PSD2 – Technical Design TPP

Version: 1.7.0

04/12/2019

Authorisations and version control

Version	Date	Affects	Brief description of the change
1.6.0	February 2019	EVERYTHING	Initial Version
1.7.0	November	3. DESCRIPTION OF CORE SERVICES 3.1.6 New functionality Cancelling a payment initiation 5.17 remittanceInformationUnstructured	New API 3.4 FCS support: Establish consent for the fund confirmation service Added new functionality Cancel a payment iniciation Information on the counterpart BIC is added within this field

CONTENTS

1. INTRODUCTION

1.1 Scope

This document provides the Technical Design of the interface with Third-Party Providers (TPPs) and the HUB in order to comply with the PSD2 directive. The functions which Banco de Sabadell (hereinafter, ASPSP) makes available will be published in it.

1.2 Glossary

The acronyms and definitions used throughout the document are set forth in the table below.

Acronym	Definition
ASPSP	Account Servicing Payment Service Provider Provides and maintains customer accounts from which payments can be made.
PISP	Payment Initiation Service Provider It initiates a payment order at the user's request, from a payment account from another provider.
AISP	Account Information Service Provider It provides customer information on accounts from other providers.
TPP	Third-party provider It exercises services defined by PSD2 on behalf of a PSU. If it is necessary to provide the service, it accesses the PSU's account(s) which are managed by an ASPSP using the ASPSP's XS2A Interface. It sends request messages to the ASPSP's XS2A interface and receives the corresponding response messages from that ASPSP.
PIISP	Payment Instrument Issuers Service Provider It provides the user with a payment instrument to initiate and process payment transactions.
PSU	This could be either a natural or legal person according to the PSD2 legislation. This is the person who implicitly or explicitly instructs the TPP to perform any ASPSP service.

2. GENERAL DESCRIPTION OF THE SYSTEM

Below, in the Figure 1: Core Module Diagram, the different Functional Modules that make up the system are displayed, which will be subsequently detailed.

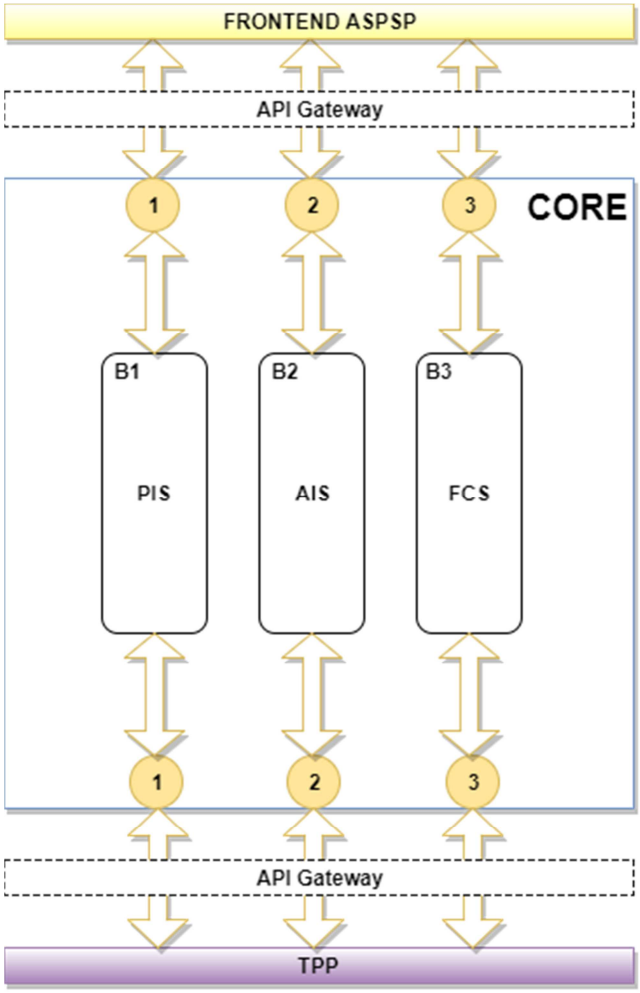

Figure 1: Core Module Diagram

Service		Functionality	Status
CORE	PIS	Start simple payment single signature	Available
		Start recurring payments	Available
		Start future payments	Available
		Check payment status	Available
		Retrieve information from the start of the payment	Available
		Payment cancellation (Pending consultation Redsys)	Available
	AIS	Request consent	Available
		Retrieve information on consent	Available
		Check payment status	Available
		Remove consent	Available
		Reading of list of accounts available without balances	Available
		Reading of accounts details without balances	Available
		Reading of balances	Available
		Reading of transactions without balances	Available
		Reading of transaction details	Not supported
	FCS	Cleared funds	Available
	SCA	SCA by redirection flow	Available
		SCA by decoupled flow	Under development
		Embedded SCA	Not supported
	OAUTH	Obtaining the access token	Available
		Renewal of the access token	Available
	Common processes	Initiate explicit authorization	Available
		SCA status query	Available
		Obtain authorisation data	Available
		Update authorisation sub-resources	Available

Table 1: CORE Services

Service		Functionality	Status
SVA	DIR. ASPSPs	List of available ASPSPs	Available
	PIS	Payment initiation with a list of accounts available for the PISP	Under development

Table 2: Value-Added Services

3. DESCRIPTION OF CORE SERVICES

3.1 PIS: Payment Initiation Service

3.1.1 Payment initiation

Message sent by the TPP to the ASPSP through the Hub to create a payment initiation.

3.1.1.1 Request

Endpoint

POST {provider}/{aspsp}/v1/payments/{payment-product}

Path

Field	Description	Type	Mand.	Format
Provider	URL of the HUB where the service is published.	String	OB	E.g.: www.hub.com
Aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name
payment-product	Payment product to use. List of supported products: • sepa-credit-transfers • instant-sepa-credit-transfers • target-2-payments • cross-border-credit-transfers	String	OB	E.g.: {provider}/{aspsp}/v1/payments/sepa-credit-transfers/

Query parameters

Additional parameters for this request are not specified.

Header

Field	Description	Type	Mand.	Format
Content-Type	Value: application/json	String	OB	Content-Type: application/json
X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID:

				1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Authorization	Bearer Token. Obtained in a pre-authentication on OAuth2.	String	OB	E.g.: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP. If it is not available, the TPP must use the IP address used by the TPP when it sends this request.	String	OB	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.: PSU-IP-Address: 192.168.16.5
PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^.{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the TPP.	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091

				102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU and the TPP. Allowed values: • POST • GET • PUT • PATCH • DELETE	String	OP	E.g.: PSU-Http-Method: POST
PSU-Device-ID	UUID (Universally Unique Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This ID must not be modified until the application has been uninstalled from the device.	String	OP	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP.	String	OP	**RFC 2426** ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*$ E.g.: PSU-Geo-Location: GEO:90.023856;25.345963
TPP-Redirect-Preferred	If it is “true”, the TPP has informed the HUB that it prefers the SCA redirection. If it is “false”, the TPP has informed the HUB that it prefers not to be redirected to the SCA and the procedure will be carried out by a decoupled flow. If the parameter is not used, the ASPSP will choose the SCA flow to apply, depending on the SCA method chosen by the TPP/PSU.	Boolean	OP	E.g.: TPP-Redirect-Preferred: true

	EMBEDDED AND DECOUPLED ARE NOT SUPPORTED IN THIS VERSION			
TPP-Redirect-URI	The TPP's URI, where the transaction flow should be redirected to after some of the SCA phases. It is recommended to use this header field at all times. In the future, this field could become mandatory.	String	COND	^.{1,250}$ E.g.: TPP-Redirect-URI":"https://tpp.example.es/cb"
TPP-Nok-Redirect-URI	If this URI is contained, the TPP is requesting that the transaction flow is redirected in this direction instead of to the TPP-Redirect-URI in the event of a negative result from the SCA redirection method.	String	OP	^.{1,250}$ E.g.: TPP-Nok-Redirect-URI":"https://tpp.example.es/cb/nok"
TPP-Explicit-Authorisation-Preferred	If it is "true", the TPP prefers to start the authorisation process separately, E.g.: given the need for the authorisation of a set of simultaneous transactions. If it is "false" or the parameter is not used, the TPP has no preference. The TPP accepts a direct authorisation of the transaction in the next step. **Note**: NOT SUPPORTED	Boolean	OP	E.g.: TPP-Explicit-Authorisation-Preferred: false
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIhvcNAQELBQAwSTELMAk

Body

The content of the Body is defined in 5.14 SinglePayment.

3.1.1.2 Response

Header

Field	Description	Type	Mand.	Format
Location	It contains the generated link to the resource.	String	OB	^.{1,512}$ E.g.: Location: /v1/payments/{payment-product}/{payment-id}
X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
ASPSP-SCA-Approach	Returned value if the SCA method has been set. Possible values: • REDIRECT The SCA based on OAuth will be taken as a REDIRECT.	String	COND	E.g.: ASPSP-SCA-Approach: REDIRECT

Body

Field	Description	Type	Mand.	Format
transactionStatus	Status of the transaction. Values defined in Annexes in 6.4 Transaction status	String	OB	**ISO 20022** E.g.: "transactionStatus": "RCVD"
paymentId	Resource identifier referred to the payment initiation.	String	OB	^.{1,36}$ E.g.: "paymentId": "1b3ab8e8-0fd5-43d2-946e-d75958b172e7"
_links	List of hyperlinks to be recognised by the TPP. Types supported in this response: • scaRedirect: in the event of the SCA	Links	OB	E.g.: "_links": {…}

	redirect. Link where the PSU's browser must be redirected by the TPP. • self: link to the resource created by this request. • status: link to retrieve the transaction status.			
psuMessage	Text to be displayed to the PSU.	String	OP	^.{1,512}$ E.g.: "psuMessage": "Information for the PSU"
tppMessages	Message for the TPP.	List<TppMessage>	OP	E.g.: "tppMessages": […]

3.1.1.3 Examples

Example of an SCA redirection request

POST https://www.hub.com/aspsp-name/v1/payments/sepa-credit-transfers

Content-Encoding: gzip

Content-Type: application/json

X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: POST

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

TPP-Redirect-Preferred: true

TPP-Redirect-URI: https://www.tpp.com/cb

TPP-Nok-Redirect-URI: https://www.tpp.com/cb/nok

Date: Sun, 26 Sep 2017 15:02:37 GMT

```
{
        "instructedAmount": {
                "currency": "EUR",
                "amount": "153.50"
        },
        "debtorAccount": {
```

```
            "iban": "ES1111111111111111111111"
        },
        "creditorAccount": {
            "iban": "ES2222222222222222222222"
        },
        "creditorName": "Name123",
        "remittanceInformationUnstructured": "Additional information"
}
```


Example of a response in the event that the SCA redirection with an implicitly created authorisation sub-resource


```
HTTP/1.1 201 Created
X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541
ASPSP-SCA-Approach: REDIRECT
Date: Sun, 26 Sep 2017 15:02:43 GMT
Location: /v1/payments/sepa-credit-transfers/123-qwe-456
Content-Type: application/json
{
        "transactionStatus": "RCVD",
        "paymentId": "123-qwe-456",
        "_links": {
            "scaRedirect": {
                "href": "https://hub.example.es/authorize"
            },
            "self": {
                "href": "/v1/payments/sepa-credit-transfers/123-qwe-456",
            "status": {
                "href": "/v1/payments/sepa-credit-transfers/123-qwe-456/status"
            },
            "scaStatus": {
                "href": "/v1/payments/sepa-credit-transfers/123-qwe-456/authorisations/123auth456"
            }
        }
}
```

Example of a request for the SCA decoupled (NOT CURRENTLY DEVELOPED)

POST https://hub.example.es/asp-name/v1/payments/sepa-credit-transfers

Content-Encoding: gzip

Content-Type: application/json

X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: POST

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

TPP-Redirect-Preferred: false

Date: Sun, 26 Sep 2017 15:02:37 GMT


```
{
        "instructedAmount": {
                "currency": "EUR",
                "amount": "153.50"
        },
        "debtorAccount": {
                "iban": "ES1111111111111111111111"
        },
        "creditorAccount": {
                "iban": "ES2222222222222222222222"
        },
        "creditorName": "Name123",
        "remittanceInformationUnstructured": "Additional information"
}
```

3.1.2 Future payment initiation

Message sent by the TPP to the ASPSP through the Hub to create a future payment initiation.

3.1.2.1 Request

Endpoint

POST {provider}/{aspsp}/v1/payments/{payment-product}

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published.	String	OB	E.g.: hub.example.es
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name
payment-product	Payment product to use. List of supported products: • sepa-credit-transfers	String	OB	E.g.: {provider}/{aspsp}/v1/payments/sepa-credit-transfers/

Query parameters

Additional parameters for this request are not specified.

Header

Field	Description	Type	Mand.	Format
Content-Type	Value: application/json	String	OB	Content-Type: application/json
X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Authorization	Bearer Token. Obtained in a pre-authentication on OAuth2.	String	OB	E.g.: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP. If it is not available, the TPP must use the IP address used by the TPP when it sends this	String	OB	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.: PSU-IP-Address: 192.168.16.5

	request.			
PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^.{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the TPP.	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU and the TPP. Allowed values: • POST • GET • PUT • PATCH • DELETE	String	OP	E.g.: PSU-Http-Method: POST
PSU-Device-ID	UUID (Universally Unique Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This ID must not be modified until the application has been uninstalled from the device.	String	OP	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP.	String	OP	**RFC 2426** ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*$ E.g.: PSU-Geo-Location: GEO:90.023856;25.345963

TPP-Redirect-Preferred	If it is “true”, the TPP has informed the HUB that it prefers the SCA redirection. If it is “false”, the TPP has informed the HUB that it prefers not to be redirected to the SCA and the procedure will be carried out by a decoupled flow. If the parameter is not used, the ASPSP will choose the SCA flow to apply, depending on the SCA method chosen by the TPP/PSU. **EMBEDDED AND DECOUPLED ARE NOT SUPPORTED IN THIS VERSION**	Boolean	OP	E.g.: TPP-Redirect-Preferred: true
TPP-Redirect-URI	The TPP’s URI, where the transaction flow should be redirected to after some of the SCA phases. It is recommended to use this header field at all times. In the future, this field could become mandatory.	String	COND	^.{1,250}$ E.g.: TPP-Redirect-URI":"https://tpp.example.es/cb"
TPP-Nok-Redirect-URI	If this URI is contained, the TPP is requesting that the transaction flow is redirected in this direction instead of to the TPP-Redirect-URI in the event of a negative result from the SCA redirection method.	String	OP	^.{1,250}$ E.g.: TPP-Nok-Redirect-URI":"https://tpp.example.es/cb/nok"
TPP-Explicit-Authorisation-Preferred	If it is “true”, the TPP prefers to start the authorisation process separately, E.g.: given the need for the authorisation of a set of simultaneous transactions. If it is “false” or the parameter is not used, the TPP has no preference. The TPP accepts a direct authorisation of the transaction in the next step. **Note**: NOT SUPPORTED.	Boolean	OP	E.g.: TPP-Explicit-Authorisation-Preferred: false
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5O

				TU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

The Body's content is defined in 5.14 SinglePayment and the following parameter must also be reported:

Field	Description	Type	Mand.	Format
requestedExecutionDate	The payment will be executed on the reported date. **Note**: this field must be reported.	String	OP	**ISODate** E.g.: "requestedExecutionDate":"2019-01-12"

3.1.2.2 Response

Header

Field	Description	Type	Mand.	Format
Location	It contains the generated link to the resource.	String	OB	**Max512Text** E.g.: Location: /v1/payments/{payment-product}/{payment-id}
X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
ASPSP-SCA-Approach	Returned value if the SCA method has been set. Possible values: • REDIRECT The SCA based on OAuth will be taken as a REDIRECT.	String	COND	E.g.: ASPSP-SCA-Approach: REDIRECT

Body

Field	Description	Type	Mand.	Format
transactionStatus	Status of the transaction. Values defined in Annexes in 6.4 Transaction status	String	OB	**ISO 20022** E.g.: "transactionStatus": "RCVD"
paymentId	Resource identifier referred to the payment initiation.	String	OB	^.{1,36}$ E.g.: "paymentId": "1b3ab8e8-0fd5-43d2-946e-d75958b172e7"
_links	List of hyperlinks to be recognised by the HUB. Types supported in this response: • scaRedirect: in the event of the SCA redirect. Link where the PSU's browser must be redirected by the HUB. • self: link to the resource created by this request. • status: link to retrieve the transaction status.	Links	OB	E.g.: "_links": {…}
psuMessage	Text sent to the TPP through the HUB to be displayed to the PSU.	String	OP	^.{1,512}$ E.g.: "psuMessage": "Information for the PSU"
tppMessages	Message for the TPP sent though the HUB.	List<TppMessage>	OP	E.g.: "tppMessages": […]

3.1.2.3 Examples

Example of an SCA redirection request

POST https://hub.example.es/aspsp-name/v1/payments/sepa-credit-transfers

Content-Encoding: gzip

Content-Type: application/json

X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: POST

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

TPP-Redirect-Preferred: true

TPP-Redirect-URI: https://tpp.example.es/cb

TPP-Nok-Redirect-URI: https://tpp.example.es/cb/nok

Date: Sun, 26 Sep 2017 15:02:37 GMT


```
{
        "instructedAmount": {
                "currency": "EUR",
                "amount": "153.50"
        },
        "debtorAccount": {
                "iban": "ES1111111111111111111111"
        },
        "creditorAccount": {
                "iban": "ES2222222222222222222222"
        },
        "creditorName": "Name123",
        "remittanceInformationUnstructured": "Additional information",
        "requestedExecutionDate": "2019-01-12"
}
```


3.1.3 Initiation of standing orders for recurring / periodic payments

Message sent by the TPP to the ASPSP through the Hub to create a recurring / periodic payment initiation.

