



## **PSD2-TPP Technical Design**

1.7.3

March 2021

## **PSD2 - TPP Technical Design**

### **CONTENTS**

<b>1. INTRODUCTION</b>	<b>1</b>
<b>1.1 SCOPE</b>	<b>1</b>
<b>1.2 CONTEXT</b>	<b>1</b>
<b>1.3 GLOSSARY</b>	<b>1</b>
<b>2. GENERAL DESCRIPTION OF THE SYSTEM</b>	<b>3</b>
<b>3. DESCRIPTION OF CORE SERVICES</b>	<b>5</b>
<b>3.1 PIS: PAYMENT INITIATION SERVICE</b>	<b>5</b>
3.1.1 PAYMENT INITIATION	5
3.1.1.1 Request	5
3.1.1.2 Response	10
3.1.1.3 Examples	14
3.1.2 PAYMENT INITIATION FOR FUTURE DATED PAYMENTS	18
3.1.2.1 Request	18
3.1.2.2 Response	24
3.1.2.3 Examples	27
3.1.3 PAYMENT INITIATION FOR BULK PAYMENTS	29
3.1.3.1 Request	29
3.1.3.2 Response	35
3.1.3.3 Examples	39
3.1.4 INITIATION FOR STANDING ORDERS FOR RECURRING/PERIODIC PAYMENTS	44
3.1.4.1 Request	44
3.1.4.2 Response	51
3.1.4.3 Examples	55
3.1.5 GET PAYMENT STATUS	56
3.1.5.1 Request	56
3.1.5.2 Response	60
3.1.5.3 Examples	61
3.1.6 GET PAYMENT INITIATION	62
3.1.6.1 Request	62
3.1.6.2 Response	66
3.1.6.3 Examples	67
3.1.7 PAYMENT CANCELLATION	69
3.1.7.1 Request	69
3.1.7.2 Response	72
3.1.7.3 Examples	75

## **PSD2 - TPP Technical Design**

3.1.8	MULTILEVEL SCA FOR PAYMENTS	76
<b>3.2</b>	<b>AIS: ESTABLISH ACCOUNT INFORMATION CONSENT SERVICE</b>	<b>76</b>
3.2.1	CHARACTERISTICS OF THE CONSENT	76
3.2.1.1	Consent model	76
3.2.1.2	Recurring access	77
3.2.1.3	Account owner name delivery	78
3.2.2	ACCOUNT INFORMATION CONSENT	78
3.2.2.1	Request	79
3.2.2.2	Response	85
3.2.2.3	Examples	88
3.2.3	GETCONSENT STATUS	92
3.2.3.1	Request	93
3.2.3.2	Response	96
3.2.3.3	Examples	97
3.2.4	GETCONSENT	98
3.2.4.1	Request	98
3.2.4.2	Response	101
3.2.4.3	Examples	103
3.2.5	REMOVE CONSENT	105
3.2.5.1	Request	105
3.2.5.2	Response	108
3.2.5.3	Examples	109
3.2.6	MULTILEVEL SCA TO ESTABLISH CONSENT	110
<b>3.3</b>	<b>AIS: ACCOUNT DATA READING SERVICE</b>	<b>110</b>
3.3.1	ACCOUNT LIST READING	110
3.3.1.1	Request	111
3.3.1.2	Response	115
3.3.1.3	Examples	115
3.3.2	READING ACCOUNT DETAILS	117
3.3.2.1	Request	118
3.3.2.2	Response	122
3.3.2.3	Examples	122
3.3.3	READING BALANCES	125
3.3.3.1	Request	125
3.3.3.2	Response	129
3.3.3.3	Examples	130
3.3.4	READING OF TRANSACTIONS	131
3.3.4.1	Request	132
3.3.4.2	Response	138
3.3.4.3	Examples	139
<b>3.4</b>	<b>FCS: ESTABLISH CONSENT FOR THE FUND CONFIRMATION SERVICE</b>	<b>145</b>
3.4.1	FUND CONFIRMATION CONSENT	145
3.4.1.1	Request	145

## **PSD2 - TPP Technical Design**

3.4.1.2	Response	150
3.4.1.3	Examples	154
3.4.2	GETCONSENT STATUS	156
3.4.2.1	Request	156
3.4.2.2	Response	160
3.4.2.3	Examples	161
3.4.3	GETCONSENT	162
3.4.3.1	Request	162
3.4.3.2	Response	165
3.4.3.3	Examples	167
3.4.4	REVOKE CONSENT	168
3.4.4.1	Request	168
3.4.4.2	Response	171
3.4.4.3	Examples	172
3.4.5	MULTILEVEL SCA TO ESTABLISH CONSENT	173
<b>3.5</b>	<b>FCS: FUND CONFIRMATION SERVICE</b>	<b>173</b>
3.5.1	CONFIRMATION OF FUNDS	173
3.5.1.1	Request	173
3.5.1.2	Response	176
3.5.1.3	Examples	177
<b>3.6</b>	<b>OAUTH2 AS PRE-STEP</b>	<b>178</b>
3.6.1	OBTAIN AUTHORISATION	178
3.6.1.1	Request	178
3.6.1.2	Response OK	180
3.6.1.3	Error response	181
3.6.1.4	Examples	182
3.6.2	OBTAIN ACCESS TOKEN	182
3.6.2.1	Request	182
3.6.2.2	Response OK	184
3.6.2.3	Error response	185
3.6.2.4	Examples	185
<b>3.7</b>	<b>TOKEN RENEWAL REQUEST</b>	<b>186</b>
3.7.1	REQUEST	186
3.7.2	RESPONSE	188
3.7.3	EXAMPLES	188
<b>3.8</b>	<b>SESSIONS: COMBINATION OF AIS AND PIS SERVICES</b>	<b>189</b>
<b>3.9</b>	<b>PROCESSES COMMON TO THE SERVICES.</b>	<b>189</b>
3.9.1	INITIATION OF THE AUTHORISATION PROCESS (EXPLICIT)	189
3.9.1.1	Request	190
3.9.1.2	Response	194
3.9.1.3	Examples	196
3.9.2	UPDATE DATA OF THE PSU (SELECT SCA METHOD)	197
3.9.2.1	Request	197

## **PSD2 - TPP Technical Design**

3.9.2.2	Response	201
3.9.2.3	Examples	203
3.9.3	GETAUTHORISATION SUB-RESOURCES	204
3.9.3.1	Request	204
3.9.3.2	Response	208
3.9.3.3	Examples	209
3.9.4	GETSCA STATUS	209
3.9.4.1	Request	209
3.9.4.2	Response	213
3.9.4.3	Examples	214
<b>4.</b>	<b>DESCRIPTION OF VALUE-ADDED SERVICES</b>	<b>216</b>
<b>4.1</b>	<b>AVAILABLE ASPSPs SERVICE</b>	<b>216</b>
4.1.1	VERSION 1	216
4.1.1.1	Request	216
4.1.1.2	Response	217
4.1.1.3	Examples	217
4.1.2	VERSION 2	218
4.1.2.1	Request	218
4.1.2.2	Response	220
4.1.2.3	Examples	220
<b>4.2</b>	<b>SVA: PAYMENT INITIATION WITH LIST OF AVAILABLE ACCOUNTS FOR PISP</b>	<b>221</b>
4.2.1	PAYMENT INITIATION	221
4.2.1.1	Request	221
4.2.1.2	Response	227
4.2.1.3	Examples	230
<b>5.</b>	<b>DEFINITION OF TYPES OF COMPOSITE DATA</b>	<b>232</b>
<b>5.1</b>	<b>ACCOUNTACCESS</b>	<b>232</b>
<b>5.2</b>	<b>ACCOUNTDETAILS</b>	<b>234</b>
<b>5.3</b>	<b>ACCOUNTREFERENCE</b>	<b>236</b>
<b>5.4</b>	<b>ACCOUNTREPORT</b>	<b>237</b>
<b>5.5</b>	<b>ADDITIONALINFORMATIONACCESS</b>	<b>238</b>
<b>5.6</b>	<b>ADDRESS</b>	<b>238</b>
<b>5.7</b>	<b>AMOUNT</b>	<b>239</b>
<b>5.8</b>	<b>AUTHENTICATIONOBJECT</b>	<b>239</b>
<b>5.9</b>	<b>ASPSP</b>	<b>240</b>
<b>5.10</b>	<b>BALANCE</b>	<b>240</b>
<b>5.11</b>	<b>EXCHANGERATE</b>	<b>241</b>
<b>5.12</b>	<b>HREF</b>	<b>242</b>
<b>5.13</b>	<b>LINKS</b>	<b>242</b>
<b>5.14</b>	<b>PAYMENTEXCHANGERATE</b>	<b>244</b>

## **PSD2 - TPP Technical Design**

<b>5.15</b>	<b>REPORTEXCHANGERATE</b>	<b>245</b>
<b>5.16</b>	<b>SINGLEPAYMENT</b>	<b>245</b>
<b>5.17</b>	<b>STANDINGORDERDETAILS</b>	<b>247</b>
<b>5.18</b>	<b>STRUCTUREDADDITIONALINFORMATION</b>	<b>250</b>
<b>5.19</b>	<b>TPPMESSAGE</b>	<b>250</b>
<b>5.20</b>	<b>TRANSACTIONS</b>	<b>251</b>
<b>6.</b>	<b>ANNEXES</b>	<b>254</b>
<b>6.1</b>	<b>SIGNATURE</b>	<b>254</b>
6.1.1	"DIGEST" HEADER MANDATORY	254
6.1.2	SIGNATURE REQUIREMENTS	254
6.1.3	EXAMPLE	255
6.1.3.1	Generation of the "Digest" header	256
6.1.3.2	Generation of the "Signature" header	257
6.1.3.3	Generation of the "TPP-Signature-Certificate" header	258
6.1.3.4	Definitive headers to send	258
<b>6.2</b>	<b>HTTP RESPONSE CODES</b>	<b>258</b>
<b>6.3</b>	<b>RETURN CODES</b>	<b>260</b>
<b>6.4</b>	<b>TRANSACTION STATUS</b>	<b>266</b>
<b>6.5</b>	<b>CONSENT STATUS</b>	<b>268</b>
<b>6.6</b>	<b>TYPES OF AUTHENTICATION</b>	<b>268</b>
<b>6.7</b>	<b>BALANCE TYPE</b>	<b>269</b>
<b>6.8</b>	<b>CHARGE BEARER</b>	<b>270</b>
<b>6.9</b>	<b>GOOD PRACTICE GUIDE</b>	<b>270</b>
6.9.1	REMITTANCEINFORMATIONUNSTRUCTURED FIELD	270
6.9.2	LIFE OF THE SCAREDIRECT LINK	271
<b>6.10</b>	<b>ANNEX EXPOSED SERVICES ENTITY</b>	<b>272</b>

## **PSD2 - TPP Technical Design**

### **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 Redsys and the financial institutions associated with the HUB.

#### **1.3 Glossary**

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

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

***PSD2 - TPP Technical Design***

	interface of this ASPSP. It sends request messages to the XS2A interface of the ASPSP and receives response messages corresponding to this ASPSP.
<b>PIISP</b>	Payment Issuer Instrument Services Provider
	Provides users with a payment instrument with which to initiate and process payment transactions.
<b>PSU</b>	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.



