PSD2-TPP Technical Design

Version: 1.7.2

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Authorisations and version control

Version	Date	Affects	Brief description of the change
1.6.0	February 2019	EVERYTHING	Initial Version
1.7.0	June 2019	3. DESCRIPTION OF CORE SERVICES	New API 3.4 FCS support: Establish consent for the fund confirmation service
1.7.1	November	3.3.1.3 Request 3.3.2.3 Request	Added versioned endpoint Added versioned endpoint
1.7.2	September	4.3 SVA: Start of orders Permanent for payments recurring / periodic with list of accounts including new service available for PISP	Added new service

CONTENTS

1. INTRODUCTION

1.1 Scope

This document describes the technical design of the interface between third-party (payment service) providers (TPPs) and the HUB to ensure compliance with the PSD2 Directive.

1.2 Context

It is the final joint document between Self Bank and the financial institutions authorized by local competent authority.

1.3 Glossary

The table below lists the acronyms/abbreviations and their definitions used in the document.

Acronym	Definition
ASPSP	Account Servicing Payment Services Provider
	Provides and maintains customer accounts from which payments can be made.
PISP	Payment Initiation Services Provider
	Initiates a payment order at the request of the user, from a payment account held at another payment services provider
AISP	Account Information Service Provider
	Provides account information services to customers for payment accounts held with other providers.
TPP	Third Party Provider

Acronym	Definition
	Executes the services defined by PSD2 on behalf of a PSU. If it is necessary for the service, it accesses the account(s) of the PSU administered by an ASPSP using the XS2A interface of this ASPSP. It sends request messages to the XS2A interface of the ASPSP and receives response messages corresponding to this ASPSP.
PIISP	Payment Issuer Instrument Services Provider
	Provides users with a payment instrument with which to initiate and process payment transactions.
PSU	Payment Services User
	May be a natural or legal person under PSD2 legislation. Implicitly or explicitly instructs the TPP to perform any PSD2 service for its ASPSP.

2. GENERAL DESCRIPTION OF THE SYSTEM

The following table lists the services available:

Service		Functionality	Status
CORE	PIS	Initiate simple single signature payment	Available
		Initiate recurring payments	Available
		Initiate recurring multiple/bulk payments	Not Available
		Initiate future payments	Available
		Check payment status	Available
		Recover payment initiation information	Available
		Cancel payment	Available
	AIS	Establish consent	Available
		Recover consent information	Available
		Check consent status	Available
		Remove consent	Available
		Read list of accounts available with/without balances	Available
		Read list of accounts accessible with/without balances	Available
		Read account details with/without balances	Available
		Read balances	Available
		Read transactions with/without balances	Available
		Read transaction details	Not supported
	FCS	Establish consent	Not Available
		Recover consent information	Not Available
		Check consent status	Not Available
		Remove consent	Not Available
		Fund confirmation	Available
	SCA	SCA by redirected flow	Available
		SCA by decoupled flow	Not Available

		Embedded SCA	Not supported
	Common processes	Initiate explicit authorisation	Available
		SCA status query	Available
		Obtain authorisation sub-resources	Available
		Update authorisation data	Available
	OAUTH	Obtain access token	Available
		Renew access token	Available

Table 1: CORE services

Service		Functionality	Status
SVA	ASPSP DIR.	List of available ASPSPs (v1 and v2)	Available
	PIS	Payment initiation with list of accounts available for PISP	Available
	PIS	Periodic payment initiation with accounts list available for PISP	Available
	AIS	Alert of data available in PUSH mode	Pending

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 Hub to initiate payment.

3.1.1.1 Request

Endpoint

POST {provider}/{aspsp}/v1/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 • target-2-payments • cross-border-credit-transfers	String	MAN	E.g. {provider}/{aspsp}/v1/payments/sepa-credit-transfers/

Query parameters

No additional parameters are specified for this request.

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	String	OPT	^.{1,5}$ E.g. PSU-IP-Port:

	the corresponding HTTP request IP Port field between PSU and TPP, if available.			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.	String	OPT	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-

	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.			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 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 NOT SUPPORTED IN THIS VERSION**	Boolean	OPT	E.g. TPP-Redirect-Preferred: true
TPP-Redirect-URI	URI of the TPP, where the transaction flow shall be redirected to after a Redirect.	String	COND	^.{1,250}$ E.g. TPP-Redirect-URI":"https://tpp.example.es/cb"

	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.			
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"
TPP-Explicit-Authorisation-Preferred	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.	Boolean	OPT	E.g. TPP-Explicit-Authorisation-Preferred: false
Digest	Is contained if and only if the "Signature" element is contained in the header of the request. See 6.1 Signature for	String	MAN	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3Z

	more information.			GFmMjhhNTc5OTU3OQ==
Signature	A signature of the request by the TPP on application level. See 6.1 Signature for more information.	String	MAN	See annexes
TPP-Signature-Certificate	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}$ E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

The content of the Body is that defined in 5.12 SinglePayment.

3.1.1.2 Response

Header

Field	Description	Type	Man.	Format
Location	Location of the created resource (if created)	String	MAN	^.{1,512}$ E.g. Location: /v1/payments/{payment-product}/{payment-id}
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
ASPSP-SCA-Approach	This data element must be contained, if the SCA Approach	String	COND	E.g. ASPSP-SCA-Approach: REDIRECT

	is already fixed. Possible values are: • REDIRECT The OAuth SCA approach will be subsumed by 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	Resource identification of the generated payment initiation resource.	String	MAN	^.{1,36}$ E.g. "paymentId": "1b3ab8e8-0fd5-43d2-946e-d75958b172e7"
transactionFees	Can be used by the ASPSP to transport transaction fees relevant for the underlying payments.	Amount	OPT	E.g. "transactionFees": {...}
transactionFeeIndicator	If equals true, the transaction will involve specific transaction cost as shown by the ASPSP in their public price list or as agreed between ASPSP and PSU. If equals false, the transaction will not involve additional specific transaction costs to the PSU.	Boolean	OPT	E.g. "transactionFeeIndicator": true
_links	A list of hyperlinks to be recognised by the TPP. Type of links admitted	Links	MAN	E.g. "_links": {...}

	in this response: • scaRedirect: In case of an SCA Redirect Approach, the ASPSP is transmitting the link to which to redirect the PSU browser. • startAuthorisation: In case, where an explicit start of the transaction authorisation is needed, but no more data needs to be updated (no authentication method to be selected, no PSU identification nor PSU authentication data to be uploaded). • self: link to the resource created by this request. • status: The link to retrieve the transaction status • scaStatus: The link to retrieve the scaStatus of the corresponding authorisation sub-resource. This link is only contained, if an authorisation sub-resource has been already created.			

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

3.1.1.3 Examples

Example of request for SCA via redirection

```
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 response in case of a redirect 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"
```

```
            }
        }
}
```

3.1.2 Payment initiation for future dated payments

Message sent by the TPP to the ASPSP through the Hub to initiate a future dated payment.

3.1.2.1 Request

Endpoint

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

Path

Field	Description	Type	Man.	Format
provider	URL of the HUB where the service is published.	String	MAN	E.g. hub.example.es
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 • target-2-payments • cross-border-credit-transfers	String	MAN	E.g. {provider}/{aspsp}/v1/payments/sepa-credit-transfers/

Query parameters

No additional parameters are specified for this request.

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	^.{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	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:

	identification this ID need to be unaltered until removal from device.			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 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 NOT SUPPORTED IN THIS VERSION**	Boolean	OPT	E.g. TPP-Redirect-Preferred: true
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".	String	COND	^.{1,250}$ E.g. TPP-Redirect-URI":"https://tpp.example.es/cb"

	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.			
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"
TPP-Explicit-Authorisation-Preferred	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.	Boolean	OPT	E.g. TPP-Explicit-Authorisation-Preferred: false
Digest	Is contained if and only if the "Signature" element is contained in the header of the request. See 6.1 Signature for	String	MAN	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE

	more information.			3ZGFmMjhhNTc5OTU3OQ==
Signature	A signature of the request by the TPP on application level. See 6.1 Signature for more information.	String	MAN	See annexes
TPP-Signature-Certificate	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}$ E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

The content of the Body is defined in 5.12 SinglePayment and the following parameter must also be entered:

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

3.1.2.2 Response

Header

Field	Description	Type	Man.	Format
Location	Location of the created resource (if created)	String	MAN	**Max512Text** E.g. Location: /v1/payments/{payment-product}/{payment-id}
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
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	Resource identification of the generated payment initiation resource.	String	MAN	^.{1,36}$ E.g. "paymentId": "1b3ab8e8-0fd5-43d2-946e-d75958b172e7"
transactionFees	Can be used by the ASPSP to transport transaction fees relevant for the underlying payments.	Amount	OPT	E.g. "transactionFees": {…}
transactionFeeIndicator	If equals true, the transaction will involve specific transaction cost as shown by the ASPSP in their public price list or as agreed between ASPSP and PSU.	Boolean	OPT	E.g. "transactionFeeIndicator": true

	If equals false, the transaction will not involve additional specific transaction costs to the PSU.			
_links	A list of hyperlinks to be recognised by the TPP. Type of links admitted in this response: • scaRedirect: In case of an SCA Redirect Approach, the ASPSP is transmitting the link to which to redirect the PSU browser. • startAuthorisation: In case, where an explicit start of the transaction authorisation is needed, but no more data needs to be updated (no authentication method to be selected, no PSU identification nor PSU authentication data to be uploaded). • self: link to the resource created by this request. • status: The link to retrieve the transaction status • scaStatus: The link to retrieve the scaStatus of the corresponding	Links	MAN	E.g. "_links": {...}

	authorisation sub-resource. This link is only contained, if an authorisation sub-resource has been already created.			
psuMessage	Text to be displayed to the PSU	String	OPT	^.{1,512}$ E.g. "psuMessage": "Information for the PSU"
tppMessages	Message to the TPP	List<TppMessage>	OPT	E.g. "tppMessages": [...]

3.1.2.3 Examples

Example of request for SCA via redirection

```
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 for standing orders for recurring/periodic payments

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

The functionality of recurring payment initiations is covered by the Berlin Group specification as a specific standing order initiation.

The TPP can submit a recurring payment initiation where the starting date, frequency and conditionally an end date is provided. Once authorised by the PSU, the payment then will be executed by the ASPSP, if possible, following this "standing order" as submitted by the TPP. No further TPP action is needed. This payment is called a periodic payment in this context to differentiate the payment from recurring payment types, where third parties are initiating the same amount of money e.g. payees for using credit card transactions or direct debits for recurring payments of goods or services. These latter types of payment initiations are not part of this interface.

Note: for the permanent payment initiation orders, the ASPSP will always request SCA with Dynamic linking. No exceptions are allowed.

dayOfExecution field rules

- **Daily payments**: the "dayOfExecution" field is not required. The first payment is the "startDate", and from then on, the payment is made every day.
- **Weekly payments**: if “dayOfExecution” is required, the possible values are from 01=Monday to 07=Sunday. If “dayOfExecution” is not required, the “startDate” used is that of the day of the week on which the payment was made. (If the "startDate" is Thursday, the payment will be made every Thursday)
- **Monthly or less frequent payments:** the possible values range from 01 to 31, using 31 as the last day of the month.

3.1.3.1 Request

Endpoint

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

Path

Field	Description	Type	Man.	Format
provider	URL of the HUB where the service is published.	String	MAN	E.g. hub.example.es
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 • target-2-payments • cross-border-credit-transfers	String	MAN	E.g. {provider}/{aspsp-name)/v1/periodic-payments/sepa-credit-transfers/

Query parameters

No additional parameters are specified for this request.

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	String	OPT	^.{1,5}$ E.g. PSU-IP-Port: 443

	between PSU and TPP, if available.			
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.	String	OPT	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-

	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.			[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 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 NOT SUPPORTED IN THIS VERSION**	Boolean	OPT	E.g. TPP-Redirect-Preferred: true
TPP-Redirect-URI	URI of the TPP, where the transaction flow shall be redirected to after a Redirect.	String	COND	^.{1,250}$ E.g. TPP-Redirect-URI":"https://tpp.

	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.			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"
TPP-Explicit-Authorisation-Preferred	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.	Boolean	OPT	E.g. TPP-Explicit-Authorisation-Preferred: false
Digest	Is contained if and only if the "Signature"	String	OPT	^.{1,100}$

	element is contained in the header of the request. See 6.1 Signature for more information.			E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	A signature of the request by the TPP on application level. See 6.1 Signature for more information.	String	MAN	See annexes
TPP-Signature-Certificate	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}$ E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

The content of the body is defined in 5.12 SinglePayment together with the following definitions:

Field	Description	Type	Man.	Format
startDate	The first applicable day of execution starting from this date is the first payment.	String	MAN	**ISODate** E.g. "startDate":"2018-12-20"
executionRule	Supported values: • following • preceding This data attribute defines the behavior when recurring	String	OPT	E.g. "executionRule":"following"

	payment dates falls on a weekend or bank holiday. The payment is then executed either the "preceding" or "following" working day. ASPSP might reject the request due to the communicated value, if rules in Online-Banking are not supporting this execution rule.			
endDate	The last applicable day of execution If not given, it is an infinite standing order.	String	OPT	**ISODate** E.g. "endDate":"2019-01-20"
frequency	The frequency of the recurring payment resulting from this standing order. Permitted values: • Daily • Weekly • Monthly • Quarterly • Annual	String	MAN	**ISO 20022 EventFrequency7Code** E.g. "frequency":"Monthly"
dayOfExecution	"31" is ultimo. The format is following the regular expression \d{1,2}. Example: The first day is addressed by "1". The date is referring to the time zone of the ASPSP. Only if supported in the ASPSP Online Banking.	String	COND	\d{1,2} E.g. "dayOfExecution":"01"

3.1.3.2 Response

Header

Field	Description	Type	Man.	Format
Location	Location of the created resource (if created)	String	MAN	^.{1,512}$ E.g. Location: /v1/periodic-payments/{payment-product}/{payment-id}
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
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"
transactionFees	Can be used by the ASPSP to transport transaction fees relevant for the	Amount	OPT	E.g. "transactionFees": {...}

	underlying payments.			
transactionFeeIndicator	If equals true, the transaction will involve specific transaction cost as shown by the ASPSP in their public price list or as agreed between ASPSP and PSU. If equals false, the transaction will not involve additional specific transaction costs to the PSU.	Boolean	OPT	E.g. "transactionFeeIndicator": true
_links	A list of hyperlinks to be recognised by the TPP. Type of links admitted in this response: • scaRedirect: In case of an SCA Redirect Approach, the ASPSP is transmitting the link to which to redirect the PSU browser. • startAuthorisation: In case, where an explicit start of the transaction authorisation is needed, but no more data needs to be updated (no authentication method to be selected, no PSU identification nor PSU authentication data to be uploaded). • self: link to the	Links	MAN	E.g. "_links": {…}

	resource created by this request. • status: The link to retrieve the transaction status • scaStatus: The link to retrieve the scaStatus of the corresponding authorisation sub-resource. This link is only contained, if an authorisation sub-resource has been already created.			
psuMessage	Text to be displayed to the PSU	String	OPT	^.{1,512}$ E.g. "psuMessage": "Information for the PSU"
tppMessages	Message to the TPP	List<TppMessage>	OPT	E.g. "tppMessages": [...]

3.1.3.3 Examples

Example of request for SCA via redirect

