03124	Banca del Fucino
03126	Banca Leonardo
03183	Mediobanca Banca di Credito Finanziario S.p.A.
03205	Banca Ifis S.p.A.
03263	IBL Banca
03321	Rbc Investor Service Bank Sa
03353	Banca del Sud
03365	Banco delle Tre Venezie
03387	Banque Chaabi du Maroc
03388	Banca Stabiese
03440	Banco di Desio e della Brianza
03488	Cassa Lombarda
03598	Banca Ubae S.p.A.
05015	Banca Progetto S.p.A.
05116	Banca Valsabbina
05385	Banca Popolare di Puglia e Basilicata
05424	Banca Popolare di Bari
05824	Cassa di Sovvenzioni e Risparmio
06045	Cassa di Risparmio di Bolzano
06085	Cassa di Risparmio di Asti
06090	Cassa di Risparmio di Biella e Vercelli S.p.A.
06115	Cassa di Risparmio di Cento
06170	Cassa di Risparmio di Fossano S.p.A.
06220	Cassa di risparmio di Orvieto
06370	Cassa di Risparmio di Volterra
10630	Istituto per il Credito Sportivo
10680	Banca del Mezzogiorno – MedioCredito Centrale S.p.A.

Cedacri exposes PSD2 APIs for Payment Initiation Service Provider (PISP) TPP, Account Information Service Provider (AISP) TPP and Payment Instrument Issuing Service Provider (PIISP) TPP in two different URLs:

- https://api.cedacri.it
- https://sandbox.cedacri.it

The first URL is for all APIs of *live* environment where services work on real and actual data of users; the second URL is for all APIs of *sandbox* environment that replicates main functionalities of the production environment but is completely independent of it.

Cedacri provides a *sandbox* environment that allows TPP developers to validate their code before migrating it to the *live* environment.

For this reason, resources of the Cedacri's XS2A Interface can be addressed under the following API endpoints:

- https://api.cedacri.it/psd2bg/{national bank code}/v1/{service}{?query-parameters}
- https://sandbox.cedacri.it/psd2bg/{national bank code}/v1/{service}{?query-parameters}

using additional content parameters {parameters}

where

- {national bank code} is the identifier of the ASPSP as reported in the list above
- v1 is denoting the final version 1.3 of the Berlin Group XS2A interface implementation Guidelines
- {service} has the values consents, payments, accounts or funds-confirmation, eventually extended by more information on product types and request scope
- {?query-parameters} are parameters detailing GET based access methods, e.g. for filtering content data
- {parameters} are content attributes defined in JSON encoding

The structure of request/response is described according to the following categories:

- Path: attributes encoded in the path
- Query Parameters: attributes added to the path after the ? sign as process steering flags or filtering attributes for GET access methods
- Header: attributes encoded in the HTTP header of request or response
- Request: attributes within the content parameter set of the request
- Response: attributes within the content parameter set of the response, defined in JSON

The following table gives an overview on the HTTP access methods supported by the API endpoints and by resources created through this API:

Endpoints/Resources	Method
payments/{payment-product}	POST
payments/{payment-product}/{paymentId}	GET
payments/{payment-product}/{paymentId}/status	GET
accounts	GET
accounts/{accountId}	GET
accounts/{accountId}/balances	GET

accounts/{accountId}/transactions	GET
consents	POST
consents/{consentId}	GET
consents/{consentId}	DELETE
consents/{consentId}/status	GET
funds-confirmations	POST

The following table shows the possible HTTP response codes:

Status Code	Description
200 OK	PUT, GET Response Codes This return code is permitted if a request was repeated due to a time-out. The POST for a Funds request will also return 200 since it does not create a new resource.
201 Created	POST response code where Payment Initiation or Consent Request was correctly performed.
204 No Content	DELETE response code where a consent resource was successfully deleted. The code indicates that the request was performed, but no content was returned.
400 Bad Request	Validation error occurred. This code will cover malformed syntax in request or incorrect data in payload.
401 Unauthorized	The TPP or the PSU is not correctly authorized to perform the request. Retry the request with correct authentication information.
404 Not found	Returned if the resource or endpoint that was referenced in the path does not exist or cannot be referenced by the TPP or the PSU.
405 Method Not Allowed	This code is only sent when the HTTP method (PUT, POST, DELETE, GET etc.) is not supported on a specific endpoint.
408 Request Timeout	The server is still working correctly, but an individual request has timed out.
429 Too Many Requests	The TPP has exceeded the number of requests allowed by the consent or by the RTS.
500 Internal Server Error	Internal server error occurred.
503 Service Unavailable	The server is currently unavailable. Generally, this is a temporary state.

Additional error information is transmitted following NextGenPSD2 XS2A specification, as reported in the JSON example below:

```
{
```

```
  "tppMessages": [
   {
    "category": "ERROR",
    "code": "TOKEN_INVALID",
    "text": "additional text information of the ASPSP up to 512 characters"
   }
  ]
}
```

In order to use the PSD2 APIs, each TPP should register itself using the dedicated onboarding API before calling production environment API.

- Onboarding API base url:https://api.cedacri.it/psd2/v1/

The onboarding API is protected by mutual authentication, like the other production APIs, therefore it requires a valid eIDAS certificate to extract the information used to identify the TPP itself and PSP roles.

The following table gives an overview on the HTTP access methods supported by the Onboarding API endpoints and by resources created through this API:

Endpoint	Method
tpp	POST
tpp/{uuid}	GET
tpp/{uuid}	PUT
tpp/{uuid}	DELETE
tpp/{uuid}/{client_id}/secret	POST

The following table shows the possible HTTP response codes:

Status Code	Description
200 OK	PUT, GET Response Codes This return code is permitted if a request was repeated due to a time-out.
204 No Content	DELETE response code where a TPP was successfully deleted. The code indicates that the request was performed, but no content was returned.
400 Bad Request	Validation error occurred. This code will cover malformed syntax in request or incorrect data in payload.
404 Not found	Returned if the resource or endpoint that was referenced in the path does not exist.

405 Method Not Allowed	This code is only sent when the HTTP method (PUT, POST, DELETE, GET etc.) is not supported on a specific endpoint.
408 Request Timeout	The server is still working correctly, but an individual request has timed out.
500 Internal Server Error	Internal server error occurred.
503 Service Unavailable	The server is currently unavailable. Generally, this is a temporary state.

If the mutual authentication verification is successful, a check on the EBA Payment Institutions Register is performed to validate the TPP and PSP roles extracted from the eIADS certificate. Any mismatch on the extracted data compared to what is present on the last available EBA register[1] will be reported with the following error response:

http status code :400

```
{
  "tppMessages": [
    {
      "category": "ERROR",
      "code": "EBA_CERTIFICATE_INVALID",
      "text": "Check on EBA register failed."
    }
  ]
}
```

5 Secure connection

The communication between the TPP and the Cedacri NextGenPSD2 XS2A is always secured via a TLS-connection using TLS version 1.2 or higher. The TPP has to set-up this TLS-connection, authenticating itself (client authentication) through the use of a qualified certificate for website authentication (QWAC). This qualified certificate has to be issued by a qualified trust service provider according to the eIDAS regulation.

The content of the certificate has to comply with the requirements of EBA – RTS on SCA and SCS, Article 34. The TPP certificate has to indicate all roles the TPP is authorized for.

In this first stage, exclusively for the sandbox environment, Cedacri has decided to offer to Third Party Providers an additional registration process within the Cedacri portal: through

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[1] EBA register is downloaded twice a day, if available on the EBA website.

this process, an interested TPP that did not get an eIDAS certification or the NCA Authorization (or both) could access the Cedacri NextGenPSD2 XS2A for testing purposes.

6 Third Party Validation

Cedacri's NextGenPSD2 XS2A has to validate the TPP identity and authorization status.

For identity validation, Cedacri's NextGenPSD2 XS2A relies on eIDAS certificate information that are verified through the inquiry on the Certificate Status Service provided by the QTSP that issued the certification for the TPP (through CRL or OCSP). N.B. this step is discarded in case of a TPP registered within the portal in sandbox environment.

For authorization validation, Cedacri's NextGenPSD2 XS2A has to verify online whether the authorization reported in the Certificate is still valid, through an online inquiry on EBA Payment Institutions Register. N.B. this step is discarded in case of a TPP is registered within the portal in sandbox environment.

7 TPP Onboarding

The TPP should perform the onboarding via API registration, before calling one of the production PSD2 APIs for the first time. Through the registration the TPP defines / receives the parameters needed to perform the OAuth2 steps described in the authentication process (chapter 8.1). The registration step via onboarding API is required only for the production environment.

In order to use PSD2 APIs in the *sandbox* environment, the TPP is required to register on the API Portal using the dedicated registration form displayed on the Sign-up page, as explained in the document "TPP Onboarding Sandbox".