## PSD2 - TPP Technical Design

### 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	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	Available
		Recover consent information	Available
		Check consent status	Available
		Remove consent	Available
		Fund confirmation	Available
	SCA	SCA by redirected flow	Available
		SCA by decoupled flow	Available
		Embedded SCA	Not supported
	Common processes	Initiate explicit authorisation	Available
		SCA status query	Available

## PSD2 - TPP Technical Design

		Obtain authorisation sub-resources	Available
		Update authorisation data	Available
	<b>OAUTH</b>	Obtain access token	Available
		Renew access token	Available

**Table 1: CORE services**

Service		Functionality	Status
<b>SVA</b>	<b>ASPSP DIR.</b>	List of available ASPSPs (v1 and v2)	Available
	<b>PI S</b>	Payment initiation with list of accounts available for PISP	Available
	<b>AI S</b>	Alert of data available in PUSH mode	Pending

**Table 2: Value-added services**

## PSD2 - TPP Technical Design

### 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
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>payment-product</b>	Payment product to be used. List of supported products: <ul style="list-style-type: none"> <li>• sepa-credit-transfers</li> <li>• instant-sepa-credit-transfers</li> <li>• target-2-payments</li> <li>• cross-border-credit-transfers</li> </ul>	String	MAN	E.g. <code>{provider}/{aspsp}/v1/payments/sepa-credit-transfers/</code>

###### Query parameters

No additional parameters are specified for this request.

## PSD2 - TPP Technical Design

### Header

Field	Description	Type	Man.	Format
<b>Content-Type</b>	Value: application/json	String	MAN	Content-Type: application/json
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicM WpAA
<b>Consent-ID</b>	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
<b>PSU-IP-Address</b>	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	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

## PSD2 - TPP Technical Design

	used by the TPP when submitting this request.			
<b>PSU-IP-Port</b>	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
<b>PSU-Accept</b>	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
<b>PSU-Accept-Charset</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available.  Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> </ul>	String	OPT	E.g. PSU-Http-Method: POST

**PSD2 - TPP Technical Design**

	<ul style="list-style-type: none"> <li>DELETE</li> </ul>			
<b>PSU-Device-ID</b>	<p>UUID (Universally Unique Identifier) for a device, which is used by the PSU, if available.</p> <p>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.</p>	String	OPT	<p><b>UUID</b></p> <p><math>^{\wedge}[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\}\\$</math></p> <p>E.g.</p> <p>PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7</p>
<b>PSU-Geo-Location</b>	<p>The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.</p>	String	OPT	<p><b>RFC 2426</b></p> <p><math>^{\wedge}GEO:[\d]*.[\d]*[;][\d]*.[\d]*\\$</math></p> <p>E.g.</p> <p>PSU-Geo-Location: GEO:90.023856;25.345963</p>
<b>TPP-Redirect-Preferred</b>	<p>If it equals "true", the TPP prefers a redirect over an embedded SCA approach.</p> <p>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.</p> <p>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.</p>	Boolean	OPT	<p>E.g. TPP-Redirect-Preferred: true</p>

**PSD2 - TPP Technical Design**

	<b>EMBEDDED NOT SUPPORTED IN THIS VERSION</b>			
<b>TPP-Redirect-URI</b>	<p>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".</p> <p>It is recommended to always use this header field.</p> <p><b>Remark for Future:</b> This field might be changed to mandatory in the next version of the specification.</p>	String	COND	<p>^.{1,250}\$</p> <p>E.g. TPP-Redirect-URI:"https://tpp.example.es/cb"</p>
<b>TPP-Nok-Redirect-URI</b>	<p>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.</p>	String	OPT	<p>^.{1,250}\$</p> <p>E.g. TPP-Nok-Redirect-URI:"https://tpp.example.es/cb/nok"</p>
<b>TPP-Explicit-Authorisation-Preferred</b>	<p>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.</p> <p>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</p>	Boolean	OPT	<p>E.g. TPP-Explicit-Authorisation-Preferred: false</p>

## PSD2 - TPP Technical Design

	<p>direct authorisation of the transaction in the next step.</p> <p><b>Note:</b> the ASPSP may not take it into account if it does not support it.</p>			
<b>Digest</b>	<p>Is contained if and only if the "Signature" element is contained in the header of the request.</p> <p>See 6.1Signature for more information.</p>	String	MAN	$\wedge.\{1,100\}\$$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
<b>Signature</b>	<p>A signature of the request by the TPP on application level.</p> <p>See 6.1Signature for more information.</p>	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	<p>The certificate used for signing the request, in base64 encoding.</p>	String	MAN	$\wedge.\{1,5000\}\$$ E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIzZvBQIt0UcwDQYJ.....KoZiHvcNAQELBQAuSTELMAkGA1UEBhMCVVMxEzARBgNVBA

### Body

The content of the Body is that defined in 5.16SinglePayment.

### 3.1.1.2 Response

#### Header

Field	Description	Type	Man.	Format
<b>Location</b>	Location of the created resource (if created)	String	MAN	$\wedge.\{1,512\}\$$ E.g. Location: /v1/payments/{payment



## PSD2 - TPP Technical Design

				-product}/{payment-id}
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>ASPSP-SCA-Approach</b>	This data element must be contained, if the SCA Approach is already fixed. Possible values are: <ul style="list-style-type: none"> <li>EMBEDDED</li> <li>DECOUPLED</li> <li>REDIRECT</li> </ul> The OAuth SCA approach will be subsumed by REDIRECT.	String	COND	E.g. ASPSP-SCA-Approach: REDIRECT

### Body

Field	Description	Type	Man.	Format
<b>transactionStatus</b>	Status of the transaction. Values defined in annexes in 6.4Transaction status	String	MAN	<b>ISO 20022</b> E.g. "transactionStatus": "RCVD"
<b>paymentId</b>	Resource identification of the generated payment initiation resource.	String	MAN	^.{1,36}\$ E.g. "paymentId": "1b3ab8e8-0fd5-43d2-946e-d75958b172e7"
<b>transactionFees</b>	Can be used by the ASPSP to transport transaction fees relevant for the	Amount	OPT	E.g. "transactionFees": {...}

**PSD2 - TPP Technical Design**

	underlying payments.			
<b>transactionFeeIndicator</b>	<p>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.</p> <p>If equals false, the transaction will not involve additional specific transaction costs to the PSU.</p>	Boolean	OPT	E.g. "transactionFeeIndicator": true
<b>scaMethods</b>	<p>This data element might be contained, if SCA is required and if the PSU has a choice between different authentication methods.</p> <p>If this data element is contained, then there is also a hyperlink of type "startAuthorisationWithAuthenticationMethodSelection" contained in the response body.</p> <p>These methods shall be presented towards the PSU for selection by the TPP.</p> <p><b>Note:</b> Only if ASPSP supports selection of the SCA method</p>	List<AuthenticationObject>	COND	E.g. "scaMethods": [...]
<b>_links</b>	<p>A list of hyperlinks to be recognised by the TPP.</p> <p>Type of links admitted in this response:</p> <ul style="list-style-type: none"> <li>scaRedirect: In case of an SCA</li> </ul>	Links	MAN	E.g. "_links": {...}

**PSD2 - TPP Technical Design**

	<p>Redirect Approach, the ASPSP is transmitting the link to which to redirect the PSU browser.</p> <ul style="list-style-type: none"> <li>• <b>startAuthorisation:</b> 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).</li> <li>• <b>startAuthorisation WithAuthentication MethodSelection:</b> The link to the authorisation endpoint, where the authorisation sub-resource has to be generated while selecting the authentication method. This link is contained under exactly the same conditions as the data element "scaMethods"</li> <li>• <b>self:</b> link to the resource created by this request.</li> </ul>			
--	---	--	--	--

## PSD2 - TPP Technical Design

	<ul style="list-style-type: none"> <li>• status: The link to retrieve the transaction status</li> <li>• 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.</li> </ul>			
<b>psuMessage</b>	Text to be displayed to the PSU	String	OPT	$\wedge.\{1,512\}\$$ E.g. "psuMessage": "Information for the PSU"
<b>tppMessages</b>	Message to the TPP	List<Tpp Message >	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 2YotnFZFEjrlzCsicMWpAA

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

## **PSD2 - TPP Technical Design**

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": "ES11111111111111111111111111111111"
  },
  "creditorAccount": {
    "iban": "ES22222222222222222222222222222222"
  },
  "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",
```

## **PSD2 - TPP Technical Design**

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

### **Example of request for decoupled SCA**

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

Content-Encoding: gzip

Content-Type: application/json

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

Authorization: Bearer 2YotnFZFEjrlzCsicMWpAA

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

## **PSD2 - TPP Technical Design**

PSU-GEO-Location: GEO:12.526347;54.649862

TPP-Redirect-Preferred: false

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

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

### **Example of response in case of an decoupled SCA approach with implicitly creating an authorisation sub-resource**

HTTP/1.1 201 Created

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

ASPS-SCA-Approach: DECOUPLED

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": {
    "self": {
      "href": "/v1/payments/sepa-credit-transfers/123-qwe-456"
    },
    "status": {
```

## PSD2 - TPP Technical Design

```

        "href": "/v1/payments/sepa-credit-transfers/123-qwe-456/status"
      },
      "scaStatus": {
        "href": "/v1/payments/sepa-credit-transfers/123-qwe-456/authorisations/123auth456"
      }
    },
    "psuMessage": "Please use your XXX Bank app to authorise the payment"
  }

```

### 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
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. hub.example.es
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>payment-product</b>	Payment product to be used. List of supported products: <ul style="list-style-type: none"> <li>• sepa-credit-transfers</li> <li>• instant-sepa-credit-transfers</li> <li>• target-2-payments</li> <li>• cross-border-credit-transfers</li> </ul>	String	MAN	E.g. {provider}/{aspsp}/v1/payments/sepa-credit-transfers/



## PSD2 - TPP Technical Design

### Query parameters

No additional parameters are specified for this request.

### Header

Field	Description	Type	Man.	Format
<b>Content-Type</b>	Value: application/json	String	MAN	Content-Type: application/json
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
<b>Consent-ID</b>	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
<b>PSU-IP-Address</b>	The forwarded IP Address header field consists of the corresponding HTTP request IP Address	String	MAN	^[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3}\$

## PSD2 - TPP Technical Design

	fieldbetween PSU and TPP.  If not available, the TPP shall use the IP Address used by the TPP when submitting this request.			E.g. PSU-IP-Address: 192.168.16.5
<b>PSU-IP-Port</b>	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
<b>PSU-Accept</b>	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
<b>PSU-Accept-Charset</b>	See above	String	OPT	^.{1,50}\$  E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^.{1,50}\$  E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	^.{1,50}\$  E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available.  Valid values are:	String	OPT	E.g. PSU-Http-Method: POST

## PSD2 - TPP Technical Design

	<ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>			
<b>PSU-Device-ID</b>	<p>UUID (Universally Unique Identifier) for a device, which is used by the PSU, if available.</p> <p>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.</p>	String	OPT	<p><b>UUID</b></p> <p><code>^[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}\$</code></p> <p>E.g.</p> <p>PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7</p>
<b>PSU-Geo-Location</b>	<p>The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.</p>	String	OPT	<p><b>RFC 2426</b></p> <p><code>^GEO:[\d]*.[\d]*[;][\d]*.[\d]*\$</code></p> <p>E.g.</p> <p>PSU-Geo-Location: GEO:90.023856;25.345963</p>
<b>TPP-Redirect-Preferred</b>	<p>If it equals "true", the TPP prefers a redirect over an embedded SCA approach.</p> <p>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.</p> <p>If the parameter is not used, the ASPSP will choose the SCA</p>	Boolean	OPT	<p>E.g. TPP-Redirect-Preferred: true</p>