The initiation of recurring payments functionality is specifically covered by the Berlin Group as the initiation of a specific standing order.

A TPP can send an initiation of a recurring payment in which the start date, frequency and the end date must all be provided.

Once authorised by the PSU, the payment will be executed by the ASPSP, if possible, following the "standing order" as it was sent by the TPP. No further action is needed by the TPP.

In this context, this payment is considered a periodic payment to differentiate it from other types of recurring payments where third parties initiate the same amount of money.

Note: to initiate standing order payments, the ASPSP will always request the SCA with Dynamic linking. No exemptions are allowed.

Rules for the dayOfExecution field

- **Daily payments**: the "dayOfExecution" field is not necessary. The first payment is on the "startDate", and from then on, the payment is made every day.
- **Weekly payments**: if the "dayOfExecution" is required, the possible values are 01=Monday to 07=Sunday. If the "dayOfExecution" is not required, the "startDate" will be the day of the week on which the payment is made. (If the "startDate" is Thursday, the payment will be made every Thursday).
- **Fortnightly payments**: the same rule applies as for weekly payments.
- **Monthly payments or longer payment periods**: the possible values range from 01 to 31. Using the 31st is used as the last day of the month (only for monthly payments). For longer periods an error will be returned.

3.1.3.1 Request

Endpoint

POST {provider}/{aspsp}/v1/periodic-payments/{payment-product}

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published.	String	OB	E.g.: hub.example.es
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name
payment-product	Payment product to use. List of supported products: sepa-credit-transfers	String	OB	E.g.: {provider}/{aspsp-name)/v1/periodic-payments/sepa-credit-transfers/

Query parameters

Additional parameters for this request are not specified.

Header

Field	Description	Type	Mand.	Format
Content-Type	Value: application/json	String	OB	Content-Type: application/json
X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-

				0fd5-43d2-946e-d75958b172e7
Authorization	Bearer Token. Obtained in a pre-authentication on OAuth2.	String	OB	E.g.: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP. If it is not available, the TPP must use the IP address used by the TPP when it sends this request.	String	OB	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.: PSU-IP-Address: 192.168.16.5
PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^.{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the TPP.	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU and the TPP. Allowed values: • POST • GET • PUT • PATCH • DELETE	String	OP	E.g.: PSU-Http-Method: POST
PSU-Device-ID	UUID (Universally Unique Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This	String	OP	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$

	ID must not be modified until the application has been uninstalled from the device.			E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP.	String	OP	**RFC 2426** ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*$ E.g.: PSU-Geo-Location: GEO:90.023856;25.345963
TPP-Redirect-Preferred	If it is "true", the TPP has informed the HUB that it prefers the SCA redirection. If it is "false", the TPP has informed the HUB that it prefers not to be redirected to the SCA and the procedure will be carried out by a decoupled flow. If the parameter is not used, the ASPSP will choose the SCA flow to apply, depending on the SCA method chosen by the TPP/PSU. **EMBEDDED AND DECOUPLED ARE NOT SUPPORTED IN THIS VERSION**	Boolean	OP	E.g.: TPP-Redirect-Preferred: true
TPP-Redirect-URI	The TPP's URI, where the transaction flow should be redirected to after some of the SCA phases. It is recommended to use this header field at all times. In the future, this field could become mandatory.	String	COND	^.{1,250}$ E.g.: TPP-Redirect-URI":"https://tpp.example.es/cb"
TPP-Nok-Redirect-URI	If this URI is contained, the TPP is requesting that the transaction flow is redirected in this direction instead of to the TPP-Redirect-URI in the event of a negative result from the SCA redirection method.	String	OP	^.{1,250}$ E.g.: TPP-Nok-Redirect-URI":"https://tpp.example.es/cb/nok"
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==

Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

The Body's content is defined in 5.14 SinglePayment along with as the definitions listed below:

Field	Description	Type	Mand.	Format
startDate	The first applicable execution day from this date is the first payment.	String	OB	**ISODate** E.g.: "startDate":"2018-12-20"
endDate	The last applicable execution day. If there is nothing entered it is a standing order with no end.	String	OP	**ISODate** E.g.: "endDate":"2019-01-20"
frequency	The frequency of the recurring payment resulting from this standing order. Allowed values: • Daily • Weekly • EveryTwoWeeks • Monthly • EveryTwoMonths • Quarterly • SemiAnnual • Annual	String	OB	**EventFrequency7Code de ISO 20022** E.g.: "frequency":"monthly"
dayOfExecution	"31" is last. Only if the frequency is monthly The regular expression \d{1,2} follows. The date refers to the ASPSP's time zone.	String	COND	\d{1,2} E.g.: "dayOfExecution":"01"

3.1.3.2 Response

Header

Field	Description	Type	Mand.	Format
Location	It contains the generated link to the resource.	String	OB	^.{1,512}$ E.g.: Location: /v1/periodic-payments/{payment-product}/{payment-id}
X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
ASPSP-SCA-Approach	Returned value if the SCA method has been set. Possible values: • REDIRECT The SCA based on OAuth will be taken as a REDIRECT.	String	COND	E.g.: ASPSP-SCA-Approach: REDIRECT

Body

Field	Description	Type	Mand.	Format
transactionStatus	Status of the transaction. Values defined in Annexes in 6.4 Transaction status	String	OB	**ISO 20022** E.g.: "transactionStatus": "RCVD"
paymentId	Resource identifier which references the periodic payment.	String	OB	^.{1,36}$ E.g.: "paymentId": "1b3ab8e8-0fd5-43d2-946e-d75958b172e7"
_links	List of hyperlinks to be recognised by the TPP. Types supported in this response: • scaRedirect: in the event of the SCA redirect. Link where the PSU's browser must be redirected by the TPP. • self: link to the resource created by this request. • status: link to retrieve the transaction status.	Links	OB	E.g.: "_links": {…}

psuMessage	Text sent to the TPP through the HUB to be displayed to the PSU.	String	OP	^.{1,512}$ E.g.: "psuMessage": "Information for the PSU"
tppMessages	Message for the TPP sent though the HUB.	List<TppMessage>	OP	E.g.: "tppMessages": […]

3.1.3.3 Examples

Example of an SCA redirection request

POST https://hub.example.es/{aspsp-name}/v1/periodic-payments/sepa-credit-transfers

Content-Encoding: gzip

Content-Type: application/json

X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

PSU-IP-Address: 192.168.8.16

TPP-Redirect-Preferred: true

TPP-Redirect-URI: https://tpp.example.es/cb

TPP-Nok-Redirect-URI: https://tpp.example.es/cb/nok

Date: Sun, 26 Sep 2017 15:02:37 GMT

```
{
        "instructedAmount": {
        "currency": "EUR",
                "amount": "153.50"
        },
        "creditorAccount": {
                "iban": "ES2222222222222222222222"
        },
        "creditorName": "Name123","remittanceInformationUnstructured":"Additional Information",
        "startDate": "2018-03-01",
        "frequency": "monthly",
        "dayOfExecution": "01"
}
```

3.1.4 Obtain payment status

This message is sent by the TPP to the HUB to request information on the status of the payment initiation requested by the TPP.

3.1.4.1 Request

Endpoint

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

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published.	String	OB	E.g.: www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name
payment-service	Possible values are: • payments • periodic-payments	String	OB	E.g.: {provider}/{aspsp}/v1/payments
payment-product	Payment product to use. List of supported products: • sepa-credit-transfers • instant-sepa-credit-transfers • target-2-payments • cross-border-credit-transfers	String	OB	E.g.: {provider}/{aspsp}/v1/payments/sepa-credit-transfers/
paymentId	Resource identifier referred to the payment initiation. Sent previously as a response to a payment initiation from the TPP to the HUB.	String	OB	^.{1,36}$ E.g.: 1234-qwer-5678

Query parameters

No additional fields are specified.

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the request.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Authorization	Bearer Token. Obtained in a pre-authentication on OAuth2.	String	OB	E.g.: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

Accept	Format supported of the response. Supported values: • application/json	String	OP	^.{1,50}$ E.g.: Accept: application/json
PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP.	String	OP	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.: PSU-IP-Address: 192.168.16.5
PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^\\d{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the TPP.	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU and the TPP. Allowed values: • POST • GET • PUT • PATCH • DELETE	String	OP	E.g.: PSU-Http-Method: GET
PSU-Device-ID	UUID (Universally Unique Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This ID must not be modified until the application has been uninstalled from the device.	String	OP	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-

				d75958b172e7
PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP.	String	OP	**RFC 2426** ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*$ E.g.: PSU-Geo-Location: GEO:90.023856;25.345963
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional data is specified.

3.1.4.2 Response

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the request.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

Body

Field	Description	Type	Mand.	Format
transactionStatus	Status of the payment transaction. Values defined in 6.4 Transaction	String	OB	**ISO20022** E.g.: "transactionStatus":"A

	status			CCP"
psuMessage	Text to be displayed to the PSU.	String	OP	^.{1,512}$ E.g.: “psuMessage":"Information for the PSU"
tppMessages	Message for the TPP.	List<TppMessage>	OP	E.g.: "tppMessages":[…]

3.1.4.3 Examples

Example of a request

GET https://www.hub.com/aspsp-name/v1/payments/sepa-credit-transfer/123asdf456/status

Accept: application/json

X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: GET

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

Date: Sun, 26 Sep 2017 15:02:48 GMT

Example of a response

HTTP/1.1 200 OK
X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Date: Sun, 26 Sep 2017 15:02:50 GMT

Content-Type: application/json

{

"transactionStatus": " ACCP”

}

3.1.5 Retrieve information from the start of the payment

This message is sent by the TPP through the HUB to the ASPSP to obtain information on the payment initiation.

3.1.5.1 Request

Endpoint

GET {provider}/{aspsp}/v1/{payment-service}/{payment-product}/{paymentId}

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published.	String	OB	E.g.: www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name
payment-service	Possible values are: • payments • periodic-payments	String	OB	E.g.: {provider}/{aspsp}/v1/payments
payment-product	Payment product to use. List of supported products: • sepa-credit-transfers • instant-sepa-credit-transfers • target-2-payments • cross-border-credit-transfers	String	OB	E.g.: {provider}/{aspsp}/v1/payments/sepa-credit-transfers/
paymentId	Resource identifier referred to the payment initiation. Sent previously as a response to a payment initiation from the TPP to the HUB.	String	OB	^.{1,36}$ E.g.: 1234-qwer-5678

Query parameters

No additional fields are specified.

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the request.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Authorization	Bearer Token. Obtained in a	String	OB	E.g.:

	pre-authentication on OAuth2.			Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP.	String	OP	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.: PSU-IP-Address: 192.168.16.5
PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^\\d{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the TPP.	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU and the TPP. Allowed values: • POST • GET • PUT • PATCH • DELETE	String	OP	E.g.: PSU-Http-Method: GET
PSU-Device-ID	UUID (Universally Unique Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This ID must not be modified until the application has been uninstalled from the device.	String	OP	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7

PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP.	String	OP	**RFC 2426** ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*$ E.g.: PSU-Geo-Location: GEO:90.023856;25.345963
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……..KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional data is specified.

3.1.5.2 Response

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the request.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

Body

The fields to be returned are those of the original payment initiation request:

- 3.1.1 Payment initiaition
- 3.1.2 Future payment initiation
- 3.1.3 Initiation of standing orders for recurring / periodic payments

In addition to the following:

Field	Description	Type	Mand.	Format
transactionStatus	Status of the transaction. Values defined in annexes. Short code.	String	OB	**ISO 20022** E.g.: "transactionStatus": "ACCP"
psuMessage	Text sent to the TPP through the HUB to be displayed to the PSU.	String	OP	^.{1,512}$ E.g.: "psuMessage": "Information for the PSU"
tppMessages	Message for the TPP sent though the HUB.	List<TppMessage>	OP	E.g.: "tppMessage": […]

3.1.5.3 Examples

Example of a request

GET https://www.hub.com/aspsp-name/v1/payments/sepa-credit-transfers/123-asdf-456

Accept: application/json

X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: GET

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

Date: Sun, 26 Sep 2017 15:02:48 GMT

Example of a response

HTTP/1.1 200 OK

X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Date: Sun, 26 Sep 2017 15:02:50 GMT

Content-Type: application/json


```
{
        "instructedAmount": {
                "currency": "EUR",
                "amount": "153.50"
```

```
        },
        "debtorAccount": {
                "iban": "ES1111111111111111111111"
        },
        "creditorAccount": {
                "iban": "ES2222222222222222222222"
        },
        "creditorName": "Name123",
        "remittanceInformationUnstructured": "Additional information",
        "transactionStatus": "ACCP"
}
```


3.1.6 Cancelling a payment initiation

This request is sent by the TPP to the ASPSP through the Hub and allows the payment initiation to be cancelled. Depending on the payment service, the payment product and ASPSP's implementation, this request may be sufficient to cancel the payment or an authorisation may be required.

3.1.6.1 Request

Endpoint

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

Path

Field	Description	Type	Mand.	Format
provider	URL of the ASPSP where the service is published.	String	OB	E.g.: www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name
payment-service	Possible values are: • payments • periodic-payments	String	OB	E.g.: {provider}/v1/payments
payment-product	Payment product to use. List of supported products: • sepa-credit-transfers • target-2-payments • cross-border-credit-transfers	String	OB	E.g.: {provider}/{aspsp}/v1/payments/sepa-credit-transfers/
paymentId	Resource identifier referred to the payment initiation. Sent previously as a response to a payment	String	OB	^.{1,36}$ E.g.: 123-qwe-456

initiation from the HUB to the ASPSP.

Query parameters

No additional fields are specified.

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the request and sent through the HUB to the ASPSP	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Authorization	Bearer Token. Obtained in a pre-authentication on OAuth2.	String	OB	E.g.: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP.	String	OP	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.: PSU-IP-Address: 192.168.16.5
PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^\\d{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the TPP.	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU	String	OP	E.g.: PSU-Http-Method: DELETE

	and the TPP. Allowed values: • POST • GET • PUT • PATCH • DELETE			
PSU-Device-ID	UUID (Universally Unique Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This ID must not be modified until the application has been uninstalled from the device.	String	OP	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP	String	OP	**RFC 2426** ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*$ E.g.: PSU-Geo-Location: GEO:90.023856;25.345963
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional data is specified.

3.1.6.2 Response

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the transaction and sent through the HUB to	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-

	the ASPSP.	[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

Body

Field	Description	Type	Mand.	Format
transactionStatus	Status of the transaction. Values defined in Annexes in 6.4 Transaction status	String	OB	**ISO 20022** E.g.: "transactionStatus": "CANC"
_links	List of hyperlinks to be recognised by the TPP. These depend on the decision made by the ASPSP to evaluate the translation. Types supported in this response.	Links	COND	E.g.: "_links": {…}
psuMessage	Text sent to the TPP through the HUB to be displayed to the PSU.	String	OP	^.{1,512}$ E.g.: "psuMessage": "Information for the PSU"
tppMessages	Message for the TPP sent though the HUB.	List<TppMessage>	OP	E.g.: "tppMessages": […]

3.1.6.1 Examples

Example of a request

DELETE https://www.hub.com/aspsp-name/v1/payments/sepa-credit-transfers/123-qwe-456

X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: GET

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

Content-Type: application/json

Date: Sun, 26 Sep 2017 15:02:48 GMT

Example of response when authorisation of the cancellation by the PSU is required

HTTP/1.1 200 OK

X-Request-ID: 0ee25bf4-6ff1-11e8-adc0-fa7ae01bbebc

Date: Sun, 26 Sep 2017 15:02:47 GMT


```
{
        "transactionStatus": "ACTC",
        "_links": {
                "startAuthorisation": {
                        "href": "/v1/payments/sepa-credit-transfers/123-qwe-456/cancellation-authorisations"
                }
        }
}
```


3.2 AIS: Service to establish consent to account information

3.2.1 Characteristics of the different types of consents

3.2.1.1 Consent model

Model	Description
Detailed consent	**Request for consent about the accounts specified** Creates a consent which must be stored by the ASPSP, requesting access to the specified accounts and the requested access. If there was already consent in place, it will expire and the new one will enter into force once it has been authorised by the PSU. The accounts for which consent is requested to access “balances” and/or “transactions” will automatically also have access to “accounts”.
Global consent	**Request consent to gain access to all the access to all accounts for the AIS services of the PSD2** Requests access to all the PSU’s available accounts of PSU for all the AIS services of the PSD2. The accounts are not specified by the TPP. In the request the access accounts that you want to have access to, are not specified. “All PSD2 accounts” is specified in the request, using “allPsd2” in the “allAccounts” value. Through the HUB, the TPP can retrieve the said information handled by the ASPSP and the PSU with a request to retrieve information on the consent.