After the production environment registration process, the TPP must call the PSD2 API using the eIDAS certificate which will be checked at each call.

Here below is the base URL to access the API for the onboarding process in production environment

 [Base URL: api.cedacri.it/psd2/v1]

TPP registration is done using the roles described in the eIDAS certificate regardless of the input provided during the registration process via the onboarding API.

For example, by defining as input a *redirect url* for both AISP and PISP despite the fact that only the scope AISP is enabled according to the eIDAS certificate provided, the TPP will be registered only to operate on AISP and will receive the OAuth2 parameters related to AISP.

If the TPP performs onboarding with a certificate (which contains a specific AN[2] identifier) associated with the AISP scope and wants to upgrade to become a PISP, it must, after receiving the new certificate:

- Register again, if the new certificate contains a different AN;
- Perform the update with the PUT, if the new certificate contains the same AN.

The following sections describe how to use the onboarding API.

7.1 Register a new TPP via API
POST /tpp

Registers a new TPP via API.

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[2] This is a unique reference number (URN) which a TPP obtains from the NCA (National Competent Authority) in order to operate.

Path Parameter

No specific path parameter defined.

Query Parameters

No specific query parameter defined.

Request Header

No request header

Request Body

Attribute	Type	Condition	Description
email	String	Mandatory	This field identifies the TPP's email, which the ASPSP can use for any communications.
redirect_url	redirect_object	Mandatory	TPP defines the callback urls on which it wants to receive the code to exchange to obtain the OAuth token (chapter 8.1, step 5).
cancel_link	String	Mandatory	TPP defines the call back url on which it wants to be redirect in case of cancelling the authorization of the OAuth token

Redirect Object

Attribute	Type	Condition	Description
AISP	Array of String	Mandatory	This field identifies the redirect urls

PISP	Array of String	Mandatory	This field identifies the redirect urls

Response Code

The HTTP response code is 200.

Response Body

Attribute	Type	Condition	Description
uuid	UUID	Mandatory	Internal organization ID returned by the gateway
AISP	OAuth2 Credentials	Mandatory	This field identifies the redirect url
PISP	OAuth2 Credentials	Mandatory	This field identifies the redirect url

OAuth2 Credentials

Attribute	Type	Condition	Description
redirect_url	Array of String	Mandatory	The callback url chosen by the TPP.
client_id	String	Mandatory	The client ID for the TPP's application
client_secret	String	Mandatory	The client secret is a secret credential for the TPP's application.
email	String	Mandatory	This field identifies the email chosen by the TPP, which the ASPSP can use for any communication.

Example

Request

POST https://api.cedacri.it/psd2/v1/tpp
{
 "email": "info@ttp.com",
 "redirect_url": {
  "AISP": ["https://www.ttp.com"],
  "PISP": ["https://www.ttp.com"],

```
  },
  "cancel_link": "https://www.test.com"
}
```

Response

<pre>{
  "uuid": "f123456b-4bc6-331e-a8b6-ba806a549c62",
  "AISP": {
    "redirect_url": [“https://www.ttp.com”],
    "client_id": "8843e662-c45c-63c8-342e-123456f6bcef",
    "client_secret": "cb31234f-1b8a-3b45-a132-ad4be4efb4dc",
    "email": "info@ttp.com",
  },
  "PISP": {
    "redirect_url": [“https://www.ttp.com”],
    "client_id": "a6d12d3d-1324-53c4-b123-46c2a1234557",
    "client_secret": "12e32f89-13ce-67fb-ba89-d55cbea8431b",
    "email": "info@ttp.com"
  }
}</pre>

7.2 TPP registration data

GET /tpp/{uuid}

Retrieves the TPP registration data.

Path Parameter

Attribute	Type	Description
uuid	UUID	Internal organization ID returned by the gateway

Query Parameters

No specific query parameter defined.

Request Header

No request header

Request Body

No request body

Response Code

The HTTP response code is 200.

Response Body

Attribute	Type	Condition	Description
uuid	UUID	Mandatory	Internal organization ID returned by the gateway
AISP	OAuth Credentials	Mandatory	This field identifies the redirect urls
PISP	OAuth Credentials	Mandatory	This field identifies the redirect urls

OAuth2 Credentials

Attribute	Type	Condition	Description
redirect_url	Array of String	Mandatory	The callback url chosen by TPP.
client_id	String	Mandatory	The client ID for the TPP's application
client_secret	String	Mandatory	The client secret is a secret credential for the TPP's application.
email	String	Mandatory	This field identifies the email chosen by the TPP, which the ASPSP can use for any communication.

Example

Request
GET https://api.cedacri.it/psd2/v1/tpp/f123456b-4bc6-331e-a8b6-ba806a549c62
Response

{
  "uuid": "f123456b-4bc6-331e-a8b6-ba806a549c62",
  "AISP": {
    "redirect_url": ["https://www.ttp.com"],
    "client_id": "8843e662-c45c-63c8-342e-123456f6bcef",
    "client_secret": "cb31234f-1b8a-3b45-a132-ad4be4efb4dc",
    "email": "info@ttp.com",

```
  },
  "PISP": {
    "redirect_url": ["https://www.ttp.com"],
    "client_id": "a6d12d3d-1324-53c4-b123-46c2a1234557",
    "client_secret": "12e32f89-13ce-67fb-ba89-d55cbea8431b",
    "email": "info@ttp.com"
  }
}
```

7.3 Updated a TPP registration

PUT /tpp/{uuid}

Updates the TPP registration data.

Path Parameter

Attribute	Type	Description
uuid	UUID	Internal organization ID returned by the gateway

Query Parameters

No specific query parameters defined.

Request Header

No request header

Request Body

Attribute	Type	Condition	Description
email	String	Mandatory	This field identifies the TPP's email, which the ASPSP can use for any communication.
redirect_url	redirect_object	Mandatory	TPP defines the callback url on which to receive the code to exchange to obtain the OAuth token.

cancel_link	String	Mandatory	TPP defines the call back url on which it wants to be redirect in case of cancelling the authorization of the OAuth token

Redirect Object

Attribute	Type	Condition	Description
AISP	Array of String	Mandatory	This field identifies the redirect urls
PISP	Array of String	Mandatory	This field identifies the redirect urls

Response Code

The HTTP response code is 200.

Response Body

Attribute	Type	Condition	Description
uuid	UUID	Mandatory	Internal organization ID returned by the gateway
AISP	OAuth2 Credentials	Mandatory	This field identifies the redirect url
PISP	OAuth2 Credentials	Mandatory	This field identifies the redirect url

OAuth2 Credentials

Attribute	Type	Condition	Description
redirect_url	Array of String	Optional	The callback url chosen by the TPP.
client_id	String	Optional	The client ID for the TPP's application
client_secret	String	Optional	The client secret is a secret credential for the TPP's application.
email	String	Optional	This field identifies the email chosen by

			the TPP, which the ASPSP can use for any communication.

Example

Request

PUT https://api.cedacri.it/psd2/v1/tpp/f123456b-4bc6-331e-a8b6-ba806a549c62
{
  "email": "info@ttp.com",
 "redirect_url": {
  "AISP": ["https://www.ttp.com"],
  "PISP": ["https://www.ttp.com"],
 },
  "cancel_link": "https://www.test.com"
}

Response

{
  "uuid": "f123456b-4bc6-331e-a8b6-ba806a549c62",
  "AISP": {
    "redirect_url": ["https://www.ttp.com"],
    "client_id": "8843e662-c45c-63c8-342e-123456f6bcef",
    "client_secret": "cb31234f-1b8a-3b45-a132-ad4be4efb4dc",
    "email": "info@ttp.com",
  },
  "PISP": {
    "redirect_url": ["https://www.ttp.com"],
    "client_id": "a6d12d3d-1324-53c4-b123-46c2a1234557",
    "client_secret": "12e32f89-13ce-67fb-ba89-d55cbea8431b",
    "email": "info@ttp.com"
  }
}

7.4 Delete a TPP registration

DELETE /tpp/{uuid}

Deletes the registration of a TPP.

Path Parameter

Attribute	Type	Description
uuid	UUID	Internal organization ID returned by the gateway

Query Parameters

No specific query parameter defined.

Request Header

No request header

Request Body

No request body

Response Code

The HTTP response code is 204.

Response Body

No response body.

Example

Request
DELETE https://api.cedacri.it/psd2/v1/tpp/f123456b-4bc6-331e-a8b6-ba806a549c62
Response
HTTP/1.1 204 No Content

7.5 Refresh the client secret

POST /tpp/{uuid}/{client_id}/secret

Refreshes the client secret

Path Parameter

Attribute	Type	Description

uuid	UUID	Internal organization ID returned by the gateway
client_id	String	The client ID for the TPP's application

Query Parameters

No specific query parameter defined.

Request Header

No request header

Request Body

No request body

Response Code

The HTTP response code is 200.