## PSD2 - TPP Technical Design

	<p>approach to be applied depending on the SCA method chosen by the TPP/PSU.</p> <p><b>EMBEDDED NOT SUPPORTED IN THIS VERSION</b></p>			
<b>TPP-Redirect-URI</b>	<p>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".</p> <p>It is recommended to always use this header field.</p> <p><b>Remark for Future:</b> This field might be changed to mandatory in the next version of the specification.</p>	String	COND	<p>^.{1,250}\$</p> <p>E.g. TPP-Redirect-URI:"https://tpp.example.es/cb"</p>
<b>TPP-Nok-Redirect-URI</b>	<p>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.</p>	String	OPT	<p>^.{1,250}\$</p> <p>E.g. TPP-Nok-Redirect-URI:"https://tpp.example.es/cb/nok"</p>
<b>TPP-Explicit-Authorisation-Preferred</b>	<p>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.</p> <p>If it equals "false" or if</p>	Boolean	OPT	<p>E.g. TPP-Explicit-Authorisation-Preferred: false</p>

## PSD2 - TPP Technical Design

	<p>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.</p> <p><b>Note:</b> the ASPSP may not take it into account if it does not support it.</p>			
<b>Digest</b>	<p>Is contained if and only if the "Signature" element is contained in the header of the request.</p> <p>See 6.1Signature for more information.</p>	String	MAN	$\wedge.\{1,100\}\$$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYtZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
<b>Signature</b>	<p>A signature of the request by the TPP on application level.</p> <p>See 6.1Signature for more information.</p>	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	<p>The certificate used for signing the request, in base64 encoding.</p>	String	MAN	$\wedge.\{1,5000\}\$$ E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIZzZvBQIt0UcwDQYJ.....KoZIHvcNAQELBQAwSTEMLMAkGA1UEBhMCMVVMxEzARBgNVBA

### Body

The content of the Body is defined in 5.16SinglePayment and the following parameter must also be entered:

Field	Description	Type	Man.	Format
<b>requestedE</b>	The payment will	String	OPT	<b>ISODate</b>

## PSD2 - TPP Technical Design

<b>ExecutionDate</b>	be executed on the reported date. <b>Note:</b> this field must be entered.			E.g. "requestedExecutionDate": 2019-01-12"
----------------------	---	--	--	--

### 3.1.2.2 Response

#### Header

Field	Description	Type	Man.	Format
<b>Location</b>	Location of the created resource (if created)	String	MAN	<b>Max512Text</b> E.g. Location: /v1/payments/{payment-product}/{payment-id}
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>ASPSP-SCA-Approach</b>	This data element must be contained, if the SCA Approach is already fixed. Possible values are: <ul style="list-style-type: none"> <li>EMBEDDED</li> <li>DECOUPLED</li> <li>REDIRECT</li> </ul> The OAuth SCA approach will be subsumed by REDIRECT.	String	COND	E.g. ASPSP-SCA-Approach: REDIRECT

#### Body

Field	Description	Type	Man.	Format
-------	-------------	------	------	--------

## PSD2 - TPP Technical Design

<b>transactionStatus</b>	Status of the transaction.  Values defined in annexes in 6.4 Transaction status	String	MAN	<b>ISO 20022</b>  E.g. "transactionStatus": "RCVD"
<b>paymentId</b>	Resource identification of the generated payment initiation resource.	String	MAN	^.{1,36}\$  E.g. "paymentId": "1b3ab8e8-0fd5-43d2-946e-d75958b172e7"
<b>transactionFees</b>	Can be used by the ASPSP to transport transaction fees relevant for the underlying payments.	Amount	OPT	E.g. "transactionFees": {...}
<b>transactionFeeIndicator</b>	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
<b>scaMethods</b>	This data element might be contained, if SCA is required and if the PSU has a choice between different authentication methods.  If this data element is contained, then there is also a hyperlink of type "startAuthorisationWithAuthenticationMethodSelection" contained in the response body.	List<AuthenticationObject>	COND	E.g. "scaMethods": [...]

**PSD2 - TPP Technical Design**

	<p>These methods shall be presented towards the PSU for selection by the TPP.</p> <p><b>Note:</b> Only if ASPSP supports selection of the SCA method</p>			
<b>_links</b>	<p>A list of hyperlinks to be recognised by the TPP.</p> <p>Type of links admitted in this response:</p> <ul style="list-style-type: none"> <li>• <b>scaRedirect:</b> In case of an SCA Redirect Approach, the ASPSP is transmitting the link to which to redirect the PSU browser.</li> <li>• <b>startAuthorisation:</b> 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).</li> <li>• <b>startAuthorisationWithAuthenticationMethodSelection:</b> The link to the authorisation endpoint, where the</li> </ul>	Links	MAN	E.g. "_links": {...}



## PSD2 - TPP Technical Design

	<p>authorisation sub-resource has to be generated while selecting the authentication method. This link is contained under exactly the same conditions as the data element "scaMethods"</p> <ul style="list-style-type: none"> <li>• self: link to the resource created by this request.</li> <li>• status: The link to retrieve the transaction status</li> <li>• 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.</li> </ul>			
<b>psuMessage</b>	Text to be displayed to the PSU	String	OPT	$\wedge.\{1,512\}\$$ E.g. "psuMessage": "Information for the PSU"
<b>tppMessages</b>	Message to the TPP	List<Tpp Message >	OPT	E.g. "tppMessages": [...]

### 3.1.2.3 Examples

#### Example of request for SCA via redirection

## **PSD2 - TPP Technical Design**

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 2YotnFZFEjrlzCsicMWpAA

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",
```

## PSD2 - TPP Technical Design

```
"requestedExecutionDate": "2019-01-12"
}
```

### 3.1.3 Payment initiation for bulk payments

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

#### 3.1.3.1 Request

##### Endpoint

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

##### Path

Field	Description	Type	Man.	Format
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. hub.example.es
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>payment-product</b>	Payment product to be used. List of supported products: <ul style="list-style-type: none"> <li>• sepa-credit-transfers</li> <li>• instant-sepa-credit-transfers</li> <li>• target-2-payments</li> <li>• cross-border-credit-transfers</li> </ul>	String	MAN	E.g. {provider}/{aspsp-name}/v1/bulk-payments/sepa-credit-transfers/

##### Query parameters

No additional parameters are specified for this request.

##### Header

Field	Description	Type	Man.	Format
<b>Content-Type</b>	Value: application/json	String	MAN	Content-Type: application/json

## PSD2 - TPP Technical Design

<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> $^{\wedge}[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{12\}\$$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
<b>Consent-ID</b>	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	$^{\wedge}\{1,36\}\$$ E.g. Consent-ID: 7890-asdf-4321
<b>PSU-IP-Address</b>	<p>The forwarded IP Address header field consists of the corresponding HTTP request IP Address field between PSU and TPP.</p> <p>If not available, the TPP shall use the IP Address used by the TPP when submitting this request.</p>	String	MAT	$^{\wedge}[0-9]\{1,3\}\.[0-9]\{1,3\}\.[0-9]\{1,3\}\.[0-9]\{1,3\}\$$ E.g. PSU-IP-Address: 192.168.16.5
<b>PSU-IP-Port</b>	The forwarded IP Port header field consists of the corresponding HTTP request IP Port field between PSU and TPP, if	String	OPT	$^{\wedge}\{1,5\}\$$ E.g. PSU-IP-Port: 443

## PSD2 - TPP Technical Design

	available.			
<b>PSU-Accept</b>	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
<b>PSU-Accept-Charset</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available.  Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: POST
<b>PSU-Device-ID</b>	UUID (Universally Unique Identifier) for a device, which is used by the PSU, if available.  UUID identifies either a	String	OPT	<b>UUID</b> ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}\$

**PSD2 - TPP Technical Design**

	device or a device 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
<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	<b>RFC 2426</b> ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*\$ E.g. PSU-Geo-Location: GEO:90.023856;25.345963
<b>TPP-Redirect-Preferred</b>	<p>If it equals "true", the TPP prefers a redirect over an embedded SCA approach.</p> <p>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.</p> <p>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.</p> <p><b>EMBEDDED NOT SUPPORTED IN THIS VERSION</b></p>	Boolean	OPT	E.g. TPP-Redirect-Preferred: true
<b>TPP-Redirect-URI</b>	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.e

## PSD2 - TPP Technical Design

	<p>Mandated for the Redirect SCA Approach, specifically when TPP-Redirect-Preferred equals "true".</p> <p>It is recommended to always use this header field.</p> <p><b>Remark for Future:</b> This field might be changed to mandatory in the next version of the specification.</p>			example.es/cb"
<b>TPP-Nok-Redirect-URI</b>	<p>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.</p>	String	OPT	$\wedge.\{1,250\}\$$ E.g. TPP-Nok-Redirect-URI:"https://tpp.example.es/cb/nok"
<b>TPP-Explicit-Authorisation-Preferred</b>	<p>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.</p> <p>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.</p> <p><b>Note:</b> the ASPSP may not take it into account if it does not support it.</p>	Boolean	OPT	E.g. TPP-Explicit-Authorisation-Preferred: false





## PSD2 - TPP Technical Design

<b>requested Execution Date</b>	If contained, the payments contained in this bulk will be executed at the addressed date. This field may not be used together with the field requestedExecutionTime.	String	OPT	<b>ISODate</b> E.g. "requestedExecutionDate": "2018-05-17"
<b>requested ExecutionTime</b>	If contained, the payments contained in this bulk will be executed at the addressed Date/Time. This field may not be used together with the field requestedExecutionDate.	String	OPT	<b>ISODateTime</b>
<b>payments</b>	The Bulk Entry Type is a type which follows the JSON formats for the supported products for single payments. <ul style="list-style-type: none"> <li>debtorAccount</li> <li>requestedExecutionDate</li> <li>requestedExecutionTime</li> </ul> <p>These three data elements may not be contained in any bulk entry.</p>	Array<SinglePayment>	MAN	E.g. "payments": [...]

### 3.1.3.2 Response

#### Header

Field	Description	Type	Man.	Format
<b>Location</b>	Location of the created resource (if created)	String	MAN	^.{1,512}\$ E.g. Location: /v1/bulk-payments/{payment-}

## PSD2 - TPP Technical Design

				product}/{payment-id}
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> $\wedge[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{12\}\$$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
<b>ASPSP-SCA-Approach</b>	This data element must be contained, if the SCA Approach is already fixed. Possible values are: <ul style="list-style-type: none"> <li>• EMBEDDED</li> <li>• DECOUPLED</li> <li>• REDIRECT</li> </ul> The OAuth SCA approach will be subsumed by REDIRECT.	String	COND	E.g. ASPSP-SCA-Approach: REDIRECT

### Body

Field	Description	Type	Man.	Format
<b>transactionStatus</b>	Status of the transaction.  Values defined in annexes in 6.4Transaction status	String	MAN	<b>ISO 20022</b> E.g. "transactionStatus": "RCVD"
<b>paymentId</b>	Resource identification of the generated payment initiation resource.	String	MAN	$\wedge.\{1,36\}\$$ E.g. "paymentId": "1b3ab8e8-0fd5-43d2-946e-d75958b172e7"
<b>transactionFees</b>	Can be used by the ASPSP to transport transaction fees relevant for the	Amount	OPT	E.g. "transactionFees": {...}

**PSD2 - TPP Technical Design**

	underlying payments.			
<b>transactionFeeIndicator</b>	<p>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.</p> <p>If equals false, the transaction will not involve additional specific transaction costs to the PSU.</p>	Boolean	OPT	E.g. "transactionFeeIndicator": true
<b>scaMethods</b>	<p>This data element might be contained, if SCA is required and if the PSU has a choice between different authentication methods.</p> <p>If this data element is contained, then there is also a hyperlink of type "startAuthorisationWithAuthenticationMethodSelection" contained in the response body.</p> <p>These methods shall be presented towards the PSU for selection by the TPP.</p> <p><b>Note:</b> Only if ASPSP supports selection of the SCA method</p>	List<AuthenticationObject>	COND	E.g. "scaMethods": [...]
<b>_links</b>	<p>A list of hyperlinks to be recognised by the TPP.</p> <p>Type of links admitted in this response:</p> <ul style="list-style-type: none"> <li>scaRedirect: In case of an SCA</li> </ul>	Links	MAN	E.g. "_links": {...}

**PSD2 - TPP Technical Design**

	<p>Redirect Approach, the ASPSP is transmitting the link to which to redirect the PSU browser.</p> <ul style="list-style-type: none"> <li>• <b>startAuthorisation:</b> 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).</li> <li>• <b>startAuthorisationWithAuthenticationMethodSelection:</b> The link to the authorisation endpoint, where the authorisation sub-resource has to be generated while selecting the authentication method. This link is contained under exactly the same conditions as the data element "scaMethods"</li> <li>• <b>self:</b> link to the resource created by this request.</li> </ul>			
--	---	--	--	--

## PSD2 - TPP Technical Design

	<ul style="list-style-type: none"> <li>status: The link to retrieve the transaction status</li> <li>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.</li> </ul>			
<b>psuMessage</b>	Text to be displayed to the PSU	String	OPT	$\wedge.\{1,512\}\$$ E.g. "psuMessage": "Information for the PSU"
<b>tppMessages</b>	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/bulk-payments/sepa-credit-transfers>

Content-Encoding: gzip

Content-Type: application/json

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

Authorization: Bearer 2YotnFZFEjrlzCsicMWpAA

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

{

## **PSD2 - TPP Technical Design**