Bank offered consent	**Request consent without specifying the accounts** Request consent to access “accounts”, “balances”, and/or “transactions” without specifying the accounts. In other words, the attributes “accounts”, “balances” and “transactions” will go in a blank array. To select the accounts to be provided, access must be obtained bilaterally between the ASPSP and the PSU through the ASPSP interface in the redirect flow from OAuth. In the redirection process the ASPSP will show the PSU their accounts on which it wants to give consent to the TPP. Through the HUB, the TPP can retrieve the said information handled by the ASPSP and the PSU with a request to retrieve information on the consent.

3.2.1.2 Recurring access

Recurrent consents

If there is a prior consent for recurring access (recurringIndicator:true) in place and a new request for recurring access is made, as soon as the new consent is accepted by the PSU, the old one will expire and the new requested consent will be the valid one.

A consent with recurring access can have one or more accounts with different types of access (“accounts”, “balances”, “transactions”).

Note: giving access to “balances” and/or “transactions” automatically gives access to these “accounts”.

Non-recurrent consents

A request for consent for a non-recurring access (for one access only with the recurringIndicator:false) will be treated as a new consent (new consentId) without affecting the previously given existing consents.

3.2.2 Consent to information on payment accounts

With this service, through the HUB, a TPP can request a consent to access the accounts of the PSU. This request may be for specific accounts but this is not a requirement.

Therefore, the request for consent has the following variations:

- Set up consent to account information for specified accounts.
- Set up consent to account information without specifying which accounts.
- Set up consent to account information for all the AIS access types of the PSD2: “accounts”, “balances” and/or “transactions”.

Note: each consent to information will generate a new resource, i.e. a new consentId.

3.2.2.1 Request

Endpoint

POST {provider}/{aspsp}/v1/consents

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published.	String	OB	E.g.: www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name

Query parameters

No additional fields are specified.

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Authorization	Bearer Token. Obtained in a pre-authentication on OAuth2.	String	OB	E.g.: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP.	String	OP	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.: PSU-IP-Address: 192.168.16.5
PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^\\d{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-

	TPP.			US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU and the TPP. Allowed values: • POST • GET • PUT • PATCH • DELETE	String	OP	E.g.: PSU-Http-Method: POST
PSU-Device-ID	UUID (Universally Unique Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This ID must not be modified until the application has been uninstalled from the device.	String	OP	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP.	String	OP	**RFC 2426** ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*$ E.g.: PSU-Geo-Location: GEO:90.023856;25.345963
TPP-Redirect-Preferred	If it is “true”, the TPP has informed the HUB that it prefers the SCA redirection. If it is “false”, the TPP has informed the HUB that it prefers not to be redirected to the SCA and the procedure will be carried out by a decoupled flow. If the parameter is not used, the ASPSP will choose the SCA flow to apply, depending on the SCA method chosen by the TPP/PSU. **EMBEDDED IS NOT SUPPORTED IN THIS VERSION** **DECOUPLED CURRENTLY NOT SUPPORTED**	Boolean	OP	E.g.: TPP-Redirect-Preferred: true
TPP-Redirect-	The TPP’s URI, where the	String	COND	^.{1,250}$

URI	transaction flow should be redirected to after some of the SCA phases. It is recommended to use this header field at all times. In the future, this field could become mandatory.			E.g.: TPP-Redirect-URI":"https://tpp.example.es/cb"
TPP-Nok-Redirect-URI	If this URI is contained, the TPP is requesting that the transaction flow is redirected in this direction instead of to the TPP-Redirect-URI in the event of a negative result from the SCA redirection method.	String	OP	^.{12,50}$ E.g.: TPP-Nok-Redirect-URI":"https://tpp.example.es/cb/nok"
TPP-Explicit-Authorisation-Preferred	If it is “true”, the TPP prefers to start the authorisation process separately, e.g.: given the need for the authorisation of a set of simultaneous transactions. If it is “false” or the parameter is not used, the TPP has no preference. The TPP accepts a direct authorisation of the transaction in the next step. **Note**: IT ONLY ALLOWS THE FALSE OPTION	Boolean	OP	E.g.: TPP-Explicit-Authorisation-Preferred: false
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

Field	Description	Type	Mand.	Format
access	Access requested to the services. Only sub-attributes with the tags: "accounts", "balances" and "transactions" are accepted. Additionally, the ASPSP can support the sub-attributes:"allPsd2" with the value "allAccounts".	AccountAccess	OB	E.g.: "access":{…}
recurringIndicator	Possible values: • true: recurring access to the account. • false: one access only.	Boolean	OB	E.g.: "recurringIndicator":true
validUntil	Date to which the consent requests access. To create the maximum possible access period, the value to be used is: 9999-12-31 When the consent is retrieved, the maximum possible date will be returned having been adjusted.	String	OB	**ISODate** E.g.: "validUntil":"2018-05-17"
frequencyPerDay	Indicates the frequency of accessing the account per day. 1 if it is one single use.	Integer	OB	E.g.: "frequencyPerDay":4
combinedServiceIndicator	Indicator that a payment will be made in the same session.	Boolean	OB	E.g.: "combinedServiceIndicator": false

3.2.2.2 Response

Header

Field	Description	Type	Mand.	Format
Location	It contains the generated hyperlink to the resource	String	OB	**Max512Text** E.g.: Location: /v1/consents/{consentId}
X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

ASPSP-SCA-Approach	Returned value if the SCA method has been set. Possible values: • REDIRECT The SCA based on OAuth will be taken as a REDIRECT.	String	COND	E.g.: ASPSP-SCA-Approach: REDIRECT

Body

Field	Description	Type	Mand.	Format
consentStatus	Authentication status of the consent. See the defined values in 6.5 Consent status	String	OB	E.g.: "consentStatus": "received"
consentId	Resource identifier which references the consent. It must be content if it generated a consent.	String	OB	^.{1,36}$ E.g.: "consentId":"123-QWE-456"
_links	List of hyperlinks to be recognised by the TPP. Types supported in this response: • scaRedirect: in the event of the SCA redirect. Link where the PSU's browser must be redirected by the TPP. • self: link to the resource created by this request. • status: link to retrieve the transaction status. •	Links	OB	E.g.: "_links": {…}
psuMessage	Text to be displayed to the PSU.	String	OP	^.{1,512}$ E.g.: "psuMessage": "Information for the PSU"
tppMessages	Message for the TPP.	List<TppMessage>	OP	E.g.: "tppMessages": […]

3.2.2.3 Examples

Example of a request for consent on specified accounts with SCA redirection

POST https://www.hub.com/aspsp-name/v1/consents

Content-Encoding: gzip

Content-Type: application/json

X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: POST

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

TPP-Redirect-Preferred: true

TPP-Redirect-URI: https://www.tpp.com/cb

TPP-Nok-Redirect-URI: https://www.tpp.com/cb/nok

Date: Sun, 26 Sep 2017 15:02:37 GMT


```
{
        "access": {
                "balances": [
                {
                        "iban": "ES1111111111111111111111"
                },
                {
                        "iban": "ES2222222222222222222222",

                },
                {
                        "iban": "ES3333333333333333333333"
                }
                ],
                "transactions": [
                {
                        "iban": "ES1111111111111111111111"
                }
                ]
        },
        "recurringIndicator": true,
        "validUntil": "17/05/2018",
        "frequencyPerDay": 4
}
```


Example of a request for consent of a list of available accounts with SCA redirection

POST https://www.hub.com/aspsp-name/v1/consents

Content-Encoding: gzip

Content-Type: application/json

X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: POST

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

TPP-Redirect-Preferred: true

TPP-Redirect-URI: https://www.tpp.com/cb

TPP-Nok-Redirect-URI: https://www.tpp.com/cb/nok

Date: Sun, 26 Sep 2017 15:02:37 GMT


```
{
        "access": {
                "availableAccounts": "allAccounts"
        },
        "recurringIndicator": false,
        "validUntil": "17/05/2018",
        "frequencyPerDay": 1
}
```


Example of a request for consent without specifying the accounts with SCA decoupled (NOT CURRENTLY SUPPORTED)

POST https://www.hub.com/aspsp-name/v1/consents

Content-Encoding: gzip

Content-Type: application/json

X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: POST

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

TPP-Redirect-Preferred: false

Date: Sun, 26 Sep 2017 15:02:37 GMT


```
{
        "access": {
                "balances": [],
                "transactions": []
        },
        "recurringIndicator": true,
        "validUntil": "17/05/2018",
        "frequencyPerDay": 4
}
```


Example of a response in the event that the SCA redirection with an implicitly generated authorisation sub-resource

HTTP/1.1 201 Created

X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541

ASPSP-SCA-Approach: REDIRECT

Date: Sun, 26 Sep 2017 15:02:43 GMT

Location: /v1/consents/123-asdf-456

Content-Type: application/json


```
{
        "consentStatus": "received",
        "consentId": "123-asdf-456",
        "_links": {
                "scaRedirect": {
                        "href": "https://hub.example.es/authorize"
                },
                "self": {
                        "href": "/v1/consents/123-asdf-456",
                },
                "status": {
                        "href": "/v1/consents/123-asdf-456/status"
                },
```

```
        }
}
```

3.2.3 Get consent status

This service allows the TPP to find out the status of a request for consent initiated beforehand.

3.2.3.1 Request

Endpoint

GET {provider}/{aspsp}/v1/consents/{consent-id}/status

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published.	String	OB	E.g.: www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name
consentId	Resource identifier which references the consent. Sent previously as a response to a request for consent message from the TPP to the HUB.	String	OB	^.{1,36}$ E.g.:123-qwe-456

Query parameters

No additional fields are specified.

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the request.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

Authorization	Bearer Token. Obtained in a pre-authentication on OAuth2.	String	OB	E.g.: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP.	String	OP	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.: PSU-IP-Address: 192.168.16.5
PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^\\d{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the TPP.	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU and the TPP. Allowed values: • POST • GET • PUT • PATCH • DELETE	String	OP	E.g.: PSU-Http-Method: GET
PSU-Device-ID	UUID (Universally Unique Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This ID must not be modified until the application has been uninstalled from the device.	String	OP	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-

				d75958b172e7
PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP.	String	OP	**RFC 2426** ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*$ E.g.: PSU-Geo-Location: GEO:90.023856;25.345963
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

There is no additional data sent.

3.2.3.2 Response

This message is returned to the TPP by the HUB as a response to the consent status request message.

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the request.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

Body

Field	Description	Type	Mand.	Format

consentStatus	Authentication status of the consent. See the defined values in 6.5 Consent status	String	OB	E.g.: "consentStatus":"valid"
psuMessage	Text to be displayed to the PSU.	String	OP	^.{1,512}$ E.g.: “psuMessage":"Information for the PSU"
tppMessages	Message for the TPP.	List<TppMessage>	OP	E.g.: "tppMessages":[…]

3.2.3.3 Examples

Example of a request

GET https://www.hub.com/aspsp-name/v1/consents/123asdf456/status

Accept: application/json

X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: GET

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

Date: Sun, 26 Sep 2017 15:02:48 GMT

Example of a response

HTTP/1.1 200 OK
X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Date: Sun, 26 Sep 2017 15:02:50 GMT

Content-Type: application/json

```
{
        "consentStatus": "valid"
}
```

3.2.4 Retrieve information on the consent

3.2.4.1 Request

This message is sent by the TPP to the HUB as a request to retrieve information from a consent which had been previously created.

Endpoint

GET {provider}/{aspsp}/v1/consents/{consentId}

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published.	String	OB	E.g.: www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name
consentId	Resource identifier which references the consent. Sent previously as a response to a request for consent message from the TPP to the HUB.	String	OB	^.{1,36}$ E.g.: 7890-asdf-4321

Query parameters

No additional fields are specified.

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the request.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Authorization	Bearer Token. Obtained in a pre-authentication on OAuth2.	String	OB	E.g.: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP.	String	OP	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.: PSU-IP-Address: 192.168.16.5

PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^\\d{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the TPP.	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU and the TPP. Allowed values: • POST • GET • PUT • PATCH • DELETE	String	OP	E.g.: PSU-Http-Method: GET
PSU-Device-ID	UUID (Universally Unique Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This ID must not be modified until the application has been uninstalled from the device.	String	OP	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP.	String	OP	**RFC 2426** ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*$ E.g.: PSU-Geo-Location: GEO:90.023856;25.345963

Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……..KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

There is no additional data sent.

3.2.4.2 Response

This message is returned to the TPP by the HUB as a response to the message to retrieve information on the consent.

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the request.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

Body

Field	Description	Type	Mand.	Format
access	Access requested to the services. Only sub-attributes with the tags: "accounts", "balances" and "transactions" are accepted. Additionally, the ASPSP can support the sub-attributes "allPsd2" with the value	Account Access	OB	E.g.: "access": {…}

	"allAccounts".			
recurringIndicator	Possible values: • true: recurring access to the account. • false: one access only.	Boolean	OB	E.g.: "recurringIndicator": true
validUntil	Date to which the consent requests access. To create the maximum possible access period, the value to be used is: 9999-12-31 When the consent is retrieved, the maximum possible date will be returned having been adjusted.	String	OB	**ISODate** E.g.: "validUntil": "17/05/2018"
frequencyPerDay	Indicates the frequency of accessing the account per day. 1 if it is one access only.	Integer	OB	E.g.: "frequencyPerDay":4
lastActionDate	Date on which the last modification was made on the consent.	String	OB	**ISODate** E.g.: "lastActionDate":"2018-01-01"
consentStatus	Authentication status of the consent. Values defined in annexes.	String	OB	E.g.: "consentStatus":"valid"
psuMessage	Text to be displayed to the PSU	String	OP	^.{1,512}$ E.g.: “psuMessage":"Information for the PSU"
tppMessages	Message for the TPP.	List<TppMessage>	OP	E.g.: "tppMessages":[…]

3.2.4.3 Examples

Example of a request

GET https://www.hub.com/aspsp-name/v1/consents/7890-asdf-4321/

Accept: application/json

X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: GET

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

Date: Sun, 26 Sep 2017 15:02:48 GMT

Example of a response on the consent of the specified accounts

HTTP/1.1 200 Ok

X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Date: Sun, 26 Sep 2017 15:02:50 GMT

Content-Type: application/json


```
{
        "access": {
                "balances": [
                {
                        "iban": "ES1111111111111111111111"
                },
                {
                        "iban": "ES2222222222222222222222",

                },
                {
                        "iban": "ES3333333333333333333333"
                }
                ],
                "transactions": [
                {
                        "iban": "ES1111111111111111111111"
                }
                ]
        },
        "recurringIndicator": true,
        "validUntil": "17/05/2018",
        "frequencyPerDay": 4,
        "lastActionDate": "17/01/2018",
        "consentStatus": "valid"
}
```

3.2.5 Remove consent

3.2.5.1 Request

This request may be sent by a TPP to the HUB to request that a previously created consent be removed.

Endpoint

DELETE {provider}/{aspsp}/v1/consents/{consentId}

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published.	String	OB	E.g.: www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name
consentId	Resource identifier which references the consent. Sent previously as a response to a request for consent message from the TPP to the HUB.	String	OB	^.{1,36}$ E.g.: 7890-asdf-4321

Query parameters

No additional fields are specified.

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the request.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Authorization	Bearer Token. Obtained in a pre-authentication on OAuth2.	String	OB	E.g.: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP.	String	OP	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.:

				PSU-IP-Address: 192.168.16.5
PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^\\d{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the TPP.	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU and the TPP. Allowed values: • POST • GET • PUT • PATCH • DELETE	String	OP	E.g.: PSU-Http-Method: DELETE
PSU-Device-ID	UUID (Universally Unique Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This ID must not be modified until the application has been uninstalled from the device.	String	OP	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP.	String	OP	**RFC 2426** ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*$ E.g.: PSU-Geo-Location:

				GEO:90.023856;25.345963
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……..KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

There is no additional data sent.

3.2.5.2 Response

This message is sent by the HUB to the TPP as a response to the consent removal request.

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the request.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

Body

No additional fields are specified.

3.2.5.3 Examples

Example of a request

DELETE https://www.hub.com/aspsp-name/v1/consents/7890-asdf-4321

Accept: application/json

X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: DELETE

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

Date: Sun, 26 Sep 2017 15:02:48 GMT

Example of a response

HTTP/1.1 204 Ok
X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Date: Sun, 26 Sep 2017 15:02:50 GMT

3.3 AIS: Account information service

3.3.1 Reading of the account list

This service enables a list of the PSU's accounts to be obtained.