Response Body

Attribute	Type	Condition	Description
client_secret	String	Mandatory	The client secret is a secret credential for the TPP's application.

Example

Request
POST https://api.cedacri.it/psd2/v1/tpp/f123456b-4bc6-331e-a8b6-ba806a549c62/8843e662-c45c-63c8-342e-123456f6bcef

Response
{   "client_secret": "cb31234f-1b8a-3b45-a132-ad4be4efb4dc",

```
}
```

8 Usage of OAuth2 for PSU Authentication and Authorisation

Cedacri implements OAuth2 as a support for the authorisation of the PSU towards the TPP for the payment initiation and/or account information service. In this case, the TPP is the client, the PSU the resource owner and the ASPSP is the resource server in the abstract OAuth2 model.

In particular, Cedacri supports it as an authentication of a PSU in a pre-step, translating this authentication into an access token to be used on the XS2A interface afterwards. By using OAuth2, the XS2A API calls work with an access token instead of using the PSU credentials.

8.1 Obtaining OAuth 2.0 access tokens

The following steps show how the TPP's application interacts with the Cedacri's OAuth 2.0 server to obtain a PSU's consent to perform an API request on behalf of the PSU. TPP's application must have that consent before it can execute a call to NextGenPSD2 XS2A API that requires the PSU authorization.

The list below quickly summarizes these steps:

1. The TPP's application identifies the permissions it needs.
2. The TPP's application redirects the PSU to ASPSP along with the requested permission.
3. The PSU decides whether to grant the permission to the TPP's application.
4. The TPP's application finds out what the PSU decided.
5. If the PSU grants the requested permissions, the TPP's application retrieves tokens needed to make API requests on behalf of the PSU.

Step 1: Set authorization parameters

The first step for the TPP is to create the authorization request. That request sets parameters that identify the application and define the permissions that the PSU will be asked to grant to TPP's application.

In order to obtain Cedacri's OAuth 2.0 endpoint, the TPP has to call one the NextGenPSD2 XS2A APIs without a valid access token. In this case, Cedacri will return an HTTP 401 Unauthorized response similar to the following:

```
{
  "status": 401,
  "status_message": "Unauthorized",
  "url": "{endpoint}"
}
```
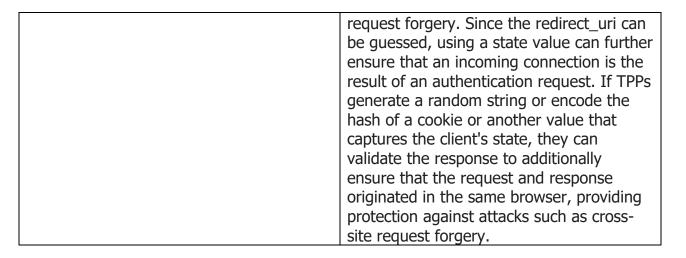
The url attribute will contain an endpoint accessible only over HTTPS. Plain HTTP connections are rejected. This endpoint will be different based on the type of environment in which the TPP operates: production or sandbox.

The TPP has to redirect PSU's web browser to this endpoint, adding the following query string parameters; when specified, the parameters are retrieved differently depending on the environment:

Parameter	Description
client_id	Required. PRODUCTION: the client id returned by the request for registration from the TPP via API (chapter 7.1) SANDBOX: the client id generated by the TPP Onboarding Sandbox (document "Cedacri Sandbox - TPP Onboarding Procedure", chapter 3)
redirect_uri	Required. PRODUCTION: the call back URL chosen by TPP (chapter 7.1). SANDBOX: the redirect uri chosen by TPP in the client id creation in TPP Onboarding Sandbox (document "Cedacri Sandbox - TPP Onboarding Procedure", chapter 3).
scope	Required. One of the scopes that identify the resources that the TPP's application could access on behalf of the PSU. Acceptable scopes are: "pisp.pagamento": to access Payment Initiation Service "aisp.base": to access Account Information Service
state	Recommended. Specifies any string value that the TPP's application uses to maintain state between its authorization request and the authorization server's response. The server returns the exact value that the TPP sends as a name=value pair in the hash (#) fragment of the redirect_uri after the PSU consents to or denies application's access request. TPPs can use this parameter for several purposes, such as directing the PSU to the correct resource in their application, sending nonces, and mitigating cross-site

	request forgery. Since the redirect_uri can be guessed, using a state value can further ensure that an incoming connection is the result of an authentication request. If TPPs generate a random string or encode the hash of a cookie or another value that captures the client's state, they can validate the response to additionally ensure that the request and response originated in the same browser, providing protection against attacks such as cross-site request forgery.

PSU is redirected on the ASPSP page where it will authenticate to allow the TPP to generate the OAuth token. The ASPSP page has a button that allows PSU to exit the authentication process and return to the TPP page: this is the "cancel link" as described in the document "Cedacri Sandbox - TPP Onboarding Procedure", chapter 3.

Step 2: Redirect to Cedacri's OAuth 2.0 server

TPP redirects the PSU to the Cedacri's OAuth 2.0 server to initiate the authentication and authorization process.

Step 3: Cedacri prompts user for consent

In this step, the PSU decides whether to grant the requested access to the TPP's application. At this stage, Cedacri's OAuth 2.0 server authenticates the PSU and obtains consent from the PSU for the TPP's application to access the requested scope.

TPP's application doesn't need to do anything at this stage as it waits for the response from Cedacri's OAuth 2.0 server indicating whether the access was granted. That response is explained in the following step.

In this step the PSU chooses the user type (RETAIL or CORPORATE), if the optional header parameter "PSU-ID-Type" is not filled in:

- PISP API in sections 10.1, 10.2, 10.3
- "Consent request on dedicated accounts" API in section 11.1

Step 4: Handle the OAuth 2.0 server response

The OAuth 2.0 server responds to the TPP's application's access request by using the URL specified in the request.

If the PSU approves the access request, then the response contains an authorization code. If the PSU does not approve the request, the response contains an error message. The authorization code that is returned to the web server appears on the query string, as shown below:

{redirect_uri}?code=4/P7q7W91a-oMsCeLvIaQm6bTrgtp7&state={state}

where:

redirect_uri and state are the query string parameters set by the TPP and described above.

If the PSU denies the access request, the API server redirects the PSU to the cancel redirect URI configured by the TPP in the API Portal.

Step 5: Exchange authorization code for refresh and access tokens

After the TPP receives the authorization code, it can exchange the authorization code for an access token within 30 seconds, after which the authorization code expires.

To exchange an authorization code for an access token, the TPP has to call (with a POST) the specific endpoint (that depends on the type of environment in which the TPP operates)

- Production: https://api.cedacri.it:9090/oauth/token
- Sandbox: https://sandbox.cedacri.it:9091/oauth/token

and set the following form parameters; when specified, the parameters are retrieved differently depending on the environment:

Parameter	Description
code	The authorization code returned from the initial request.
client_id	PRODUCTION: the client id returned by the request for registration from the TPP via API (chapter 7.1) SANDBOX: the client id generated by the TPP Onboarding Sandbox (document "Cedacri Sandbox - TPP Onboarding Procedure", chapter 3)
client_secret	Required if TPP chooses a confidential application type. PRODUCTION: the client secret returned by the request for registration of the TPP via API (chapter 7.1) SANDBOX: the client secret generated by the client id creation in TPP Onboarding Sandbox (document "Cedacri Sandbox - TPP Onboarding Procedure", chapter 3)
redirect_uri	PRODUCTION: the call back URL chosen by TPP (chapter 7.1). SANDBOX: the redirect uri chosen by TPP in the client id creation in TPP Onboarding Sandbox (document "Cedacri Sandbox - TPP Onboarding Procedure", chapter 3).

grant_type	As defined in the OAuth 2.0 specification, this field must contain a value of "authorization_code".

The Content-Type must be "application/x-www-form-urlencoded", that is the default content type defined by RFC1738.

The following snippet shows a sample request:

```
POST /oauth/token HTTP/1.1

code=4/P7q7W91a-oMsCeLvIaQm6bTrgtp7&
client_id={tpp_client_id}&
client_secret={tpp_client_secret}&
redirect_uri={redirect_uri}&
grant_type=authorization_code
```

Cedacri responds to this request by returning a JSON object that contains an access token. This response is in the request body.

The response contains the following fields:

Parameter	Description
access_token	The token that TPP's application sends to authorize a request.
expires_in	The remaining lifetime of the access token in seconds.
token_type	The type of token returned. At this time, this field's value is always set to Bearer.

The following snippet shows an example of response:

```
{
  "access_token":"1/fFAGRNJru1FTz70BzhT3Zg",
  "expires_in":3920,
  "token_type":"Bearer"
}
```

9 Redirect SCA Approach with Implicit Start of the Authorisation Process

The supported flow for the Payment Initiation Service and the Account Information Service, is the Redirect SCA Approach with Implicit Start of the Authorization Process.