```
"batchBookingPreferred": true,
"debtorAccount": {
  "iban": "ES11111111111111111111111111111111"
},
"requestedExecutionDate": "2018-12-21",
"payments":
[
{
  "instructedAmount": {
    "currency": "EUR",
    "amount": "153.50"
  },
  "creditorAccount": {
    "iban": "ES22222222222222222222222222222222"
  },
  "creditorName": "Name123",
  "remittanceInformationUnstructured": "Additional
information"
},
{
  "instructedAmount": {
    "currency": "EUR",
    "amount": "20.30"
  },
  "creditorAccount": {
    "iban": "ES33333333333333333333333333333333"
  },
  "creditorName": "Name123",
  "remittanceInformationUnstructured": "Additional
information"
}
]
}
```

## **PSD2 - TPP Technical Design**

### **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/bulk-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/bulk-payments/sepa-credit-transfers/123-qwe-456",
      "status": {
        "href": "/v1/bulk-payments/sepa-credit-transfers/123-qwe-456/status"
      }
    },
    "scaStatus": {
      "href": "/v1/bulk-payments/sepa-credit-transfers/123-qwe-456/authorisations/123auth456"
    }
  }
}
```

### **Example of request for decoupled SCA**

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

Content-Encoding: gzip

Content-Type: application/json

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

## **PSD2 - TPP Technical Design**

Authorization: Bearer 2YotnFZFEjrlzCsicMWpAA

PSU-IP-Address: 192.168.8.16

TPP-Redirect-Preferred: false

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

```
{
  "batchBookingPreferred": true,
  "debtorAccount": {
    "iban": "ES11111111111111111111111111111111"
  },
  "requestedExecutionDate": "2018-12-21",
  "payments":
  [
    {
      "instructedAmount": {
        "currency": "EUR",
        "amount": "153.50"
      },
      "creditorAccount": {
        "iban": "ES22222222222222222222222222222222"
      },
      "creditorName": "Name123",
      "remittanceInformationUnstructured": "Additional
information"
    },
    {
      "instructedAmount": {
        "currency": "EUR",
        "amount": "20.30"
      },
      "creditorAccount": {
        "iban": "ES33333333333333333333333333333333"
      },
      "creditorName": "Name123",
```



## **PSD2 - TPP Technical Design**

```
        "remittanceInformationUnstructured": "Additional  
information"  
    }  
]  
}
```

### **Example of response in case of an decoupled SCA approach with implicitly creating an authorisation sub-resource**

HTTP/1.1 201 Created

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

ASPSP-SCA-Approach: DECOUPLED

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

Location: </v1/bulk-payments/sepa-credit-transfers/123-qwe-456>

Content-Type: application/json

```
{  
  "transactionStatus": "RCVD",  
  "paymentId": "123-qwe-456",  
  "_links": {  
    "self": {  
      "href": "/v1/bulk-payments/sepa-credit-transfers/123-  
qwe-456"  
    },  
    "status": {  
      "href": "/v1/bulk-payments/sepa-credit-transfers/123-  
qwe-456/status"  
    },  
    "scaStatus": {  
      "href": "/v1/bulk-payments/sepa-credit-transfers/123-  
qwe-456/authorisations/123auth456"  
    }  
  },  
  "psuMessage": "Please use your XXX Bank app to authorise the  
payment"  
}
```

## PSD2 - TPP Technical Design

### 3.1.4 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)
- **Twice-monthly payments:** the same rule as for weekly payments applies.
- **Monthly or less frequent payments:** the possible values range from 01 to 31, using 31 as the last day of the month.

#### 3.1.4.1 Request

##### Endpoint

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

##### Path

Field	Description	Type	Man.	Format
-------	-------------	------	------	--------

## PSD2 - TPP Technical Design

<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. hub.example.es
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>payment-product</b>	Payment product to be used. List of supported products: <ul style="list-style-type: none"> <li>• sepa-credit-transfers</li> <li>• instant-sepa-credit-transfers</li> <li>• target-2-payments</li> <li>• cross-border-credit-transfers</li> </ul>	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
<b>Content-Type</b>	Value: application/json	String	MAN	Content-Type: application/json
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA

## PSD2 - TPP Technical Design

<b>Consent-ID</b>	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
<b>PSU-IP-Address</b>	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}\$ E.g. PSU-IP-Address: 192.168.16.5
<b>PSU-IP-Port</b>	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
<b>PSU-Accept</b>	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
<b>PSU-Accept-Charset</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-

## PSD2 - TPP Technical Design

				Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available.  Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: POST
<b>PSU-Device-ID</b>	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	<b>UUID</b>  ^[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
<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	<b>RFC 2426</b>  ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*\$  E.g. PSU-Geo-Location: GEO:90.023856;2

**PSD2 - TPP Technical Design**

				5.345963
<b>TPP-Redirect-Preferred</b>	<p>If it equals "true", the TPP prefers a redirect over an embedded SCA approach.</p> <p>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.</p> <p>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.</p> <p><b>EMBEDDED NOT SUPPORTED IN THIS VERSION</b></p>	Boolean	OPT	E.g. TPP-Redirect-Preferred: true
<b>TPP-Redirect-URI</b>	<p>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".</p> <p>It is recommended to always use this header field.</p> <p><b>Remark for Future:</b> This field might be changed to mandatory in the next version of the specification.</p>	String	COND	<p>^.{1,250}\$</p> <p>E.g. TPP-Redirect-URI:"https://tpp.example.es/cb"</p>
<b>TPP-Nok-</b>	If this URI is contained, the TPP is asking to	String	OPT	^.{1,250}\$

## PSD2 - TPP Technical Design

<b>Redirect-URI</b>	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.			E.g. TPP-Nok-Redirect-URI:"https://tpp.example.es/cb/nok"
<b>TPP-Explicit-Authorisation-Preferred</b>	<p>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.</p> <p>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.</p> <p><b>Note:</b> the ASPSP may not take it into account if it does not support it.</p>	Boolean	OPT	E.g. TPP-Explicit-Authorisation-Preferred: false
<b>Digest</b>	<p>Is contained if and only if the "Signature" element is contained in the header of the request.</p> <p>See 6.1Signature for more information.</p>	String	OPT	$\wedge.\{1,100\}\$$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ= =
<b>Signature</b>	<p>A signature of the request by the TPP on application level.</p> <p>See 6.1Signature for more information.</p>	String	MAN	See annexes

## PSD2 - TPP Technical Design

<b>TPP-Signature-Certificate</b>	The certificate used for signing the request, in base64 encoding.	String	MAN	$\wedge.\{1,5000\}\$$ E.g. TPP-Signature-Certificate: MIIHgZCCBmugAw IBAgIIZzZvBQlt0U cwDQYJ.....Ko ZIhvcNAQELBQAw STELMAkGA1UEBh MCVVMxEzARBgN VBA
----------------------------------	---	--------	-----	---

### Body

The content of the body is defined in 5.16SinglePayment together with the following definitions:

Field	Description	Type	Man.	Format
<b>startDate</b>	The first applicable day of execution starting from this date is the first payment.	String	MAN	<b>ISODate</b> E.g. "startDate":"2018-12-20"
<b>executionRule</b>	Supported values: <ul style="list-style-type: none"> <li>• following</li> <li>• preceding</li> </ul> This data attribute defines the behavior when recurring 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.	String	OPT	E.g. "executionRule":"following"



## PSD2 - TPP Technical Design

<b>endDate</b>	The last applicable day of execution If not given, it is an infinite standing order.	String	OPT	<b>ISODate</b> E.g. "endDate":"2019-01-20"
<b>frequency</b>	The frequency of the recurring payment resulting from this standing order. Permitted values: <ul style="list-style-type: none"> <li>• Daily</li> <li>• Weekly</li> <li>• EveryTwoWeeks</li> <li>• Monthly</li> <li>• EveryTwoMonths</li> <li>• Quarterly</li> <li>• SemiAnnual</li> <li>• Annual</li> </ul>	String	MAN	<b>ISO 20022 EventFrequency7Code</b> E.g. "frequency":"Monthly"
<b>dayOfExecution</b>	"31" is ultimo. The format is following the regular expression $\backslash d\{1,2\}$ . 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	$\backslash d\{1,2\}$ E.g. "dayOfExecution":"01"

### 3.1.4.2 Response

#### Header

Field	Description	Type	Man.	Format
<b>Location</b>	Location of the created resource (if created)	String	MAN	$\wedge.\{1,512\}\$$ E.g. Location: /v1/periodic-payments/{payment-

## PSD2 - TPP Technical Design

				product}/{payment-id}
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> $^{\wedge}[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{12\}\$$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
<b>ASPSP-SCA-Approach</b>	This data element must be contained, if the SCA Approach is already fixed. Possible values are: <ul style="list-style-type: none"> <li>• EMBEDDED</li> <li>• DECOUPLED</li> <li>• REDIRECT</li> </ul> The OAuth SCA approach will be subsumed by REDIRECT.	String	COND	E.g. ASPSP-SCA-Approach: REDIRECT

### Body

Field	Description	Type	Man.	Format
<b>transactionStatus</b>	Status of the transaction.  Values defined in annexes in 6.4 Transaction status	String	MAN	<b>ISO 20022</b> E.g. "transactionStatus": "RCVD"
<b>paymentId</b>	Resource identification of the generated payment initiation resource.	String	MAN	$^{\wedge}\{1,36\}\$$ E.g. "paymentId": "1b3ab8e8-0fd5-43d2-946e-d75958b172e7"
<b>transactionFees</b>	Can be used by the ASPSP to transport transaction fees relevant for the	Amount	OPT	E.g. "transactionFees": {...}