```
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",
      "executionRule": "preceeding",
      "frequency": "Monthly",
      "dayOfExecution": "01"
}
```


3.1.4 Get 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	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-service	Possible values are: • payments • periodic-payments	String	MAN	E.g. {provider}/{aspsp}/v1/payments
payment-product	Payment product to be used. List of supported products: • sepa-credit-transfers • target-2-payments • cross-border-credit-transfers	String	MAN	E.g. {provider}/{aspsp}/v1/payments/sepa-credit-transfers/
paymentId	Resource Identification of the related payment. Sent previously as a response to a message initiating payment by the TPP to the HUB.	String	MAN	^.{1,36}$ E.g. 1234-qwer-5678

Query parameters

No additional fields are specified.

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
Authorisation	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA

Accept	Response format supported. Supported values: • application/json	String	OPT	^.{1,50}$ E.g. Accept: application/json
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	OPT	^[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: GET
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
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	^.{1,100}$ 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	^.{1,5000}$ E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional data are specified.

3.1.4.2 Response

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

Body

Field	Description	Type	Man.	Format
transactionStatus	Status of the payment transaction. Values defined in 6.4 Transaction status	String	MAN	**ISO20022** E.g. "transactionStatus":"ACCP"
fundsAvailab	This data element is	Boolean	COND	E.g.

le	contained, if supported by the ASPSP, if a funds check has been performed and if the transactionStatus is: • ATCT • ACWC • ACCP			"fundsAvailable": true
psuMessage	Text to show to the PSU.	String	OPT	^.{1,512}$ E.g. "psuMessage":"Information for PSU"
tppMessages	Message for the TPP	List<TppMessage>	OPT	E.g. "tppMessages":[...]

3.1.4.3 Examples

Example of 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 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",
      "fundsAvailable": true
}
```

3.1.5 Get payment initiation

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

3.1.5.1 Request

Endpoint

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

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-service	Possible values are: • payments • periodic-payments	String	MAN	E.g. {provider}/{aspsp}/v1/payments
payment-product	Payment product to be used. List of supported products: • sepa-credit-transfers • target-2-payments • cross-border-credit-	String	MAN	E.g. {provider}/{aspsp}/v1/payments/sepa-credit-transfers/

	transfers			
paymentId	Resource Identification of the related payment. Sent previously as a response to a message initiating payment by the TPP to the HUB.	String	MAN	^.{1,36}$ E.g. 1234-qwer-5678

Query parameters

No additional fields are specified.

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
Authorisation	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
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	OPT	^[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	String	OPT	^\\d{1,5}$

	header field consists of the corresponding HTTP request IP Port field between PSU and TPP, if available.			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: GET
PSU-Device-ID	UUID (Universally Unique Identifier) for a device, which is used by	String	OPT	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-

	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.			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
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	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	A signature of the request by the TPP on application level. See 6.1 Signature for more information.	String	MAN	See annexes
TPP-Signature-Certificate	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}$ E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional data are specified.

3.1.5.2 Response

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

Body

The fields to return are those requesting initiation of the original payment:

- 3.1.1 Payment initiation
- 3.1.2 Payment initiation for future dated payments
- 3.1.3 Initiation for standing orders for recurring/periodic payments

Plus the following:

Field	Description	Type	Man.	Format
transactionStatus	Status of the transaction. Values defined in annexes. Short code.	String	MAN	**ISO 20022** E.g. "transactionStatus": "ACCP"
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. "tppMessage": [...]

3.1.5.3 Examples

Example of 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 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 Payment cancellation

This request is send by the TPP to the ASPSP through the Hub and allows payment cancellation to be initiated. Depending on the payment-service, the payment-product and the ASPSP's implementation, this TPP call might be sufficient to cancel a payment. If an authorisation of the payment cancellation is mandated by the ASPSP, a corresponding hyperlink will be contained in the response message.

3.1.6.1 Request

Endpoint

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

Path

Field	Description	Type	Man.	Format
provider	URL of the ASPSP 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-service	Possible values are: • payments • periodic-payments	String	MAN	E.g. {provider}/v1/payments
paymentId	Identifier of the resource that references the payment initiation. Sent previously as a response to a message initiating	String	MAN	^.{1,36}$ E.g.123-qwe-456

	payment by the HUB to the ASPSP.			

Query parameters

No additional fields are specified.

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
Authorisation	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
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	OPT	^[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	String	OPT	^.{1,50}$ E.g. PSU-Accept:

	the corresponding HTTP request Accept header fields between PSU and TPP, if available.			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: DELETE
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	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

	need to be unaltered until removal from device.			
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
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	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	A signature of the request by the TPP on application level. See 6.1 Signature for more information.	String	MAN	See annexes
TPP-Signature-Certificate	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}$ E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ…….....KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional data are specified.

3.1.6.2 Response

Header

Field	Description	Type	Man.	Format
X-Request-	ID of the request,	String	MAN	**UUID**

ID	unique to the call, as determined by the initiating party.			^[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	Man.	Format
transactionStatus	Status of the transaction. Values defined in annexes in 6.4 Transaction status	String	MAN	**ISO 20022** E.g. "transactionStatus": "CANC"
_links	A list of hyperlinks to be recognised by the TPP. Type of links admitted in this response: • startAuthorisation: In case, where an explicit start of the transaction authorisation is needed, but no more data needs to be updated (no authentication method to be selected, no PSU identification nor PSU authentication data to be uploaded).	Links	COND	E.g. "_links": {…}
psuMessage	Text to show to the PSU.	String	OPT	^.{1,512}$ E.g. "psuMessage": "Information for the PSU"
tppMessag	Message for the TPP	List<Tpp	OPT	E.g. "tppMessages":

es		Message >		[...]

3.1.6.3 Examples

Example of 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 in case the DELETE process as such is already sufficient for cancelling the payment

```
HTTP/1.1 204 No Content
X-Request-ID: 0ee25bf4-6ff1-11e8-adc0-fa7ae01bbebc
Date: Sun, 26 Sep 2017 15:02:47 GMT
```

Example in case an authorisation of the cancellation is needed by the PSU

```
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"
            }
      }
}
```


3.1.7 Multilevel SCA for payments

In the case of the SCA flow by redirection, the TPP may redirect to PSU, which initiates the transaction to the scaRedirect link for applying SCA.

In addition, the ASPSP will return a message in the psuMessage field to indicate to the PSU that the transaction requires SCA by more users.

3.2 AIS: Establish account information consent service

3.2.1 Characteristics of the consent

3.2.1.1 Consent model

Model	Description
Detailed consent	**Request consent for the accounts indicated** Create a consent, which the ASPSP must store, requesting access for the accounts indicated and with the requested access. If there was already consent, this consent will expire and the new agreement will enter into force when authorised by the PSU. The accounts for which consent is requested to access the "balances" and/or "transactions" are also assumed to have the "accounts" access type.

3.2.1.2 Recurring access

Recurring consents

If there is already a prior consent with recurring access (recurringIndicator=true) and a new consent request is sent with recurring access, as soon as the new consent is accepted by the PSU, the prior consent will expire and only the new requested consent will be valid.

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

Note: giving access to "balances" and/or "transactions" automatically grants "accounts" access to these accounts.

Non-recurring consents

A consent request for non-recurring access (once-only and with recurringIndicator=false) will be treated as a new consent (new consentId) without affecting previous existing consents.

3.2.2 Account information consent

With this service, a TPP may request consent through the HUB to access the PSU accounts. This request may be for indicated accounts or not.

That is why the consent request has these variants:

- Establish consent for account information on the indicated accounts
- Establish account information consent to obtain a list of all available accounts
- Establish account information consent to obtain access to all accounts for all types of PSD2 AIS access: “accounts”, “balances” and/or “transactions”

Note: each consent 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	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	String	MAN	E.g. aspsp-name

	made.			

Query parameters

No additional fields are specified.

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
Authorisation	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
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	OPT	^[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	String	OPT	^.{1,50}$

	of the corresponding HTTP request Accept header fields between PSU and TPP, if available.			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	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

	need to be unaltered until removal from device.			
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 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 NOT SUPPORTED IN THIS VERSION**	Boolean	OPT	E.g. TPP-Redirect-Preferred: true
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	String	COND	^.{1,250}$ E.g. TPP-Redirect-URI":"https://tpp.example.es/cb"

	"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.			
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	^.{12,50}$ E.g. TPP-Nok-Redirect-URI":"https://tpp.example.es/cb/nok"
TPP-Explicit-Authorisation-Preferred	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.	Boolean	OPT	E.g. TPP-Explicit-Authorisation-Preferred: false

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	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	A signature of the request by the TPP on application level. See 6.1 Signature for more information.	String	MAN	See annexes
TPP-Signature-Certificate	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}$ E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

Field	Description	Type	Man.	Format
access	Accesses requested to the services. Only the sub-attributes with "accounts", "balances" and "transactions" tags are accepted. In addition, the ASPSP may support the attributes "availableAccounts", "availableAccountsWithBalances" or "allPsd2" with the value "allAccounts".	Account Access	MAN	E.g. "access":{...}
recurringIndicator	Possible values: • true: recurring access to the account. • false: once-only	Boolean	MAN	E.g. "recurringIndicator": true

	access.			
validUntil	Date until which the consent requests access. The following value should be used to create consent with the maximum possible access time: 9999-12-31 When consent is recovered, the maximum possible date will be adjusted.	String	MAN	**ISODate** E.g. "validUntil":"2018-05-17"
frequencyPerDay	This field indicates the requested maximum frequency for an access without PSU involvement per day. For a one-off access, this attribute is set to "1".	Integer	MAN	E.g. "frequencyPerDay":4
combinedServiceIndicator	If true indicates that a payment initiation service will be addressed in the same "session"	Boolean	MAN	E.g. "combinedServiceIndicator": false

3.2.2.2 Response

Header

Field	Description	Type	Man.	Format
Location	Location of the created resource (if created)	String	MAN	**Max512Text** E.g. Location: /v1/consents/{consentId}
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
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
consentStatus	Consent authentication status. See values defined in 6.5 Consent status	String	MAN	E.g. "consentStatus": "received"
consentId	Identifier of the resource that references the consent. It must be contained if a consent was generated.	String	MAN	^.{1,36}$ E.g. "consentId":"123-QWE-456"
_links	A list of hyperlinks to be recognised by the TPP. Type of links admitted in this response: • scaRedirect: In case of an SCA Redirect Approach, the ASPSP is transmitting the link to which to redirect the PSU browser. • startAuthorisation: In case, where an explicit start of the transaction	Links	MAN	E.g. "_links": {...}

	authorisation is needed, but no more data needs to be updated (no authentication method to be selected, no PSU identification nor PSU authentication data to be uploaded). • self: link to the resource created by this request. • status: The link to retrieve the transaction status • scaStatus: The link to retrieve the scaStatus of the corresponding authorisation sub-resource. This link is only contained, if an authorisation sub-resource has been already created.			
psuMessage	Text to be displayed to the PSU	String	OPT	^.{1,512}$ E.g. "psuMessage": "Information for the PSU"
tppMessages	Message to the TPP	List<TppMessage>	OPT	E.g. "tppMessages": [...]

3.2.2.3 Examples

Example of consent request for dedicated accounts with SCA via redirect

```
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",
                  "currency": "USD"
            },
            {
                  "iban": "ES3333333333333333333333"
            }
            ],
            "transactions": [
            {
                  "iban": "ES1111111111111111111111"
            }
            ]
      },
      "recurringIndicator": true,
```

```
      "validUntil": "2018-05-17",
      "frequencyPerDay": 4
}
```

Example of consent request for the list of available accounts with SCA via redirect

```
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": "2018-05-17",
      "frequencyPerDay": 1
}
```

Example of the response in the case of SCA via redirect with an implicitly generated sub-resource authorisation

```
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"
            },
            "scaStatus": {
                  "href": "/v1/consents/123-asdf-456/authorisations/123auth456"
            }
      }
}
```

3.2.3 Get consent status

This service allows TPP to know the status of a consent request initiated previously.

3.2.3.1 Request

Endpoint

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

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
consentId	Identifier of the resource that references the consent. Sent previously as a response to a request message for consent from the TPP to the HUB.	String	MAN	^.{1,36}$ E.g.123-qwerty-456

Query parameters

No additional fields are specified.

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
Authorisation	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsic

				MWpAA
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	OPT	^[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-	HTTP method used at	String	OPT	E.g. PSU-Http-

Method	the PSU – TPP interface, if available. Valid values are: • GET • POST • PUT • PATCH • DELETE			Method: GET
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
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	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	A signature of the request by the TPP on application level. See 6.1 Signature for more information.	String	MAN	See annexes

TPP-Signature-Certificate	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}$ E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional data are sent.

3.2.3.2 Response

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

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

Body

Field	Description	Type	Man.	Format
consentStatus	Consent authentication status. See values defined in 6.5 Consent status	String	MAN	E.g. "consentStatus":"valid"
psuMessage	Text to show to the PSU	String	OPT	^.{1,512}$ E.g. "psuMessage":"Information for

				PSU"
tppMessages	Message for the TPP	List<TppMessage>	OPT	E.g. "tppMessages":[...]

3.2.3.3 Examples

Example of 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 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 Get consent

3.2.4.1 Request

This message is sent by the TPP to the HUB as a request to recover the information of a previously created consent.

Endpoint

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

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
consentId	Identifier of the resource that references the consent. Sent previously as a response to a request message for consent from the TPP to the HUB.	String	MAN	^.{1,36}$ E.g. 7890-asdf-4321

Query parameters

No additional fields are specified.

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
Authorisation	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
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	OPT	^[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: GET
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
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	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	A signature of the	String	MAN	See annexes

	request by the TPP on application level. See 6.1 Signature for more information.			
TPP-Signature-Certificate	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}$ E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional data are sent.

3.2.4.2 Response

This message is returned by the HUB to the TPP as a response to the message requesting recovery of the consent information.

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

Body

Field	Description	Type	Man.	Format
access	Accesses requested to the services. Only the	AccountAcces	MAN	E.g. "access": {...}

	sub-attributes with "accounts", "balances" and "transactions" tags are accepted. In addition, the ASPSP may support the attributes "availableAccounts", "availableAccountsWithBalances" or "allPsd2" with the value "allAccounts"	s		
recurringIndicator	Possible values: • true: recurring access to the account. • false: once-only access.	Boolean	MAN	E.g. "recurringIndicator": true
validUntil	Date until which the consent requests access. The following value should be used to create consent with the maximum possible access time: 9999-12-31 When consent is recovered, the maximum possible date will be adjusted.	String	MAN	**ISODate** E.g. "validUntil": "2018-05-17"
frequencyPerDay	Indicates the frequency of access to the account every day. 1 if it is one-time-only access.	Integer	MAN	E.g. "frequencyPerDay":4
lastActionDate	Date of the last modification made to the consent.	String	MAN	**ISODate** E.g. "lastActionDate":"2018-01-01"
consentStatus	Consent authentication status. Values defined in annexes.	String	MAN	E.g. "consentStatus":"valid"

psuMessage	Text to show to the PSU	String	OPT	^.{1,512}$ E.g. "psuMessage":"Information for PSU"
tppMessages	Message for the TPP	List<TppMessage>	OPT	E.g. "tppMessages":[...]