As a requirement, it is assumed that the PSU has consented to this access and it has been stored by the ASPSP.

Functioning of the service:

Access type	Description
account	If the consent associated with the request has this type of access, the account balances included in the consent with "account" access can be listed.
balances	If the consent associated with the request has this type of access, the accounts included in the consent with the "balances" access can be listed and their balances can be obtained if the ASPSP supports this function.
transactions	If the consent has accounts with this type of access, the said accounts can be listed with the "account" access. This type of access does not entail access to "balances".

allPsd2	If the consent associated with the request has this type of access, the accounts included in the consent can be listed and their balances can be obtained. Note: allPsd2 provides all three types of access.

3.3.1.1 Request

Endpoint

GET {provider}/{aspsp}/v1/accounts{query-parameters}

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published	String	OB	E.g.: www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Authorization	Bearer Token. Obtained in a pre-authentication on OAuth2.	String	OB	E.g.: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
Consent-ID	Consent identifier obtained in the transaction to request consent.	String	OB	^.{1,36}$ E.g.: Consent-ID: 7890-asdf-4321
PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP. It must be included if, and only if this request was actively initiated by the PSU.	String	COND	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.:

				PSU-IP-Address: 192.168.16.5
PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^\\d{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the TPP.	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU and the TPP. Allowed values: • POST • GET • PUT • PATCH • DELETE	String	OP	E.g.: PSU-Http-Method: GET
PSU-Device-ID	UUID (Universally Unique Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This ID must not be modified until the application has been uninstalled from the device.	String	OP	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$

				E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP.	String	OP	**RFC 2426** ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*$ E.g.: PSU-Geo-Location: GEO:90.023856;25.345963
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……..KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No data goes in the body of this request.

3.3.1.2 Response

Header

Field	Description	Type	Mand.	Format

X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

Body

Field	Description	Type	Mand.	Format
accounts	List of available accounts.	List<AccountDetails>	OB	E.g.: "accounts": []
psuMessage	Text to be displayed to the PSU.	String	OP	^.{1,512}$ E.g.: “psuMessage":"Information for the PSU"
tppMessages	Message for the TPP.	List<TppMessage>	OP	E.g.: "tppMessages": […]

3.3.1.3 Examples

Example of a request to a obtain list of available accounts from the PSU

GET https://www.hub.com/aspsp-name/v1/accounts

Content-Encoding: gzip

Content-Type: application/json

X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

Consent-ID: 7890-asdf-4321

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: GET

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

Date: Sun, 26 Sep 2017 15:02:48 GMT

Example of a response to obtain list of the PSU’s accessible accounts

Response in which the consent has been given for two distinct IBANs.

HTTP/1.1 200 Ok
X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Date: Sun, 26 Sep 2017 15:02:50 GMT

Content-Type: application/json


```
{
        "accounts": [
    {
                "resourceId": "3dc3d5b3-7023-4848-9853-f5400a64e80f",
                "iban": "ES1111111111111111111111",
                "currency": "EUR",
                "product": "Girokonto",
                "name": "Main Account",
                "_links": {
                        "balances": {
                                "href": "/v1/accounts/3dc3d5b3-7023-4848-9853-f5400a64e80f/balances"
                        },
                        "transactions": {
                                "href": "/v1/accounts/3dc3d5b3-7023-4848-9853-f5400a64e80f/transactions"
                        }
                }
    },
    {
                "resourceId": "3dc3d5b3-7023-4848-9853-f5400a64e81g",
                "iban": "ES2222222222222222222222",
                "currency": "USD",
                "name": "US Dollar Account",
                "_links": {
                        "balances": {
                                "href": "/v1/accounts/3dc3d5b3-7023-4848-9853-f5400a64e81g/balances"
                        }
                }
        }
        ]
}
```

3.3.2 Reading of the account details

This service allows an account's details to be read.

As a requirement, it is assumed that the PSU has consented to this access and it has been stored by the ASPSP.

Operation of the service according to the type of access specified in the consent:

Access type	Description
account	If the consent associated with the request has this type of access to the account, it can be queried.
balances	If the consent associated with the request has this type of access to the account, it can be queried and its balances can be obtained, provided that the ASPSP supports this function.
transactions	If the consent has accounts with this type of access, the said account can be queried with the "account" access type. This type of access does not entail access to "balances".
allPsd2	If the consent associated with the request has this type of access to the account, it can be queried and its balances can be obtained. Note: allPsd2 provides all three types of access.

3.3.2.1 Request

Endpoint

GET {provider}/{aspsp}/v1/accounts/{account-id}

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published	String	OB	E.g.: www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name
account-id	Unique identifier assigned by the ASPSP for the account.	String	OB	^.{1,100}$ E.g.: account-id=a1q5w

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.:

				X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Authorization	Bearer Token. Obtained in a pre-authentication on OAuth2.	String	OB	E.g.: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
Consent-ID	Consent identifier obtained in the transaction to request consent.	String	OB	^.{1,36}$ E.g.: Consent-ID: 7890-asdf-4321
PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP. It must be included if, and only if this request was actively initiated by the PSU.	String	COND	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.: PSU-IP-Address: 192.168.16.5
PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^\\d{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the TPP.	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU and the TPP. Allowed values: • POST • GET • PUT • PATCH • DELETE	String	OP	E.g.: PSU-Http-Method: GET
PSU-Device-ID	UUID (Universally Unique	String	OP	**UUID**

	Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This ID must not be modified until the application has been uninstalled from the device.			^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP.	String	OP	**RFC 2426** ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*$ E.g.: PSU-Geo-Location: GEO:90.023856;25.345963
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No data goes in the body of this request.

3.3.2.2 Response

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

Body

Field	Description	Type	Mand.	Format
account	Detailed information of the account	AccountDetails	OB	E.g.: "account": {…}
psuMessage	Text to be displayed to the PSU	String	OP	^.{1,512}$ E.g.: “psuMessage":"Information for the PSU"
tppMessages	Message for the TPP.	List<TppMessage>	OP	E.g.: "tppMessages": […]

3.3.2.3 Examples

Example of a request

GET https://www.hub.com/aspsp-name/v1/accounts/3dc3d5b3-7023-4848-9853-f5400a64e80f

Content-Encoding: gzip

Content-Type: application/json

X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

Consent-ID: 7890-asdf-4321

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: GET

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

Date: Sun, 26 Sep 2017 15:02:48 GMT

Example of a response for an account with just one currency

HTTP/1.1 200 Ok
X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Date: Sun, 26 Sep 2017 15:02:50 GMT

Content-Type: application/json


```
{
        "account": {
                "resourceId": "3dc3d5b3-7023-4848-9853-f5400a64e80f",
                "iban": "ES1111111111111111111111",
```

```
                "currency": "EUR",
                "product": "Girokonto",

                "name": "Main Account",
                "_links": {
                        "balances": {
                                "href": "/v1/accounts/3dc3d5b3-7023-4848-9853-
                        f5400a64e80f/balances"
                        },
                        "transactions": {
                                "href": "/v1/accounts/3dc3d5b3-7023-4848-9853--
                        5400a64e80f/transactions"
                        }
                }
    }
}
```


3.3.3 Reading of balances

This service allows the balances of a particular account to be obtained by its identifier.

As a requirement, it is assumed that the PSU has consented to this access and it has been stored by the ASPSP.

Operation of the service according to the type of access specified in the consent:

Access type	Description
account	This service cannot be used with this type of access.
balances	If the consent associated with the request has this type of access to the account balances, they can be queried.
transactions	This service cannot be used with this type of access.
allPsd2	If the consent associated with the request has this type of access to the account balances, they can be queried. Note: allPsd2 provides all three types of access.

3.3.3.1 Request

Endpoint

GET {provider}/{aspsp}/v1/accounts/{account-id}/balances

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published	String	OB	E.g.: www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name
account-id	Account identifier to be used to read the data. Previously obtained in the reading of the list of accounts. It must be valid at least for the duration of the consent. This ID can be tokenised.	String	OB	^.{1,100}$ E.g.: account-id=a1q5w

Query parameters

No additional fields are specified.

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Authorization	Bearer Token. Obtained in a pre-authentication on OAuth2.	String	OB	E.g.: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
Consent-ID	Consent identifier obtained in the transaction to request consent.	String	OB	^.{1,36}$ E.g.: Consent-ID: 7890-asdf-4321

PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP. It must be included if, and only if this request was actively initiated by the PSU.	String	COND	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.: PSU-IP-Address: 192.168.16.5
PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^\\d{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the TPP.	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU and the TPP. Allowed values: • POST • GET • PUT • PATCH • DELETE	String	OP	E.g.: PSU-Http-Method: GET
PSU-Device-ID	UUID (Universally Unique Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This ID must not be modified until the application has been uninstalled from the device.	String	OP	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP.	String	OP	**RFC 2426** ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*$

				E.g.: PSU-Geo-Location: GEO:90.023856;25.345963
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No data goes in the body of this request.

3.3.3.2 Response

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

Body

Field	Description	Type	Mand.	Format
account	Identifier of the account being queried. Note: recommended to	AccountReference	OP	E.g.: "account": {…}

	be used as it could become a mandatory parameter in future versions.			
balances	A list of balances of a certain account.	List<Balance>	OB	E.g.: "balances": {…}
psuMessage	Text to be displayed to the PSU.	String	OP	^.{1,512}$ E.g.: “psuMessage":"Information for the PSU"
tppMessages	Message for the TPP.	List<TppMessage>	OP	E.g.: "tppMessages":[…]

3.3.3.3 Examples

Example of a request

GET https://www.hub.com/aspsp-name/accounts/3dc3d5b3-7023-4848-9853-f5400a64e81g/balances

Accept: application/json

X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

Consent-ID: 7890-asdf-4321

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: GET

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

Date: Sun, 26 Sep 2017 15:02:48 GMT

Example of a response

HTTP/1.1 200 Ok
X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Date: Sun, 26 Sep 2017 15:02:50 GMT

Content-Type: application/json


```
{
        "account": {
                "iban": "ES1111111111111111111111"
```

```
        },
        "balances": [
        {
                "balanceType": "closingBooked",
                "balanceAmount": {
                        "currency": "EUR",
                        "amount": "500.00"
                }

        },
        {
                "balanceType": "expected",
                "balanceAmount": {
                        "currency": "EUR",
                        "amount": "900.00"
                }
        }
        ]
}
```


3.3.4 Reading of the transactions

This service allows for transactions of a particular account to be obtained via its identifier.

As a requirement, it is assumed that the PSU has consented to this access and it has been stored by the ASPSP.

Operation of the service according to the type of access specified in the consent:

Access type	Description
account	This service cannot be used with this type of access.
balances	If the consent associated with the request has this type of access it will allow the balances to be requested, provided that the ASPSP supports this.
transactions	If the consent associated with the request has this type of access to the account movements, they can be queried.
allPsd2	If the consent associated with the request has this type of access to the account balances, they can be queried. Note: allPsd2 provides all three types of access.

3.3.4.1 Request

Endpoint

GET {provider}/{aspsp}/v1/accounts/{account-id}/transactions{query-parameters }

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published	String	OB	E.g.: www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name
account-id	Account identifier to be used to read the data. Previously obtained in the reading of the list of accounts. It must be valid at least for the duration of the consent. This ID can be tokenised.	String	OB	^.{1,100}$ E.g.: account-id=a1q5w

Query parameters

Field	Description	Type	Mand.	Format
dateFrom	Query start date. It is included if the “deltaList” is not included.	String	COND	**ISODate** E.g.: dateFrom=2017-10-25
dateTo	Query end date. The default value is the current date if nothing is entered.	String	OP	**ISODate** E.g.: dateTo=2017-11-05
entryReferenceFrom	If specified, it will give us the results from the call with the preceding entryReferenceFrom given. If it is content, the dateFrom and dateTo attributes are ignored.	String	OP	E.g.: entryReferenceFrom=1234-asdf-567
bookingStatus	Status of returned transactions. The permitted status codes are “booked”, “pending” and “both”. The mandatory ones for the ASPSPs are “booked”.	String	OB	E.g.: bookingStatus=booked

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-

				0fd5-43d2-946e-d75958b172e7
Authorization	Bearer Token. Obtained in a pre-authentication on OAuth2.	String	OB	E.g.: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
Consent-ID	Consent identifier obtained in the transaction to request consent.	String	OB	^.{1,36}$ E.g.: Consent-ID: 7890-asdf-4321
Accept	Formats supported by the ASPSP. The TPP can specify the order and type. Supported values: application/json	String	OP	^.{1,50}$ E.g.: Accept: application/json
PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP. It must be included if, and only if this request was actively initiated by the PSU.	String	COND	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.: PSU-IP-Address: 192.168.16.5
PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^\\d{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the TPP.	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU and the TPP. Allowed values: • POST • GET • PUT	String	OP	E.g.: PSU-Http-Method: GET

- PATCH
- DELETE

PSU-Device-ID	UUID (Universally Unique Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This ID must not be modified until the application has been uninstalled from the device.	String	OP	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP.	String	OP	**RFC 2426** ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*$ E.g.: PSU-Geo-Location: GEO:90.023856;25.345963
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No data goes in the body of this request.

3.3.4.2 Response

Header

Field	Description	Type	Mand.	Format
Content-Type	Possible values:	String	OB	E.g.: Content-Type: application/json

	application/json			
X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

Body

Field	Description	Type	Mand.	Format
account	Identifier of the account being queried. Note: recommended to be used as it could become a mandatory parameter in future versions.	AccountReference	OP	E.g.: "account": {…}
transactions	The data is returned in JSON format, when the returned data is small in size.	AccountReport	OP	E.g.: "transactions": {…}
_links	List of hyperlinks to be recognised by the TPP. Types supported in this response:	Links	OP	E.g.: "_links": {…}
psuMessage	Text to be displayed to the PSU	String	OP	^.{1,512}$ E.g.: "psuMessage": "Information for the PSU"
tppMessages	Message for the TPP.	List<TppMessage>	OP	E.g.: "tppMessages": […]

3.3.4.3 Examples

Example of search request sending search criteria including dateTo and dateFrom

GET

https://www.hub.com/aspsp-name/v1/accounts/qwer3456tzui7890/transactions?dateFrom=2017-10-25&dateTo=2017-11-05&bookingStatus=booked

Accept: application/json

X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

Consent-ID: 7890-asdf-4321

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: GET

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

Date: Sun, 26 Sep 2017 15:02:48 GMT

Example of a search request with the search entryReferenceFrom criterion

GET https://www.hub.com/aspsp-name/v1/accounts/qwer3456tzui7890/transactions?entryReferenceFrom=1234-asd-4564700&bookingStatus=booked

Accept: application/json

X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

Consent-ID: 7890-asdf-4321

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: GET

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

Date: Sun, 26 Sep 2017 15:02:48 GMT

Example of response with pagination

HTTP/1.1 200 Ok
X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Date: Sun, 26 Sep 2017 15:02:50 GMT

Content-Type: application/json


```
{
        "account": {
                "iban": "ES1111111111111111111111"
```

```
},
"transactions": {
        "booked": [
        {
                "entryReference": "1234567",
                },
                "transactionAmount": {
                        "currency": "EUR",
                        "amount": "256.67"
                },
                "bookingDate": "25/10/2017",
                "valueDate": "26/10/2017",
                "remittanceInformationUnstructured": "Example for Remittance Information"
        },
        {
                "entryReference": "1234568",
                },
                "transactionAmount": {
                        "currency": "EUR",
                        "content": "343.01"
                },
                "bookingDate": "25/10/2017",
                "valueDate": "26/10/2017",
                "remittanceInformationUnstructured": "Another example for Remittance
        Information"
        }
        ],
        "_links": {
                "account": {
                        "href": "/v1/accounts/qwer3456tzui7890"
                },
                "first": {
                        "href": "/v1/accounts/ qwer3456tzui7890/transactions?
                },
                "next": {
                        "href": "/v1/accounts/ qwer3456tzui7890/transactions? "
                },
        }
}
```

}

Example of response with error

{
"tppMessages": [{
"category": "ERROR",
"code": "ACCESS_EXCEEDED"
}
]
}

3.4 FCS: Fund confirmation service

3.4.1 Fund query

This type of message is used in the fund query service. The TPP sends the request to the HUB to check for funds for a specified amount on the specified account.

.

The HUB communicates with the ASPSP to ask whether the funds are available, and after checking, it answers the TPP.

3.4.1.1 Request

Endpoint

POST {provider}/{aspsp}/v1/funds-confirmations

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published	String	OB	E.g.: www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-

	transaction.			9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,512}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ…….KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

Field	Description	Type	Mand.	Format
cardNumber	Card number issued by the PIISP. This must be sent if it is available.	String	OP	E.g.: "cardNumber": "1111-1111-1111-1111"
account	PSU account number.	Account Reference	OB	E.g.: "account": {"iban":"ES1111111111111111111"}
payee	Business in which the card is accepted as information for the PSU.	String	OP	^.{1,70}$ E.g.: "payee":"Commercial name"
instructedAmount	This contains the amount and currency to be queried.	Amount	OB	E.g.: "instructedAmount": {…}

3.4.1.2 Response

This message is returned to the TPP by the HUB as a response to the message to confirm funds.