**PSD2 - TPP Technical Design**

	underlying payments.			
<b>transactionFeeIndicator</b>	<p>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.</p> <p>If equals false, the transaction will not involve additional specific transaction costs to the PSU.</p>	Boolean	OPT	E.g. "transactionFeeIndicator": true
<b>scaMethods</b>	<p>This data element might be contained, if SCA is required and if the PSU has a choice between different authentication methods.</p> <p>If this data element is contained, then there is also a hyperlink of type "startAuthorisationWithAuthenticationMethodSelection" contained in the response body.</p> <p>These methods shall be presented towards the PSU for selection by the TPP.</p> <p><b>Note:</b> Only if ASPSP supports selection of the SCA method</p>	List<AuthenticationObject>	COND	E.g. "scaMethods": [...]
<b>_links</b>	<p>A list of hyperlinks to be recognised by the TPP.</p> <p>Type of links admitted in this response:</p> <ul style="list-style-type: none"> <li>scaRedirect: In case of an SCA</li> </ul>	Links	MAN	E.g. "_links": {...}

**PSD2 - TPP Technical Design**

	<p>Redirect Approach, the ASPSP is transmitting the link to which to redirect the PSU browser.</p> <ul style="list-style-type: none"> <li>• <b>startAuthorisation:</b> 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).</li> <li>• <b>startAuthorisationWithAuthenticationMethodSelection:</b> The link to the authorisation endpoint, where the authorisation sub-resource has to be generated while selecting the authentication method. This link is contained under exactly the same conditions as the data element "scaMethods"</li> <li>• <b>self:</b> link to the resource created by this request.</li> </ul>			
--	---	--	--	--

## PSD2 - TPP Technical Design

	<ul style="list-style-type: none"> <li>status: The link to retrieve the transaction status</li> <li>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.</li> </ul>			
<b>psuMessage</b>	Text to be displayed to the PSU	String	OPT	$\wedge.\{1,512\}\$$ E.g. "psuMessage": "Information for the PSU"
<b>tppMessages</b>	Message to the TPP	List<Tpp Message >	OPT	E.g. "tppMessages": [...]

### 3.1.4.3 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 2YotnFZFEjrlzCsicMWpAA

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

{

## PSD2 - TPP Technical Design

```

"instructedAmount": {
  "currency": "EUR",
    "amount": "153.50"
},
"creditorAccount": {
  "iban": "ES222222222222222222222222"
},
"creditorName": "Name123",
"remittanceInformationUnstructured": "Additional information",
"startDate": "2018-03-01",
"executionRule": "preceeding",
"frequency": "Monthly",
"dayOfExecution": "01"
}

```

### 3.1.5 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.

#### 3.1.5.1 Request

##### Endpoint

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

##### Path

Field	Description	Type	Man.	Format
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to	String	MAN	E.g. aspsp-

## PSD2 - TPP Technical Design

	which the request is made.			name
<b>payment-service</b>	Possible values are: <ul style="list-style-type: none"> <li>• payments</li> <li>• bulk-payments</li> <li>• periodic-payments</li> </ul>	String	MAN	E.g. {provider}/{aspasp}/v1/payments
<b>payment-product</b>	Payment product to be used. List of supported products: <ul style="list-style-type: none"> <li>• sepa-credit-transfers</li> <li>• instant-sepa-credit-transfers</li> <li>• target-2-payments</li> <li>• cross-border-credit-transfers</li> </ul>	String	MAN	E.g. {provider}/{aspasp}/v1/payments/sepa-credit-transfers/
<b>paymentId</b>	Resource Identification of the related payment.  Sent previously as a response to a message initiating payment by the TPP to the HUB.	String	MAN	$\wedge.\{1,36\}\$$ E.g. 1234-qwer-5678

### Query parameters

No additional fields are specified.

### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> $\wedge[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{12\}\$$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-

## PSD2 - TPP Technical Design

				d75958b172e7
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsic MWpAA
<b>Accept</b>	Response format supported. Supported values: <ul style="list-style-type: none"> <li>application/json</li> </ul>	String	OPT	^.{1,50}\$ E.g. Accept: application/json
<b>PSU-IP-Address</b>	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
<b>PSU-IP-Port</b>	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
<b>PSU-Accept</b>	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
<b>PSU-Accept-Charset</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-



## PSD2 - TPP Technical Design

				Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available.  Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: GET
<b>PSU-Device-ID</b>	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	<b>UUID</b>  ^[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
<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	<b>RFC 2426</b>  ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*\$  E.g. PSU-Geo-Location: GEO:90.023856;25.345963
<b>Digest</b>	Is contained if and only if the "Signature"	String	MAN	^.{1,100}\$

## PSD2 - TPP Technical Design

	<p>element is contained in the header of the request.</p> <p>See 6.1Signature for more information.</p>			<p>E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==</p>
<b>Signature</b>	<p>A signature of the request by the TPP on application level.</p> <p>See 6.1Signature for more information.</p>	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	<p>The certificate used for signing the request, in base64 encoding.</p>	String	MAN	<p>^.{1,5000}\$</p> <p>E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIHvcNAQELBQAwSTE LMAkGA1UEBhMCVVMxEzARBgNVBA</p>

### Body

No additional data are specified.

### 3.1.5.2 Response

#### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	<p>ID of the request, unique to the call, as determined by the initiating party.</p>	String	MAN	<p><b>UUID</b></p> <p>^[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}\$</p> <p>E.g.</p> <p>X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-</p>

## PSD2 - TPP Technical Design

				d75958b172e7
--	--	--	--	--------------

### Body

Field	Description	Type	Man.	Format
<b>transactionStatus</b>	Status of the payment transaction. Values defined in 6.4Transaction status	String	MAN	<b>ISO20022</b> E.g. "transactionStatus": "ACCP"
<b>fundsAvailable</b>	This data element is contained, if supported by the ASPSP, if a funds check has been performed and if the transactionStatus is: <ul style="list-style-type: none"> <li>• ATCT</li> <li>• ACWC</li> <li>• ACCP</li> </ul>	Boolean	COND	E.g. "fundsAvailable": true
<b>psuMessage</b>	Text to show to the PSU.	String	OPT	^.{1,512}\$ E.g. "psuMessage": "Information for PSU"
<b>tppMessages</b>	Message for the TPP	List<Tp pMessage>	OPT	E.g. "tppMessages": [...]

### 3.1.5.3 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 2YotnFZFEjrlzCsicMWpAA

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

## PSD2 - TPP Technical Design

```

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
}

```

### 3.1.6 Get payment initiation

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

#### 3.1.6.1 Request

##### Endpoint

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

##### Path

Field	Description	Type	Man.	Format
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to	String	MAN	E.g. aspsp-

## PSD2 - TPP Technical Design

	which the request is made.			name
<b>payment-service</b>	Possible values are: <ul style="list-style-type: none"> <li>• payments</li> <li>• bulk-payments</li> <li>• periodic-payments</li> </ul>	String	MAN	E.g. {provider}/{asp}/v1/payments
<b>payment-product</b>	Payment product to be used. List of supported products: <ul style="list-style-type: none"> <li>• sepa-credit-transfers</li> <li>• instant-sepa-credit-transfers</li> <li>• target-2-payments</li> <li>• cross-border-credit-transfers</li> </ul>	String	MAN	E.g. {provider}/{asp}/v1/payments/sepa-credit-transfers/
<b>paymentId</b>	Resource Identification of the related payment.  Sent previously as a response to a message initiating payment by the TPP to the HUB.	String	MAN	$\wedge.\{1,36\}\$$ E.g. 1234-qwer-5678

### Query parameters

No additional fields are specified.

### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> $\wedge[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{12\}\$$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

## PSD2 - TPP Technical Design

<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsic MWpAA
<b>PSU-IP-Address</b>	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}.\$  E.g. PSU-IP-Address: 192.168.16.5
<b>PSU-IP-Port</b>	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
<b>PSU-Accept</b>	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
<b>PSU-Accept-Charset</b>	See above	String	OPT	^{1,50}\$  E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^{1,50}\$  E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	^{1,50}\$  E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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;

**PSD2 - TPP Technical Design**

				en-US; rv:1.9.1.5) Gecko/20091102 Firefox/3.5.5 (.NET CLR 3.5.30729)
<b>PSU-Http-Method</b>	<p>HTTP method used at the PSU – TPP interface, if available.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: GET
<b>PSU-Device-ID</b>	<p>UUID (Universally Unique Identifier) for a device, which is used by the PSU, if available.</p> <p>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.</p>	String	OPT	<p><b>UUID</b></p> <p><math>^{\wedge}[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\}\\$</math></p> <p>E.g.</p> <p>PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7</p>
<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	<p><b>RFC 2426</b></p> <p><math>^{\wedge}\text{GEO}:[\backslash\text{d}]*.[\backslash\text{d}]*[;][\backslash\text{d}]*.[\backslash\text{d}]*\\$</math></p> <p>E.g.</p> <p>PSU-Geo-Location: GEO:90.023856;25.345963</p>
<b>Digest</b>	Is contained if and only if the "Signature" element is contained in the header of the request.	String	MAN	<p><math>^{\wedge}.\{1,100\}\\$</math></p> <p>E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNT</p>

## PSD2 - TPP Technical Design

	See 6.1Signature for more information.			U3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
<b>Signature</b>	A signature of the request by the TPP on application level.  See 6.1Signature for more information.	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}\$  E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIzZvBQlt0UcwDQYJ.....KoZIHvcNAQELBQAwSTE LMAkGA1UEBhMCMCVVMxEzARBgNVBA

### Body

No additional data are specified.

### 3.1.6.2 Response

#### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b>  ^[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:

- 3.1.1Payment initiation



## PSD2 - TPP Technical Design

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

Plus the following:

Field	Description	Type	Man.	Format
<b>transactionStatus</b>	Status of the transaction. Values defined in annexes. Short code.	String	MAN	<b>ISO 20022</b> E.g. "transactionStatus": "ACCP"
<b>debtorName</b>	PSU name. Provided by the ASPSP if	String	OP	^.{1, 70}\$ Ej: "debtorName": "Paul Simpson"
<b>psuMessage</b>	Text to show to the PSU.	String	OPT	^.{1,512}\$ E.g. "psuMessage": "Information for the PSU"
<b>tppMessages</b>	Message for the TPP	List<Tpp Message >	OPT	E.g. "tppMessage": [...]