3.2.4.3 Examples

Example of 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 response to consent with dedicated 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",
                "currency": "USD"
            },
            {
                "iban": "ES3333333333333333333333"
            }
            ],
            "transactions": [
            {
                "iban": "ES1111111111111111111111"
            }
            ]
      },
      "recurringIndicator": true,
      "validUntil": "2018-05-17",
      "frequencyPerDay": 4,
      "lastActionDate": "2018-01-17",
      "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 the removal of a previously created consent.

Endpoint

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

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

consentId	Identifier of the resource that references the consent. Sent previously as a response to a request message for consent from the TPP to the HUB.	String	MAN	^.{1,36}$ E.g. 7890-asdf-4321

Query parameters

No additional fields are specified.

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
Authorisation	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
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	OPT	^[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	String	OPT	^\\d{1,5}$ E.g. PSU-IP-Port: 443

	between PSU and TPP, if available.			
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: DELETE
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	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-

	dependant application installation. In case of an installation identification this ID need to be unaltered until removal from device.			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
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	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	A signature of the request by the TPP on application level. See 6.1 Signature for more information.	String	MAN	See annexes
TPP-Signature-Certificate	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}$ E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional data are sent.

3.2.5.2 Response

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

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

Body

No additional fields are specified.

3.2.5.3 Examples

Example of 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 response

```
HTTP/1.1 204 Ok
X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc
Date: Sun, 26 Sep 2017 15:02:50 GMT
```

3.2.6 Multilevel SCA to establish consent

In the case of the SCA flow by redirection, the TPP may redirect to PSU, which initiates the transaction to the scaRedirect link for applying SCA.

In addition, the ASPSP will return a message in the psuMessage field to indicate to the PSU that the transaction requires SCA by more users.

3.3 AIS: Account data reading service

3.3.1 Account list reading

This service allows a list of PSU accounts to be obtained, including the account balances if requested and the consent includes it.

This request is used both for the list of available accounts and the list of account details, depending on the consent used in the request.

As a requirement, it is assumed that the PSU has given its consent for this access and it has been stored by the ASPSP.

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

Type of access	Description
availableAccounts	This type of access is associated with once-only consents. If the consent associated with the request has this type of access, it will be a once-only consent and may be obtained: • List of all the available PSU accounts. The following may not be obtained: • Account balances (unless supported by the ASPSP) • Links to the endpoint of balances or transactions
availableAccountsWithBalances	This type of access is associated with once-only consents. If the consent associated with the request has this type of access, it will be a once-only consent and may be obtained: • List of all the available PSU accounts.

	• Account balances (unless supported by the ASPSP) The following may not be obtained: • Links to the endpoint of balances or transactions
account	If the consent associated with the request has this type of access, the accounts included in the consent with the "account" type of access may be listed.
balances	If the consent associated with the request has this type of access, the accounts included in the consent with the "balances" type of access may be listed and their balances may be obtained if supported by the ASPSP.
transactions	If the consent has accounts with this type of access, these accounts may be listed with the "account" access type. This type of access does not imply a "balances" type of access.
allPsd2	If the consent associated with the request has this type of access, the accounts included in the consent may be listed and their balances may be obtained. Note: allPsd2 grants the three types of access.

3.3.1.1 Request

Endpoint

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

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

Query parameters

Field	Description	Type	Man.	Format
withBalance	If it is included, this function includes the balances. This request will be rejected if access to balances does not include consent or the ASPSP does not support this parameter.	Boolean	OPT	E.g. true

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
Authorisation	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
Consent-ID	Identification of the consent resource	String	MAN	^.{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	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	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	String	OPT	^.{1,50}$ E.g. PSU-Accept: application/json

	fields between PSU and TPP, if available.			
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: GET
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	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

	device.			
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
Digest	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	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

Data are not sent in the body in this request.

3.3.1.2 Response

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

Body

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

3.3.1.3 Examples

Example of request to obtain list of accessible PSU accounts

```
GET https://www.hub.com/aspsp-name/v1.1/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 the response obtaining list of accessible PSU accounts

Response where the consent has been given for two different IBAN numbers.

```
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",
            "cashAccountType": "CACC",
            "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",
            "cashAccountType": "CACC",
            "name": "US Dollar Account",
            "_links": {
                  "balances": {
                        "href":  "/v1/accounts/3dc3d5b3-7023-4848-9853-
                  f5400a64e81g/balances"
                  }
            }
      }
      ]
}
```


3.3.2 Reading account details

This service allows the account details to be read with the balances if required.

As a requirement, it is assumed that the PSU has given its consent for this access and it has been stored by the ASPSP.

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

Type of access	Description
availableAccounts	This type of access does not allow consumption of this service.
availableAccountsWithBalances	This type of access does not allow consumption of this service.
account	If the consent associated with the request has this type of access, the account may be queried.
balances	If the consent associated with the request has this type of access, the account may be queried and its balances may be obtained if the ASPSP supports it.
transactions	If the consent has accounts with this type of access, this account may be queried with the

	"account" access type. This type of access does not imply a "balances" type of access.
allPsd2	If the consent associated with the request has this type of access, the account may be queried and its balances may be obtained. Note: allPsd2 grants the three types of access.

3.3.2.1 Request

Endpoint

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

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
account-id	Identifier of the account assigned by the ASPSP	String	MAN	^.{1,100}$ E.g. account-id=a1q5w

Query parameters

Field	Description	Type	Man.	Format
withBalance	If it is included, this function includes the balances. This request will be rejected if access to balances does not include consent or the ASPSP does not support this parameter.	Boolean	OPT	E.g. true

Header

Field	Description	Type	Man.	Format
X-Request-ID	ID of the request, unique to the call, as determined by the	String	MAN	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-

	initiating party.			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	Identification of the consent resource	String	MAN	^.{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	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	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-	See above	String	OPT	^.{1,50}$

Encoding				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: GET
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
Digest	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	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

Data are not sent in the body in this request.

3.3.2.2 Response

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

Body

Field	Description	Type	Mand.	Format
account	Detailed information on the account	Account Details	MAN	E.g. "account": {...}
psuMessage	Text to show to the PSU	String	OPT	^.{1,512}$ E.g. "psuMessage":"Information for PSU"
tppMessages	Message for the TPP	List<TppMessage>	OPT	E.g. "tppMessages": [...]

3.3.2.3 Examples

Example of request

```
GET https://www.hub.com/aspsp-name/v1.1/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 when the account only has 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",
            "cashAccountType": "CACC",
            "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 balances

This service allows balances of an account determined by its identifier to be obtained.

As a requirement, it is assumed that the PSU has given its consent for this access and it has been stored by the ASPSP.

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

Type of access	Description
availableAccounts	This type of access does not allow consumption of this service.
availableAccountsWithBalances	This type of access does not allow consumption of this service.
account	This type of access does not allow consumption of this service.
balances	If the consent associated with the request has this type of access, the account balances may be queried.
transactions	This type of access does not allow consumption of this service.
allPsd2	If the consent associated with the request has this type of access, the account balances may be queried. Note: allPsd2 grants the three types of access.

3.3.3.1 Request

Endpoint

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

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
account-id	Identifier of the account that will be used in the data reading. Obtained previously in the reading of the account list. Must be valid at least while the consent lasts. This id may be tokenised .	String	MAN	^.{1,100}$ E.g. account-id=a1q5w

Query parameters

No additional fields are specified.

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
Authorisation	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
Consent-ID	Identification of the consent resource	String	MAN	^.{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	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	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	String	OPT	^.{1,50}$ E.g. PSU-Accept:

	the corresponding HTTP request Accept header fields between PSU and TPP, if available.			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: GET
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	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-

	until removal from device.			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
Digest	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	MAN	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
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

The data are not sent in the body in this request.

3.3.3.2 Response

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

Body

Field	Description	Type	Mand.	Format
account	Identifier of the addressed account. Remark for Future: It is recommended to use this data element. The condition might change to "mandatory" in a next version of the specification.	AccountReference	OPT	E.g. "account": {...}
balances	A list of balances regarding this account, e.g. the current balance, the last booked balance.	List<Balance>	MAN	E.g. "balances": {...}
psuMessage	Text to show to the PSU.	String	OPT	^.{1,512}$ E.g. "psuMessage": "Information for PSU"
tppMessages	Message for the TPP.	List<TppMessage>	OPT	E.g. "tppMessages" :[...]

3.3.3.3 Examples

Example of 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 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"
            },
            "referenceDate": "2017-10-25"
```

```
      },
      {
            "balanceType": "expected",
            "balanceAmount": {
                  "currency": "EUR",
                  "amount": "900.00"
            },
            "lastChangeDateTime": "2017-10-25T15:30:35.035Z"
      }
      ]
}
```


3.3.4 Reading of transactions

This service allows transactions to be obtained of an account determined by its identifier.

As a requirement, it is assumed that the PSU has given its consent for this access and it has been stored by the ASPSP.

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

Type of access	**Description**
availableAccounts	This type of access does not allow consumption of this service.
availableAccountsWithBalances	This type of access does not allow consumption of this service.
account	This type of access does not allow consumption of this service.
balances	If the consent associated with the request has this type of access, the balances may be requested if the ASPSP supports it.
transactions	If the consent associated with the request has this type of access, the account activity may be queried.
allPsd2	If the consent associated with the request has this type of access, the account balances may be queried. Note: allPsd2 grants the three types of access.

3.3.4.1 Request

Endpoint

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

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
account-id	Identifier of the account that will be used in the data reading. Obtained previously in the reading of the account list. Must be valid at least while the consent lasts. This id may be tokenised.	String	MAN	^.{1,100}$ E.g. account-id=a1q5w

Query parameters

Field	Description	Type	Man.	Format
dateFrom	Start date of query. It is included if the "deltaList" is not included.	String	COND	**ISODate** E.g. dateFrom=2017-10-25
dateTo	End date of query. Its default value is the current date, unless otherwise indicated.	String	OPT	**ISODate** E.g. dateTo=2017-11-05
entryReferenceFrom	If it is indicated, it will give us the results from the time of the call with entryReferenceFrom before that given. If it is contained, the dateFrom and dateTo attributes	String	OPT	E.g. entryReferenceFrom=1234-asdf-567

	are ignored.			
bookingStatus	Status of the returned transactions. The status codes permitted are "booked", "pending" and "both". Those mandatory for the ASPSPs are "booked".	String	MAN	E.g. bookingStatus=booked
withBalance	If it is included, this function includes the balances. This request will be rejected if access to balances does not include consent or the ASPSP does not support this parameter.	Boolean	OPT	E.g. true

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
Authorisation	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
Consent-ID	Identification of the consent resource	String	MAN	^.{1,36}$ E.g. Consent-ID: 7890-asdf-4321
Accept	Response format supported. Supported values:	String	OPT	^.{1,50}$ E.g. Accept:

	application/json			application/json
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	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	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-	HTTP method used at	String	OPT	E.g. PSU-Http-

Method	the PSU – TPP interface, if available. Valid values are: • GET • POST • PUT • PATCH • DELETE			Method: GET
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
Digest	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	MAN	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	Is contained if and only if the "Signature" element is contained in the header of the request.	String	MAN	See annexes

	See 6.1 Signature for more information.			
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

Data are not sent in the body in this request.

3.3.4.2 Response

Header

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

Body

Field	Description	Type	Man.	Format
account	Identifier of the addressed account. Remark for Future: It is recommended to use this data element. The	AccountReference	OPT	E.g. "account": {...}

	condition might change to "mandatory" in a next version of the specification.			
transactions	JSON based account report. This account report contains transactions resulting from the query parameters.	AccountReport	OPT	E.g. "transactions": {...}
balances	A list of balances regarding this account, which might be restricted to the current balance.	List<Balance>	OPT	E.g. "balances": [...]
_links	List of hyperlinks to be recognised by the TPP. Types supported in this response: "**download**": Download link for the query data when the data returned are of a substantial weight. Only for camt-data.	Links	OPT	E.g. "_links": {...}
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": [...]

3.3.4.3 Examples

Example of a search request sending search criteria by dateTo and dateFrom

GET

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

```
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 sending entryReferenceFrom search criteria

```
GET https://www.hub.com/aspsp-name/v1/accounts/qwer3456tzui7890/transactions?entryReferenceFrom=1234-asd-4564700&bookingStatus=both
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": [
            {
                  "transactionId": "1234567",
                  "creditorName": "John Miles",
                  "creditorAccount": {
                        "iban": "ES1111111111111111111111"
                  },
                  "transactionAmount": {
                        "currency": "EUR",
                        "amount": "256.67"
                  },
                  "bookingDate": "2017-10-25",
                  "valueDate": "2017-10-26",
                  "remittanceInformationUnstructured": "Example for
            Remittance Information"
            },
            {
                  "transactionId": "1234568",
                  "debtorName": "Paul Simpson",
                  "debtorAccount": {
                        "iban": "NL354543123456900"
                  },
                  "transactionAmount": {
                        "currency": "EUR",
```

```
                "content": "343.01"
            },
            "bookingDate": "2017-10-25",
            "valueDate": "2017-10-26",
            "remittanceInformationUnstructured": "Another example
for Remittance Information"
}
],
"pending": [
{
            "transactionId": "123456789",
            "creditorName": "Claude Renault",
            "creditorAccount": {
                "iban": "NL354543123456900"
            },
            "transactionAmount": {
                "currency": "EUR",
                "amount": "-100.03"
            },
            "valueDate": "2017-10-26",
            "remittanceInformationUnstructured": "Another example
for Remittance Information"
}
],
"_links": {
            "account": {
                "href": "/v1/accounts/qwer3456tzui7890"
            },
            "first": {
                "href":                          "/v1/accounts/
            qwer3456tzui7890/transactions?page[number]=1&page[siz
            e]=15
            },
            "previous": {
                "href":                          "/v1/accounts/
            qwer3456tzui7890/transactions?page[number]=2&page[siz
            e]=15"
```

```
                },
                "next": {
                      "href":                              "/v1/accounts/
                qwer3456tzui7890/transactions?page[number]=4&page[siz
                e]=15"
                },
                "last": {
                      "href":                              "/v1/accounts/
                qwer3456tzui7890/transactions?page[number]=10&page[si
                ze]=15"
                }
          }
      }
}
```


Example of response with error


```
{
      "tppMessages": [{
            "category": "ERROR",
            "code": " ACCESS_EXCEDED "
      }
      ]
}
```


3.4 FCS: Fund Confirmation Service

3.4.1 Confirmation of funds

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

The HUB communicates with the ASPSP to ask whether it has funds or not, and after the query, returns the response to the TPP.