Within this flow, the Account Information Consent and Payment Initiation Requests are followed by a redirection to the ASPSP SCA authorization website.

The URL of the ASPSP SCA authorization website are contained in the "scaRedirect" attribute of "_links" attribute of responses of both calls.

The TPP has to redirect the PSU's web browser to the URL and wait for the PSU SCA authentication. Note that, exclusively for the Payment Initiation Service, ASPSP SCA website prevents the authorization from the PSU if more than 60 seconds passed between the start of the flow and the redirection to the URL.

Once the PSU has authorized or rejected, the TPP will receive a redirect on one of the URI defined in the TPP-Redirect-URI and TPP-Nok-Redirect-URI headers of the request.

10 Payment Initiation Service

The Payment Initiation Flow that Cedacri has adopted is the Redirect SCA Approach with Implicit Start of the Authorization Process. With this flow, the Account Information Consent Request is followed by a redirection to the ASPSP SCA authorization website.

10.1 Payment Initiation with JSON encoding of the Payment Instruction

POST /v1/payments/{payment-product}

This creates a payment initiation request at the ASPSP.

Path Parameters

Attribute	Type	Description
payment- product	String	The addressed payment product endpoint, e.g. for SEPA Credit Transfers (SCT). The list of products supported by Cedacri is: sepa-credit-transfers target-2-payments cross-border-credit-transfers

Query Parameters

No specific query parameter defined.

Request Header

Attribute	Type	Condition	Description
Content-Type	String	Mandatory	application/json
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
Authorization	String	Mandatory	Bearer Token.
PSU-IP-Address	String	Mandatory	The forwarded IP Address header field consists of the corresponding HTTP request IP Address

			field between the PSU and the TPP. If not available, the TPP shall use the IP Address used by the TPP when submitting this request.
TPP-Redirect-URI	String	Mandatory	TPP's URI, where the transaction flow shall be redirected after a Redirect.
TPP-Nok-Redirect-URI	String	Optional	If this URI appears, the TPP is asking to redirect the transaction flow to this address instead of the TPP-Redirect-URI in case of a negative result of the redirect SCA method.
PSU-ID-Type	String	Optional	Type of the PSU-ID, needed in scenarios where PSUs have several PSU-IDs as access possibility and the TPP wants to specify which one the user should use to authenticate. Possible values are: RETAIL or CORPORATE. If national bank code is 03440 or 05704, possible values are: RETAIL, CORPORATE or CORPORATE_IBK.

Request Body

Attribute	Type	Condition	Description
requestedExecutionDate	ISODate	Conditional	If the payment is a future type one, this field will be filled. If contained, the payment will be executed at the addressed date. This field may not be used together with the field requestedExecutionTime.
requestedExecutionTime	ISODateTime	Conditional	If the payment is a future type one, this field will be filled. If contained, the payment will be executed at the addressed Date/Time. This field may not be used together with the field requestedExecutionDate.

Note: future payments are supported for SCT and target-2-payments products.

The following table gives an overview on the JSON structures of standard SEPA payment products for single and future payments:

Data Element	Type	SCT EU Core	Target2 Paym. Core	Cross Border CT Core
debtorAccount (incl. type)	Account Reference	mandatory	Mandatory	mandatory
instructedAmount (inc. Curr.)	Amount	mandatory	Mandatory	mandatory
creditorAccount	Account Reference	mandatory	Mandatory	mandatory
creditorName	Max70Text	mandatory	Mandatory	mandatory
creditorAgent	BICFI	optional	Optional	mandatory
creditorAddress	Address (valorized with parameters "country" and "city")	optional	optional	mandatory

remittance Information Unstructured	Max140Text	mandatory	Mandatory	mandatory

The country code required as input in the case of a foreign bank transfer is not the ISO code requested by the Berlin Group but the numeric one, the Bdl code, specified by the Bank of Italy at [https://infostat.bancaditalia.it/GIAVAInquiry-public/antit.html], that is represented by parameter "country" in creditorAddress.

Response Code

The HTTP response code is 201.

Response Header

Attribute	Type	Condition	Description
Location	String	Mandatory	Location of the created resource (if created)
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
ASPSP-SCA-Approach	String	Mandatory	REDIRECT

Response Body

Attribute	Type	Condition	Description
transactionStatus	Transaction Status	Mandatory	Possible values are: RCVD, ACTC, CANC, RJCT, ACSC
paymentId	String	Mandatory	Resource identification of the generated payment initiation resource.
transactionFees	Amount	Mandatory	It can be used by the ASPSP to transport transaction fees

			relevant for the payments in question.
_links	Links	Mandatory	A list of hyperlinks to be recognized by the TPP. "scaRedirect": The link the PSU's browser is redirected to, according to the SCA Redirect Approach. PSU lands on the ASPSP page in which it is shown a button to exit the payment initiation process and return to the TPP page; this is the "payment cancel link", as described in the document "Cedacri Sandbox - TPP Onboarding Procedure", chapter 3 "self": The link to the payment initiation resource created by this request. This link can be used to retrieve the resource data. "status": The link to retrieve the transaction status of the payment initiation.

Example

Request

POST https://api.cedacri.it/psd2bg/06085/v1/payments/cross-border-credit-transfers
X-Request-ID: request-0001
PSU-IP-Address: 91.198.174.192
Content-Type: application/json
Authorization: Bearer ldiS526vZhi74oUZw2iJ6td4p5zR39mZ94tAy1vYqmFOKmtXl6SOpJ

```
{
  "debtorAccount": {
   "iban": "IT42Z0608500100000000100001"
  },
  "instructedAmount": {
   "currency": "EUR",
   "amount": "1.00"
  },
  "creditorAccount": {
   "iban": "TR780006261118715142297663"
  },
  "creditorName": "Name",
  "creditorAgent": "AKBKTRIS005",
  "creditorAddress": {
   "city": "Ankara",
   "country": "076"
  },
  "remittanceInformationUnstructured": "Test 122345",
}
```

Response

```
{
  "transactionStatus": "RCVD",
  "paymentId": "Id-f718885c2c5e13b83dd689f4",
  "transactionFees": {
   "currency": "EUR",
   "amount": "5.160"
  },
  "_links": {
   "scaRedirect": {
    "href": "
```
https://api.cedacri.it:9090/payment/confirm?abi=06085&lang=IT&d=eyJlbmMiOiJBMTI4Q0JDLUhTMjU2IiwiYWxnIjoiUlNBLU9BRVAtMjU2In0.cXJ3FK8eiYEyIhqD-af54hYFb5jKkTR45eUgIITIdvFRjxan6fgY__uQX5vI4QxhqwDK2fBkbTylnpLRxYS9KTtDEA5we-XJhTs4ZsO8QAZ6rC_J9AJ7597kTeH2lTtLyw1u4KRPg6R8RzgBByrD3WhpiDvL4T5Rncl_nByncHi1AUuqGm1c9U1dbCUG61fGly74EpxIc2mP1NvvUKMk9wlJf6HZFJQWmAeMz2wptoFr6M_stpQflvHCu41bx7kB-kQTLtyf0ssuDaTNZBnvxHpb3_kVgY6UGEDPj1mZbRLaaLTkK0YM-Fm1voaj4wHm43xo03rLJxAS1t85vLtMkg.GdXxHtITSh0DHnGgXUtq9A.Yc-TVVclmg73jxQsmK637UUzrA9UI_6SEiL8zHHI9-_W05aqHks0-dlJPQBoHAlIUCF47aViGGGxip8IKSWuFkn7DwKw5-

7fsXZYAeDkPhdBJYiJ71suv3yunX2CZysOdPursNT4DoJSJtZdzENzSdgMi0VxOPT8Q_DgDi68L6dl4Ek
hhsj066z9xhOILLoOQymEJKObfF8hh6pFsdtTvlBR3kqdS0JcPDdGyuRLgemHT9HcABp1J8AqheXEd
oS-
b2X5owFoWdFwxFA40vBE0vVz0dfJlztYhhJBFX2V8W4f6si9nXg_zbQfH0mlARoiOp86EciBx2EUw3
kXDKIIPLGEx0ZnXLEBhRo9b_xkmhSRoVjMtDJfr_WeqVhNxALGL2V2NhCG_5v3YtOFvObPHQ.yUE
k5B0uK4VxV7aGdclVPg"
    }
  }
}

10.2 Get Transaction Status Request

GET /v1/{payment-service}/{payment-product}/{paymentId}/status

Possibility of checking the status of a payment initiation.

Path Parameters

Attribute	Type	Description
payment- product	String	The addressed payment product endpoint, e.g. for SEPA Credit Transfers (SCT). The list of products supported by Cedacri is: sepa-credit-transfers target-2-payments cross-border-credit-transfers
payment-service	String	The only admitted value is: payments
paymentId	String	Resource Identification of the related payment.