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the transaction and sent through the HUB to the ASPSP.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

Body

Field	Description	Type	Mand.	Format
fundsAvailable	Takes the “true” value "true" if sufficient funds are available at the time of the request, otherwise it will be “false”.	Boolean	OB	E.g.: "fundsAvailable": true
tppMessages	Message for the TPP.	List<TppMessage>	OP	E.g.: "tppMessages": […]

3.4.1.3 Examples

Example of a request

POST https://www.hub.com/aspsp-name/v1/funds-confirmations

Content-Encoding: gzip

Content-Type: application/json

X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc

Date: Sun, 17 Oct 2017 13:15:17 GMT

```
{
        "cardNumber": "87432569872156",
        "account": {
                "iban": "ES1111111111111111111111"
        },
        "payee": "Name123",
        "instructedAmount": {
                "currency": "EUR",
                "amount": "153.50"
        }
}
```

Example of response with available funds

HTTP/1.1 200 Ok
X-Request-ID: 0ee25bf4-6ff1-11e8-adc0-fa7ae01bbebc

Date: Sun, 26 Sep 2017 15:02:47 GMT

Content-Type: application/json

{

"fundsAvailable": true

}

3.5 OAuth2 as a pre-step

3.5.1 Get authorisation

3.5.1.1 Request

The TPP redirects the PSU's browser so it carries out the following request (redirection) to the Hub:

Endpoint

GET
/{aspsp}/authorize?response_type={response_type}&client_id={client_id}&scope={scope}&state={state}&redirect_uri={redirect_uri}&code_challenge={code_challenge}&code_challenge_method={code_challenge_method}

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published.	String	OB	E.g.: www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name

Query parameters

Field	Description	Type	Mand.	Format
response_type	The value should be set as "code".	String	OB	E.g.: response_type=code

client_id	"organizationIdentifier" provided in the eIDAS certificate made up of: - PSD - 2 characters of the NCA country code according to the ISO 3166 - Character "-" - 2-8 characters for the NCA identifier (A-Z in upper case) - Character "-" - PSP identifier	String	OB	^.{1,70}$ E.g.: client_id=PSDES-BDE-3DFD246
scope	Possible Scopes: • PIS • AIS • SVA More than one can be specified separating it by a space (%20).	String	OB	^.{1,64}$ E.g.: scope=PIS%20AIS%20SVA
state	Opaque value, generated by the TPP. Used to prevent "cross-site request forgery" (XSRF) attacks.	String	OB	^.{1,64}$ E.g.: state=XYZ
redirect_uri	URL returned to the HUB which will provide the authorisation code that will be subsequently used to obtain the access token.	String	OB	^.{1,250}$ E.g.: redirect_uri=https%3A%2F%2Fwww%2Etpp%2Ecom%2Fcb
code_challenge	PKCE challenge used to prevent code injection attacks. According to RFC 7636.	String	OB	^.{1,128}$ E.g.: code_challenge=E9Melhoa2OwvFrEMTJguCHaoeK1t8URWbuGJSstw-cM
code_challenge_method	Method for checking the code which could be "plain" or "S256". Preferred S256 (SHA 256)	String	OP	^.{1,120}$ E.g.: code_challenge_method=S256

Header

No additional fields are specified.

Body

No data goes in the body of this response.

3.5.1.2 OK Response

Response if the request has been processed correctly. This is the result from the redirection initiated by the HUB from the PSU's browser to the return URL provided by the TPP.

Path

No additional fields are specified.

Query Parameters

Field	Description	Type	Mand.	Format
Location	This contains the URI where the redirection to the TPP is performed.	String	OB	E.g.: Location: https://www.tpp.com/cb
code	Authorisation Code for single use generated by the HUB. The recommended duration of the code should not exceed 10 minutes.	String	OB	^.{1,64}$ E.g.: code=SplxlOBeZQQYbYS6WxSbIA
state	Opaque value, generated by the TPP. Used to maintain the state between the request and response. The HUB will include it when PSU's browser is redirected back to the TPP. Used to prevent "cross-site request forgery" attacks.	String	OB	^.{1,64}$ E.g.: state=XYZ

Body

No data goes in the body of this request.

3.5.1.3 Error Response

Response if an error has occurred in the request. This is the result from the redirection initiated by the HUB from the PSU's browser to the return URL provided by the TPP.

Path

No additional fields are specified.

Query Parameters

Field	Description	Type	Mand.	Format
Location	This contains the URI where the redirection to the TPP is performed.	String	OB	E.g.: Location: https://www.tpp.com/cb

error	Code indicating an error has occurred.	String	OB	E.g.: error=invalid_request
state	Value generated by the TPP. Used to maintain the state between the request and response. The HUB will send back the response.	String	OB	E.g.: state=XYZ

Body

No data goes in the body of this request.

3.5.1.4 Examples

Example of a request

GET https://www.hub.com/aspsp-name/authorize?response_type=code&client_id=PSDES-BDE-3DFD246&scope=PIS%20AIS%20SVA&state=xyz&redirect_uri=https%3A%2F%2Fwww%2Ehub%2Ecom%2Fcb&code_challenge=E9Melhoa2OwvFrEMTJguCHaoeK1t8URWbuGJSstw-cM&code_challenge_method=S256

Example OK response

HTTP/1.1 302 Found

Location: https://www.tpp.com/cb?code=SplxlOBeZQQYbYS6WxSbIA&state=xyz

Example NOK response

HTTP/1.1 302 Found

Location: https://www.tpp.com/cb?error=access_denied&state=xyz

3.5.2 Obtaining the access token

This message is sent by the HUB to ASPSP to exchange the authorization code obtained in the previous step and get the access and refresh tokens.

3.5.2.1 Request

Endpoint

POST {provider}/{aspsp}/token

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published.	String	OB	E.g.: www.hub.com

aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name

Request Parameters

Field	Description	Type	Mand.	Format
grant_type	It must have the value of "authorization_code"	String	OB	E.g.: grant_type=authorization_code
client_id	"organizationIdentifier" provided in the eIDAS certificate made up of: - PSD - 2 characters of the NCA country code according to the ISO 3166 - Character "-" - 2-8 characters for the NCA identifier (A-Z in upper case) - Character "-" - PSP identifier	String	OB	^.{1,70}$ E.g.: client_id=PSDES-BDE-3DFD246
code	Authorisation code returned by the ASPSP in the previous authorisation code returned.	String	OB	^.{1,64}$ E.g.: code=SplxlOBeZQQYbYS6WxSbIA
redirect_uri	The URL returned to the TPP where the authorisation code is reported. It must be the same as that reported in the request for the authorisation code.	String	OB	^.{1,250}$ E.g.: redirect_uri=https%3A%2F%2Fwww%2Etpp%2Ecom%2Fcb
code_verifier	The proof key code, PKCE, used to prevent code injection attacks. Based on RFC 7636.	String	OB	E.g.: code_verifier=dBjftJeZ4CVP-mB92K27uhbUJU1p1r_wW1gFWFOEjXk

Header

No additional fields are specified.

Body

Fields do not go in the Body.

3.5.2.2 OK Response

Response if the request has been processed correctly. This result is given to the request to obtain an access token sent by the HUB to the PSU.

Body

Field	Description	Type	Mand.	Format
access_token	Access token issued by the HUB and attached to the scope asked for in the requested and confirmed by the PSU.	String	OB	^.{1,64}$ E.g.: "access_token":"2YotnFZFEjr1zCsicMWpAA"
token_type	Type of token issued. It will take the value of "Bearer".	String	OB	E.g.: "token_type":"Bearer"
expires_in	Duration of the access token in seconds.	Integer	OP	E.g.: "expires_in":300
refresh_token	Refresh token. It can be used to obtain a new access token if it expires.	String	OP	^.{1,64}$ E.g.: "refresh_token":"tGzv3JOKF0XG5Qx2TlKWIA"

3.5.2.3 Error Response

Response if an error has occurred in the request. This result is given to the request for an access token sent by the TPP to the HUB.

Body

Field	Description	Type	Mand.	Format
error	Code indicating an error has occurred. See more return codes in the annexes.	String	OB	E.g.: "error":"invalid_request"

3.5.2.4 Examples

Example of a request

POST /token HTTP/1.1

Host: https://www.hub.com/aspsp-name

Content-Type: application/x-www-form-urlencoded

grant_type=authorization_code&client_id=PSDES-BDE-3DFD246&code=SplxlOBeZQQYbYS6WxSbIA&redirect_uri=https%3A%2F%2Fwww%2Etpp%2Ecom%2Fcb&code_verifier=dBjftJeZ4CVP-mB92K27uhbUJU1p1r_wW1gFWFOEjXk

Example OK response

HTTP/1.1 200 OK

Content-Type: application/json;charset=UTF-8

Cache-Control: no-store

Pragma: no-cache

{
"access_token": "2YotnFZFEjr1zCsicMWpAA",
"token_type": "Bearer",
"expires_in": 3600,
"refresh_token": "tGzv3JOKF0XG5Qx2TlKWIA"
}

Example NOK response

HTTP/1.1 400 Bad Request

Content-Type: application/json;charset=UTF-8

Cache-Control: no-store

Pragma: no-cache

{
"error": "invalid_request"
}

3.6 Refresh token request

This service is used when the HUB reports that the access_token has expired. We can refresh the access_token by sending the refresh_token associated with the expired access_token through this request.

3.6.1 Request

Endpoint

POST {provider}/{aspsp}/token

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published.	String	OB	E.g.: www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name
grant_type	It must have the value of “refresh_token”	String	OB	E.g.: grant_type=refresh_token

client_id	"organizationIdentifier" provided in the eIDAS certificate made up of: - PSD - 2 characters of the NCA country code according to the ISO 3166 - Character "-" - 2-8 characters for the NCA identifier (A-Z in upper case) - Character "-" - PSP identifier	String	OB	^.{1,70}$ E.g.: client_id=PSDES-BDE-3DFD246
refresh_token	Refresh token to obtain a valid access_token.	String	OB	^.{1,64}$ E.g.: refresh_token=tGzv3JOKF0XG5Qx2TlKWIA

Header

No additional data is specified.

Body

No additional data is specified.

3.6.2 Response

Field	Description	Type	Mand.	Format
access_token	Access token issued by the HUB and attached to the scope asked for in the requested and confirmed by the PSU.	String	OB	^.{1,64}$ E.g.: "access_token":"83kdFZFEjr1zCsicMWBB"
token_type	Type of token issued. It will take the value of "Bearer".	String	OB	E.g.: "token_type":"Bearer"
expires_in	Duration of the access token in seconds.	Integer	OP	E.g.: "expires_in":300
refresh_token	Refresh token. It can be used to obtain a new access token if it expires.	String	OP	^.{1,64}$ E.g.: "refresh_token":"28JD3JOKF0NM5Qx2TlCCC"

3.6.3 Examples

POST /token HTTP/1.1

Host: https://www.hub.com

Content-Type: application/x-www-form-urlencoded

grant_type=refresh_token&client_id=PSDES-BDE-3DFD246&refresh_token=tGzv3JOKF0XG5Qx2TlKWIA

Example OK response

HTTP/1.1 200 OK

Content-Type: application/json;charset=UTF-8

Cache-Control: no-store

Pragma: no-cache

{
"access_token": "83kdFZFEjr1zCsicMWBB",
"token_type": "Bearer",
"expires_in": 300,
"access_token": "28JD3JOKF0NM5Qx2TlCCC"
}

3.7 Common processes in the services

3.7.1 Initiate authorisation process (explicit)

Use

The process of initiating the authorisation is necessary to be able to create an authorisation sub-resource (if it has not been created implicitly). It applies in the following scenarios:

- The ASPSP specifies with a "startAuthorisation" link in the response to a request to cancel a payment that an explicit initiation of the authorisation process is required by the TPP.

3.7.1.1 Request

Endpoint in the event of a Payment Cancellation

POST {provider}/{aspsp}/v1/{payment-service}/{payment-product}/{paymentId}/cancellation-authorisations

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published.	String	OB	E.g.: hub.example.es
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name
payment-service	Possible values are: • payments	String	COND	E.g.: {provider}/v1/payme

	• periodic-payments			nts
payment-product	Payment product to use. List of supported products: • sepa-credit-transfers	String	COND	E.g.: {provider}/v1/payments/sepa-credit-transfers/
paymentId	Resource identifier referred to the payment initiation.	String	OB	^.{1,36}$ E.g.:123-qwe-456

Query parameters

Additional parameters for this request are not specified.

Header

Field	Description	Type	Mand.	Format
Content-Type	Value: application/json	String	OB	Content-Type: application/json
X-Request-ID	Unique identifier assigned by the TPP for the transaction and sent through the HUB to the ASPSP	String	OB	UUID ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Authorization	Bearer Token. Obtained in a pre-authentication on OAuth2.	String	OB	E.g.: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP. If it is not available, the TPP must use the IP address used by the TPP when it sends this request.	String	OP	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.: PSU-IP-Address: 192.168.16.5
PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^\\d{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-

	PSU and the TPP.			ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the TPP.	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU and the TPP. Allowed values: • POST • GET • PUT • PATCH • DELETE	String	OP	E.g.: PSU-Http-Method: POST
PSU-Device-ID	UUID (Universally Unique Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This ID must not be modified until the application has been uninstalled from the device.	String	OP	UUID ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP.	String	OP	RFC 2426 ^GEO:[\\d]*.[\\d]*[;,][\\d]*.[\\d]*$ E.g.: PSU-Geo-Location: GEO:90.023856;25.345963
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional fields are specified.

3.7.1.2 Response

Header

Field	Description	Type	Mand.	Format
Location	It contains the generated link relating to the resource.	String	OB	E.g.: Location: /v1/payments/{payment-product}/{paymentId}/authorisations/123qwert/456
X-Request-ID	Unique identifier assigned by the TPP for the transaction and sent through the HUB to the ASPSP.	String	OB	UUID ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
ASPSP-SCA-Approach	Returned value if the SCA method has been set. Possible values: • REDIRECT The SCA based on OAuth2 will be taken as a REDIRECT.	String	COND	E.g.: ASPSP-SCA-Approach: REDIRECT

Body

Field	Description	Type	Mand.	Format
scaStatus	SCA Status	String	OB	E.g.: "scaStatus": "received"
authorisationId	Resource identifier referring to the created authorisation sub-resource.	String	OB	^.{1,36}$ E.g.: "authorisationId": "1b3ab8e8-0fd5-43d2-946e-d75958b172e7"
scaMethods	This element is content if the SCA is required and the PSU can choose between different authentication methods. Note: Provided that the ASPSP supports the SCA selection method.	List<AuthenticationObject>	COND	E.g.: "scaMethods": […]
_links	List of hyperlinks to be recognised by the TPP. Types supported in this response: • scaRedirect: in the event of the SCA redirect. Link where the PSU's browser	Links	OB	E.g.: "_links": {…}

	must be redirected by the TPP. • scaStatus: link to check the SCA status corresponding to the authorisation sub-resource.			
psuMessage	Text sent to the TPP through the HUB to be displayed to the PSU.	String	OP	^.{1,512}$ E.g.: "psuMessage": "Information for the PSU"
tppMessages	Message for the TPP sent though the HUB.	List<TppMessage>	OP	E.g.: "tppMessages": […]

3.7.1.3 Examples

Example of a request for a Payment Cancellation

```
POST https://hub.example.es/aspsp-name/v1/payments/sepa-credit-transfers/qwert1234tzui7890/cancellation-authorisations
Content-Encoding: gzip
Content-Type: application/json
X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541
Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
PSU-IP-Address: 192.168.8.16
PSU-IP-Port: 443
PSU-Accept: application/json
PSU-Accept-Charset: utf-8
PSU-Accept-Encoding: gzip
PSU-Accept-Language: es-ES
PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0
PSU-Http-Method: POST
PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc
PSU-GEO-Location: GEO:12.526347;54.649862
Date: Sun, 26 Sep 2017 15:02:37 GMT
```

Example of a response in the event of the SCA redirect

```
HTTP/1.1 201 Created
X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541
ASPSP-SCA-Approach: REDIRECT
Date: Sun, 26 Sep 2017 15:02:43 GMT
Location: /v1/payments/sepa-credit-transfers/123-qwe-456/cancellation-authorisations/123auth456
Content-Type: application/json
```

```
{
      "scaStatus": "received",
      "authorisationId": "123auth456",
      "_links": {
            "scaRedirect": {
                  "href": "https://hub.example.es/authorize "
            },
            "scaStatus": {
                  "href":     "/v1/payments/sepa-credit-transfers/123-qwe-
            456/cancellation-authorisations/123auth456"
            }
      }
}
```


3.7.2 Obtain authorisation sub-resources

This will provide an array of resource identifiers for all the authorization sub-resources generated.