3.4.1.1 Request

Endpoint

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

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

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
Authorisation	Bearer Token. Obtained in a prior authentication on OAuth2. Only if the consent management has been carried out through the API.	String	COND	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
Consent-ID	Identifier of the consent obtained in the transaction requesting consent. Only if the consent management	String	COND	^.{1,36}$ E.g. Consent-ID: 7890-asdf-4321

	has been carried out through the API.			
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	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	A signature of the request by the TPP on application level. See 6.1 Signature for more information.	String	MAN	See annexes
TPP-Signature-Certificate	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,512}$ E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

Field	Description	Type	Mand.	Format
cardNumber	Card Number of the card issued by the PIISP. Should be delivered if available.	String	OPT	E.g. "cardNumber": "1111-1111-1111-1111"

account	PSU's account number.	AccountReference	MAN	E.g. "account": {"iban":"ES1111111111111111111"}
payee	The merchant where the card is accepted as an information to the PSU.	String	OPT	^.{1,70}$ E.g. "payee":"Merchant name"
instructedAmount	Transaction amount to be checked within the funds check mechanism.	Amount	MAN	E.g. "instructedAmount": {…}

3.4.1.2 Response

This message is returned by the HUB to the TPP as a response to the fund confirmation message.

Header

Field	Description	Type	Man.	Format
Location	Contains the link to the resource generated.	String	MAN	
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

Body

Field	Description	Type	Man.	Format
fundsAvailable	Equals true if sufficient funds are available at the time of the request, false otherwise.	Boolean	MAN	E.g. "fundsAvailable": true

tppMessages	Message for the TPP.	List<TppMessage>	OPT	E.g. "tppMessages": [...]

3.4.1.3 Examples

Example of 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
Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
Consent-ID: 7890-asdf-4321
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 pre-step

3.5.1 Obtain authorisation

3.5.1.1 Request

The TPP redirects the PSU's browser so that 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	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

Query parameters

Field	Description	Type	Man.	Format
response_type	Its value must be established at "code".	String	MAN	E.g. response_type=code

client_id	organizationIdentifier" provided in the eIDAS certificate formed as: - PSD - 2 characters from the NCA country code (according to ISO 3166) - Carácter "-" - 2-8 characters for the NCA identifier (A-Z in upper case) - Carácter "-" - PSP identifier	String	MAN	^.{1,70}$ E.g. client_id=PSDES-BDE-3DFD246
scope	Possible scope: • PIS • AIS • FCS • SVA May indicate more than one, separated by a +	String	MAN	^.{1,64}$ E.g. scope=PIS+AIS+SVA
state	Opaque value generated by the TPP. Used to prevent "cross-site request forgery" XSRF attacks.	String	MAN	^.{1,64}$ E.g. state=XYZ
redirect_uri	URL returned to the HUB where it will report the authorisation "code" that will be used subsequently to obtain the access token.	String	MAN	^.{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	MAN	^.{1,128}$ E.g. code_challenge=E9Melhoa2OwvFrEMTJguCHaoe

				K1t8URWbuGJSstw-cM
code_challenge_method	Method to verify the code that may be "plain" or "S256". S256 (SHA 256) preferred	String	OPT	^.{1,120}$ E.g. code_challenge_method=S256

Header

No additional fields are specified.

Body

The data are not sent in the body in this response.

3.5.1.2 Response OK

Response if the request has been processed correctly. The result is the redirection initiated by the HUB from the PSU navigator to the URL of the environment provided by the TPP.

Path

No additional fields are specified.

Query Parameters

Field	Description	Type	Man.	Format
Location	Contains the URL where the redirection is carried out to the TPP.	String	MAN	E.g. Location: https://www.tpp.com/cb
code	One-time-only authorisation generated by the HUB. A life of not more than 10 minutes is recommended.	String	MAN	^.{1,64}$ E.g. code=SplxlOBeZQQYbYS6WxSbIA
state	Opaque value generated by the TPP. Used to maintain the status between request and response. The HUB will include it when it redirects the PSU's	String	MAN	^.{1,64}$ E.g. state=XYZ

	browser back to the TPP. Used to prevent "cross-site request forgery" attacks.			

Body

Data are not sent in the body in this request.

3.5.1.3 Error response

Response if there has been any error in the request. The result is the redirection initiated by the HUB from the PSU navigator to the URL of the environment provided by the TPP.

Path

No additional fields are specified.

Query Parameters

Field	Description	Type	Man.	Format
Location	Contains the URL that is redirected to the TPP.	String	MAN	E.g. Location: https://www.tpp.com/cb
error	Code that indicates the error that has occurred.	String	MAN	E.g. error=invalid_request
state	Value generated by the TPP. Used to maintain the status between request and response. The HUB will return it in the response.	String	MAN	E.g. state=XYZ

Body

Data are not sent in the body in this request.

3.5.1.4 Examples

Example of 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 of OK response

```
HTTP/1.1 302 Found
Location: https://www.tpp.com/cb?code=SplxlOBeZQQYbYS6WxSbIA&state=xyz
```

Example of NOK response

```
HTTP/1.1 302 Found
Location: https://www.tpp.com/cb?error=access_denied&state=xyz
```

3.5.2 Obtain access token

This message is sent by the HUB to ASPSP to exchange the authorisation code obtained in the prior step and obtain an access token and refresh token.

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	MAN	E.g. www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name

Request Parameters

Field	Description	Type	Mand.	Format
grant_type	Must take the value of "authorisation_code"	String	MAN	E.g. grant_type=authorization_code
client_id	“organizationIdentifier” provided in the eIDAS certificate formed as: - PSD - 2 characters from the NCA country code (according to ISO 3166) - Carácter "-" - 2-8 characters for the NCA identifier (A-Z in upper case) - Carácter "-" - PSP identifier	String	MAN	^.{1,70}$ E.g. client_id=PSDES-BDE-3DFD246
code	Authorisation code returned by the ASPSP in the previous application requesting an authorisation code	String	MAN	^.{1,64}$ E.g. code=SplxlOBeZQQY bYS6WxSbIA
redirect_uri	URL is returned to the TPP where the authorisation "code" is entered. It must be the same as that entered in the authorisation code request.	String	MAN	^.{1,250}$ E.g. redirect_uri=https%3A%2F%2Fwww%2Etpp%2Ecom%2Fcb
code_verifier	PKCE verification code used to prevent code injection attacks. Based on RFC 7636.	String	MAN	E.g. code_verifier=dBjftJeZ4CVP-mB92K27uhbUJU1p1r_wW1gFWFOEjXk

Header

No additional fields are specified.

Body

Fields are not sent in the body.

3.5.2.2 Response OK

Response if the request has been processed correctly. The result of the request is an access token sent by the HUB to the PSU.

Body

Field	Description	Type	Man.	Format
access_token	Access token issued by the HUB and joined to the scope that was requested in the request and confirmed by the PSU.	String	MAN	^.{1,64}$ E.g. "access_token":"2YotnFZFEjr1zCsicMWpAA"
token_type	Type of token issued. Will take the value "Bearer".	String	MAN	E.g. "token_type":"Bearer"
expires_in	Life of the access token in seconds.	Integer	OPT	E.g. "expires_in":300
refresh_token	Refresh token. May be used to obtain a new access token if it has expired.	String	OPT	^.{1,64}$ E.g. "refresh_token":"tGzv3JOkF0XG5Qx2TlKWIA"

3.5.2.3 Error response

Response if there has been any error in the request. It is the result of the request for an access token made by the TPP to the HUB.

Body

Field	Description	Type	Man.	Format
error	Code that indicates the error that has occurred. For more return codes see the annexes.	String	MAN	E.g. "error":"invalid_request"

3.5.2.4 Examples

Example of 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%2Et
pp%2Ecom%2Fcb&code_verifier=dBjftJeZ4CVP-
mB92K27uhbUJU1p1r_wW1gFWFOEjXk
```

Example of 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 of 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 Token renewal request

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

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	MAN	E.g. www.hub.com
aspsp	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
grant_type	Must take the value of "refresh_token"	String	MAN	E.g. grant_type=refresh_token
client_id	organizationIdentifier" provided in the eIDAS certificate formed as: - PSD - 2 characters from the NCA country code (according to ISO 3166) - Carácter "-" - 2-8 characters for the NCA identifier (A-Z in upper case)	String	MAN	^.{1,70}$ E.g. client_id=PSDES-BDE-3DFD246

	- Carácter "-" - PSP identifier			
refresh_token	The refresh token necessary to be able to obtain an unexpired access_token.	String	MAN	^.{1,64}$ E.g. refresh_token=tGzv3JOkF0XG5Qx2TlKWIA

Header

No additional data are specified.

Body

No additional data are specified.

3.6.2 Response

Field	Description	Type	Man.	Format
access_token	Access token issued by the HUB and joined to the scope that was requested in the request and confirmed by the PSU.	String	MAN	^.{1,64}$ E.g. "access_token":"83kdFZFEjr1zCsicMWBB"
token_type	Type of token issued. Will take the value "Bearer".	String	MAN	E.g. "token_type":"Bearer"
expires_in	Life of the access token in seconds.	Integer	OPT	E.g. "expires_in":300
refresh_token	Refresh token. May be used to obtain a new access token if it has expired.	String	OPT	^.{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 of 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 Processes common to the services.

3.7.1 Initiation of the authorisation process (explicit)

Use

The process of initiating authorisation is a necessary process to create a new authorisation sub-resource (if it has not been created implicitly). Applied in the following scenarios:

- The ASPSP has indicated with a "startAuthorisation" link in the response to a payment initiation request that an explicit initiation of the authorisation process is not necessary because of the TPP.
- The ASPSP has indicated with a "startAuthorisation" link in the response to a payment cancellation request that an explicit initiation of the authorisation process is not necessary because of the TPP.
- The ASPSP has indicated with a "startAuthorisation" link in the response to an account information consent request that an explicit initiation of the authorisation process is not necessary because of the TPP.

- The ASPSP has indicated with a "startAuthorisation" link in the response to a fund confirmation consent request that an explicit initiation of the authorisation process is not necessary because of the TPP.

3.7.1.1 Request

Endpoint in the case of Fund Confirmation Consent

POST {provider}/{aspsp}/v2/consents/confirmation-of-funds/{consentId}/authorisations

Endpoint in the case of Payment Cancellation

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

Path

Field	Description	Type	Man.	Format
provider	URL of the HUB where the service is published.	String	MAN	E.g. hub.example.es
aspsp	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
payment-service	Possible values are: • payments • periodic-payments	String	COND	E.g. {provider}/v1/payments
payment-product	Payment product to be used. List of supported products: • sepa-credit-transfers • target-2-payments • cross-border-credit-transfers	String	COND	E.g. {provider}/v1/payments/sepa-credit-transfers/
paymentI, consentId	Identifier of the resource that references the payment initiation or consent.	String	MAN	^.{1,36}$ E.g.123-qwe-456

Query parameters

No additional parameters are specified for this request.

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
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	OPT	^[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-	The forwarded Geo Location of the	String	OPT	**RFC 2426**

Location	corresponding HTTP request between PSU and TPP if available.			^GEO:[\\d]*.[\\d]*[;,][\\d]*.[\\d]*$ E.g. PSU-Geo-Location: GEO:90.023856;25.345963
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	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	A signature of the request by the TPP on application level. See 6.1 Signature for more information.	String	MAN	See annexes
TPP-Signature-Certificate	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}$ E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ……..KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional fields are specified.

3.7.1.2 Response

Header

Field	Description	Type	Man.	Format
Location	Contains the link related to the resource generated.	String	MAN	E.g. Location: /v1/payments/{payment-product}/{paymentId}/authorisations/123qwert/456

X-Request-ID	Unique identifier of the transaction assigned by the TPP and submitted through the HUB to the ASPSP	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
ASPSP-SCA-Approach	Value returned if the SCA method has been fixed. Possible values: • REDIRECT The SCA based on OAuth2 will be taken as REDIRECT.	String	COND	E.g. ASPSP-SCA-Approach: REDIRECT

Body

Field	Description	Type	Man.	Format
scaStatus	SCA status	String	MAN	E.g. "scaStatus": "received"
authorisationId	Identifier of the resource that references the authorisation of sub-resource created.	String	MAN	^.{1,36}$ E.g. "authorisationId": "1b3ab8e8-0fd5-43d2-946e-d75958b172e7"
scaMethods	This element is contained if SCA is required and if PSU can choose between the different methods of authentication. If this data is contained the link "selectAuthenticationMethod" will also be reported. These methods must be presented to the PSU. **Note:** Only if ASPSP	List<AuthenticationObject>	COND	E.g. "scaMethods": [...]

	supports selection of the SCA method			
_links	List of hyperlinks to be recognised by the TPP. Types supported in this response: • scaRedirect: in case of SCA by redirection. Link where the PSU navigator must be redirected by the TPP. • scaStatus: link to query the SCA status corresponding to the authorisation sub-resource.	Links	MAN	E.g. "_links": {…}
psuMessage	Text sent to TPP through the HUB to be shown to PSU.	String	OPT	^.{1,512}$ E.g. "psuMessage": "Information for the PSU"
tppMessages	Message for the TPP sent through the HUB.	List<TppMessage>	OPT	E.g. "tppMessages": […]

3.7.1.3 Examples

Example of request on 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 response in the case of SCA via 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 Update data of the PSU (select SCA method)

This message is sent by TPP to the ASPSP through the HUB to indicate the SCA method selected by the PSU.

The SCA-Approach my depend on the SCA method selected.

3.7.2.1 Request

Endpoint in the case of Fund Confirmation Consent

PUT {provider}/{aspsp}/v2/consents/confirmation-of-funds/{consentId}/authorisations/{authorisationId}

Endpoint in the case of Payment Cancellation

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

Path

Field	Description	Type	Man.	Format
provider	URL of the HUB where the service is published.	String	MAN	E.g. hub.example.es
aspsp	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
payment-service	Possible values are: • payments • periodic-payments	String	COND	E.g. {provider}/{aspsp}/v1/payments
payment-product	Payment product to be used. List of supported products: • sepa-credit-transfers • target-2-payments • cross-border-credit-transfers	String	COND	E.g. {provider}/v1/payments/sepa-credit-transfers/
paymentId, consentId	Identifier of the resource that references the payment initiation.	String	MAN	^.{1,36}$ E.g.123-qwe-456
authorisationId	Identifier of the sub-resource associated with the consent.	String	COND	^.{1,36}$

cancellationId	Identifier of the sub-resource associated with the payment cancellation.	String	COND	^.{1,36}$

Query parameters

No additional fields are specified.

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
Authorisation	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
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	OPT	^[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: GET
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	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-

	an installation identification this ID need to be unaltered until removal from device.			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
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	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	A signature of the request by the TPP on application level. See 6.1 Signature for more information.	String	MAN	See annexes
TPP-Signature-Certificate	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}$ E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ…….KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

Field	Description	Type	Man.	Format
authenticationMethodId	Identifier of the authentication method.	String	MAN	^.{1,35}$ E.g. "authenticationMethodId": "123"

3.7.2.2 Response

Header

Field	Description	Type	Man.	Format
X-Request-ID	Unique identifier of the transaction assigned by the TPP and submitted through the HUB to the ASPSP	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
ASPSP-SCA-Approach	Value returned if the SCA method has been fixed. Possible values: • REDIRECT The SCA based on OAuth2 will be taken as REDIRECT.	String	OPT	E.g. ASPSP-SCA-Approach: REDIRECT

Body

Field	Description	Type	Man.	Format
_links	List of hyperlinks to be recognised by the HUB. Types supported in this response: • scaRedirect: in case of SCA by redirection. Link where the PSU navigator must be redirected by the TPP. • scaStatus: link to query the SCA status corresponding to the authorisation sub-resource. This	Links	MAN	E.g. "_links": {...}

	link is only contained if an authorisation sub-resource has been created.			
scaStatus	SCA status	String	MAN	E.g. "scaStatus": "received"
psuMessage	Text sent to TPP through the HUB to be shown to PSU.	String	OPT	^.{1,512}$ E.g. "psuMessage": "Information for the PSU"
tppMessages	Message for the TPP sent through the HUB.	List<TppMessage>	OPT	E.g. "tppMessage": [...]

3.7.2.3 Examples

Example of request on a payment cancellation

```
PUT https://hub.example.es/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 response

```
HTTP/1.1 200 Ok
```

```
X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc
ASPSP-SCA-Approach: REDIRECT
Date: Sun, 26 Sep 2017 15:02:50 GMT
Content-Type: application/json
{
      "scaStatus": "scaMethodSelected",
      "scaRedirect": {
            "href": "https://hub.example.es/authorize "
      },
      "scaStatus": {
            "href":        "/v1/payments/sepa-credit-transfers/123-qwe-
            456/cancellation-authorisations/123auth456"
      }
}
```

3.7.3 Get authorisation sub-resources

Will provide an array of resource identifiers for all the sub-resources of authorisation generated.