Request Header

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

Authorization	String	Mandatory	Bearer Token.
Accept	String	Optional	Only JSON format is supported.
PSU-ID-Type	String	Optional	Type of the PSU-ID, needed in scenarios where PSUs have several PSU-IDs as access possibility and the TPP wants to specify which one the user should use to authenticate. Possible values are: RETAIL or CORPORATE. If national bank code is 03440 or 05704, possible values are: RETAIL, CORPORATE or CORPORATE_IBK.

Note: In the API transaction status request, it is mandatory to fill in the "authorization" field with a valid access token, otherwise the TPP will have to wait for the PSU to connect and log in again. In order to avoid making an API transaction status request with an expired access token, the TPP must update the access token before it expires. The TPP knows the expiration of the access token from the "expires_in", field in response of the OAuth token request (chapter 8.1, step 5), in which the remaining lifetime of the access token is specified in seconds.

To update the access token the TPP will have to callback the API transaction status without adding the "authorization" header, in order to receive a "401" response code and thus proceed again with the PSU login execution. This will allow the TPP to get a new token before it expires.

Query Parameters

No specific query parameter defined.

Request Body

No request body.

Response Code

The HTTP response code is 200.

Response Header

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

Response Body

Attribute	Type	Condition	Description
transactionStatus	Transaction Status	Mandatory	Possible values are: RCVD, ACTC, CANC, RJCT, ACSC

Example

Request
GET https://api.cedacri.it/psd2bg/06085/v1/payments/sepa-credit-transfers/Id-f718885c2c5e13b83dd689f4/status X-Request-ID: request-0001 Authorization: Bearer ldiS526vZhi74oUZw2iJ6td4p5zR39mZ94tAy1vYqmFOKmtXl6SOpJ

Response

HTTP/1.1 200
X-Request-ID: request-0001
Content-Type: application/json
{
  "transactionStatus": "ACSC"
}

10.3 Get Payment Request

GET /v1/{payments-service}/{payment-product}/{paymentId}

Returns the content of a payment object.

Path Parameters

Attribute	Type	Description
payment- product	String	The addressed payment product endpoint, e.g. for SEPA Credit Transfers (SCT). The list of products supported by Cedacri is: sepa-credit-transfers target-2-payments cross-border-credit-transfers
payment-service	String	payments
paymentId	String	ID of the corresponding payment initiation object as returned by a Payment Initiation Request

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
Authorization	String	Mandatory	Bearer Token.
PSU-ID-Type	String	Optional	Type of the PSU-ID, needed in scenarios where PSUs have several PSU-IDs as access possibility and the TPP wants to specify which one the user should use to authenticate. Possible values are: RETAIL or CORPORATE. If national bank code is 03440 or

			05704, possible values are: RETAIL, CORPORATE or CORPORATE_IBK.

Note: In the API payment request, it is mandatory to fill in the "authorization" field with a valid access token, otherwise the TPP will have to wait for the PSU to connect and log in again. In order to avoid making an API payment request with an expired access token, the TPP must update the access token before it expires. The TPP knows the expiration of the access token from the "expires_in", field in response of the OAuth token request (chapter 8.1, step 5), in which the remaining lifetime of the access token in seconds is specified.

To update the access token the TPP will have to call back the API payment request without adding the "authorization" header, in order to receive a "401" response code and thus proceed again with the PSU login execution. This will allow the TPP to get a new token before it expires.

Query Parameters

No specific query parameter defined.

Request Body

No request body.

Response Code

The HTTP response code is 200.

Response Header

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

Response Body

The response body is dependent on the parameter {payment-service}. It contains the view of the ASPSP on the addressed payment resource.

Data Element	SCT EU Core	Target2 Paym. Core	Cross Border CT Core
debtorAccount (incl. type)	mandatory	mandatory	mandatory
instructedAmount (inc. Curr.)	mandatory	mandatory	mandatory
creditorAccount	mandatory	mandatory	mandatory
creditorName	mandatory	mandatory	mandatory
creditorAgent	optional	optional	mandatory
creditorAddress	optional	optional	mandatory
remittance Information Unstructured	optional	optional	optional
transactionStatus	mandatory	mandatory	mandatory
paymentId	mandatory	mandatory	mandatory
transactionFees	mandatory	mandatory	mandatory

Example

Request
GET https://api.cedacri.it/psd2bg/06085/v1/payments/sepa-credit-transfers/Id-f718885c2c5e13b83dd689f4 X-Request-ID: request-0001 Authorization: Bearer ldiS526vZhi74oUZw2iJ6td4p5zR39mZ94tAy1vYqmFOKmtXl6SOpJ
Response

HTTP/1.1 200
X-Request-ID: request-0001
Content-Type: application/json
{
  "debtorAccount": {
   "iban": "IT42Z0608500120000000862916"
  },
  "instructedAmount": {

```
  "currency": "EUR",
  "amount": "1"
 },
 "creditorAccount": {
  "iban": "IT23J0542404010000001063502"
 },
 "creditorName": "name",
 "remittanceInformationUnstructured": "description"
   "transactionStatus": "ACSC"
   "paymentId": "Id-f718885c2c5e13b83dd689f4",
   "transactionFees": {
     "currency": "EUR",
     "amount": "5.160"
   }
}
```

10.4 Payment Cancellation Request

DELETE /v1/{payment-service}/{payment-product}/{paymentId}

It initiates the cancellation of a payment. Depending on the payment-service, the payment-product and the ASPSP's implementation, this TPP call might be sufficient to cancel a payment. If an authorization of the payment cancellation is mandated by the ASPSP, a corresponding hyperlink will be contained in the response message.

Path Parameters

Attribute	Type	Description
payment- product	String	The payment product, under which the payment under paymentId has been initiated. The list of products supported by Cedacri is: sepa-credit-transfers target-2-payments cross-border-credit-transfers
payment-service	String	The possible value is "payments"
paymentId	String	Resource Identification of the related payment.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
Authorization	String	Mandatory	Bearer Token.
PSU-ID-Type	String	Optional	Type of the PSU-ID, needed in scenarios where PSUs have several PSU-IDs as access possibility and the TPP wants to specify which one the user should use to authenticate. Possible values are: RETAIL or CORPORATE.

If national bank code is 03440 or 05704, possible values are: RETAIL, CORPORATE or CORPORATE_IBK. |

Query Parameters

No specific query parameters defined.

Request Body

No request body.

Response Code

The HTTP response code is 204.

Response Header

Attribute	Type	Condition	Description

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

Response Body

No response body.

Example

Request
DELETE https://api.cedacri.it/psd2bg/06085/v1/payments/sepa-credit-transfers/Id-f718885c2c5e13b83dd689f4 X-Request-ID: request-0001 Authorization: Bearer ldiS526vZhi74oUZw2iJ6td4p5zR39mZ94tAy1vYqmFOKmtXl6SOpJ

Response
HTTP/1.1 204 X-Request-ID: request-0001

11 Account Information Service

The Account Information Consent Flow that Cedacri has adopted is the Redirect SCA Approach with Implicit Start of the Authorization Process. With this flow, the Account Information Consent Request is followed by a redirection to the ASPSP SCA authorization website.

11.1 Consent Request on Dedicated Accounts
Call

POST /v1/consents

Creates an account information consent resource on the ASPSP regarding access to accounts specified in this request.

Path Parameters

No specific path parameter defined.

Query Parameters

No specific query parameter defined.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
Authorization	String	Mandatory	Bearer Token.
TPP-Redirect-URI	String	Mandatory	URI of the TPP, where the transaction flow shall be redirected to after a Redirect.
TPP-Nok-Redirect-URI	String	Optional	If this URI is contained, the TPP is asking to redirect the transaction flow to this address instead of the TPP-Redirect-URI in case of a negative result of the redirect SCA method.
PSU-IP-Address	String	Mandatory	This field identifies the IP of the user who is giving consent
PSU-ID-Type	String	Optional	Type of the PSU-ID, needed in scenarios where PSUs have several PSU-IDs as access possibility and the TPP wants to specify which one the user should use to authenticate. Possible values are: RETAIL or CORPORATE.

If national bank code is 03440 or 05704, possible values are: |

			RETAIL, CORPORATE or CORPORATE_IBK.

Request Body

Attribute	Type	Condition	Description
access	Account Access	Mandatory	Supported values are: … {"availableAccounts": "allAccounts"} …
recurringIndicator	Boolean	Mandatory	true, if the consent is for recurring access to the account data false, if the consent is for one access to the account data.
validUntil	ISODate	Mandatory	This parameter calls for a valid expiration date for the requested consent. The content is the local ASPSP date in ISODate Format, e.g. 2017-10-30. If a maximal available date is requested, a date in the distant future is to be used: "9999-12-31". The consent object to be retrieved by the GET Consent Request will contain the adjusted date.
frequencyPerDay	Integer	Mandatory	This field indicates the requested maximum frequency for an access per day. If

			recurringIndicator is true, this attribute is set to "4", if recurringIndicator is false this attribute is set to "1"
combinedService Indicator	Boolean	Mandatory	false

Response Code

The HTTP response code is 201.