3.7.2.1 Request

Endpoint in the event of a Payment Cancellation

GET {provider}/{aspsp}/v1/{payment-service}/{payment-product}/{paymentId}/cancellation-authorisations

Path

Field	Description	Type	Mand.	Format
provider	URL of the ASPSP where the service is published.	String	OB	E.g.: hub.example.es
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name
payment-service	Possible values are: • payments • bulk-payments • periodic-payments	String	COND	E.g.: {provider}/v1/payments
payment-product	Payment product to use. List of supported products: • sepa-credit-transfers • instant-sepa-credit-transfers • target-2-payments • cross-border-credit-transfers	String	COND	E.g.: {provider}/v1/payments/sepa-credit-transfers/

paymentId	Resource identifier referred to the payment initiation.	String	OB	^.{1,36}$ E.g.:123-qwe-456

Query parameters

No additional fields are specified.

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the transaction and sent through the HUB to the ASPSP	String	OB	UUID ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
TPP-HUB-ID	TPP identifier reported through the HUB. TPP registration number.	String	OP	^.{1,70}$ E.g.: TPP-HUB-ID: PSDES-BDE-3DFD21
Authorization	Bearer Token. Obtained in a pre-authentication on OAuth2.	String	OB	E.g.: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP.	String	OP	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.: PSU-IP-Address: 192.168.16.5
PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^\\d{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-

				ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the TPP.	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU and the TPP. Allowed values: • POST • GET • PUT • PATCH • DELETE	String	OP	E.g.: PSU-Http-Method: DELETE
PSU-Device-ID	UUID (Universally Unique Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This ID must not be modified until the application has been uninstalled from the device.	String	OP	UUID ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP	String	OP	RFC 2426 ^GEO:[\\d]*.[\\d]*[;,][\\d]*.[\\d]*$ E.g.: PSU-Geo-Location: GEO:90.023856;25.345963
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional data is specified.

3.7.2.2 Response

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the transaction and sent through the HUB to the ASPSP.	String	OB	UUID ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

Body

Field	Description	Type	Mand.	Format
cancellationIds	Array of cancellationIds connected to the payment resource. Note: mandatory if it is a cancellation.	Array<String>	COND	E.g.: "cancellationIds": [...]
psuMessage	Text sent to the TPP through the HUB to be displayed to the PSU.	String	OP	^.{1,512}$ E.g.: "psuMessage": "Information for the PSU"
tppMessages	Message for the TPP sent though the HUB.	List<TppMessage>	OP	E.g.: "tppMessages": [...]

3.7.2.3 Examples

Example of a request

```
GET https://hub.example.es/asp-name/v1/payments/sepa-credit-transfers/123-qwe-456/cancellation-authorisations
X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc
Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
PSU-IP-Address: 192.168.8.16
Content-Type: application/json
Date: Sun, 26 Sep 2017 15:02:48 GMT
```

Example of a response

```
HTTP/1.1 200 Ok
X-Request-ID: 0ee25bf4-6ff1-11e8-adc0-fa7ae01bbebc
Date: Sun, 26 Sep 2017 15:02:47 GMT
{
      "cancellationIds": ["123auth456"]
}
```

3.7.3 Obtain SCA status

Message sent by the TPP to the ASPSP through the Hub to create an authorisation sub-resource.

3.7.3.1 Request

Endpoint in the event of a Payment Cancellation

GET {provider}/{aspsp}/v1/{payment-service}/{payment-product}/{paymentId}/cancellation-authorisations/{cancellationId}

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published.	String	OB	E.g.: hub.example.es
aspsp	Name of the ASPSP to which the request is made.	String	OB	E.g.: aspsp-name
payment-service	Possible values are: • payments • bulk-payments • periodic-payments	String	COND	E.g.: {provider}/v1/payments
payment-product	Payment product to use. List of supported products: • sepa-credit-transfers • instant-sepa-credit-transfers • target-2-payments • cross-border-credit-transfers	String	COND	E.g.: {provider}/v1/payments/sepa-credit-transfers/
paymentId	Resource identifier referred to the payment initiation.	String	OB	^.{1,36}$ E.g.:123-qwe-456
cancellationId	Sub-resource identifier associated with the payment cancellation.	String	COND	^.{1,36}$

Query parameters

No additional fields are specified.

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the transaction and sent through the HUB to the ASPSP	String	OB	UUID ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-

				[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Authorization	Bearer Token. Obtained in a pre-authentication on OAuth2.	String	OB	E.g.: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
PSU-IP-Address	IP Address of the HTPP request between the PSU and the TPP.	String	OP	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g.: PSU-IP-Address: 192.168.16.5
PSU-IP-Port	IP Port of the HTPP request between the PSU and the TPP, if available.	String	OP	^\\d{1,5}$ E.g.: PSU-IP-Port: 443
PSU-Accept	Accept header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept: application/json
PSU-Accept-Charset	Accept charset header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTPP request between the PSU and the TPP.	String	OP	^.{1,50}$ E.g.: PSU-Accept-Language: es-ES
PSU-User-Agent	Browser or operating system of the HTTP request between the PSU and the TPP.	String	OP	E.g.: PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used in the interface between the PSU and the TPP. Allowed values: • POST • GET • PUT • PATCH • DELETE	String	OP	E.g.: PSU-Http-Method: GET
PSU-Device-ID	UUID (Universally Unique Identifier) for a device. The UUID identifies the device or an installation of an application on a device. This ID must not be modified until	String	OP	UUID ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-

	the application has been uninstalled from the device.			d75958b172e7
PSU-Geo-Location	Corresponding location of the HTPP request between the PSU and the TPP	String	OP	RFC 2426 ^GEO:[\\d]*.[\\d]*[;,][\\d]*.[\\d]*$ E.g.: PSU-Geo-Location: GEO:90.023856;25.345963
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	^.{1,100}$ E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the TPP. See 6.1 Signature for more information.	String	OB	See annexes
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	^.{1,5000}$ E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……..KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional data is specified.

3.7.3.2 Response

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the transaction and sent through the HUB to the ASPSP.	String	OB	UUID ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

Body

Field	Description	Type	Mand.	Format
scaStatus	SCA Status	String	OB	E.g.: "scaStatus": "finalised"
psuMessage	Text sent to the TPP through	String	OP	^.{1,512}$

	the HUB to be displayed to the PSU.			E.g.: "psuMessage": "Information for the PSU"
tppMessages	Message for the TPP sent though the HUB.	List<TppMessage>	OP	E.g.: "tppMessages": […]

3.7.3.3 Examples

Example of a request

```
GET https://hub.example.es/aspsp-name/v1/payments/sepa-credit-transfers/123-qwe-456/cancellation-authorisations/123asd456
X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc
Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
PSU-IP-Address: 192.168.8.16
PSU-IP-Port: 443
PSU-Accept: application/json
PSU-Accept-Charset: utf-8
PSU-Accept-Encoding: gzip
PSU-Accept-Language: es-ES
PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0
PSU-Http-Method: GET
PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc
PSU-GEO-Location: GEO:12.526347;54.649862
Date: Sun, 26 Sep 2017 15:02:48 GMT
```

Example of a response

```
HTTP/1.1 200 Ok
X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc
Date: Sun, 26 Sep 2017 15:02:50 GMT
Content-Type: application/json
{
      "scaStatus": " finalised"
```

4. DESCRIPTION OF VALUE-ADDED SERVICES

4.1 ASPSP services available

This message is sent by the TPP to the HUB to receive information about the ASPSPs which are available in the system.

4.1.1 Version 1

4.1.1.1 Request

Endpoint
GET {provider}/v1/sva/aspsps

Path

Field	Description	Type	Mand.	Format
provider	URL of the HUB where the service is published.	String	OB	E.g.: www.hub.com

Header

Field	Description	Type	Mand.	Format
X-Request-ID	Unique identifier assigned by the TPP for the transaction.	String	OB	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g.: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Digest	It is content if it goes in the Signature field. See 6.1 Signature for more information.	String	OB	E.g.: Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Signature of the request for the	String	OB	See annexes

	TPP. See 6.1 Signature for more information.			
TPP-Signature-Certificate	TPP certificate used to sign the request in base64.	String	OB	**eIDAS** E.g.: TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ ……KoZIhvcNAQELBQAwSTELMAkGA1UE BhMCVVMxEzARBgNVBA

Body

No additional fields are specified.

4.1.1.2 Response

Field	Description	Type	Mand.	Format
aspsps	List of ASPSPs available on the system. The list returned shall be made up of relevant information of the ASPSP.	List<Aspsp>	OB	E.g.: "aspsps":[]
tppMessages	Contains the message type and the code associated with it	Tppmessage	OB	E.g.: "tppMessages":{}

4.1.1.3 Examples

Example of a request

GET https://www.hub.com/v1/sva/aspsps

Content-Encoding: gzip

Content-Type: application/json

X-Request-ID: 29391c7e-ad88-49ec-a2ad-99ddcb1f7721

Date: Sun, 27 Oct 2017 13:15:17 GMT

Example of a response

HTTP/1.1 200 OK

```
{
        "aspsps": [
                {
                        "bic": "XXXXESMMXXX",
                        "name": "aspsp1"
                },
```

```
                {
                        "bic": "YYYYESMMXXX",
                        "name": "aspsp2"
                }
        ]
}
```


4.1.2 Version 2

This version includes the name of the API for each ASPSP.

4.1.2.1 Request

Endpoint
GET {provider}/v2/sva/aspsps

Path

Field	Description	Type	Man.	Format
provider	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com

Header

Field	Description	Type	Man.	Format
X-Request-ID	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Digest	Is contained if and only if the "Signature" element is contained in the header of the request. See 6.1 Signature for more information.	String	MAN	E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	A signature of the request by the TPP on	String	MAN	See annexes

	application level. See 6.1 Signature for more information.			
TPP-Signature-Certificate	The certificate used for signing the request, in base64 encoding.	String	MAN	**eIDAS** E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional fields are specified.

4.1.2.2 Response

Field	Description	Type	Man.	Format
aspsps	List of ASPSPs available in the system. The returned list will be made up of relevant information on the ASPSP.	List<Aspsp>	MAN	E.g. "aspsps":[]
tppMessages	Contains the type of message and the code associated with it	Tppmessage	MAN	E.g. "tppMessages":{}

4.1.2.3 Examples

Example of request

GET https://www.hub.com/v2/sva/aspsps

Content-Encoding: gzip

Content-Type: application/json

X-Request-ID: 29391c7e-ad88-49ec-a2ad-99ddcb1f7721

Date: Sun, 27 Oct 2017 13:15:17 GMT

Example of response

HTTP/1.1 200 Ok


```
{
        "aspsps": [
                {
                        "bic": "XXXXESMMXXX",
                        "name": "Bank name",
                        "apiName": "nombreBanco1"
```

```
        },
        {
            "bic": "YYYYESMMXXX",
            "name": "Bank 2 name",
            "apiName": "nombreBanco2"
        }
    ]
}
```


4.2 SVA: payment initiation with list of available accounts for PISP

This service allows the TPP to initiate a payment without entering information on the debtor's account "debtorAccount" and provides the list of accounts during the SCA flow so that the PSU can select one.

This value service complements the payment API payment and uses the CORE services to:

- Obtain payment status
- Recover payment initiation information
- Cancel payment initiation

4.2.1 Payment initiation

This message is sent by the TPP to the HUB to initiate payment without entering information on the debtor's account.

4.2.1.1 Request

Endpoint

POST {provider}/{aspsp}/v1/sva/payments/{payment-product}

Path

Field	Description	Type	Man.	Format
provider	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
payment-product	Payment product to be used. List of supported products: • sepa-credit-transfers • instant-sepa-credit-transfers • target-2-payments • cross-border-credit-transfers	String	MAN	E.g. {provider}/{aspsp}/v1/payments/sepa-credit-transfers/

Header

Field	Description	Type	Man.	Format
Content-Type	Value: application/json	String	MAN	Content-Type: application/json
X-Request-ID	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
Authorisation	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
Consent-ID	This data element may be contained, if the payment initiation transaction is part of a session, i.e. combined AIS/PIS service. This then contains the "consentId" of the related AIS consent, which was performed prior to this payment initiation.	String	OPT	^.{1,36}$ E.g. Consent-ID: 7890-asdf-4321
PSU-IP-Address	The forwarded IP Address header field consists of the corresponding HTTP request IP Address field between PSU and TPP. If not available, the TPP shall use the IP Address used by the TPP when submitting this request.	String	MAN	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ E.g. PSU-IP-Address: 192.168.16.5
PSU-IP-Port	The forwarded IP Port header field consists of the corresponding HTTP request IP Port field between PSU and TPP, if available.	String	OPT	^\\d{1,5}$ E.g. PSU-IP-Port: 443
PSU-Accept	The forwarded Accept header fields consist of the corresponding HTTP request Accept header fields between PSU and TPP, if available.	String	OPT	^.{1,50}$ E.g. PSU-Accept: application/json
PSU-Accept-Charset	See above	String	OPT	^.{1,50}$ E.g. PSU-Accept-

				Charset: utf-8
PSU-Accept-Encoding	See above	String	OPT	^.{1,50}$ E.g. PSU-Accept-Encoding: gzip
PSU-Accept-Language	See above	String	OPT	^.{1,50}$ E.g. PSU-Accept-Language: es-ES
PSU-User-Agent	The forwarded Agent header field of the HTTP request between PSU and TPP, if available.	String	OPT	E.g. PSU-User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
PSU-Http-Method	HTTP method used at the PSU – TPP interface, if available. Valid values are: • GET • POST • PUT • PATCH • DELETE	String	OPT	E.g. PSU-Http-Method: POST
PSU-Device-ID	UUID (Universally Unique Identifier) for a device, which is used by the PSU, if available. UUID identifies either a device or a device dependant application installation. In case of an installation identification this ID need to be unaltered until removal from device.	String	OPT	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}$ E.g. PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
PSU-Geo-Location	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	**RFC 2426** ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*$ E.g. PSU-Geo-Location: GEO:90.023856;25.345963
TPP-Redirect-Preferred	If it equals "true", the TPP prefers a redirect over an embedded SCA approach. If it equals "false", the TPP prefers not to be redirected for SCA. The ASPSP will then choose between the	Boolean	OPT	E.g. TPP-Redirect-Preferred: true

	Embedded or the Decoupled SCA approach, depending on the choice of the SCA procedure by the TPP/PSU. If the parameter is not used, the ASPSP will choose the SCA approach to be applied depending on the SCA method chosen by the TPP/PSU. **EMBEDDED AND DECOUPLED ARE NOT SUPPORTED IN THIS VERSION**			
TPP-Redirect-URI	URI of the TPP, where the transaction flow shall be redirected to after a Redirect. Mandated for the Redirect SCA Approach, specifically when TPP-Redirect-Preferred equals "true". It is recommended to always use this header field. **Remark for Future**: This field might be changed to mandatory in the next version of the specification.	String	COND	^.{1,250}$ E.g. TPP-Redirect-URI":"https://tpp.example.es/cb"
TPP-Nok-Redirect-URI	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. This might be ignored by the ASPSP.	String	OPT	^.{1,250}$ E.g. TPP-Nok-Redirect-URI":"https://tpp.example.es/cb/nok"
Digest	If it equals "true", the TPP prefers to start the authorisation process separately. This preference might be ignored by the ASPSP, if a signing basket is not supported as functionality. If it equals "false" or if the parameter is not used, there is no preference of the TPP. This especially indicates that the TPP assumes a direct authorisation of the transaction in the next step. **Note**: the ASPSP may not take it into account if it does not support it.	String	MAN	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==

Signature	Is contained if and only if the "Signature" element is contained in the header of the request. See 6.1 Signature for more information.	String	MAN	See annexes
TPP-Signature-Certificate	A signature of the request by the TPP on application level. See 6.1 Signature for more information.	String	MAN	^.{1,5000}$ E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

Field	Description	Type	Man.	Format
instructedAmount	Information on the transfer carried out.	Amount	MAN	E.g. "instructedAmount": {…}
creditorAccount	Creditor account	AccountReference	MAN	E.g. "creditorAccount": {"iban":"ES1111111111111111111"}
creditorName	Creditor's name	String	MAN	^.{1,70}$ E.g. "creditorName":"Name"
creditorAgent	BIC of the creditor account.	String	OPT	^.{1,12}$ E.g. "creditorAgent":"XSXHXSMMXXX"
creditorAddress	Creditor's address	Address	OPT	E.g. "creditorAddress":{…}
remittanceInformationUnstructured	Additional information	String	OPT	^.{1,140}$ E.g. "remittanceInformationUnstructured":"Additional information"