3.7.3.1 Request

Endpoint in the case of Payment Cancellation

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

Path

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

payment-product	Payment product to be used. List of supported products: • sepa-credit-transfers • target-2-payments • cross-border-credit-transfers	String	COND	E.g. {provider}/v1/payments/sepa-credit-transfers/
paymentId	Identifier of the resource that references the payment initiation.	String	MAN	^.{1,36}$ E.g.123-qwe-456

Query parameters

No additional fields are specified.

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
Authorisation	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
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	String	OPT	^[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

	TPP when submitting this request.			
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: DELETE

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
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	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	A signature of the request by the TPP on application level. See 6.1 Signature for more information.	String	MAN	See annexes
TPP-Signature-Certificate	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}$ E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ…….KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional data are specified.

3.7.3.2 Response

Header

Field	Description	Type	Man.	Format
X-Request-ID	Unique identifier of the transaction assigned by the TPP and submitted through the HUB to the ASPSP	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

Body

Field	Description	Type	Man.	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 TPP through the HUB to be shown to PSU.	String	OPT	^.{1,512}$ E.g. "psuMessage": "Information for the PSU"
tppMessages	Message for the TPP sent through the HUB.	List<TppMessage>	OPT	E.g. "tppMessages": [...]

3.7.3.3 Examples

Example of 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 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"]
}
```

3.7.4 Get SCA status

Message sent by the TPP to the ASPSP through the Hub to request the SCA status of an authorisation sub-resource.

3.7.4.1 Request

Endpoint in the case of Fund Confirmation Consent

GET {provider}/{aspsp}/v2/consents/confirmation-of-funds/{consentId}/authorisations/{authorisationId}

Endpoint in the case of Payment Cancellation

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

Path

Field	Description	Type	Man.	Format
provider	URL of the HUB where the service is published.	String	MAN	E.g. hub.example.es
aspsp	Name of the ASPSP to	String	MAN	E.g. aspsp-name

	which the request is made.			
payment-service	Possible values are: • payments • periodic-payments	String	COND	E.g. {provider}/v1/payments
payment-product	Payment product to be used. List of supported products: • sepa-credit-transfers • target-2-payments • cross-border-credit-transfers	String	COND	E.g. {provider}/v1/payments/sepa-credit-transfers/
paymentId, consentId	Identifier of the resource that references the payment initiation or consent	String	MAN	^.{1,36}$ E.g.123-qwe-456
authorisationId	Identifier of the sub-resource associated with the consent.	String	COND	^.{1,36}$
cancellationId	Identifier of the sub-resource associated with the payment cancellation.	String	COND	^.{1,36}$

Query parameters

No additional fields are specified.

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

Authorisation	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
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	OPT	^[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: GET
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
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	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
Signature	A signature of the	String	MAN	See annexes

	request by the TPP on application level. See 6.1 Signature for more information.			
TPP-Signature-Certificate	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}$ E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ…….KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional data are specified.

3.7.4.2 Response

Header

Field	Description	Type	Man.	Format
X-Request-ID	Unique identifier of the transaction assigned by the TPP and submitted through the HUB to the ASPSP	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

Body

Field	Description	Type	Man.	Format
scaStatus	SCA status	String	MAN	E.g. "scaStatus": "finalised"
psuMessage	Text sent to TPP through the HUB to be shown to PSU.	String	OPT	^.{1,512}$ E.g. "psuMessage": "Information for

				the PSU"
tppMessages	Message for the TPP sent through the HUB.	List<TppMessage>	OPT	E.g. "tppMessages": [...]

3.7.4.3 Examples

Example of 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 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 Available ASPSPs service

This message is sent by the TTP to the HUB to receive the information about what ASPSPs 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	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	String	MAN	See annexes

	the request by the TPP on 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: MIIHgzCCBmugAwIBAgIIZzZvBQIt0UcwDQYJ.....KoZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

Body

No additional fields are specified.

4.1.1.2 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":{}

4.1.1.3 Examples

Example of 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 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	String	MAN	**UUID** ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-

	determined by the initiating party.			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 application level. See 6.1 Signature for more information.	String	MAN	See annexes
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	List<Aspsp>	MAN	E.g. "aspsps":[]

	the ASPSP.			
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 • 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	Accept charset header of the HTTP request between PSU and the TPP.	String	OPT	^.{1,50}$ E.g. PSU-Accept-Charset: utf-8
PSU-Accept-Encoding	Accept encoding header of the HTTP request between PSU and the TPP.	String	OPT	^.{1,50}$ E.g. PSU-Accept-Encoding: gzip
PSU-Accept-Language	Accept language header of the HTTP request between PSU and TPP.	String	OPT	^.{1,50}$ E.g. PSU-Accept-Language: es-ES
PSU-User-Agent	Browser or system operative of the Request HTTP between the PSU and the TPP.	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 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 NOT SUPPORTED IN THIS**	Boolean	OPT	E.g. TPP-Redirect-Preferred: true

	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.	String	MAN	^.{1,100}$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRlMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==

	Note: the ASPSP may not take it into account if it does not support it.			
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……Ko ZIhvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

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":{...}
remittanceInformationU	Additional information	String	OPT	^.{1,140}$ E.g.

nstructured				"remittanceInformation Unstructured":"Addition al 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 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
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 where the PSU navigator must be redirected by the TPP. • startAuthorisation: if an explicit initiation of the transaction authorisation is	Links	MAN	E.g. "_links": {...}

	necessary (there is no selection of the SCA method) • self: link to the resource created by this request. • status: link to recover the transaction status. • scaStatus: link to query the SCA status corresponding to the authorisation sub-resource. This link is only contained if an authorisation sub-resource has been created.			
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": "ES2222222222222222222"
      },
      "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"
            }
      }
}
```


4.3 SVA: Initiation of standing orders for payments recurring/periodic with list of accounts available for PISP

This service allows the TPP to initiate a periodic payment without inform the payer account "debtorAccount" and provide the list of accounts during the SCA flow for the PSU to select

This valuable service complements the regular payment API and makes use of the CORE services for:

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

4.3.1 Periodic payment initiation flows

4.3.1.1 SCA flow by redirection with account selection: start authorization process implicit

Next, in Figure 9: Periodic payment start scenario with a list of accounts available for PISP, the sequence of requests/responses is represented that are necessary for this service.

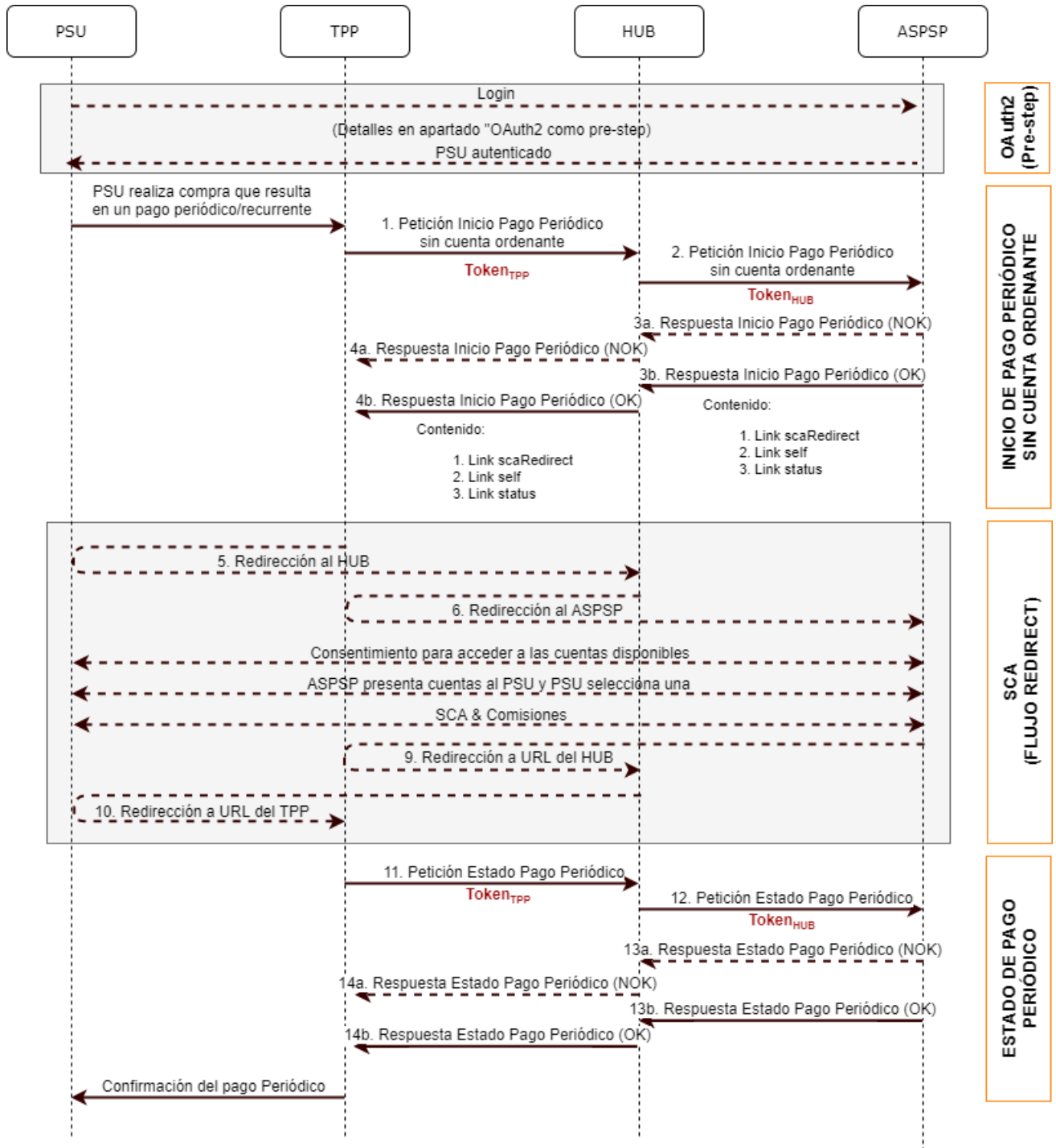

Figure 9: Periodic payment start scenario with list of available accounts for PISP

OAuth2 (pre-step)

The main purpose of this flow is to authenticate the PSU to gain access to the services exposed by your ASPSP by using an access token obtained after the application of this protocol.

For simplicity, the detail of this flow has been omitted and can be consulted in section 6.1 OAuth2 as a pre-step.

Note: This step is optional. It only applies if you do not have a valid access token.

PSU starts periodic payment

The PSU wants to pay through the TPP.

1. Periodic payment start request (TPP → Hub)

This service allows the TPP to initiate a periodic payment without inform the payer account "debtorAccount" and provide the list of accounts during the SCA flow for the PSU to select

- **TPP data:** identifier, name, roles, NCA, certificate...
- **Periodic payment data:** transfer type, beneficiary IBAN, amount,currency concept...
- **Data for calculating risk scoring:** IP, port, user-agent, language, location, HTTP headers...
- **X-Request-ID:** Identified

2. Periodic payment start request (Hub → ASPSP)

The Hub receives the TPP request, stores it, and sends a POST request to start periodic payment with tokenHUB to the ASPSP. Among the data reported by the Hub is find:

- **TPP data:** identifier, name, roles, NCA, certificate...
- **Periodic payment data:** transfer type, beneficiary IBAN, amount,currency concept, periodic payment start date, periodicity,...
- **X-Request-ID:** operation identifier assigned by the TPP.
- **HUB-Transaction-ID:** Hub operation identifier
- **HUB-Request-ID:** Hub request identifier
- **Token:** Access token

3. Response Start periodic payment (ASPSP → Hub)

The ASPSP returns to the Hub a link to scaRedirect where the accounts available to the PSU will be displayed:

- **paymentId:** identifier of the resource generated by the ASPSP that refers to the current periodic payment initiation operation.
- **_links:**
  - **scaRedirect:** link to the ASPSP authentication server where the accounts available to the PSU will be displayed and to start SCA via a redirect (no SCA is applied over OAuth2). This URL you can attach security parameters that allow you to maintain the session during redirection. https://aspsp.example.com/auth
  - **self:** link to the payment resource generated by the ASPSP for the payment initiation request received through the Hub.
  - **status:** ASPSP link to which the Hub can make a request payment status query.
- **Other information regarding the operation.**

4. Response Start periodic payment (Hub → TPP)

The Hub, after receiving the response from the ASPSP, responds to the TPP indicated the url to which you have to redirect to continue the process:

- **paymentId:** identifier of the resource generated by the referring Hub
- **transactionStatus:** ISO 20022 status of the start of periodic payment received.
- **_links:**
  - **scaRedirect:** link to the Hub endpoint where, after receiving the TPP redirect is redirected back to the scaRedirect of the ASPSP. This URL can append security parameters that allow you to maintain the session during redirection. https://hub.example.com/autho self: link to the payment resource generated by the Hub for the request of initiation of payment received from the TPP
  - **self:** link to the payment resource generated by the Hub for the request of initiation of payment received from the TPP..
  - **status:** Hub link to which the TPP can make a request for check payment status..
- **Other information regarding the operation.**

5. Redirect to scaRedirect of the Hub (TPP → Hub)

The TPP, after receiving the response to initiate periodic payment, redirects the PSU to the Hub authentication endpoint.

HTTP/1.1 302 Found
Location: https://hub.example.com/auth

6. Redirection to scaRedirect of the ASPSP (Hub → ASPSP)

The Hub, upon receiving the TPP redirection, will redirect it to the ASPSP authentication where the accounts available to the PSU will be displayed and, if the ASPSP considers it, it will trigger Strong Authentication (SCA).