Response Header

Attribute	Type	Condition	Description
Location	String	Mandatory	Location of the created resource.
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
ASPSP-SCA-Approach	String	Mandatory	REDIRECT

Response Body

Attribute	Type	Condition	Description
consentStatus	Consent Status	Mandatory	authentication status of the consent
consentId	String	Mandatory	Identification of the consent resource as it is used in the API structure
_links	Links	Mandatory	A list of hyperlinks to be recognised by the TPP.

			Type of links admitted in this response (which might be extended by single ASPSPs as indicated in its XS2A documentation): "scaRedirect": In case of an SCA Redirect Approach, the ASPSP is transmitting the link to redirect the PSU browser to.

Example

Request

POST https://api.cedacri.it/psd2bg/06085/v1/consents
X-Request-ID: request-0001
PSU-IP-Address: 91.198.174.192
TPP-Redirect-URI: https://tpp-redirect-ok-url
Content-Type: application/json
TPP-Nok-Redirect-URI: https://tpp-redirect-nok-url
Authorization: Bearer o9xcq8V2zUg893gm6ROpO7XDUhaBkIOyilSHG0M11XCXFgjMPP7U6R
{
  "access": {
    "availableAccounts": "allAccounts"
  },
  "recurringIndicator": false,
  "validUntil": "2019-10-10",
  "frequencyPerDay": 1,
  "combinedServiceIndicator": false
}

Response

HTTP/1.1 201
ASPSP-SCA-Approach: REDIRECT
X-Request-ID: request-0001
Content-Type: application/json
{
  "consentStatus": "received",
  "consentId": "8c929c62-53f3-4543-97c0-0aed02b1d9bc",
  "_links": {
    "scaRedirect": {

```
    "href": "https://api.cedacri.it:9090/consent/init?consent_id=8c929c62-53f3-4543-97c0-
0aed02b1d9bc&d=eyJlbmMiOiJBMTI4Q0JDLUhTMjU2IiwiYWxnIjoiUlNBLU9BRVAtMjU2In0.A5W
Azn0nw3g2t8yBD6k0_J9gwhhaOpJBVtm53TgWv4Goo1wkWoe4MWPlmzZeysle9sTiG3y3CbViuA
qgpvH_pY-WKic2ZQgoTtJtgSexp3FN78FHrxuThrQDvzX8hC3Q2W4cJjL9n70rPwTycZaJI-
GsHwGIN8Bi95AsgQk0lXMAgU2a-Zlb1lxTMHl_VXewppjhw_-
Xe7jcn1V6cd3UHsfVj6oLXTM4FkhVItDO73ueFpdqWm8oTykrnCifhdt4mTGhgtSdBqDjJlyDHMzt7E
theVPXbPFcw84Y-
ESXjSS1ubTZYxHNI87B0idEXXpZOIKghtN0GG4h5sjtAEO_cw.ZRkTBQ1u2GoIaWxIYiU-
Bg.hKKNAvLi1_hWnCgXAsXoYGZrPpQaGw1bRPrQWMF9dXFJf_DO8cz-
E3CejjqBZSkSDibT2kBfafZJkPONaPxmQTtTc6aUTfERxMqX-ImID57fOEZkiSoJz_n7ANg-
tkx7BP13eW5nTyNAYryVyyaEoELwRBeTeuUbOpADsWuZV4cXXOKsdSfde0cphMj7euWtmaYFuth
EzELuXAoGZDqqKu3ENhVotbzdH0n_vKUs35Y.BHls0M-oxoStLfFTPUb4lQ"
  }
 }
}
```

11.2 Get Status Request

GET /v1/consents/{consentId}/status

Possibility of checking the status of an account information consent resource.

Path Parameters

Attribute	Type	Description
consentId	String	The consent identification assigned to the created resource.

Query Parameters

No specific query parameter defined.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
Authorization	String	Mandatory	Bearer Token.
PSU-ID-Type	String	Optional	Type of the PSU-ID, needed in scenarios where PSUs have several PSU-IDs as access possibility

| | | | and the TPP wants to specify which one the user should use to authenticate. Possible values are: RETAIL or CORPORATE.

If national bank code is 03440 or 05704, possible values are: RETAIL, CORPORATE or CORPORATE_IBK. |
|---|---|---|---|

Request Body

No request body.

Response Code

The HTTP response code is 200.

Response Header

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

Response Body

Attribute	Type	Condition	Description
consentStatus	Consent Status	Mandatory	This is the overall lifecycle status of the consent. Possible values are: received, valid, revokedByPsu, expired, terminatedByTpp.

Example

Request
GET https://api.cedacri.it/psd2bg/06085/v1/consents/8c929c62-53f3-4543-97c0-0aed02b1d9bc/status X-Request-ID: request-0001 Authorization: Bearer o9xcq8V2zUg893gm6ROpO7XDUhaBkIOyilSHG0M11XCXFgjMPP7U6R
Response

HTTP/1.1 200
X-Request-ID: request-0001
Content-Type: application/json
{
  "consentStatus": "received"
}

11.3 Get Consent Request

GET /v1/consents/{consentId}

Returns the content of an account information consent object. This is returning the data for the TPP especially in cases, where the consent was directly managed between ASPSP and the PSU e.g. in a re-direct SCA Approach.

Path Parameters

Attribute	Type	Description
consentId	String	ID of the corresponding consent object as returned by an Account Information Consent Request.

Query Parameters

No specific query parameter defined.

Request Header

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

PSU-ID-Type	String	Optional	Type of the PSU-ID, needed in scenarios where PSUs have several PSU-IDs as access possibility and the TPP wants to specify which one the user should use to authenticate. Possible values are: RETAIL or CORPORATE. If national bank code is 03440 or 05704, possible values are: RETAIL, CORPORATE or CORPORATE_IBK.

Request Body

No request body.

Response Code

The HTTP response code is 200.

Response Header

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

Response Body

Attribute	Type	Condition	Description
access	Account Access	Mandatory	
recurringIndicator	Boolean	Mandatory	
validUntil	ISODateTime	Mandatory	

frequencyPerDay	Integer	Mandatory	
lastActionDate	ISODateTime	Mandatory	This date is containing the date of the last action on the consent object either through the XS2A interface or the PSU/ASPSP interface having an impact on the status.
consentStatus	Consent Status	Mandatory	The status of the consent resource. Possible values are: received, valid, revokedByPsu, expired, terminatedByTpp.

Example

Request
GET https://api.cedacri.it/psd2bg/06085/v1/consents/8c929c62-53f3-4543-97c0-0aed02b1d9bc X-Request-ID: request-0001 Authorization: Bearer o9xcq8V2zUg893gm6ROpO7XDUhaBkIOyilSHG0M11XCXFgjMPP7U6R

Response

HTTP/1.1 200
X-Request-ID: request-0001
Content-Type: application/json
{
  "access": {
   "availableAccounts": "allAccounts"
  },
  "recurringIndicator": false,
  "validUntil": "2019-10-10 00:00 AM UTC",
  "frequencyPerDay": 1,
  "lastActionDate": "2019-03-09 10:07 AM UTC",
  "consentStatus": "received"
}

11.4 Delete an Account Information Consent Object

DELETE /v1/consents/{consentId}

Deletes a given consent (sets the status to terminatedByTpp).

Path Parameters

Attribute	Type	Description
consentId	String	Contains the resource-ID of the consent to be deleted.

Query Parameters

No specific query parameter defined.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
Authorization	String	Mandatory	Bearer Token.
PSU-ID-Type	String	Optional	Type of the PSU-ID, needed in scenarios where PSUs have several PSU-IDs as access possibility and the TPP wants to specify which one the user should use to authenticate. Possible values are: RETAIL or CORPORATE.

If national bank code is 03440 or 05704, possible values are: RETAIL, CORPORATE or CORPORATE_IBK. |

Request Body

No request body.

Response Code

The HTTP response code is 204.

Response Header

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

Response Body

No response body.

Example

Request
DELETE https://api.cedacri.it/psd2bg/06085/v1/consents/8c929c62-53f3-4543-97c0-0aed02b1d9bc X-Request-ID: request-0001 Authorization: Bearer o9xcq8V2zUg893gm6ROpO7XDUhaBkIOyilSHG0M11XCXFgjMPP7U6R
Response
HTTP/1.1 204 No Content X-Request-ID: request-0001

11.5 Read Account List

GET /v1/accounts {query-parameters}

Reads a list of bank accounts, with balances where required. It is assumed that a consent of the PSU to this access is already given and stored on the ASPSP system. The addressed list of accounts depends then on the PSU ID and the stored consent addressed by consentId, respectively the OAuth2 access token.