4.2.1.2 Response

Header

Field	Description	Type	Man.	Format
Location	Location of the created resource (if created)	String	MAN	E.g. Location: /v1/payments/{payment-product}/{payment-id}
X-Request-ID	ID of the request, unique to the call, as determined by	String	MAN	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-

	the initiating party.			F]{12}$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
ASPSP-SCA-Approach	This data element must be contained, if the SCA Approach is already fixed. Possible values are: • REDIRECT The OAuth SCA approach will be subsumed by REDIRECT.	String	COND	E.g. ASPSP-SCA-Approach: REDIRECT

Body

Field	Description	Type	Man.	Format
transactionStatus	Status of the transaction. Values defined in annexes in 6.4 Transaction status	String	MAN	**ISO 20022** E.g. "transactionStatus": "RCVD"
paymentId	Identifier of the resource that references the payment initiation.	String	MAN	^.{1,36}$ E.g. "paymentId": "1b3ab8e8-0fd5-43d2-946e-d75958b172e7"
transactionFees	Fees associated with the payment.	Amount	OPT	E.g. "transactionFees": {…}
transactionFeeIndicator	If equal to "true", the transaction will involve a fee depending on the ASPSP or what has been agreed between the ASPSP and the PSU. If equal to "false", the transaction will not involve any additional fee for the PSU.	Boolean		E.g. "transactionFeeIndicator": true
_links	List of hyperlinks to be recognised by the TPP. Types supported in this response: • scaRedirect: in case of SCA by redirection. Link	Links	MAN	E.g. "_links": {…}

	where the PSU navigator must be redirected by the TPP. • • self: link to the resource created by this request. • status: link to recover the transaction status.			
psuMessage	Text to show to the PSU.	String	OPT	^.{1,512}$ E.g. "psuMessage": "Information for the PSU"
tppMessages	Message for the TPP	List<TppMessage>	OPT	E.g. "tppMessages": […]

4.2.1.3 Examples

Example of request

POST https://www.hub.com/aspsp-name/v1/sva/payments/sepa-credit-transfers

Content-Encoding: gzip

Content-Type: application/json

X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541

Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

PSU-Accept-Language: es-ES

PSU-User-Agent: Mozilla/5.0 (Windows NT 10.0; WOW64; rv:54.0) Gecko/20100101 Firefox/54.0

PSU-Http-Method: POST

PSU-Device-ID: f8b3feda-6fe3-11e8-adc0-fa7ae01bbebc

PSU-GEO-Location: GEO:12.526347;54.649862

TPP-Redirect-Preferred: true

TPP-Redirect-URI: https://www.tpp.com/cb

TPP-Nok-Redirect-URI: https://www.tpp.com/cb/nok

Date: Sun, 26 Sep 2017 15:02:37 GMT

```
{
        "instructedAmount": {
```

```
                "currency": "EUR",
                "amount": "153.50"
        },
        "creditorAccount": {
                "iban": "ES2222222222222222222222"
        },
        "creditorName": "Name123",
        "remittanceInformationUnstructured": "Additional information"
}
```


Example of response

HTTP/1.1 201 Created

X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541

ASPSP-SCA-Approach: REDIRECT

Date: Sun, 26 Sep 2017 15:02:43 GMT

Location: /v1/payments/sepa-credit-transfers/1234-qwer-5678


```
{
"transactionStatus": "RCVD",
"paymentId": "123-qwe-456",
"_links": {
"scaRedirect": {
"href": "https://www.hub.com/aspsp-name/authorize"
},
"self": {
"href": "/v1/payments/sepa-credit-transfers/123-qwe-456",
"status": {
"href": "/v1/payments/sepa-credit-transfers/123-qwe-456/status"
}
}
}
```


5. DEFINITION OF COMPOSITE DATA

The various types of composite data used in the requests and responses used in the system are defined below.

5.1 AccountAccess

Field	Description	Type	Mand.	Format
accounts	This specifies the accounts for which detailed	List<Account	OP	E.g.: "accounts": […]

	information can be requested. If the list is empty, the TPP is requesting all accessible accounts and they will be questioned through a dialogue between the PSU and the ASPSP. Additionally, the list of balances and transactions must also be left blank if they are used.	Reference>		
balances	Specifies the accounts for which the balances can be requested. If the list is empty, the TPP is requesting all accessible accounts and they will be questioned through a dialogue between the PSU and the ASPSP. Additionally, the list of accounts and transactions must also be left blank if they are used.	List<Account Reference>	OP	E.g.: "balances": […]
transactions	Specifies the accounts for which transactions can be requested. If the list is empty, the TPP is requesting all accessible accounts and they will be questioned through a dialogue between the PSU and the ASPSP. Additionally, the list of balances and accounts must also be left blank if they are used.	List<Account Reference>	OP	E.g.: "transactions": […]
allPsd2	Only the value "allAccounts" is allowed.	String	OP	E.g.: "allPsd2": "allAccounts"

5.2 AccountDetails

Field	Description	Type	Mand.	Format
resourceId	Account identifier to be used in the PATH when data is requested on a dedicated account.	String	COND	^.{1,100}$ E.g.: "resourceId":"3dc3d5b3702348489853f5400a64e80f"
iban	Account IBAN.	String	OP	E.g.: "iban":"ES1111111111111111111"
bban	BBAN of the account, when it doesn't have an IBAN.	String	OP	E.g.: "bban":"20385778983000760236"

currency	Account's currency type.	String	OB	**ISO 4217** E.g.: "currency":"EUR"
name	Name given by the bank or the PSU to the online banking account.	String	OP	^.{1,35}$ E.g.: "name":"Name"
product	Name of the product given by ASPSP to this account.	String	OP	^.{1,35}$ E.g.: "product":"Main Account"
bic	Account BIC.	String	OP	^.{1,12}$ E.g.: "bic":"XSXHXSMMXXX"
_links	Links to the account to retrieve balance and/or transaction information of the account. Links are only supported when the corresponding consent has been given to the account.	Links	OP	E.g.: "links": {…}

5.3 AccountReference

Field	Description	Type	Mand.	Format
iban	Account IBAN	String	COND	E.g.: "iban":"ES1111111111111111111"
bban	BBAN of the account, when it doesn't have an IBAN.	String	COND	E.g.: "bban":"20385778983000760236"
maskedPan	Masked Primary Account Number of the card.	String	COND	^.{1,35}$ E.g.: "maskedPan":"123456******4567"
msisdn	Alias for access to a payment account through a registered mobile telephone number. **NOT SUPPORTED**	String	COND	^.{1,35}$ E.g.: "msisdn":"…"
currency	Currency type.	String	OP	**ISO 4217** E.g.: "currency":"EUR"

5.4 AccountReport

Field	Description	Type	Mand.	Format
booked	Latest Transactions (annotations) known to the account.	List<Transactions>	COND	E.g.: "booked":[{..}]

	It must be included if the bookingStatus parameter is set as “booked” or “both”.			
pending	Pending account transactions. No content if the bookingStatus parameter is set to “booked”.	List<Transactions>	OP	E.g.: "pending":[{..}]
_links	The following links are accepted in this object: • account (OB) • first (OP) • next (OP)	Links	OB	E.g.: "_links":[{..}]

5.5 Address

Field	Description	Type	Mand.	Format
street	Street	String	OP	^.{1,70}$ E.g.: "street":"Street example"
buildingNumber	Number	String	OP	E.g.: "buildingNumber":"5"
city	City	String	OP	E.g.: "city":"Cordoba"
postalCode	Postcode	String	OP	E.g.: "postalCode":"14100"
country	Country code	String	OB	**ISO 3166** E.g.: "country":"ES"

5.6 Amount

Field	Description	Type	Mand.	Format
currency	Currency of the amount.	String	OB	**ISO 4217** E.g.: "currency":"EUR"
amount	The amount. The decimal point is used as the separator.	String	OB	**ISO 4217** E.g.: "amount":"500.00"

5.7 Aspsp

Field	Description	Type	Mand.	Format
bic	The ASPSP's BIC code.	String	OB	E.g.: "bic":" XXXXXXXXXXX"

name	ASPSP Name	String	OP	E.g.: “name":"Name ASPSP"

5.8 Balance

Field	Description	Type	Mand.	Format
balanceAmount	Amount and currency of the balance.	Amount	OB	E.g.: "balanceAmount": {…}
balanceType	Balance type. Values supported in annex 6.6 Balance types	String	OB	E.g.: "balanceType": "closingBooked"

5.9 ExchangeRate

Field	Description	Type	Mand.	Format
currencyFrom	Source currency.	String	OB	E.g.: "currencyFrom":"USD"
rate	Defines the exchange rate. E.g.: currencyFrom=USD, currencyTo=EUR: 1USD =0.8 EUR with an exchange rate of 0.8.	String	OB	E.g.: "rate":"0.8"
currencyTo	Target currency.	String	OB	E.g.: "currencyTo":"EUR"
rateDate	Rate date.	String	OB	**ISODateTime**
rateContract	Reference to the contract of the rate.	String	OP	

5.10 Href

Field	Description	Type	Mand.	Format
href	Contains a link to a resource.	String	OP	E.g.: "href": "/v1/payments/sepa-credit-transfers/asd-1234-jkl"

5.11 Links

Field	Description	Type	Mand.	Format
scaRedirect	The URL used to perform SCA, through a redirect of the PSU's browser.	Href	OP	E.g.: "scaRedirect": {…}
startAuthorisat	Link to endpoint where the	Href	OP	E.g.: "startAuthorisation":{…}

ion	authorisation of either the transaction or the cancellation must be initiated.			
startAuthorisationWithAuthenticationMethodSelection	Link to endpoint where the authorisation of the either the transaction or the cancellation must be initiated, where the SCA method must be specified in the corresponding call.	Href	OP	E.g.: " startAuthorisationWithAuthenticationMethodSelection ": {…}
self	The link to the resource created for the request. This link can be subsequently used to retrieve the transaction status.	Href	OP	E.g.: "self": {…}
status	The link to retrieve the transaction status. For example, the payment initiation status.	Href	OP	E.g.: "status": {…}
account	Link to the resource that provides the data on an account.	Href	OP	E.g.: "account": {…}
balances	Link to the resource that provides the account balances.	Href	OP	E.g.: "balances": {…}
transactions	Link to the resource that provides the account transactions.	Href	OP	E.g.: "transactions": {…}
first	Browser link for paginated accounts.	Href	OP	E.g.: "first": {…}
next	Browser link for paginated accounts.	Href	OP	E.g.: "next": {…}

5.12 PaymentExchangeRate

Field	Description	Type	Mand.	Format
unitCurrency	Currency in which the exchange rate is expressed in a foreign currency. In the following example EUR1 = xxxCUR, the currency is the EUR.	String	OP	**ISO 4217** E.g.: "unitCurrency": "EUR"
exchangeRate	Factor used to convert an amount from one currency to another. It reflects the price at which one currency was purchased with the other currency.	String	OP	E.g.: "exchangeRate": "1.3"

contractIdentification	Unique identification of the contract to exchange currencies	String	OP	E.g.: "contractIdentification": "1234-qeru-23"
rateType	Specifies the rate used to complete the currency exchange. Allowed values: • SPOT • SALE • AGRD	String	OP	E.g.: "rateType": "SPOT"

5.13 ReportExchangeRate

Field	Description	Type	Mand.	Format
sourceCurrency	Currency from which an amount will be converted in a currency exchange.	String	OB	**ISO 4217** E.g.: "sourceCurrency": "EUR"
exchangeRate	Factor used to convert an amount from one currency to another. It reflects the price at which one currency was purchased with the other currency.	String	OB	E.g.: "exchangeRate": "1.3"
unitCurrency	Currency in which the exchange rate is expressed in a foreign currency. In the following example EUR1 = xxxCUR, the currency is the EUR.	String	OB	**ISO 4217** E.g.: "unitCurrency": "EUR"
targetCurrency	Currency into which the amount will be converted into in a currency exchange.	String	OB	**ISO 4217** E.g.: "targetCurrency": "USD"
quotationDate	Date on which the exchange rate is quoted.	String	OB	**ISODate** E.g.: "quotationDate": "24/01/2019"
contractIdentification	Unique identification of the contract to exchange currencies	String	OP	E.g.: "contractIdentification": "1234-qeru-23"

5.14 SinglePayment

Field	Description	Type	Mand.	Format
instructedAmount	Information on the transfer which has been made.	Amount	OB	E.g.: "instructedAmount": {…}

debtorAccount	The originator's account. **Note:** this field can be optional in some services such as bulk payments	AccountReference	OB	E.g.: "debtorAccount": {"iban":"ES1111111111111111111111"}
creditorAccount	Beneficiary's account	AccountReference	OB	E.g.: "creditorAccount": {"iban":"ES1111111111111111111111"}
creditorName	Beneficiary's name	String	OB	^.{1,70}$ E.g.: "creditorName":"Name"
creditorAgent	BIC of the Beneficiary's account.	String	OP	E.g.: "creditorAgent":"XSXHXSMMXXX"
creditorAddress	Beneficiary's address	Address	OP	E.g.: "creditorAddress":{…}
chargeBearer	Only for payment-product: • target-2-payments • cross-border-credit-transfers Allowed values: • DEBT • CRED • SHAR • SLEV	String	OP	**ChargeBearerType1Code de ISO 20022** E.g.: "chargeBearer":"SLEV"
remittanceInformationUnstructured	Additional information. See annex 6.8 Good Practice Guide for recommendations for use.	String	OP	^.{1,140}$ E.g.: "remittanceInformationUnstructured":"Additional information"
requestedExecutionDate	Execution date requested for future payments. **Note**: only if supported by the ASPSP	String	COND	**ISODate**
requestedExecutionTime	Execution time requested. **Note**: only if supported by the ASPSP	String	COND	**ISODateTime**

5.15 TppMessage

Field	Description	Type	Mand.	Format
category	Category for the type of message received. Possible values: ERROR or WARNING	String	OB	E.g.: "category": "ERROR"
code	Response code. In annex 6.3 Return codes the return codes are listed	String	OB	E.g.: "code":"CONSENT_INVALID"

	by service.			
path	Path to the error field.	String	COND	E.g.: "path":"..."
text	Additional explanatory text.	String	OP	E.g.: "text":"Text example"

5.16 Transactions

Field	Description	Type	Mand.	Format
entryReference	Identification of the transaction that can be used, for example, in delta queries.	String	OP	^.{1,35}$ E.g.: "entryReference":"1234-asdf-456"
bookingDate	Date the transaction was recorded	String	OP	**ISODate** "bookingDate":"2017-10-23"
valueDate	Date on which the settlement becomes available to the account owner in the case of a request for a loan or credit facility.	String	OP	**ISODate** E.g.: "valueDate":"2017-10-23"
transactionAmount	Transaction amount	Amount	OB	E.g.: "transactionAmount": [{..}]
currencyExchange	Currency exchange rate	List<ReportExchangeRate>	OP	E.g.: "currencyExchange": [{...}]
remittanceInformationUnstructured	Field to include additional information on the remittance.	String	OP	^.{1,140}$ E.g.: "remittanceInformationUnstructured":"Additional information"
_links	Possible values: •	Links	OP	E.g.: "_links": {...}

6. ANNEXES

6.1 Signature

6.1.1 "Digest" header mandatory

The Digest field is mandatory in all requests.

This field contains a hash of the message body. If the message does not contain a body, the "Digest" field must contain a hash of an empty "bytelist". The hash algorithms that may be used to calculate the "Digest" in the context of this specification are SHA-256 and SHA-512.

6.1.2 Signature requirements

The structure of the “Signature” field of the request header must have the following structure:

Item	Type	Mand.	Requirements	Additional requirements
keyId	String	OB	It is a chain that the HUB can use to find the component needed to validate the signature.	Serial number of the TPP certificate included in “TPP-Signature-Certificate”. It must be in the following format: KeyId="SN=XXX,CA= YYYYYYYYYYYYYYYY" In which “XXX” is the certificate serial number encoded in hexadecimal format and “YYYYYYYYYYYYYYYY” is the full “Distinguished Name” of the certifying authority.
Algorithm-ID	String	OB	This is used to specify the algorithm used to generate the signature.	The algorithm must identify the same algorithm for the signature which is presented in the request’s certificate. It should identify SHA-256 or SHA-512.
Headers	String	OP	These are used to specify the list of HTTP headers included when the signature for the message is generated. If specified, it should be a list within quotation marks and in lower case, separated by a blank space. If it is not specified it shall be understood that only one value has been specified. The said specified value is the "Date" attribute from the header of the request. The order of attributes is important and must be the same as the order specified in the list of HTTP headers in this field.	The mandatory fields to be signed are: • digest • x-request-id Optionally, if they can go there and are supported, they can include: • psu-id • psu-corporate-id • tpp-redirect-uri
Signature	String	OB	The “signature” parameter must be in Base64 according to RFC 4648.	There are no additional requirements.

	The TPP uses the header's algorithm and parameters to form the signature chain to be signed. The chain to sign is signed with the keyId and the corresponding algorithm. The content should go in Base64.