HTTP/1.1 302 Found
Location: https://hub.example.com/auth

SCA between PSU → ASPSP

During this redirection process, the ASPSP will be able to:

- Show consent to PSU to access available accounts.
- Show available accounts and the PSU selects one.
- Show the commissions to the PSU if required.
- Show ASPSP-PSU interface for SCA.

SCA & Commissions

The ASPSP, after receiving the risk scoring of the operation, decides if it is necessary SCA and runs it, showing the fees.

9. Redirection to Hub URL (ASPSP → Hub)

After redirection to the SCA in the ASPSP environment, it will return control to the Hub.

HTTP/1.1 302 Found
Location: https://hub.example.com/cb?state=xyz

10. Redirection to TPP URL (Hub → TPP)

The Hub, after receiving the redirection back from the ASPSP at the end of the SCA, performs the redirection again to the TPP callback URL to return control to it.

HTTP/1.1 302 Found
Location: https://tpp.example.com/cb

11. Periodic Payment Status Request (TPP → Hub)

The TPP will send a payment status request with TPP token to the Hub to know the status of the payment.

12. Periodic Payment Status Request (Hub → ASPSP)

The Hub will retransmit the tokenized payment status request HUB to the ASPSP for know the status of the payment.

Note: The Hub performs an exchange between the TPP token and the HUB token.

13. Periodic Payment Status Response (ASPSP → Hub)

After receiving the periodic payment status request with a valid HUB token, the ASPSP checks the status of the start of payment in its systems and returns it to the Hub.

14. Response Periodic Payment Status (Hub → TPP)

The Hub, after receiving the response from the ASPSP, updates the status of the operation and responds to the TPP.

Confirmation of periodic payment

The TPP confirms the status of the periodic payment to the PSU.

4.3.1.1 SCA flow by redirection: Explicit start of the process of authorization

Similar to 6.3.1.2 SCA flow by redirection: Explicit start of the process of authorization.

4.3.2 Carrying out periodic payment initiation

Message sent by the TPP to the ASPSP through the Hub to create a recurring/periodic payment start without informing the payer account "debtorAccount". A TPP can send a recurring payment initiation where the start date, frequency and, conditionally, end date are provided.

Once authorized by the PSU, the payment will be executed by the ASPSP, if possible, following the “standing order” as sent by the TPP. No further action is required by the TPP.

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

4.3.2.1 Petición

Endpoint

POST {provider}/v1.1/sva/periodic-payments/{payment-product}

Path

Campo	Descripción	Tipo	Oblig.	Formato
provider	URL del ASPSP donde se publica el servicio.	String	OB	Ej: aspsp.example.es
payment-product	pay-to-product wear. List of products supported • sepa-credit-transfers • instant-sepa-credit-transfers • target-2-payments	String	OB	Ej: {provider}/v1.1/periodic-payments/sepa-credit-transfers/

	• cross-border-credit-transfers			

Query parameters

No additional parameters are specified for this request..

Header

Campo	Descripción	Tipo	Oblig.	Formato
Content-Type	Value: application/json	String	OB	Content-Type: application/json
HUB-Transaction-ID	Unique identifier of the assigned operation by the HUB. **Note**: as long as the request is from the Hub will be informed	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}$ Ej: HUB-Transaction-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
HUB-Request-ID	Unique identifier for the request assigned by the HUB. Relate the request HTTP between HUB and ASPSP. **Note**: as long as the request is from the Hub will be informed	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}$ Ej: HUB-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
X-Request-ID	Unique identifier of the assigned request by the TPP and sent to through the HUB to 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}$ Ej: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

TPP-HUB-ID	TPP identifier that communicates to through the HUB. Registry number of the TPP.	String	OP	^.{1,70}$ Ej: TPP-HUB-ID: PSDES-BDE-3DFD21
TPP-HUB-Name	Name of the TPP that communicates through from the HUB	String	OP	^.{1,140}$ Ej: TPP-HUB-Name: Name of TPP
TPP-HUB-Rol	Roles of the TPP that are communicates Through HUB.	List<String>	OP	Ej: TPP-HUB-Rol: PSP_PI,PSP_AI,PSP_IC
TPP-HUB-National-Competent-Authority	Competent authority national that has provided the Certificate to the TPP that communicates through from the HUB.	String	OP	^.{1,8}$ Ej: TPP-HUB-National-Competent-Authority: BDE
Risk-Scoring	Risk score of the operation provided by the HUB.	String	OP	Ej: Risk-Scoring: 0.001
PSU-ID	Identifier that the PSU used for identify yourself in your ASPSP. Can be informed even if you are using a token of OAuth and, if so, the ASPSP could check that the PSU-ID and token are correspond.	String	OP	Ej: PSU-ID: 12345678W
PSU-ID-Type	Type of the PSU-ID. needed in scenarios where the PSU has various PSU-ids like possibilities of access.	String	OP	Ej: PSU-ID-Type: NIF
PSU-Corporate-ID	identifier of "company" in the Online channels.	String	OP	Ej: PSU-Corporate-ID: user@corporate.com

PSU-Corporate-ID-Type	PSU type-Corporate-ID necessary for him ASPSP to identify its content.	String	OP	Ej: PSU-Corporate-ID-Type: email
Authorization	Bearer Token. Obtained in a pre-authentication over OAuth2.	String	OB	Ej: Authorization: Bearer 2YotnFZFEjr1zCsicMWpAA
Consent-ID	This data is content if the transaction start of payment form part of a session (combination of AIS/PIS). will contain the consentId of the ISA consent that was done before at the start of payment.	String	OP	^.{1,36}$ Ej: Consent-ID: 7890-asdf-4321
PSU-IP-Address	IP address of the HTTP request between PSU and the TPP. If it is not available, the TPP should use the IP address used by the TPP when sending this request.	String	OB	^[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}.[0-9]{1,3}$ Ej: PSU-IP-Address: 192.168.16.5
TPP-Redirect-Preferred	If "true", the TPP has communicated to the HUB who prefers SCA For redirect. If "false", the TPP has communicated to the HUB who would rather not be redirected to SCA and the procedure will be by uncoupled flow.	Boolean	OP	Ej: TPP-Redirect-Preferred: true

	If the parameter is not used, the ASPSP will choose the SCA flow to apply Depending of the SCA Method chosen by him TPP/PSU. **EMBEDDED NO SUPPORTED ON THIS VERSION**			
TPP-Redirect-URI	If this URI is contained, the HUB is requesting to redirect The transaction flow to this address in instead of the TPP-Redirect-URI in case of a result negative of the method of ACS for redirect.	String	COND	^.{1,250}$ Ej: TPP-Redirect-URI":"https://hub.example.es/cb"
TPP-Nok-Redirect-URI	If this URI is contained, the HUB is requesting to redirect The transaction flow to this address in instead of the TPP-Redirect-URI in case of a result negative of the method of ACS for redirect.	String	OP	^.{1,250}$ Ej: TPP-Nok-Redirect-URI":"https://hub.example.es/cb/nok"
TPP-Explicit-Authorisation-Preferred	If equal to true, the TPP prefers to start the process of authorization separately, by eg Due to the need of the authorization of a set of operations simultaneously.	Boolean	OP	Ej: TPP-Explicit-Authorisation-Preferred: false

	If it is false or the parameter is not used, none TPP preference. He TPP assumes a direct authorization of the transaction in the next step.			
TPP-Brand-Logging-Information	This field could be used by the TPP to inform the ASPSP about the brand (Brand) used by the TPP facing the PSU. This information should be used for improve the communication between The ASPSP and the PSU or the ASPSP and the TPP.	String	OP	^.{1,70}$ Ej: TPP-Brand-Logging-Information: Marca del TPP

Body

The content of the Body is the one defined in 8.19 SinglePayment, following the conditions of the following tables, plus those defined below:

Campo	Descripción	Tipo	Oblig.	Formato
startDate	The first applicable day of execution from this date is the first payment	String	OB	**ISODate** Ej: "startDate":"2018-12-20"
executionRule	Supported values: • following • preceding Defines the behavior when the dates of recurring payment drop on the weekend or festive. So he payment runs the day previous employment or later.	String	OP	Ej: "executionRule":"following"

	The ASPSP can reject the request due to value communicated if the banking rules Online do not support this rule of execution.			
endDate	Last applicable day of execution. If it doesn't come it's about a standing order endless.	String	OP	**ISODate** Ej: "endDate":"2019-01-20"
frequency	The frequency of Payment resulting recurring of this order permanent. Allowed values: • Daily • Weekly • Monthly • Quarterly • Annual	String	OB	**EventFrequency7Code de ISO 20022** Ej: "frequency":"Monthly"
dayOfExecution	"31" last one. Follow the expression regular \d{1,2} The date refers to the ASPSP time zone. Only if supported in Online Banking.	String	COND	\d{1,2} Ej: "dayOfExecution":"01"

Fields marked as required (OB) and optional (OP) must be supported by the ASPSP with that type of condition.

The fields marked as COND depend on each ASPSP.

Campo	**SCT**	**SCT INST**	**Target 2**	**Cross Border CT**

EndToEndIdentification*	NA	NA	NA	NA
instructionIdentification	COND	COND	COND	COND
debtorName	COND	COND	COND	COND
debtorAccount	NA	NA	NA	NA
debtorId	COND	COND	COND	COND
ultimateDebtor	COND	COND	COND	COND
instructedAmount	OB	OB	OB	OB
currencyOfTransfer	COND	COND	COND	COND
exchangeRateInformation	COND	COND	COND	COND
creditorAccount	OB	OB	OB	OB
creditorAgent	OP	OP	OP	OB/OP
creditorAgentName	COND	COND	COND	COND
creditorName	OB	OB	OB	OB
creditorId	COND	COND	COND	COND
creditorAddress	OP	OP	OP	OP
creditorNameAndAddress	COND	COND	COND	COND
ultimateCreditor	COND	COND	COND	COND
purposeCode	COND	COND	COND	COND
chargeBearer	COND	COND	COND	COND
serviceLevel	COND	COND	COND	COND
remittanceInformationUnstructured	OP	OP	OP	OP
remittanceInformationUnstructuredArray	COND	COND	COND	COND
remittanceInformationStructured	COND	COND	COND	COND
remittanceInformationStructuredArray	COND	COND	COND	COND
requestedExecutionDate	n.a.	n.a.	n.a.	n.a.
requestedExecutionTime	n.a.	n.a.	n.a.	n.a.

***NOTE: If the TPP wants to report it, it will travel in the field remittanceInformationUnstructured providing you with a guide to good practices for its use.**

4.3.2.2 Response

HTTP Code

201 si el recurso ha sido creado

Header

Campo	Descripción	Tipo	Oblig.	Formato
Location	Contains the link relative to the Resource generated.	String	OB	Ej: Location: /v1.1/payments/{payment-product}/{paymentId}
HUB-Transaction -ID	Unique identifier of the assigned operation by the HUB. **Note**: as long as the request is from the Hub will be informed	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}$ Ej: HUB-Transaction-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
HUB-Request-ID	Unique identifier for the request assigned by the HUB. Relate the request HTTP between HUB and ASPSP. **Note**: as long as the request is from the Hub will be informed	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}$ Ej: HUB-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
X-Request-ID	Unique identifier of the assigned request by the TPP and sent through the HUB to 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}$ Ej: X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

ASPSP-SCA-Approach	Return value if the SCA method has been fixed. Values Possible: • REDIRECT The SCA based on OAuth will be taken as REDIRECT EMBEDDED no supported in this version.	String	COND	Ej: ASPSP-SCA-Approach: REDIRECT

Body

Campo	Descripción	Tipo	Oblig.	Formato
transactionStatus	State of transaction. Values defined in Annexes in 9.4 States Of transaction	String	OB	**ISO 20022** Ej: "transactionStatus": "RCVD"
paymentId	Identifier of the resource that References at the initiation of pay.	String	OB	^.{1,36}$ Ej: "paymentId": "1b3ab8e8-0fd5-43d2-946e-d75958b172e7"
transactionFees	Associated commissions to periodic payment.	Amount	OP	Ej: "transactionFees": {...}
transactionFeeIndicator	Si es igual a "true", la transacción implicará una comisión según el ASPSP o según lo acordado entre ASPSP y PSU. Si es igual a "false" o no es usado, la transacción no implicará ninguna comisión adicional para el PSU.	Boolean	OP	Ej: "transactionFeeIndicator": true

currencyConversionFees	Could be used by the ASPSP for transport specific information conversion related currency with the transfer started.	Amount	OP	Ej: "currencyConversionFees": {...}
scaMethods	This item is content if SCA is required and if the PSU you can choose between different methods of authentication. If this data is content is also will inform the link "startAuthorizationWithAuthenticationMethodSelection". These methods should be introduced to PSU.	List<AuthenticationObject>	COND	Ej: "scaMethods": [...]
chosenScaMethod	**NOT SUPPORTED ON THIS VERSION**	AuthenticationObject	COND	
_links	Hyperlink list to be recognized by the HUB. Guys supported in this answer: • scaRedirect: in SCA case for redirect. links where he PSU browser must be redirected by the Hub. • scaOAuth: in case of SCA and require payment run. • self: link to resource start of payment.	Links	OB	Ej: "_links": {...}

	created by this petition. • status: link to recover the State of transaction Of start of payment			
psuMessage	Text sent to the TPP to through the HUB to be shown to the PSU.	String	OP	^.{1,500}$ Ej: "psuMessage": "Información para PSU"
tppMessages	Message for the TPP sent through the HUB.	List<TppMessage>	OP	Ej: "tppMessages": [...]