Path Parameters

No specific path parameter defined.

Query Parameters

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

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
Consent-ID	String	Mandatory	Shall be contained since "Establish Consent Transaction" was performed via this API before.
Authorization	String	Conditional	Bearer Token. Is contained only, if an OAuth2 based authentication was performed in a pre-step or an OAuth2 based SCA was performed in the related consent authorization.
PSU-IP-Address	String	Conditional	This field identifies the IP of the user who is giving consent.

			If the Consent-ID is recurring, PSU-IP-Address is optional, if the Consent-ID is not recurring, PSU-IP-Address is mandatory.
PSU-ID-Type	String	Optional	Type of the PSU-ID, needed in scenarios where PSUs have several PSU-IDs as access possibility and the TPP wants to specify which one the user should use to authenticate. Possible values are: RETAIL or CORPORATE. If national bank code is 03440 or 05704, possible values are: RETAIL, CORPORATE or CORPORATE_IBK.

Request Body

No request body.

Response Code

The HTTP response code is 200.

Response Header

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

Response Body

Attribute	Type	Condition	Description
accounts	Array of Account Details	Mandatory	

Example

Sample response, where the consent is given on two different IBANs:

Request
GET https://api.cedacri.it/psd2bg/06085/v1/accounts X-Request-ID: request-0001 Consent-ID: 8c929c62-53f3-4543-97c0-0aed02b1d9bc PSU-IP-Address: 91.198.174.192 Authorization: Bearer o9xcq8V2zUg893gm6ROpO7XDUhaBkIOyilSHG0M11XCXFgjMPP7U6R

Response

HTTP/1.1 200
X-Request-ID: request-0001
Content-Type: application/json
{
  "accounts": [
   { "resourceId": "IT42Z0608500120000000616474_EUR",
    "iban": "IT42Z0608500120000000616474",
    "currency": "EUR"
   },
   { "resourceId": "IT42Z0608500120000000862916_EUR",
    "iban": "IT42Z0608500120000000862916",
    "currency": "EUR"
   }
  ]
}

Sample response, where consent on balances and transactions has been given to a multicurrency account with both EUR and USD and where the ASPSP is giving the data access on aggregation level and on the sub-account level:

Request
GET https://api.cedacri.it/psd2bg/06085/v1/accounts?withBalance X-Request-ID: request-0001 Consent-ID: 8c929c62-53f3-4543-97c0-0aed02b1d9bc PSU-IP-Address: 91.198.174.192 Authorization: Bearer o9xcq8V2zUg893gm6ROpO7XDUhaBkIOyilSHG0M11XCXFgjMPP7U6R
Response

```
HTTP/1.1 200
X-Request-ID: request-0001
Content-Type: application/json
{
 "accounts": [
  { "resourceId": "IT42Z0608500120000000616474_EUR"
    "iban": "IT42Z0608500120000000616474",
    "currency": "EUR"
      "balance": [
      {
       "balanceAmount": {
        "currency": "EUR",
        "amount": "3"
       },
       "balanceType": "expected",
       "referenceDate": "2019-02-23"
      },
      {
       "balanceAmount": {
        "currency": "EUR",
        "amount": "3"
       },
       "balanceType": "interimAvailable",
       "referenceDate": "2019-02-23"
      }
     ]
  },
  { "resourceId": "IT42Z0608500120000000616474_USD"
    "iban": "IT42Z0608500120000000616474",
    "currency": "USD"
      "balance": [
      {
       "balanceAmount": {
        "currency": "USD",
        "amount": "3"
       },
       "balanceType": "expected",
       "referenceDate": "2019-02-23"
      },
      {
       "balanceAmount": {
        "currency": "USD",
        "amount": "3"
       },
       "balanceType": "interimAvailable",
```

```
        "referenceDate": "2019-02-23"
      }
    ]
  },
  { "resourceId": "IT42Z0608500120000000616474_XXX"
    "iban": "IT42Z0608500120000000616474",
   "currency": "XXX"
     "balance": [
     {
      "balanceAmount": {
        "currency": "XXX",
        "amount": "3"
      },
      "balanceType": "expected",
      "referenceDate": "2019-02-23"
     },
     {
      "balanceAmount": {
        "currency": "XXX",
        "amount": "3"
      },
      "balanceType": "interimAvailable",
      "referenceDate": "2019-02-23"
     }
    ]
  }
 ]
}
```

11.6 Read Account Details

GET /v1/accounts/{account-id} {query-parameters}

Reads details about an account.

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

Path Parameters

Attribute	Type	Description
accountId	String	This identification is denoting the addressed

			account. The accountId is retrieved by using a "Read Account List" call. The accountId is the "resourceId" attribute of the account structure. Its value is constant at least throughout the lifecycle of a given consent.

Query Parameters

Attribute	Type	Condition	Description
withBalance	Boolean	Optional	If contained, this function reads the details of the addressed account including the booking balance, if granted by the PSU's consent and if supported by ASPSP. This data element might be ignored by the ASPSP.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
Consent-ID	String	Mandatory	Shall be contained since "Establish Consent Transaction" was performed via this API before.
Authorization	String	Conditional	Bearer Token. Is contained only, if an OAuth2 based authentication was performed in a pre-

			step or an OAuth2 based SCA was performed in the related consent authorization.
PSU-IP-Address	String	Conditional	This field identifies the IP of the user who is giving consent. If the Consent-ID is recurring, PSU-IP-Address is optional, if the Consent-ID is not recurring, PSU-IP-Address is mandatory.
PSU-ID-Type	String	Optional	Type of the PSU-ID, needed in scenarios where PSUs have several PSU-IDs as access possibility and the TPP wants to specify which one the user should use to authenticate. Possible values are: RETAIL or CORPORATE. If national bank code is 03440 or 05704, possible values are: RETAIL, CORPORATE or CORPORATE_IBK.

Request Body

No request body.

Response Code

The HTTP response code is 200.

Response Header

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

Response Body

Attribute	Type	Condition	Description
account	Account Details	Mandatory	

Example

Response body for a regular account

Request
GET https://api.cedacri.it/psd2bg/06085/v1/accounts/IT42Z0608500120000000616474_EUR X-Request-ID: request-0001 Consent-ID: 8c929c62-53f3-4543-97c0-0aed02b1d9bc PSU-IP-Address: 91.198.174.192 Authorization: Bearer o9xcq8V2zUg893gm6ROpO7XDUhaBkIOyilSHG0M11XCXFgjMPP7U6R

Response

HTTP/1.1 200
X-Request-ID: request-0001
Content-Type: application/json
{
"account": {
  "resourceId":" IT42Z0608500120000000616474_EUR"
  "iban": "IT42Z0608500120000000616474",
  "currency": "EUR"
 }
}

Response body for a multi-currency account

Request
GET https://api.cedacri.it/psd2bg/06085/v1/accounts?withBalance/IT42Z0608500120000000616474_XXX X-Request-ID: request-0001 Consent-ID: 8c929c62-53f3-4543-97c0-0aed02b1d9bc

PSU-IP-Address: 91.198.174.192
Authorization: Bearer o9xcq8V2zUg893gm6ROpO7XDUhaBkIOyilSHG0M11XCXFgjMPP7U6R

<div align="center">Response</div>

```
HTTP/1.1 200
X-Request-ID: request-0001
Content-Type: application/json
{
 "account":
  { "resourceId": "IT42Z0608500120000000616474_XXX",
    "iban": "IT42Z0608500120000000616474",
    "currency": "XXX"
     "balance":[
     {
      "balanceAmount": {
        "currency": "EUR",
        "amount": "5"
       },
       "balanceType": "expected",
       "referenceDate": "2019-02-23"
     },
     {
      "balanceAmount": {
        "currency": "EUR",
        "amount": "5"
       },
       "balanceType": "interimAvailable",
       "referenceDate": "2019-02-23"
     },
     {
      "balanceAmount": {
        "currency": "USD",
        "amount": "5.5"
       },
       "balanceType": "expected",
       "referenceDate": "2019-02-23"
     },
     {
      "balanceAmount": {
        "currency": "USD",
        "amount": "5.5"
       },
       "balanceType": "interimAvailable",
       "referenceDate": "2019-02-23"
     }
    ]
```

```
    }
}
```

11.7 Read Balance

GET /v1/accounts/{accountId}/balances

Reads account data from a given account addressed "accountId".

Path Parameters

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

Query Parameters

No specific query parameter defined.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
Consent-ID	String	Mandatory	Shall be contained since "Establish Consent Transaction" was performed via this API before.