### 3.1.6.3 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 2YotnFZFEjrlzCsicMWpAA

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

## **PSD2 - TPP Technical Design**

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": "ES11111111111111111111111111111111"
  },
  "debtorName": "Paul Simpson",
  "creditorAccount": {
    "iban": "ES22222222222222222222222222222222"
  },
  "creditorName": "Name123",
  "remittanceInformationUnstructured": "Additional information",
  "transactionStatus": "ACCP"
}
```

## PSD2 - TPP Technical Design

### 3.1.7 Payment cancellation

This request is sent 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.

#### 3.1.7.1 Request

##### Endpoint

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

##### Path

Field	Description	Type	Man.	Format
<b>provider</b>	URL of the ASPSP where the service is published.	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>payment-service</b>	Possible values are: <ul style="list-style-type: none"> <li>• payments</li> <li>• bulk-payments</li> <li>• periodic-payments</li> </ul>	String	MAN	E.g. {provider}/v1/payments
<b>paymentId</b>	Identifier of the resource that references the payment initiation.  Sent previously as a response to a message initiating payment by the HUB to the ASPSP.	String	MAN	^.{1,36}\$ E.g.123-qwe-456

##### Query parameters

No additional fields are specified.

## PSD2 - TPP Technical Design

### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> $^{[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{12\}}\$$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
<b>Authorization</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
<b>PSU-IP-Address</b>	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	$^{[0-9]\{1,3\}\. [0-9]\{1,3\}\. [0-9]\{1,3\}}\$$ E.g. PSU-IP-Address: 192.168.16.5
<b>PSU-IP-Port</b>	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
<b>PSU-Accept</b>	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

## PSD2 - TPP Technical Design

<b>PSU-Accept-Charset</b>	See above	String	OPT	$\wedge.\{1,50\}\$$ E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	$\wedge.\{1,50\}\$$ E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	$\wedge.\{1,50\}\$$ E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available.  Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: DELETE
<b>PSU-Device-ID</b>	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	<b>UUID</b> $\wedge[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{12\}\$$ E.g. PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7

## PSD2 - TPP Technical Design

<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	<b>RFC 2426</b> ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*\$ E.g. PSU-Geo-Location: GEO:90.023856;25.345963
<b>Digest</b>	Is contained if and only if the "Signature" element is contained in the header of the request.  See 6.1Signature for more information.	String	MAN	^.{1,100}\$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
<b>Signature</b>	A signature of the request by the TPP on application level.  See 6.1Signature for more information.	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}\$ E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIZzZvBQIt0UcwDQYJ... .....KoZIHvcNAQELBQAwSTELMAkGA1UEBhM CVVMxEzARBgNVBA

### Body

No additional data are specified.

### 3.1.7.2 Response

#### Header

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

## PSD2 - TPP Technical Design

	initiating party.			<p>9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}\$</p> <p>E.g.</p> <p>X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7</p>
--	-------------------	--	--	--

### Body

Field	Description	Type	Man.	Format
<b>transactionStatus</b>	Status of the transaction. Values defined in annexes in 6.4Transaction status	String	MAN	<p><b>ISO 20022</b></p> <p>E.g. "transactionStatus": "CANC"</p>
<b>scaMethods</b>	<p>This data element might be contained, if SCA is required and if the PSU has a choice between different authentication methods.</p> <p>If this data element is contained, then there is also a hyperlink of type "startAuthorisationWithAuthenticationMethodSelection" contained in the response body.</p> <p>These methods shall be presented towards the PSU for selection by the TPP.</p> <p><b>Note:</b> Only if ASPSP supports selection of the SCA method</p>	List<AuthenticationObject>	COND	E.g. "scaMethods": [...]
<b>_links</b>	<p>A list of hyperlinks to be recognised by the TPP.</p> <p>Type of links admitted in this response:</p>	Links	COND	E.g. "_links": {...}

**PSD2 - TPP Technical Design**

	<ul style="list-style-type: none"> <li>• <b>startAuthorisation:</b> 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).</li> <li>• <b>startAuthorisationWithAuthenticationMethodSelection:</b> The link to the authorisation endpoint, where the authorisation sub-resource has to be generated while selecting the authentication method. This link is contained under exactly the same conditions as the data element "scaMethods"</li> </ul>			
<b>psuMessage</b>	Text to show to the PSU.	String	OPT	^.{1,512}\$ E.g. "psuMessage": "Information for the PSU"
<b>tppMessages</b>	Message for the TPP	List<TppMessage>	OPT	E.g. "tppMessages": [...]



## **PSD2 - TPP Technical Design**

### **3.1.7.3 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 2YotnFZFEjrlzCsicMWpAA  
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": {

## PSD2 - TPP Technical Design

```

    "startAuthorisation": {
      "href": "/v1/payments/sepa-credit-transfers/123-qwe-456/cancellation-authorisations"
    }
  }
}

```

### 3.1.8 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 the case of SCA decoupled flow, the TPP will receive in the psuMessage field the message it must show to the PSU and direct to the PSU's bank app.

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	<p><b>Request consent for the accounts indicated</b> Create a consent, which the ASPSP must store, requesting access for the accounts indicated and with the requested access.</p> <p>If there was already consent, this consent will expire and the new agreement will enter into force when authorised by the PSU.</p> <p>The accounts for which consent is requested to access the "balances" and/or "transactions" are also assumed to have the "accounts" access type.</p>
Global consent	<p><b>Request consent for the list of available accounts</b> This functionality only serves to request consent for the list of available PSU accounts. It does not give consent for "accounts", "balances" and/or "transactions".</p> <p>This request does not indicate the accounts for which access is</p>

## PSD2 - TPP Technical Design

	<p>wanted. It indicates that it is requested for "all available accounts", indicating in the access the "availableAccounts" or "availableAccountsWithBalances" with the value "allAccounts".</p> <p>It is a once-time-only consent to obtain the list of available accounts. It will not give details of the accounts.</p> <p><b>Request consent to obtain access to all the accounts for all the PSD2 AIS services</b></p> <p>Request access for all the PSU accounts available on all the PSD2 AIS services.</p> <p>The accounts are not indicated by the TPP.</p> <p>This request does not indicate the accounts for which access is wanted. The request is indicated as being for "all PSD2 accounts", indicating in the access the "allPsd2" attribute with the value "allAccounts".</p> <p>Through the HUB, the TPP may recover this information managed between ASPSP and PSU, making a request to recover consent information.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>Bank-offered consent</b></p>	<p><b>Request consent without indicating the accounts</b></p> <p>Request consent to access "accounts", "balances" and/or "transactions" without indicating the accounts. Thus the "accounts", "balances" and "transactions" attributes will include a blank array.</p> <p>To select the accounts that will be provided, access must be obtained bilaterally between ASPSP and PSU through the ASPSP interface in the OAuth redirect flow.</p> <p>In the redirection process, the ASPSP will show the PSU its accounts so that the PSU can choose which to provide consent for to the TPP.</p> <p>Through the HUB, the TPP may recover this information managed between ASPSP and PSU, making a request to recover consent information.</p>

### 3.2.1.2 Recurring access

#### Recurring consents

## **PSD2 - TPP Technical Design**

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 may 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.

#### **3.2.1.3 Account owner name delivery**

This specification is following the consent models described in NextGentPSD2 XS2A Framework v1.3.6. In particular, this specification follows:

- The ASPSP deliver the account owner name without any extension to the consent model defined below.
- The provision of this service by an ASPSP might depend on the fact that the account owner name is also delivered in online channels of the ASPSP

#### **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 consent for account information without indicating the 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`.

## PSD2 - TPP Technical Design

### 3.2.2.1 Request

#### Endpoint

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

#### Path

Field	Description	Type	Man.	Format
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name

#### Query parameters

No additional fields are specified.

#### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpA A
<b>PSU-IP-Address</b>	The forwarded IP Address header field consists of the corresponding HTTP request IP Address field	String	OPT	^[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3}\$ E.g. PSU-IP-Address:

## PSD2 - TPP Technical Design

	<p>between PSU and TPP.</p> <p>If not available, the TPP shall use the IP Address used by the TPP when submitting this request.</p>			192.168.16.5
<b>PSU-IP-Port</b>	The forwarded IP Port header field consists of the corresponding HTTP request IP Port field between PSU and TPP, if available.	String	OPT	$\wedge \backslash \{d\{1,5\}\$$ E.g. PSU-IP-Port: 443
<b>PSU-Accept</b>	The forwarded Accept header fields consist of the corresponding HTTP request Accept header fields between PSU and TPP, if available.	String	OPT	$\wedge .\{1,50\}\$$ E.g. PSU-Accept: application/json
<b>PSU-Accept-Charset</b>	See above	String	OPT	$\wedge .\{1,50\}\$$ E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	$\wedge .\{1,50\}\$$ E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	$\wedge .\{1,50\}\$$ E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available. Valid values are:	String	OPT	E.g. PSU-Http-Method: POST

**PSD2 - TPP Technical Design**

	<ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>			
<b>PSU-Device-ID</b>	<p>UUID (Universally Unique Identifier) for a device, which is used by the PSU, if available.</p> <p>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.</p>	String	OPT	<p><b>UUID</b></p> <p><math>^{[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\}}\\$</math></p> <p>E.g.</p> <p>PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7</p>
<b>PSU-Geo-Location</b>	<p>The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.</p>	String	OPT	<p><b>RFC 2426</b></p> <p><math>^{GEO:[\d]*.[\d]*[;][\d]*.[\d]*\\$</math></p> <p>E.g.</p> <p>PSU-Geo-Location: GEO:90.023856;25.345963</p>
<b>TPP-Redirect-Preferred</b>	<p>If it equals "true", the TPP prefers a redirect over an embedded SCA approach.</p> <p>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.</p> <p>If the parameter is</p>	Boolean	OPT	<p>E.g. TPP-Redirect-Preferred: true</p>

## PSD2 - TPP Technical Design

	<p>not used, the ASPSP will choose the SCA approach to be applied depending on the SCA method chosen by the TPP/PSU.</p> <p><b>EMBEDDED NOT SUPPORTED IN THIS VERSION</b></p>			
<b>TPP-Redirect-URI</b>	<p>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".</p> <p>It is recommended to always use this header field.</p> <p><b>Remark for Future:</b> This field might be changed to mandatory in the next version of the specification.</p>	String	COND	<p>^.{1,250}\$</p> <p>E.g. TPP-Redirect-URI:"https://tpp.example.es/cb"</p>
<b>TPP-Nok-Redirect-URI</b>	<p>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.</p>	String	OPT	<p>^.{12,50}\$</p> <p>E.g. TPP-Nok-Redirect-URI:"https://tpp.example.es/cb/nok"</p>
<b>TPP-Explicit-Authorisation-Preferred</b>	<p>If it equals "true", the TPP prefers to start the authorisation process separately. This preference might</p>	Boolean	OPT	<p>E.g. TPP-Explicit-Authorisation-Preferred: false</p>



**PSD2 - TPP Technical Design**

	<p>be ignored by the ASPSP, if a signing basket is not supported as functionality.</p> <p>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.</p> <p><b>Note:</b> the ASPSP may not take it into account if it does not support it.</p>			
<b>Digest</b>	<p>Is contained if and only if the "Signature" element is contained in the header of the request.</p> <p>See 6.1Signature for more information.</p>	String	MAN	<p>^.{1,100}\$</p> <p>E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYtZiNTU3MjVmNDI4NTRI MzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==</p>
<b>Signature</b>	<p>A signature of the request by the TPP on application level.</p> <p>See 6.1Signature for more information.</p>	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	<p>The certificate used for signing the request, in base64 encoding.</p>	String	MAN	<p>^.{1,5000}\$</p> <p>E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ..... ....KoZIHvcNAQELBQAwS TELMakGA1UEBhMUVVM xEzARBgNVBA</p>

## PSD2 - TPP Technical Design

### Body

Field	Description	Type	Man.	Format
<b>access</b>	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", "availableAccountsWith Balances" or "allPsd2" with the value "allAccounts".	Account Access	MAN	E.g. "access":{...}
<b>recurringIndicator</b>	Possible values: <ul style="list-style-type: none"> <li>true: recurring access to the account.</li> <li>false: once-only access.</li> </ul>	Boolean	MAN	E.g. "recurringIndicator": true
<b>validUntil</b>	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	<b>ISODate</b> E.g. "validUntil": "2018-05-17"
<b>frequencyPerDay</b>	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	Integer	MAN	E.g. "frequencyPerDay": 4

## PSD2 - TPP Technical Design

	"1".			
<b>combinedServiceIndicator</b>	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
<b>Location</b>	Location of the created resource (if created)	String	MAN	<b>Max512Text</b> E.g. Location: /v1/consents/{consentId}
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>ASPSP-SCA-Approach</b>	This data element must be contained, if the SCA Approach is already fixed. Possible values are: <ul style="list-style-type: none"> <li>EMBEDDED</li> <li>DECOUPLED</li> <li>REDIRECT</li> </ul> The OAuth SCA approach will be subsumed by REDIRECT.	String	COND	E.g. ASPSP-SCA-Approach: REDIRECT

#### Body

## PSD2 - TPP Technical Design

Field	Description	Type	Man.	Format
<b>consentStatus</b>	Consent authentication status. See values defined in 6.5Consent status	String	MAN	E.g. "consentStatus": "received"
<b>consentId</b>	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"
<b>scaMethods</b>	<p>This data element might be contained, if SCA is required and if the PSU has a choice between different authentication methods.</p> <p>If this data element is contained, then there is also a hyperlink of type "startAuthorisationWith AuthenticationMethodSelection" contained in the response body.</p> <p>These methods shall be presented towards the PSU for selection by the TPP.</p> <p><b>Note:</b> Only if ASPSP supports selection of the SCA method</p>	List<AuthenticationObject>	COND	E.g. "scaMethods": [...]
<b>_links</b>	<p>A list of hyperlinks to be recognised by the TPP.</p> <p>Type of links admitted in this response:</p> <ul style="list-style-type: none"> <li>scaRedirect: In case of an SCA Redirect Approach, the ASPSP is transmitting the link to which to redirect the PSU browser.</li> <li>startAuthorisation:</li> </ul>	Links	MAN	E.g. "_links": {...}

**PSD2 - TPP Technical Design**

	<p>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).</p> <ul style="list-style-type: none"> <li>• startAuthorisationWithAuthenticationMethodSelection: The link to the authorisation endpoint, where the authorisation sub-resource has to be generated while selecting the authentication method. This link is contained under exactly the same conditions as the data element "scaMethods"</li> <li>• self: link to the resource created by this request.</li> <li>• status: The link to retrieve the transaction status</li> <li>• scaStatus: The link to retrieve the scaStatus of the corresponding</li> </ul>			
--	--	--	--	--

## PSD2 - TPP Technical Design

	authorisation sub-resource. This link is only contained, if an authorisation sub-resource has been already created.			
<b>psuMessage</b>	Text to be displayed to the PSU	String	OPT	^.{1,512}\$ E.g. "psuMessage": "Information for the PSU"
<b>tppMessages</b>	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 2YotnFZFEjrlzCsicMWpAA

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

## **PSD2 - TPP Technical Design**

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