4.3.2.3 Examples

Example request

POST https://aspsp.example.es/v1.1/sva/periodic-payments/sepa-credit-transfers

```
Content-Encoding: gzip
Content-Type: application/json
HUB-Transaction-ID: 3dc3d5b3-7023-4848-9853-f5400a64e80f
HUB-Request-ID: 99391c7e-ad88-49ec-a2ad-99ddcb1f7721
X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541
TPP-HUB-ID: PSDES-BDE-3DFD21
TPP-HUB-Name: Nombre del TPP
TPP-HUB-Rol: PSP_PI
TPP-HUB-National-Competent-Authority: BDE
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://hub.example.es/cb
TPP-Nok-Redirect-URI: https://hub.example.es/cb/nok
Date: Sun, 26 Sep 2017 15:02:37 GMT
{
      "instructedAmount": {
            "currency": "EUR",
            "amount": "153.50"
      },
      "creditorAccount": {
            "iban": "ES2222222222222222222222"
      },
      "creditorName": "Nombre123",
      "remittanceInformationUnstructured": "Información adicional",
      "startDate": "2018-03-01",
      "executionRule": "preceding",
      "frequency": "Monthly",
      "dayOfExecution": "01"
}
```

Example response

```
HTTP/1.1 201 Created
HUB-Transaction-ID: 3dc3d5b3-7023-4848-9853-f5400a64e80f
HUB-Request-ID: 99391c7e-ad88-49ec-a2ad-99ddcb1f7721
X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541
ASPSP-SCA-Approach: REDIRECT
Date: Sun, 26 Sep 2017 15:02:43 GMT
Location: https://aspsp.example.es/v1.1/periodic-payments/123-qwe-456
Content-Type: application/json
{
      "transactionStatus": "RCVD",
```

```
      "paymentId": "123-qwe-456",
      "_links": {
            "scaRedirect": {
                  "href": "https://aspsp.example.es/authorize"
            },
            "self": {
                  "href": "/v1.1/periodic-payments/123-qwe-456",
            "status": {

            }
      }
}
```

5. DEFINITION OF TYPES OF COMPOSITE DATA

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

5.1 AccountAccess

Field	Description	Type	Man.	Format
accounts	Indicates the accounts on which to ask for detailed information. If the list is empty, the TPP requests all the accessible accounts and they will be queried in a dialogue between PSU-ASPSP. In addition, the list of balances and	List<AccountReference>	OPT	E.g. "accounts": [...]

	transactions must also be empty if they are used.			
balances	Indicates the accounts on which to ask for balances. If the list is empty, the TPP requests all the accessible accounts and they will be queried in a dialogue between PSU-ASPSP. The list of accounts and transactions must also be empty if they are used.	List<AccountReference>	OPT	E.g. "balances": [...]
transactions	Indicates the accounts on which to ask for transactions. If the list is empty, the TPP requests all the accessible accounts and they will be queried in a dialogue between PSU-ASPSP. In addition, the list of balances and accounts must also be empty if they are used.	List<AccountReference>	OPT	E.g. "transactions": [...]
availableAccounts	Only the value "allAccounts" is admitted.	String	OPT	E.g. "availableAccounts": "allAcounts"
availableAccountsWithBalances	Only the value "allAcounts" is admitted	String	OPT	E.g. "availableAccountsWithBalances": "allAcounts"
allPsd2	Only the value "allAcounts" is admitted	String	OPT	E.g. "allPsd2": "allAcounts"

```
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://hub.example.es/cb
TPP-Nok-Redirect-URI: https://hub.example.es/cb/nok
Date: Sun, 26 Sep 2017 15:02:37 GMT
{
      "instructedAmount": {
            "currency": "EUR",
            "amount": "153.50"
      },
      "creditorAccount": {
            "iban": "ES2222222222222222222222"
      },
      "creditorName": "Nombre123",
      "remittanceInformationUnstructured": "Información adicional",
      "startDate": "2018-03-01",
      "executionRule": "preceding",
      "frequency": "Monthly",
      "dayOfExecution": "01"
}
```

Ejemplo respuesta

```
HTTP/1.1 201 Created
HUB-Transaction-ID: 3dc3d5b3-7023-4848-9853-f5400a64e80f
HUB-Request-ID: 99391c7e-ad88-49ec-a2ad-99ddcb1f7721
X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541
ASPSP-SCA-Approach: REDIRECT
Date: Sun, 26 Sep 2017 15:02:43 GMT
Location: https://aspsp.example.es/v1.1/periodic-payments/123-qwe-456
Content-Type: application/json
{
      "transactionStatus": "RCVD",
```

```
      "paymentId": "123-qwe-456",
      "_links": {
            "scaRedirect": {
                  "href": "https://aspsp.example.es/authorize"
            },
            "self": {
                  "href": "/v1.1/periodic-payments/123-qwe-456",
            "status": {
                  "href": "/v1.1/periodic-payments/123-qwe-456/status"
            }
      }
}
```

5.2 AccountDetails

Field	Description	Type	Man.	Format
resourceId	This is the data element to be used in the path when retrieving data from a dedicated account. This shall be filled, if addressable resource are created by the ASPSP on the /accounts endpoint.	String	COND	^.{1,100}$ E.g. "resourceId":"3dc3d5b3702348489853f5400a64e80f"
iban	IBAN of the account	String	OPT	E.g. "iban":"ES1111111111111111111111"
bban	BBAN of the account if it does not have an IBAN.	String	OPT	E.g. "bban":"20385778983000760236"
msisdn	Alias to access a payment account through a registered mobile phone number.	String	OPT	^.{1,35}$ E.g. "msisdn":"..."
currency	Account currency.	String	MAN	**ISO 4217** E.g. "currency":"EUR"
name	Name of the account given by the bank or the PSU in Online-Banking	String	OPT	^.{1,35}$ E.g. "name":"Name"
product	Product Name of the Bank for this account, proprietary definition	String	OPT	^.{1,35}$ E.g. "product":"Main Account"
cashAccountType	Specifies the nature or use of the account.	String	OPT	**ExternalCashAccountType1Code de ISO 20022** E.g. "cashAccountType": ”CACC"
status	Account status. The value is one of the following:	String	OPT	E.g. "status":"enabled"

	• enabled: the account is available • deleted: account closed			
bic	BIC of the account.	String	OPT	^.{1,12}$ E.g. "bic":"XSXHXSMMXXX"
linkedAccounts	This data attribute is a field, where an ASPSP can name a cash account associated to pending card transactions.	String	OPT	^.{1,70}$
usage	Specifies the use of the account. Possible values: • PRIV: private personal account	String	OPT	^.{1,4}$ E.g. "usage": "PRIV"
details	Specifications that might be provided by the ASPSP. • Account characteristics	String	OPT	^.{1,140}$
balances	Account balances.	List<Balance>	COND	"balances": [...]
_links	Links to the account, which can be directly used for retrieving account information from this dedicated account. Links to "balances" and/or "transactions" These links are only supported, when the corresponding consent has been already granted.	Links	OPT	E.g. "links": {...}

5.3 AccountReference

Field	Description	Type	Man.	Format
iban	IBAN of the account	String	COND	E.g. "iban":"ES1111111111111111111"
bban	BBAN of the account if it does not have an IBAN.	String	COND	E.g. "bban":"20385778983000760236"
currency	Currency.	String	OPT	**ISO 4217** E.g. "currency":"EUR"

5.4 AccountReport

Field	Description	Type	Man.	Format
booked	Latest known transactions (notes) in the account Must be included if the bookingStatus parameter is set to "booked" or "both".	List<Transactions>	COND	E.g. "booked":[{..}]
pending	Transactions pending in the account. Not contained if the bookingStatus parameter is established as "booked".	List<Transactions>	OPT	E.g. "pending":[{..}]
_links	The following links are accepted in this object: • account (MAN) • first (OPT) • next (OPT) • previous (OPT) • last (OPT)	Links	MAN	E.g. "_links":[{..}]

5.5 Address

Field	Description	Type	Mand.	Format
street	Street	String	OPT	^.{1,70}$ E.g. "street":"Example of street"
buildingNumber	Number	String	OPT	E.g. "buildingNumber":"5"
city	City	String	OPT	E.g. "city":"Córdoba"
postalCode	Postcode	String	OPT	E.g. "postalCode":"14100"
country	Country code	String	MAN	**ISO 3166** E.g. "country":"ES"

5.6 Amount

Field	Description	Type	Mand.	Format
currency	Currency of amount.	String	MAN	**ISO 4217** E.g. "currency":"EUR"
amount	Amount The decimal separator is a point.	String	MAN	**ISO 4217** E.g. "amount":"500.00"

5.7 Aspsp

Field	Description	Type	Man.	Format
bic	BIC code of the ASPSP.	String	MAN	E.g. "bic":" XXXXXXXXXXX"
name	Name of the ASPSP	String	OPT	E.g. "name":"ASPSP Name"
apiName	Name of the ASPSP used in the request	String	COND	E.g. "apiName":

	PATH. **Note**: Only available for V2 of the list of available ASPSPs.			"nombreBanco"

5.8 Balance

Field	Description	Type	Man.	Format
balanceAmount	Amount and currency of the balance	Amount	MAN	E.g. "balanceAmount": {...}
balanceType	Type of balance. Values supported in the annex 6.6 Balance type	String	MAN	E.g. "balanceType": "closingBooked"
creditLimitIncluded	A flag indicating if the credit limit of the corresponding account is included in the calculation of the balance, where applicable	Boolean	OPT	E.g. "creditLimitIncluded":true
lastChangeDateTime	Date of the last action carried out on the account.	String	OPT	**ISODateTime** E.g. "lastChangeDateTime": "2017-10-25T15:30:35.035Z"
referenceDate	Reference date of the balance	String	OPT	**ISODate** E.g. "referenceDate": "2017-10-25"
lastCommittedTransaction	entryReference of the last commited transaction to support the TPP in identifying whether all PSU transactions are already known.	String	OPT	**Max35Text** E.g. "lastCommittedTransaction": "1234-asd-567"

5.9 ExchangeRate

Field	Description	Type	Man.	Format
currencyFrom	Source currency	String	MAN	E.g. "currencyFrom":"USD"
rate	Defines the exchange rate. E.g. currencyFrom=USD, currencyTo=EUR: 1USD =0.8 EUR and 0.8 is the fee.	String	MAN	E.g. "rate":"0.8"
currencyTo	Destination currency	String	MAN	E.g. "currencyTo":"EUR"
rateDate	Date of fee	String	MAN	**ISODateTame**
rateContract	Reference to the fee contract	String	OPT	

5.10 Href

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

5.11 Links

Field	Description	Type	Man.	Format
scaRedirect	URL used to carry out the SCA, through redirecting the PSU navigator.	Href	OPT	E.g. "scaRedirect": {...}
startAuthorisation	Link to the endpoint where the authorisation of the transaction or the authorisation of the	Href	OPT	E.g. "startAuthorisation":{...}

	cancellation transaction must be initiated.			
self	The link to the resource created for the request. This link may be used subsequently to recover the transaction status.	Href	OPT	E.g. "self": {...}
status	The link to recover the transaction status. For example, payment initiation status.	Href	OPT	E.g. "status": {...}
account	Link to the resource that provides the information on an account.	Href	OPT	E.g. "account": {...}
balances	Link to the resource that provides the account balances.	Href	OPT	E.g. "balances": {...}
transactions	Link to the resource that provides the account activity.	Href	OPT	E.g. "transactions": {...}
first	Navigation link for reports on paginated accounts.	Href	OPT	E.g. "first": {...}
next	Navigation link for reports on paginated accounts.	Href	OPT	E.g. "next": {...}
previous	Navigation link for reports on paginated accounts.	Href	OPT	E.g. "previous": {...}
last	Navigation link for reports on paginated accounts.	Href	OPT	E.g. "last": {...}
download	Download link for large AIS data packages. Only for camt-data.	Href	OPT	E.g. "download": {...}

5.12 SinglePayment

Field	Description	Type	Man.	Format
instructedAmount	Information on the transfer carried out.	Amount	MAN	E.g. "instructedAmount": {...}
debtorAccount	The debtor's account. **Note**: this field may be optional in some services such as bulk payments	Account Reference	MAN	E.g. "debtorAccount": {"iban":"ES1111111111111111111111"}
creditorAccount	Creditor account	Account Reference	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	E.g. "creditorAgent":"XSXHXSMMXXX"
creditorAddress	Creditor's address	Address	OPT	E.g. "creditorAddress":{...}
chargeBearer	Only for payment-product: • target-2-payments • cross-border-credit-transfers Permitted values: • DEBT • CRED • SHAR • SLEV	String	OPT	**ChargeBearerType1Code of ISO 20022** E.g. “chargeBearer”:"SLEV"
remittanceInformationUnstructured	Additional information. See annex 6.8 Good practice guide remittanceInformationUnstructured field for recommendations on use.	String	OPT	^.{1,140}$ E.g. "remittanceInformationUnstructured":"Additional information"

requested Execution Date	Execution date requested for future payments. **Note**: only if supported by the ASPSP	String	COND	**ISODate**
requested ExecutionTime	Requested time of execution. **Note**: only if supported by the ASPSP	String	COND	**ISODateTime**

5.13 TppMessage

Field	Description	Type	Man.	Format
category	Category of type of message received. Possible values: ERROR or WARNING	String	MAN	E.g. "category": "ERROR"
code	Response code. All the return codes for the service are listed in annex 6.3 Return codes.	String	MAN	E.g. "code":"CONSENT_INVALID"
path	Path to the field with a reference to the error.	String	COND	E.g. "path":"..."
text	Additional explanatory text.	String	OPT	E.g. "text":"Example of text"

5.14 Transactions

Field	Description	Type	Man.	Format
transactionId	Can be used as access-ID in the API, where more details on an transaction is offered.	String	OPT	E.g. "transactionId":"123-asdf-456"
entryReference	Is the identification of the transaction as used e.g. for reference for deltafunction on application level.	String	OPT	^.{1,35}$ E.g. "entryReference":"1234-asdf-456"
endToEndId	Unique end-to-end identifier.	String	OPT	^.{1,35}$ E.g. "endToEnd":"..."
mandateId	Identification of Mandates, e.g. a SEPA Mandate ID	String	OPT	^.{1,35}$ E.g. "mandateId":"..."
checkId	Cheque identifier	String	OPT	^.{1,35}$ E.g. "checkId":"..."
creditorId	Identification of the beneficiary. For example, an ID of a SEPA beneficiary.	String	OPT	^.{1,35}$ E.g. "creditorId":"..."
bookingDate	The Date when an entry is posted to an account on the ASPSPs books.	String	OPT	**ISODate** "bookingDate":"2017-10-23"
valueDate	The Date at which assets become available to the account owner in case of a credit	String	OPT	**ISODate** E.g. "valueDate":"2017-10-23"
transactionAmount	The amount of the transaction as billed to the account.	Amount	MAN	E.g. "transactionAmount": [{..}]
currencyExchange	Exchange rate	List<ReportExchangeRate>	OPT	E.g. "currencyExchange": [{...}]
creditorName	Name of the creditor if a "Debited" transaction	String	OPT	^.{1,70}$ E.g. "creditor": "Nombre"
creditorAc	Creditor's account.	AccountRe	COND	E.g. "creditorAccount":

count		ference		{...}
ultimateCreditor	Ultimate creditor.	String	OPT	^.{1,70}$ E.g. "ultimateCreditor": "Nombre"
debtorName	Name of the debtor if a "Credited" transaction	String	OPT	^.{1,70}$ E.g. "debtor": "Nombre"
debtorAccount	The debtor's account.	AccountReference	COND	E.g. "debtorAccount": {...}
ultimateDebtor	Name of ultimate debtor.	String	OPT	^.{1,70}$ E.g. "ultimateDebtor": "Nombre"
remittanceInformationUnstructured	Field to include additional information on the remittance.	String	OPT	^.{1,140}$ E.g. "remittanceInformationUnstructured":"Additional information"
remittanceInformationStructured	Reference as contained in the structured remittance reference structure	String	OPT	^.{1,140}$ E.g. "remittanceInformationStructured":"Ref. 12344567"
purposeCode	ExternalPurpose1Code ISO 20022	String	OPT	**ExternalPurpose1Code ISO 20022**
bankTransactionCode	Bank transaction code as used by the ASPSP and using the sub elements of this structured code defined by ISO20022	String	OPT	**ExternalBankTransactionDomain1Code**
proprietaryBankTransactionCode	Proprietary bank transaction code	String	OPT	^.{1,35}$
_links	Possible values: • transactionDetails	Links	OPT	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 be presented with the following structure.