Authorization	String	Conditional	Bearer Token.
PSU-IP-Address	String	Conditional	This field identifies the IP of the user who is giving consent. If the Consent-ID is recurring, PSU-IP-Address is optional, if the Consent-ID is not recurring, PSU-IP-Address is mandatory.
PSU-ID-Type	String	Optional	Type of the PSU-ID, needed in scenarios where PSUs have several PSU-IDs as access possibility and the TPP wants to specify which one the user should use to authenticate. Possible values are: RETAIL or CORPORATE. If national bank code is 03440 or 05704, possible values are: RETAIL, CORPORATE or CORPORATE_IBK.

Request Body

No request body.

Response Code

The HTTP response code is 200.

Response Header

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

Response Body

Attribute	Type	Condition	Description
balances	Array of Balance	Mandatory	A list of balances regarding this account, e.g. the current balance, the last balance booked.

Balance

Attribute	Type	Condition	Description
balanceAmount	Amount	Mandatory	The Amount Type is composed by "currency" and "amount"
balanceType	Balance Type	Mandatory	Balance Type permitted are: - expected - interimAvailable

Example

Request
GET https://api.cedacri.it/psd2bg/06085/v1/accounts/IT42Z0608500120000000616474/balances X-Request-ID: request-0001 Consent-ID: 8c929c62-53f3-4543-97c0-0aed02b1d9bc PSU-IP-Address: 91.198.174.192 Authorization: Bearer o9xcq8V2zUg893gm6ROpO7XDUhaBkIOyilSHG0M11XCXFgjMPP7U6R
Response

HTTP/1.1 200
X-Request-ID: request-0001
Content-Type: application/json
{
  "account": {
    "iban": "IT42Z0608500120000000616474"

```
  },
 "balances": [
  {
   "balanceAmount": {
    "currency": "EUR",
    "amount": "3"
   },
   "balanceType": "expected",
   "referenceDate": "2019-02-23"
  },
  {
   "balanceAmount": {
    "currency": "EUR",
    "amount": "3"
   },
   "balanceType": "interimAvailable",
   "referenceDate": "2019-02-23"
  }
 ]
}
```

11.8 Read Transactions

GET /v1/accounts/{accountId}/transactions {query-parameters}

Reads a list of transactions from a given account addressed by "accountId".

Path Parameters

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

Request Header

Attribute	Type	Condition	Description

X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
Consent-ID	String	Mandatory	
Authorization	String	Conditional	Bearer Token. Is contained only, if an OAuth2 based authentication was performed in a pre-step or an OAuth2 based SCA was performed in the related consent authorization.
Accept	String	Optional	Only JSON format is supported.
PSU-IP-Address	String	Conditional	This field identifies the IP of the user who is giving consent. If the Consent-ID is recurring, PSU-IP-Address is optional, if the Consent-ID is not recurring, PSU-IP-Address is mandatory.
PSU-ID-Type	String	Optional	Type of the PSU-ID, needed in scenarios where PSUs have several PSU-IDs as access possibility and the TPP wants to specify which one the user should use to authenticate. Possible values are: RETAIL or CORPORATE. If national bank code is 03440 or

			05704, possible values are: RETAIL, CORPORATE or CORPORATE_IBK.

Query Parameters

Attribute	Type	Condition	Description
dateFrom	ISODate	Mandatory	Starting date (including the date dateFrom) of the transaction list, provided that no delta access is required.
dateTo	ISODate	Optional	End date (including the data dateTo) of the transaction list, default is "now".
bookingStatus	String	Mandatory	Permitted code is "booked".
withBalance	Boolean	Optional	If contained, this function reads the list of transactions including the booking balance, if granted by the PSU in the related consent and available by the ASPSP. This parameter might be ignored by the ASPSP.

Request Body

No request body.

Response Code

The HTTP response code is 200.

Response Header

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

Response Body

A JSON response is defined as follows:

Attribute	Type	Condition	Description
transactions	Account Report	Mandatory	JSON based account report.
balances	Balances	Optional	A list of balances regarding this account, which might be restricted to the current balance.

Note: for foreign accounts a maximum of 300 occurrences are returned.

Examples

Response body for a regular account:

Request
GET https://api.cedacri.it /psd2bg/06085/v1/accounts/IT42Z0608500120000000616474_EUR/transactions?bookingStatus =booked&dateFrom=2018-12-31&dateTo=2019-01-01   X-Request-ID: request-0001   Consent-ID: 8c929c62-53f3-4543-97c0-0aed02b1d9bc   Authorization: Bearer Ac85Cpl45c03tZiS5NcZlcLAVCSLM8HUkL3HU2e6ddgFq494mCM5o8
Response
HTTP/1.1 200   X-Request-ID: request-0001   Content-Type: application/json   {

```
"account": {
 "iban": "IT42Z0608500120000000616474"
},
"transactions": {
 "booked": [
  {
   "transactionAmount": {
    "currency": "EUR",
    "amount": "-2"
   },
   "bookingDate": "2019-02-19",
   "remittanceInformationUnstructured": "example"
  },
  {
   "transactionAmount": {
    "currency": "EUR",
    "amount": "-1"
   },
   "bookingDate": "2019-02-20",
   "remittanceInformationUnstructured": "example"
  },
  {
   "transactionAmount": {
    "currency": "EUR",
    "amount": "1"
   },
   "bookingDate": "2019-02-21",
   "remittanceInformationUnstructured": "example"
  },
  {
   "transactionAmount": {
    "currency": "EUR",
    "amount": "2"
   },
   "bookingDate": "2019-02-22",
   "remittanceInformationUnstructured": "example"
  },
  {
   "transactionAmount": {
    "currency": "EUR",
    "amount": "3"
   },
   "bookingDate": "2019-02-23",
   "remittanceInformationUnstructured": "example"
  }
```

```
    ]
  }
}
```

Response body for a multi-currency account with Balance.

Request
GET https://api.cedacri.it /psd2bg/06085/v1/accounts/IT42Z0608500120000000616474_XXX/transactions?bookingStatus =booked&dateFrom=2018-12-31&dateTo=2019-01-01&withBalance X-Request-ID: request-0001 Consent-ID: 8c929c62-53f3-4543-97c0-0aed02b1d9bc Authorization: Bearer Ac85Cpl45c03tZiS5NcZlcLAVCSLM8HUkL3HU2e6ddgFq494mCM5o8
Response
HTTP/1.1 200 X-Request-ID: request-0001 Content-Type: application/json

```
{
  "account": {
    "iban": "IT42Z0608500120000000616474"
  },
  "transactions": {
    "booked": [
      {
        "transactionAmount": {
          "currency": "EUR",
          "amount": "-2"
        },
        "bookingDate": "2019-02-19",
        "remittanceInformationUnstructured": "example"
      },
      {
        "transactionAmount": {
          "currency": "USD",
          "amount": "-1"
        },
        "bookingDate": "2019-02-20",
        "remittanceInformationUnstructured": "example"
      },
      {
        "transactionAmount": {
          "currency": "XXX",
          "amount": "1"
```

```
      },
      "bookingDate": "2019-02-21",
      "remittanceInformationUnstructured": "example"
    },
    {
     "transactionAmount": {
      "currency": "EUR",
      "amount": "2"
     },
     "bookingDate": "2019-02-22",
     "remittanceInformationUnstructured": "example"
    },
    {
     "transactionAmount": {
      "currency": "EUR",
      "amount": "3"
     },
     "bookingDate": "2019-02-23",
     "remittanceInformationUnstructured": "example"
    }
   ]
  },
  "balances": [
   {
     "balanceAmount": {
      "currency": "EUR",
      "amount": "3"
     },
     "balanceType": "expected",
     "referenceDate": "2019-02-23"
   },
   {
     "balanceAmount": {
      "currency": "EUR",
      "amount": "3"
     },
     "balanceType": "interimAvailable",
     "referenceDate": "2019-02-23"
   }
  ]
}
```

12 Confirmation of Funds Service

12.1 Confirmation of Funds Request

POST /v1/funds-confirmations

Creates a confirmation of funds request on the ASPSP.

Path Parameters

No specific path parameter defined.

Query Parameters

No specific query parameter defined.

Request Header

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

Request Body

Attribute	Type	Condition	Description
account	Account Reference	Mandatory	PSU's account number.
instructedAmount	Amount	Mandatory	Transaction amount to be checked within the funds check mechanism.

Response Code

The HTTP response code is 200.

Response Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call,

			as determined by the initiating party.

Response Body

Attribute	Type	Condition	Description
fundsAvailable	Boolean	Mandatory	Equals true if sufficient funds are available at the time of the request, otherwise false.

Example

Request

POST https://api.cedacri.it/psd2bg/06085/v1/funds-confirmations
X-Request-ID: request-0001
Content-Type: application/json
{
  "account": {
    "iban": "IT42Z0608500120000000616474"
  },
  "instructedAmount": {
    "currency": "EUR",
    "amount": "1"
  }
}

Response

HTTP/1.1 200
X-Request-ID: request-0001
Content-Type: application/json
{
  "fundsAvailable": true
}