```
{
  "access": {
    "balances": [
      {
        "iban": "ES11111111111111111111111111111111"
      },
      {
        "iban": "ES22222222222222222222222222222222",
        "currency": "USD"
      },
      {
        "iban": "ES33333333333333333333333333333333"
      }
    ],
    "transactions": [
      {
        "iban": "ES11111111111111111111111111111111"
      }
    ]
  },
  "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 2YotnFZFEjrlzCsicMWpAA

PSU-IP-Address: 192.168.8.16

PSU-IP-Port: 443

PSU-Accept: application/json

PSU-Accept-Charset: utf-8

PSU-Accept-Encoding: gzip

## **PSD2 - TPP Technical Design**

```
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 consent request without indicating the accounts and decoupled SCA**

```
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 2YotnFZFEjrlzCsicMWpAA
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
```



## **PSD2 - TPP Technical Design**

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

PSU-GEO-Location: GEO:12.526347;54.649862

TPP-Redirect-Preferred: false

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

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

### **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"
    }
  }
}
```

## **PSD2 - TPP Technical Design**

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

### **Example of response in the case of decoupled SCA**

HTTP/1.1 201 Created

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

AS PSP-SCA-Approach: DECOUPLED

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": {  
    "self": {  
      "href": "/v1/consents/123-asdf-456",  
      "status": {  
        "href": "/v1/consents/123-asdf-456/status"  
      }  
    }  
  },  
  "psuMessage": "Please use your XXX Bank app to authorise  
consent"  
}
```

### **3.2.3 Getconsent status**

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

## PSD2 - TPP Technical Design

### 3.2.3.1 Request

#### Endpoint

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

#### Path

Field	Description	Type	Man.	Format
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>consentId</b>	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
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication	String	MAN	E.g. Authorisation:

## PSD2 - TPP Technical Design

	on OAuth2.			Bearer 2YotnFZFEjr1zCsic MWpAA
<b>PSU-IP-Address</b>	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}\$  E.g. PSU-IP-Address: 192.168.16.5
<b>PSU-IP-Port</b>	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
<b>PSU-Accept</b>	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
<b>PSU-Accept-Charset</b>	See above	String	OPT	^.{1,50}\$  E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^.{1,50}\$  E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	^.{1,50}\$  E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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

## PSD2 - TPP Technical Design

				Firefox/3.5.5 (.NET CLR 3.5.30729)
<b>PSU-Http-Method</b>	<p>HTTP method used at the PSU – TPP interface, if available.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: GET
<b>PSU-Device-ID</b>	<p>UUID (Universally Unique Identifier) for a device, which is used by the PSU, if available.</p> <p>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.</p>	String	OPT	<p><b>UUID</b></p> <p><math>^{\wedge}[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\}\\$</math></p> <p>E.g.</p> <p>PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7</p>
<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	<p><b>RFC 2426</b></p> <p><math>^{\wedge}\text{GEO}:[\backslash\text{d}]*.[\backslash\text{d}]*[;][\backslash\text{d}]*.[\backslash\text{d}]*\\$</math></p> <p>E.g.</p> <p>PSU-Geo-Location: GEO:90.023856;25.345963</p>
<b>Digest</b>	<p>Is contained if and only if the "Signature" element is contained in the header of the request.</p> <p>See 6.1Signature for more information.</p>	String	MAN	<p><math>^{\wedge}.\{1,100\}\\$</math></p> <p>E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==</p>

## PSD2 - TPP Technical Design

<b>Signature</b>	A signature of the request by the TPP on application level.  See 6.1Signature for more information.	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}\$  E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIzZvBQlt0UcwDQYJ.....KoZIHvcNAQELBQAwSTE LMAkGA1UEBhMCMCV VMxEzARBgNVBA

### 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
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>consentStatus</b>	Consent authentication status.	String	MAN	E.g. "consentStatus":

## PSD2 - TPP Technical Design

	See values defined in 6.5Consent status			valid"
<b>psuMessage</b>	Text to show to the PSU	String	OPT	^.{1,512}\$ E.g. "psuMessage": "Information for PSU"
<b>tppMessages</b>	Message for the TPP	List<Tp pMessage>	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 2YotnFZFjrlzCsicMWpAA
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
```

## PSD2 - TPP Technical Design

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

### 3.2.4 Getconsent

#### 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
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>consentId</b>	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
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b>  ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-



## PSD2 - TPP Technical Design

				<p>F]{4}-[0-9a-fA-F]{12}\$</p> <p>E.g.</p> <p>X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7</p>
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	<p>E.g.</p> <p>Authorisation: Bearer 2YotnFZFEjr1zCsicM WpAA</p>
<b>PSU-IP-Address</b>	<p>The forwarded IP Address header field consists of the corresponding HTTP request IP Address field between PSU and TPP.</p> <p>If not available, the TPP shall use the IP Address used by the TPP when submitting this request.</p>	String	OPT	<p>^[0-9]{1,3}\.[0-9]{1,3}\.[0-9]{1,3}.\$</p> <p>E.g.</p> <p>PSU-IP-Address: 192.168.16.5</p>
<b>PSU-IP-Port</b>	The forwarded IP Port header field consists of the corresponding HTTP request IP Port field between PSU and TPP, if available.	String	OPT	<p>^\d{1,5}\$</p> <p>E.g. PSU-IP-Port: 443</p>
<b>PSU-Accept</b>	The forwarded Accept header fields consist of the corresponding HTTP request Accept header fields between PSU and TPP, if available.	String	OPT	<p>^.{1,50}\$</p> <p>E.g. PSU-Accept: application/json</p>
<b>PSU-Accept-Charset</b>	See above	String	OPT	<p>^.{1,50}\$</p> <p>E.g. PSU-Accept-Charset: utf-8</p>
<b>PSU-Accept-Encoding</b>	See above	String	OPT	<p>^.{1,50}\$</p> <p>E.g. PSU-Accept-Encoding: gzip</p>
<b>PSU-Accept-</b>	See above	String	OPT	<p>^.{1,50}\$</p>

## PSD2 - TPP Technical Design

<b>Language</b>				E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available.  Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: GET
<b>PSU-Device-ID</b>	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	<b>UUID</b>  ^[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
<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	<b>RFC 2426</b>  ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*\$  E.g. PSU-Geo-Location: GEO:90.023856;25.345963

## PSD2 - TPP Technical Design

<b>Digest</b>	Is contained if and only if the "Signature" element is contained in the header of the request.  See 6.1Signature for more information.	String	MAN	^.{1,100}\$  E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
<b>Signature</b>	A signature of the request by the TPP on application level.  See 6.1Signature for more information.	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}\$  E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIHvcNAQELBQAwSTELMAKGA1UEBhMCMVVMxEzARBgNVBA

### 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
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating	String	MAN	<b>UUID</b> ^[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.

## PSD2 - TPP Technical Design

	party.			X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
--	--------	--	--	--

### Body

Field	Description	Type	Man.	Format
<b>access</b>	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"	AccountAccess	MAN	E.g. "access": {...}
<b>recurringIndicator</b>	Possible values: <ul style="list-style-type: none"> <li>true: recurring access to the account.</li> <li>false: once-only access.</li> </ul>	Boolean	MAN	E.g. "recurringIndicator": true
<b>validUntil</b>	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	<b>ISODate</b> E.g. "validUntil": "2018-05-17"
<b>frequencyPerDay</b>	Indicates the frequency of access to the account every day.	Integer	MAN	E.g. "frequencyPerDay":4

## PSD2 - TPP Technical Design

	1 if it is one-time-only access.			
<b>lastActionDate</b>	Date of the last modification made to the consent.	String	MAN	<b>ISODate</b> E.g. "lastActionDate":"2018-01-01"
<b>consentStatus</b>	Consent authentication status. Values defined in annexes.	String	MAN	E.g. "consentStatus":"valid"
<b>psuMessage</b>	Text to show to the PSU	String	OPT	^.{1,512}\$ E.g. "psuMessage":"Information for PSU"
<b>tppMessages</b>	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 2YotnFZFEjrlzCsicMWpAA
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
```

## **PSD2 - TPP Technical Design**

### **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": "ES11111111111111111111111111111111"
      },
      {
        "iban": "ES22222222222222222222222222222222",
        "currency": "USD"
      },
      {
        "iban": "ES33333333333333333333333333333333"
      }
    ],
    "transactions": [
      {
        "iban": "ES11111111111111111111111111111111"
      }
    ]
  },
  "recurringIndicator": true,
  "validUntil": "2018-05-17",
  "frequencyPerDay": 4,
  "lastActionDate": "2018-01-17",
  "consentStatus": "valid"
}
```

### **Example of response to consent with global availableAccounts**

```
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
```

## PSD2 - TPP Technical Design

```
{
  "access": {
    "availableAccounts": "allAccounts"
  },
  "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
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>consentId</b>	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.

## PSD2 - TPP Technical Design

### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> $^{\wedge}[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{12\}\$$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicM WpAA
<b>PSU-IP-Address</b>	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	$^{\wedge}[0-9]\{1,3\}.\{0-9\}\{1,3\}.\{0-9\}\{1,3\}.\{0-9\}\{1,3\}\$$ E.g. PSU-IP-Address: 192.168.16.5
<b>PSU-IP-Port</b>	The forwarded IP Port header field consists of the corresponding HTTP request IP Port field between PSU and TPP, if available.	String	OPT	$^{\wedge}\{0-9\}\{1,5\}\$$ E.g. PSU-IP-Port: 443
<b>PSU-Accept</b>	The forwarded Accept header fields consist of the corresponding HTTP request Accept header fields between PSU and TPP, if available.	String	OPT	$^{\wedge}.\{1,50\}\$$ E.g. PSU-Accept: application/json
<b>PSU-Accept-Charset</b>	See above	String	OPT	$^{\wedge}.\{1,50\}\$$ E.g. PSU-Accept-



## PSD2 - TPP Technical Design

				Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available.  Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: DELETE
<b>PSU-Device-ID</b>	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	<b>UUID</b> ^[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
<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP	String	OPT	<b>RFC 2426</b> ^GEO:[\\d]*.[\\d]*[;]

## PSD2 - TPP Technical Design

	request between PSU and TPP if available.			][\\d]*.][\\d]*\$ E.g. PSU-Geo-Location: GEO:90.023856;25.3 45963
<b>Digest</b>	Is contained if and only if the "Signature" element is contained in the header of the request.  See 6.1Signature for more information.	String	MAN	^.{1,100}\$  E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
<b>Signature</b>	A signature of the request by the TPP on application level.  See 6.1Signature for more information.	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}\$  E.g. TPP-Signature-Certificate: MIIHgzCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIHvcNAQELBQAwwSTELMAKGA1UEBhMCMVVMxEzARBgNVBA

### 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
-------	-------------	------	------	--------

## PSD2 - TPP Technical Design

<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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 2YotnFZFEjrlzCsicMWpAA
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
```

## **PSD2 - TPP Technical Design**

### **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 the case of SCA decoupled flow, the TPP will receive in the psuMessage field the message it must show to the PSU and direct to the PSU's bank app.