6.1.3 Example

You want to make a host-to-host request with the following text:


```
{
 "instructedAmount" : {
  "currency" : "EUR",
  "amount" : "16.00"
 },
 "debtorAccount" : {
  "iban" : "ES5140000001050000000001",
  "currency" : "EUR"
 },
 "creditorName" : "Cred. Name",
 "creditorAccount" : {
  "iban" : "ES6621000418401234567891",
  "currency" : "EUR"
 },
 "creditorAddress" : {
  "street" : "Example of street",
  "buildingNumber" : "15",
  "city" : "Cordoba",
  "postalCode" : "14100",
  "country" : "ES"
 },
 "remittanceInformationUnstructured" : "Payment",
 "chargeBearer" : "CRED"
}
```


And you must also add the following headers

- X-Request-ID=a13cbf11-b053-4908-bd06-517dfa3a1861

You must make the following transactions.

6.1.3.1 Generation of the "Digest" header

To do so you must perform the hash of the message body that will be sent. It is vital to do so on the final content once serialised, as the following serialisation processes may introduce changes in the body of the message finally sent, making the signature invalid.

It is possible to use the SHA-256 and SHA-512 algorithms following the RFC 5843. In our example you will use SHA-256 on the body of the message, obtaining the following result:

- Hexadecimal: A5F1CF405B28E44ED29507E0F64495859BA877893D2A714512D16CE3BD8BE562
- Base64: pfHPQFso5E7SlQfg9kSVhZuod4k9KnFFEtFs472L5WI=

Thus the value of the "Digest" header to generate will be:

SHA256=pfHPQFso5E7SlQfg9kSVhZuod4k9KnFFEtFs472L5WI=

The headers you have so far are:

X-Request-ID=a13cbf11-b053-4908-bd06-517dfa3a1861f]
Digest=SHA256=pfHPQFso5E7SlQfg9kSVhZuod4k9KnFFEtFs472L5WI=

6.1.3.2 Generation of the "Signature" header

The "Signature" header is the multi-value type, i.e. it contains within it various pairs of sub-headers of the attribute-value type

Establishment of the "keyId" value

This field is obtained based on a serial number of the certificate in hexadecimal and the DN of the certification authority that generates the certificate.

In our example you obtain the following result:

keyId="SN=-5d803f65,CA=CN=REDSYS-AC-EIDASt-C1,OU=PKI,O=REDSYS,C=ES"

Establishment of the "headers" attribute

You should note that this attribute and some others are shown in the Berlin Group document with the first character in upper case, but in the RFC used by the entity its content is always established in lower case, so we assume that it is an error.

This establishes the fields that will be taken into account signing.

headers="digest x-request-id"

Establishment of the "algorithm" attribute

algorithm="SHA-256"

Construction of the chain to be signed

The chain to be signed according to point 2.2.3 is as follows:

Digest: SHA256=pfHPQFso5E7SlQfg9kSVhZuod4k9KnFFEtFs472L5WI=

X-Request-ID: a13cbf11-b053-4908-bd06-517dfa3a1861f

Generation of the signature

We sign the chain obtained in the above point with the private key of our certificate and pass the result to Base64, obtaining in our specific case the following result:

la8LV3Fny2so4c40OkYFtZvr1mOkOVY1n87iKfIggEkXQjZNcyjp9fFkNtQc+5ZVNESdiqKG8xrawYa5gAm46CvcKCh
NTPaakiEJHcXM5RZPWN0Ns5HjV5mUY2QzD+g5mwqcWvXtBr1vg0bZKN8Zt3+uJMN37NQg9tJNE2yKIJlEPlAYOj
C2PA/yzGSLOdADnXQut9yRvxw8gMCjDtRaKDyWmwG6/crX293hGvBUeff1xvTluWhQzyfx4J6WG0v1ZmpnWdZ
1LF68sToeDGTdu65aVKV2q6qcZzcm5aPV6+mVHX+21Vr6acxiLZdeYUHYJHrzErUN3KJrmt3w2AL7Dw==

6.1.3.3 Generation of the "TPP-Signature-Certificate" header

This header contains the certificate we have used in Base64. For reasons of space only a part is established in the example:

TPP-Signature-Certificate=”MIIEWTCCA0GgAwIBAgI….

6.1.3.4 Definitive headers to send

As seen in the above points the headers that must be sent in the request are:

X-Request-ID=a13cbf11-b053-4908-bd06-517dfa3a1861f

Digest=SHA256=pfHPQFso5E7SlQfg9kSVhZuod4k9KnFFEtFs472L5WI=

Signature=keyId="SN=-5d803f65,CA=CN=REDSYS-AC-EIDASt-C1,OU=PKI,O=REDSYS,C=ES",algorithm="SHA-256",headers="digest x-request-id",signature="la8LV3Fny2so4c40OkYFtZvr1mOkOVY1n87iKfIggEkXQjZNcyjp9fFkNtQc+5ZVNESdiqKG8xrawYa5gAm46CvcKCh
NTPaakiEJHcXM5RZPWN0Ns5HjV5mUY2QzD+g5mwqcWvXtBr1vg0bZKN8Zt3+uJMN37NQg9tJNE2yKIJlEPlAYOj
C2PA/yzGSLOdADnXQut9yRvxw8gMCjDtRaKDyWmwG6/crX293hGvBUeff1xvTluWhQzyfx4J6WG0v1ZmpnWdZ
1LF68sToeDGTdu65aVKV2q6qcZzcm5aPV6+mVHX+21Vr6acxiLZdeYUHYJHrzErUN3KJrmt3w2AL7Dw=="

TPP-Signature-Certificate=MIIEWTCCA0GgAwIBAgIEon/…

6.2 HTTP response codes

The HTTP codes followed by this specification and their uses are as follows:

HTTP code	Description
200 OK	• Response Code for PUT and GET requests. • This code is allowed if the request was repeated due to a timeout. The response may be 200 or 201 depending on the implementation of the ASPSP. • The POST request of the FCS also allows a 200 code to be returned as a new resource is not created. • Response code for DELETE requests when the request has been carried out correctly and authorisation is not required.
201 Created	Response code for POST: requests Post where a new resource has been created correctly.
202 Accepted	Response code for DELETE: requests when a payment resource can be cancelled,

	but authorisation of the cancellation from the PSU is required.
204 No Content	Response code for DELETE: requests where the consent has been deleted successfully. The code indicates that the response was performed, but no content has been returned. It is also used in DELETE requests for a payment initiation in which authentication is not required.
400 Bad Request	A validation error has occurred. This code covers syntax errors in the requests or when there is incorrect data in the payload.
401 Unauthorized	The PSU is not properly authorised to make the request. Try to make the request again with the correct authentication information.
403 Forbidden	Returned if the appeal was referenced in the existing path but cannot be accessed by the TPP or the PSU. This code must only be used for non-sensitive identifiers as it could reveal that the resource exists but that it cannot be accessed.
404 Not found	Returned if the resource or endpoint that was referenced in the path exists but cannot be accessed by the TPP or the PSU. When there are any doubts as to whether a specific ID in the path is sensitive or not, use this code instead of 403.
405 Method Not Allowed	This code is sent only when the method (POST, PUT, GET...) is not supported in a specific endpoint. Response code for DELETE in the event of a payment cancellation, where the payment initiation cannot be cancelled due to legal or other operational reasons.
406 Not Acceptable	The ASPSP cannot generate the content specified by the TPP in the Accept header field.
408 Request Timeout	The server is still working properly, but the request has reached the timeout limit.
409 Conflict	The request could not be completed due to a conflict with the current status of the referenced resource.
415 Unsupported Media Type	The TPP has requested a media type which is not supported by the ASPSP.
429 Too Many Requests	The TPP has exceeded the maximum number of requests allowed by the consent or by the RTS.
500 Internal Server Error	An internal error has occurred in the server.
503 Service Unavailable	The ASPSP server is currently unavailable. This is generally a temporary condition.

6.3 Return codes

Return codes and associated HTTP response codes allowed.

	HTTP code	Code	Description
SIGNATURE CERTIFICATE	401	CERTIFICATE_INVALID	The content of the signature certificate is not valid.
	401	CERTIFICATE_EXPIRED	The signature certificate has expired.
	401	CERTIFICATE_BLOCKED	The signature certificate has been

			blocked by the ASPSP.
	401	CERTIFICATE_REVOKED	The signature certificate has been revoked by the QTSP.
	401	CERTIFICATE_MISSING	The signature certificate was missing from the request.
SIGNATURE	401	SIGNATURE_INVALID	The signature is not valid.
	401	SIGNATURE_MISSING	The signature, when it is mandatory, is missing from in the message.
GENERAL	400	FORMAT_ERROR	The format of certain fields of the request is incorrect. The fields will be indicated. This applies to fields in the body and the header. It also applies in cases where these entries refer to occasions when there is data that is missing or incorrect.
	400	PARAMETER_NOT_CONSISTENT	The parameters sent by the TPP are not consistent. Only applies to query parameters.
	400	PARAMETER_NOT_SUPPORTED	The parameter is not supported by the ASPSP. It will only be used in those parameters whose support is optional for the ASPSP.
	401	PSU_CREDENTIALS_INVALID	The PSU-ID is not related to the ASPSP or is blocked, or the password or OTP as incorrect.
	400 (payload) 405 (HTTP method)	SERVICE_INVALID	The requested service is not valid for the specified resource or the data sent.
	403	SERVICE_BLOCKED	The service is not available for the PSU due to a block in the ASPSP channel.
	401	CORPORATE_ID_INVALID	The PSU-Corporate-ID could not be associated in the ASPSP systems.
	403 (if resource in path) 400 (if resource in payload)	CONSENT_UNKNOWN	The requested Consent-ID does not coincide for the TPP and the ASPSP.
	401	CONSENT_INVALID	Consent was created by the TPP, but is not valid for the resource / service requested. Or, the definition of the consent is incomplete or is invalid.
	401	CONSENT_EXPIRED	The consent was created by the TPP but has expired and must be refreshed.
	401	TOKEN_UNKNOWN	The token received is unknown to

			the TPP.
	401	TOKEN_INVALID	The token is associated with the TPP, but it is not valid for the service / resource which are being accessed.
	401	TOKEN_EXPIRED	The token is associated with the TPP, but it has expired and must be refreshed.
	404 (if account-id is in the path) 403 (if another resource is in path) 400 (if it goes in payload)	RESOURCE_UNKNOWN	The resource requested is unknown to the TPP.
	403 (if resource in path) 400 (if resource in payload)	RESOURCE_EXPIRED	The requested resource is associated with the TPP, but it has expired and will no longer be available.
	400	RESOURCE_BLOCKED	The directed resource cannot be directed by the request. It may be blocked, for example by a grouping in the “signing basket”.
	400	TIMESTAMP_INVALID	The timestamp is not in the accepted period of time.
	400	PERIOD_INVALID	The period of time requested is out of range.
	400	SCA_METHOD_UNKNOWN	The SCA method selected in the authentication method selection request is unknown or cannot be associated with the PSU by the ASPSP.
	409	STATUS_INVALID	The directed resource does not allow additional authorisation.
OAuth2	302	invalid_request	The request has not been formed correctly as it has missing parameters, an unsupported value and/or repeated parameters.
	302	unauthorized_client	The authenticated client is not authorised to use this type of authorisation.
	302	access_denied	The resource owner or the authorisation server denies the request.
	302	unsupported_response_type	The authorisation server does not support the method used to obtain the authorisation code.
	302	invalid_scope	The requested scope is invalid, unknown or poorly formed.

	302	server_error	Error 500 that cannot be returned in a redirect, which is returned with this code.
	302	temporarily_unavailable	The authorisation server is unable to process the request at this time due to a temporary overload or due to maintenance being undertaken.
	400	invalid_request	The request has not been formed correctly as it has missing parameters, an unsupported value and/or repeated parameters, includes multiple credentials or uses more than one client authentication mechanism.
	401	invalid_client	Failure to authenticate the client.
	400	invalid_grant	The authorisation provided or the refresh token is invalid, has expired, has been revoked, does not match the URI redirection or was issued to another client.
	400	unauthorized_client	The authenticated client is not authorised to use this type of authorisation.
	400	unsupported_grant_type	The type of authorisation requested is not supported by the authorisation server.
	400	invalid_scope	The requested scope is invalid, unknown, badly formed or exceeds what is allowed.
PIS	403	PRODUCT_INVALID	The payment product requested is not available for the PSU.
	404	PRODUCT_UNKNOWN	The payment product requested is not supported by the ASPSP.
	400	PAYMENT_FAILED	The payment failed. For example, due to risk management reasons.
	400	EXECUTION_DATE_INVALID	The execution date requested is not a valid execution date for the ASPSP.
	405	CANCELLATION_INVALID	The directed payment cannot be cancelled. For example, a long time has passed or due to legal restrictions.
AIS	401	CONSENT_INVALID	Consent was created by the TPP, but is not valid for the resource / service requested. Or, the definition of the consent is incomplete or is invalid.
	400	SESSIONS_NOT_SUPPORTED	The combined service indicator does not support the ASPSP which

			the request was sent to.
	429	ACCESS_EXCEEDED	The account accesses have exceeded the allowable accesses per day without the PSU being present.
	406	REQUESTED_FORMATS_INVALID	The format requested in the Accept field does not match those offered by the ASPSP.
FCS	400	CARD_INVALID	The card number is unknown to the ASPSP or is not associated with the PSU.
	400	NO_PIIS_ACTIVATION	The PSU has not activated the account to be used for the PIIS associated with the TPP.

6.4 Transaction status

Code	Name	Description
ACCC	AcceptedSettlementCompleted	The settlement of the beneficiary's account has been completed.
ACCP	AcceptedCustomerProfile	The pre-check of the technical validation was correct. The client profile check was also correct.
ACFC	AcceptedFundsChecked	In addition to the client profile, the availability of funds has been checked and confirmed. Note: ISO 20022 approval is needed.
ACSC	AcceptedSettlementCompleted	The settlement of the originator's account has been completed. Use: the use of the first agent (the originator's ASPSP through the HUB) to inform the originator that the transaction has been completed. Important: the reason for this status is to provide the status of the transaction, not for financial information. It can only be used after a bilateral agreement has been entered into.
ACSP	AcceptedSettlementInProcess	The above controls such as technical validations and of the client's profile were correct and therefore, the payment initiation has been accepted to be processed.
ACTC	AcceptedTechnicalValidation	Syntactic and semantic authentication and validation are correct.
ACWC	AcceptedWithChange	The instruction has been accepted, but a modification is required, for example a date or another item of data which has not been sent. It is also used to report that a change has been applied, for example, on a payment initiation and that the execution

		date has been changed.
ACWP	AcceptedWithoutPosting	The payment instruction included in the credit transfer has been accepted without being sent to the beneficiary client.
RCVD	Received	The initiation of payment has been received by the agent (the ASPSP through the HUB).
PATC	PartiallyAcceptedTechnicalCorrect	The payment initiations have been authorised by at least one PSU, but they have not yet been authorised by all the PSUs involved. (Multi-level SCA) Note: ISO 20022 approval is needed.
PDNG	Pending	The payment initiation or the individual transaction included in the payment initiation is pending. Additional checks and status updates will be made.
RJCT	Rejected	The payment initiation or the individual transaction included in the payment initiation has been rejected.
CANC	Cancelled	The payment initiation was cancelled before it was executed. Note: ISO 20022 approval is needed.

6.5 Consent status

Code	Description
received	The consent has been received and is technically correct. The data has not yet been authorised.
rejected	The consent has been rejected.
partiallyAuthorised	Due to a multi-level SCA, some, but not all of the necessary authorisations have been made.
valid	The consent is accepted and valid for requests to read the data and specified in the consent.
revokedByPsu	The consent has been revoked by the PSU to the ASPSP.
expired	The consent has expired.
terminatedByTpp	The corresponding TPP has terminated the consent by using the DELETE request on the created consent resource.

6.6 Balance types

Code	Description
closingBooked	The account balance at the end of the pre-agreed period for the report. The sum of the “openingBooked” balances at the beginning of the period and all entries listed in the account during the pre-agreed period for the report.
expected	Transactions made up of annotated entries and entries pending at the time of the request.
openingBooked	The account balance at the beginning of the pre-agreed period for the report. It is always the same as the “closingBooked” balance of

	the previous period's report.
interimAvailable	Provisionally available balance. Calculated based on annotations of the credit and debit entries during the specified period of time.
interimBooked	The balance calculated during the working day, at the specified time and subject to change during the day. This balance is calculated including the credit and debit entries made during the specified time/period.
forwardAvailable	Future balance available to the account owner on the specified date.

6.7 Types of sharing commissions

Code	Description
DEBT	All transaction charges are paid by the originator.
CRED	All transaction charges are paid by the beneficiary.
SHAR	Shared charges. The originator and beneficiary pay the charges corresponding to each party.
SLEV	The charges to be applied follow the rules agreed at the service level and/or scheme.

6.8 Good Practice Guide

6.8.1 Lifetime of the scaRedirect link

The validity of the token is 5 minutes for this type of link.