Element	Type	Man.	Requirements	Additional requirements
keyId	String	MAN	It is a chain that can be used by the HUB to find a component needed to validate the signature.	Serial number of the TPP certificate included in "TPP-Signature-Certificate". Must be formatted as follows: KeyId="SN=XXX,CA= YYYYYYYYYYYYYYY" Where "XXX" is the serial number of the certificate in hexadecimal code and "YYYYYYYYYYYYYYY" is the full "Distinguished Name" of the certification authority.
Algorithm-ID	String	MAN	It is used to specify the algorithm used to generate the signature.	The algorithm must identify the same algorithm for the signature as that presented in the request certificate. Must identify SHA-256 or SHA-512.
Headers	String	OPT	Is used to specify the list of HTTP headers included when the signature is generated	The required fields to be signed are: • digest

			for the message. If specified, it must be a list between inverted commas and in lower case, separated by a blank space. If not specified, it must be understood that only one value has been specified. This specified value is the "Date" attribute of the request header. The order of the attributes is important and must be the same as the order specified on the list of HTTP headers specified in this field.	• x-request-id Conditionally, if they travel and are supported, they must include: • psu-id • psu-corporate-id • tpp-redirect-uri
Signature	String	MAN	The "signature" parameter must be in Base64 according to RFC 4648. The TPP uses the algorithm and the parameters of the header to form the chain to be signed. The chain to sign is signed with the keyId and the corresponding algorithm. The content must be in Base64.	There are no additional requirements.

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+5ZVNESdiq
KG8xrawYa5gAm46CvcKChNTPaakiEJHcXM5RZPWN0Ns5HjV5mUY2QzD+g5mwqcW
vXtBr1vg0bZKN8Zt3+uJMN37NQg9tJNE2yKIJlEPlAYOjC2PA/yzGSLOdADnXQut9yRvx
w8gMCjDtRaKDyWmwG6/crX293hGvBUeff1xvTluWhQzyfx4J6WG0v1ZmpnWdZ1LF6
8sToeDGTdu65aVKV2q6qcZzcm5aPV6+mVHX+21Vr6acxiLZdeYUHYJHrzErUN3KJrmt
3w2AL7Dw==

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+5ZVNESdiq
KG8xrawYa5gAm46CvcKChNTPaakiEJHcXM5RZPWN0Ns5HjV5mUY2QzD+g5mwqcW
vXtBr1vg0bZKN8Zt3+uJMN37NQg9tJNE2yKIJlEPlAYOjC2PA/yzGSLOdADnXQut9yRvx
w8gMCjDtRaKDyWmwG6/crX293hGvBUeff1xvTluWhQzyfx4J6WG0v1ZmpnWdZ1LF6
8sToeDGTdu65aVKV2q6qcZzcm5aPV6+mVHX+21Vr6acxiLZdeYUHYJHrzErUN3KJrmt
3w2AL7Dw==”

TPP-Signature-Certificate=MIIEWTCCA0GgAwIBAgIEon/…

6.2 HTTP response codes

The HTTP codes followed by this specification and their uses are the following:

HTTP code	Description
200 OK	PUT, GET Response Codes This return code is permitted if a request was repeated due to a time-out. The response in that might be either a 200 or 201 code depending on the ASPSP implementation. The POST for a Funds request will also return 200 since it does not create a new resource.

	DELETE Response Code where a payment resource has been cancelled successfully and no further cancellation authorisation is required.
201 Created	POST response code where Payment Initiation or Consent Request was correctly performed.
202 Accepted	DELETE response code, where a payment resource can be cancelled in general, but where a cancellation authorisation is needed in addition.
204 No Content	DELETE response code where a consent resource was successfully deleted. The code indicates that the request was performed, but no content was returned. Also used in DELETE requests of a payment initiation where authentication is not needed.
400 Bad Request	Validation error occurred. This code will cover malformed syntax in request or incorrect data in payload.
401 Unauthorised	The TPP or the PSU is not correctly authorized to perform the request. Retry the request with correct authentication information.
403 Forbidden	Returned if the resource that was referenced in the path exists but cannot be accessed by the TPP or the PSU. This code should only be used for non-sensitive id references as it will reveal that the resource exists even though it cannot be accessed.
404 Not found	Returned if the resource or endpoint that was referenced in the path does not exist or cannot be referenced by the TPP or the PSU. When in doubt if a specific id in the path is sensitive or not, use the HTTP response code 404 instead of the HTTP response code 403.
405 Method Not Allowed	This code is only sent when the HTTP method (PUT, POST, DELETE, GET etc.) is not supported on a specific endpoint. It has nothing to do with the consent, payment or account information data model. DELETE Response code in case of cancellation of a payment initiation, where the payment initiation cannot be cancelled due to legal or other operational reasons.

406 Not Acceptable	The ASPSP cannot generate the content that the TPP specified in the Accept header.
408 Request Timeout	The server is still working correctly, but an individual request has timed out.
409 Conflict	The request could not be completed due to a conflict with the current state of the target resource.
415 Unsupported Media Type	The TPP has supplied a media type which the ASPSP does not support.
429 Too Many Requests	The TPP has exceeded the number of requests allowed by the consent or by the RTS.
500 Internal Server Error	Internal server error occurred.
503 Service Unavailable	The ASPSP server is currently unavailable. Generally, this is a temporary state.

6.3 Return codes

Permitted return codes and associated HTTP response codes.

	HTTP code	**Code**	**Description**
SIGNATURE CERTIFICATE	401	CERTIFICATE_INVALID	The contents of the signature/corporate seal certificate are not matching PSD2 general PSD2 or attribute requirements.
	401	CERTIFICATE_EXPIRED	Signature/corporate seal certificate is expired.
	401	CERTIFICATE_BLOCKED	Signature/corporate seal certificate has been blocked by the ASPSP or the related NCA.
	401	CERTIFICATE_REVOKED	Signature/corporate seal certificate has been revoked by QSTP.
	401	CERTIFICATE_MISSING	Signature/corporate seal certificate was not available in the request but is mandated for the corresponding.
SIGNATUR	401	SIGNATURE_INVALI	Application layer eIDAS

E		D	Signature for TPP authentication is not correct.
	401	SIGNATURE_MISSING	Application layer eIDAS Signature for TPP authentication is mandated by the ASPSP but is missing.
GENERAL	400	FORMAT_ERROR	Format of certain request fields are not matching the XS2A requirements. An explicit path to the corresponding field might be added in the return message. This applies to headers and body entries. It also applies in cases where these entries are referring to erroneous or not existing data instances, e.g. a malformed IBAN.
	400	PARAMETER_NOT_CONSISTENT	Parameters submitted by TPP are not consistent. This applies only for query parameters.
	400	PARAMETER_NOT_SUPPORTED	The parameter is not supported by the API provider. This code should only be used for parameters that are described as "optional if supported by API provider."
	401	PSU_CREDENTIALS_INVALID	The PSU-ID cannot be matched by the addressed ASPSP or is blocked, or a password resp. OTP was not correct. Additional information might be added.
	400 (payload) 405 (HTTP method)	SERVICE_INVALID	The addressed service is not valid for the addressed resources or the submitted data.

	403	SERVICE_BLOCKED	This service is not reachable for the addressed PSU due to a channel independent blocking by the ASPSP. Additional information might be given by the ASPSP.
	401	CORPORATE_ID_INVALID	The PSU-Corporate-ID cannot be matched by the addressed ASPSP.
	403 (if resource on path) 400 (if resource in payload)	CONSENT_UNKNOWN	The Consent-ID cannot be matched by the ASPSP relative to the TPP.
	401	CONSENT_INVALID	The consent was created by this TPP but is not valid for the addressed service/resource. Or, the definition of the consent is not complete, or is invalid.
	401	CONSENT_EXPIRED	The consent was created by this TPP but has expired and needs to be renewed.
	401	TOKEN_UNKNOWN	The OAuth2 token cannot be matched by the ASPSP relative to the TPP.
	401	TOKEN_INVALID	The OAuth2 token is associated to the TPP but is not valid for the addressed service/resource.
	401	TOKEN_EXPIRED	The OAuth2 token is associated to the TPP but has expired and needs to be renewed.
	404 (if account-id in path) 403 (if other resource in path)	RESOURCE_UNKNOWN	The addressed resource is unknown relative to the TPP.

	400 (if goes in payload)		
	403 (if resource on path) 400 (if resource in payload)	RESOURCE_EXPIRED	The addressed resource is associated with the TPP but has expired, not addressable anymore.
	400	RESOURCE_BLOCKED	The addressed resource is not addressable by this request, since it is blocked e.g. by a grouping in a signing basket.
	400	TIMESTAMP_INVALID	Timestamp not in accepted time period.
	400	PERIOD_INVALID	Requested time period out of bound.
	400	SCA_METHOD_UNKNOWN	Addressed SCA method in the Authentication Method Select Request is unknown or cannot be matched by the ASPSP with the PSU.
	409	STATUS_INVALID	The addressed resource does not allow addtitional authorisation.
OAuth2	302	invalid_request	The request is not well formed because there are parameters missing, value not supported, or parameters repeated.
	302	unauthorized_client	The authenticated client is not authorised to use this type of authorisation.
	302	access_denied	The owner of the resources or the authorised server rejects the request.
	302	unsupported_response_type	The authorisation server does not support the method used to obtain the authorisation code.
	302	invalid_scope	The scope requested is invalid, unknown or badly formed.
	302	server_error	Error 500 that may not be

			returned in a redirect. It is returned with this code.
	302	temporarily_unavailable	The authorisation server is temporarily unable to process the request, due to a temporary overload or due to maintenance.
	400	invalid_request	The request is not well formed because parameters are missing, the value is not supported, parameters are repeated, it includes multiple credentials or uses more than one of the client's authentication mechanisms.
	401	invalid_client	Client authentication failure.
	400	invalid_grant	The authorisation provided or the refresh token is invalid, expired, revoked, does not coincide with the redirect URL, or was issued by 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 scope requested is invalid, unknown, badly formed or exceeds what is permitted.
PIS	403	PRODUCT_INVALID	The addressed payment product is not available for the PSU.
	404	PRODUCT_UNKNOWN	The addressed payment product is not supported by the ASPSP.
	400	PAYMENT_FAILED	The payment initiation POST request failed during

			the initial process. Additional information may be provided by the ASPSP.
	400	EXECUTION_DATE_INVALID	The requested execution date is not a valid execution date for the ASPSP.
	405	CANCELLATION_INVALID	The addressed payment is not cancellable e.g. due to cut off time passed or legal constraints.
AIS	401	CONSENT_INVALID	The consent was created by the TPP, but it is not valid for the recourse/service requested. Or, the consent definition is not complete or invalid. In case of being not complete, the bank is not supporting a completion of the consent towards the PSU.
	400	SESSIONS_NOT_SUPPORTED	The combined service flag may not be used with this ASPSP.
	429	ACCESS_EXCEEDED	The access on the account has been exceeding the consented multiplicity without PSU involvement per day.
	406	REQUESTED_FORMATS_INVALID	The requested formats in the Accept header entry are not matching the formats offered by the ASPSP.
FCS	400	CARD_INVALID	Addressed card number is unknown to the ASPSP or not associated to the PSU.
	400	NO_PIIS_ACTIVATION	The PSU has not activated the addressed account for the usage of the PIIS associated with the TPP.

6.4 Transaction status

Code	Name	Description
ACCC	AcceptedSettelmentCompleted	Settlement on the creditor's account has been completed.
ACCP	AcceptedCustomerProfile	Preceding check of technical validation was successful. Customer profile check was also successful.
ACFC	AcceptedFundsChecked	Pre-ceeding check of technical validation and customer profile was successful and an automatic funds check was positive . **Remark:** This code is accepted as new code by ISO20022.
ACSC	AcceptedSettlementCompleted	Settlement on the debtor's account has been completed. **Usage:** this can be used by the first agent to report to the debtor that the transaction has been completed. **Warning:** this status is provided for transaction status reasons, not for financial information. It can only be used after bilateral agreement
ACSP	AcceptedSettlementInProcess	All preceding checks such as technical validation and customer profile were successful and therefore the payment initiation has been accepted for execution.
ACTC	AcceptedTechnicalValidation	Authentication and syntactical and semantical validation are successful
ACWC	AcceptedWithChange	The instruction has been accepted, but needs a change; for example, the date or other data has not been sent. Also to inform that a change has been applied, for example, on the payment initiation, and that the execution date has been changed.
ACWP	AcceptedWithoutPosting	Payment instruction included in the credit transfer is accepted without being posted to the creditor customer's account.
RCVD	Received	Payment initiation has been received by the receiving agent.

PATC	PartiallyAcceptedTechnicalCorrect	The payment initiation needs multiple authentications, where some but not yet all have been performed. Syntactical and semantical validations are successful. **Remark**: This code is is accepted as new code by ISO20022.
PDNG	Pending	Payment initiation or individual transaction included in the payment initiation is pending. Further checks and status update will be performed.
RJCT	Rejected	Payment initiation or individual transaction included in the payment initiation has been rejected.
CANC	Cancelled	Payment initiation has been cancelled before execution **Remark:** This code is accepted as new code by ISO20022.
PART	PartiallyAccepted	A number of transactions have been accepted, whereas another number of transactions have not yet achieved 'accepted' status. **Remark:** This code may be used only in case of bulk payments. It is only used in a situation where all mandated authorisations have been applied, but some payments have been rejected.

6.5 Consent status

Code	Description
received	The consent data have been received and are technically correct. The data is not authorised yet.
rejected	The consent data have been rejected e.g. since no successful authorisation has taken place.
valid	The consent is accepted and valid for GET account data calls and others as specified in the consent object.
revokedBy Psu	The consent has been revoked by the PSU towards the ASPSP.
expired	The consent expired.

terminated ByTpp	The corresponding TPP has terminated the consent by applying the DELETE method to the consent resource.

6.6 Balance type

Code	Description
closingBooked	Balance of the account at the end of the pre-agreed account reporting period. It is the sum of the opening booked balance at the beginning of the period and all entries booked to the account during the pre-agreed account reporting period.

6.7 Charge Bearer

Code	Description
DEBT	All transaction charges are to be borne by the debtor.
CRED	All transaction charges are to be borne by the creditor.
SHAR	In a credit transfer context, means that transaction charges on the sender side are to be borne by the debtor, transaction charges on the receiver side are to be borne by the creditor. In a direct debit context, means that transaction charges on the sender side are to be borne by the creditor, transaction charges on the receiver side are to be borne by the debtor.
SLEV	Charges are to be applied following the rules agreed in the service level and/or scheme.

6.8 Good practice guide

6.8.1 remittanceInformationUnstructured field

This field may be used following the EACT *"Association of European Treasurers"* standard adopted in BG in the *"Mobile P2P Interoperability Framework – Implementation Guidelines v1.0"*

The format is as follows:

Field	Description
/DNR/	Debtor's alias
/CNR/	Creditor's alias. (we recommend sending the merchant's FUC)
/DOC/	Reference data for the corresponding request. (The Hub mobilises X-Request-Id of the TPP)
/TXT/	Additional text/item

Example
"remittanceInformationUnstructured": "/DOC/db617660-d60d-11e8-9f8b-f2801f1b9fd1/TXT/Purchase in merchant xxx"

6.8.2 Life of the scaRedirect link

The Berlin Group recommends a duration of 5 minutes for this type of link.