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:

<b>Type of access</b>	<b>Description</b>
<b>availableAccounts</b>	<p>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:</p> <ul style="list-style-type: none"> <li>• List of all the available PSU accounts.</li> </ul> <p>The following may not be obtained:</p> <ul style="list-style-type: none"> <li>• Account balances (unless supported by the ASPSP)</li> <li>• Links to the endpoint of balances or transactions</li> </ul>
<b>availableAccountsWithBalances</b>	<p>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:</p> <ul style="list-style-type: none"> <li>• List of all the available PSU accounts.</li> <li>• Account balances (unless supported by the ASPSP)</li> </ul> <p>The following may not be obtained:</p> <ul style="list-style-type: none"> <li>• Links to the endpoint of balances or transactions</li> </ul>

## PSD2 - TPP Technical Design

<b>account</b>	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.
<b>balances</b>	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.
<b>transactions</b>	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.
<b>allPsd2</b>	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
<b>provider</b>	URL of the HUB where the service is published	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name

#### Query parameters

Field	Description	Type	Man.	Format
<b>withBalance</b>	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

## PSD2 - TPP Technical Design

### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> $^{\wedge}[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{12\}\$$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
<b>Consent-ID</b>	Identification of the consent resource	String	MAN	$^{\wedge}\{1,36\}\$$ E.g. Consent-ID: 7890-asdf-4321
<b>PSU-IP-Address</b>	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	$^{\wedge}[0-9]\{1,3\}\.[0-9]\{1,3\}\.[0-9]\{1,3\}\.[0-9]\{1,3\}\$$ E.g. PSU-IP-Address: 192.168.16.5
<b>PSU-IP-Port</b>	The forwarded IP Port header field consists of the corresponding HTTP request IP Port field between PSU and TPP, if available.	String	OPT	$^{\wedge}\{1,5\}\$$ E.g. PSU-IP-Port: 443
<b>PSU-Accept</b>	The forwarded Accept header fields consist of	String	OPT	$^{\wedge}\{1,50\}\$$ E.g. PSU-Accept:

## PSD2 - TPP Technical Design

	the corresponding HTTP request Accept header fields between PSU and TPP, if available.			application/json
<b>PSU-Accept-Charset</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available.  Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: GET
<b>PSU-Device-ID</b>	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	<b>UUID</b> ^[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:

## PSD2 - TPP Technical Design

	identification this ID need to be unaltered until removal from device.			5b3ab8e8-0fd5-43d2-946e-d75958b172e7
<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	<b>RFC 2426</b> ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*\$ E.g. PSU-Geo-Location: GEO:90.023856;25.345963
<b>Digest</b>	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==
<b>Signature</b>	Is contained if and only if the "Signature" element is contained in the header of the request.  See 6.1Signature for more information.	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	A signature of the request by the TPP on application level.  See 6.1Signature for more information.	String	MAN	^.{1,5000}\$ E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwI BAgIIZzZvBQlt0Uc wDQYJ.....KoZIHvcNAQELBQAwSTE LMAkGA1UEBhMCMV VMxEzARBgNVBA

### Body

Data are not sent in the body in this request.



## PSD2 - TPP Technical Design

### 3.3.1.2 Response

#### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>accounts</b>	List of available accounts.	List<AccountDetails>	MAN	E.g. "accounts": []
<b>psuMessage</b>	Text to show to the PSU.	String	OPT	^.{1,512}\$ E.g. "psuMessage": "Information for PSU"
<b>tppMessages</b>	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/accounts>

Content-Encoding: gzip

Content-Type: application/json

## **PSD2 - TPP Technical Design**

```
X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc
Authorization: Bearer 2YotnFZFEjrlzCsicMWpAA
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": {
```

## PSD2 - TPP Technical Design

```

        "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": "ES222222222222222222222222",
    "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.

## PSD2 - TPP Technical Design

<b>availableAccountsWithBalances</b>	This type of access does not allow consumption of this service.
<b>account</b>	If the consent associated with the request has this type of access, the account may be queried.
<b>balances</b>	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.
<b>transactions</b>	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.
<b>allPsd2</b>	If the consent associated with the request has this type of access, the account may be requeried 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
<b>provider</b>	URL of the HUB where the service is published	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>account-id</b>	Identifier of the account assigned by the ASPSP	String	MAN	^.{1,100}\$ E.g. account-id=a1q5w

#### Query parameters

Field	Description	Type	Man.	Format
<b>withBalance</b>	If it is included, this function includes the balances. This request will be rejected if	Boole an	OPT	E.g. true

## PSD2 - TPP Technical Design

	access to balances does not include consent or the ASPSP does not support this parameter.			
--	---	--	--	--

### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsic MWpAA
<b>Consent-ID</b>	Identification of the consent resource	String	MAN	^.{1,36}\$ E.g. Consent-ID: 7890-asdf-4321
<b>PSU-IP-Address</b>	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
<b>PSU-IP-Port</b>	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

## PSD2 - TPP Technical Design

	between PSU and TPP, if available.			
<b>PSU-Accept</b>	The forwarded Accept header fields consist of the corresponding HTTP request Accept header fields between PSU and TPP, if available.	String	OPT	$\wedge.\{1,50\}\$$ E.g. PSU-Accept: application/json
<b>PSU-Accept-Charset</b>	See above	String	OPT	$\wedge.\{1,50\}\$$ E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	$\wedge.\{1,50\}\$$ E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	$\wedge.\{1,50\}\$$ E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available.  Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: GET
<b>PSU-Device-ID</b>	UUID (Universally Unique Identifier) for a device, which is used by the PSU, if available.	String	OPT	<b>UUID</b> $\wedge[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-$

**PSD2 - TPP Technical Design**

	<p>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.</p>			<p>fA-F]{4}-[0-9a-fA-F]{12}\$</p> <p>E.g.</p> <p>PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7</p>
<b>PSU-Geo-Location</b>	<p>The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.</p>	String	OPT	<p><b>RFC 2426</b></p> <p>^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*\$</p> <p>E.g.</p> <p>PSU-Geo-Location: GEO:90.023856;25.345963</p>
<b>Digest</b>	<p>The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.</p>	String	MAN	<p>^.{1,100}\$</p> <p>E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==</p>
<b>Signature</b>	<p>Is contained if and only if the "Signature" element is contained in the header of the request.</p> <p>See 6.1Signature for more information.</p>	String	MAN	<p>See annexes</p>
<b>TPP-Signature-Certificate</b>	<p>A signature of the request by the TPP on application level.</p> <p>See 6.1Signature for more information.</p>	String	MAN	<p>^.{1,5000}\$</p> <p>E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIHvcNAQELBQAwSTE LMAkGA1UEBhMCMVVMxEzARBgNVBA</p>

## PSD2 - TPP Technical Design

### Body

Data are not sent in the body in this request.

### 3.3.2.2 Response

#### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> $^{\wedge}[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{12\}\$$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

### Body

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

### 3.3.2.3 Examples

#### Example of request

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

Content-Encoding: gzip

Content-Type: application/json



## **PSD2 - TPP Technical Design**

X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc  
Authorization: Bearer 2YotnFZFEjrlzCsicMWpAA  
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",  
 "ownerName": "Heike Mustermann",  
 "product": "Girokonto",  
 "cashAccountType": "CACC",  
 "name": "Main Account",  
 "\_links": {  
 "balances": {  
 "href": "/v1/accounts/3dc3d5b3-7023-4848-9853-f5400a64e80f/balances"  
 },  
 },  
 },  
}

## PSD2 - TPP Technical Design

```
        "transactions": {
            "href": "/v1/accounts/3dc3d5b3-7023-4848-9853--
5400a64e80f/transactions"
        }
    }
}
```

### Example of multi-currency account 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": {
    "resourceId": "3dc3d5b3-7023-4848-9853-f5400a64e81g",
    "iban": "ES222222222222222222222222",
    "currency": "XXX",
    "ownerName": "Heike Mustermann",
    "product": "Multicurrency Account",
    "cashAccountType": "CACC",
    "name": "Aggregation Account",
    "_links": {
      "balances": {
        "href": "/v1/accounts/3dc3d5b3-7023-4848-9853-
f5400a64e81g/balances"
      },
      "transactions": {
        "href": "/v1/accounts/3dc3d5b3-7023-4848-9853-
f5400a64e81g/transactions"
      }
    }
  }
}
```

## PSD2 - TPP Technical Design

### 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
<b>availableAccounts</b>	This type of access does not allow consumption of this service.
<b>availableAccountsWithBalances</b>	This type of access does not allow consumption of this service.
<b>account</b>	This type of access does not allow consumption of this service.
<b>balances</b>	If the consent associated with the request has this type of access, the account balances may be queried.
<b>transactions</b>	This type of access does not allow consumption of this service.
<b>allPsd2</b>	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
<b>provider</b>	URL of the HUB where the service is published	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name

## PSD2 - TPP Technical Design

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

### Query parameters

No additional fields are specified.

### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> $\wedge[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{12\}\$$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
<b>Consent-ID</b>	Identification of the consent resource	String	MAN	$\wedge.\{1,36\}\$$ E.g. Consent-ID: 7890-asdf-4321
<b>PSU-IP-Address</b>	The forwarded IP Address header field consists of the corresponding HTTP request IP Address field	String	COND	$\wedge[0-9]\{1,3\}.\{0-9\}\{1,3\}.\{0-9\}\{1,3\}.\{0-9\}\{1,3\}\$$ E.g.

## PSD2 - TPP Technical Design

	between PSU and TPP. If not available, the TPP shall use the IP Address used by the TPP when submitting this request.			PSU-IP-Address: 192.168.16.5
<b>PSU-IP-Port</b>	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
<b>PSU-Accept</b>	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
<b>PSU-Accept-Charset</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available.  Valid values are: <ul style="list-style-type: none"><li>• GET</li></ul>	String	OPT	E.g. PSU-Http-Method: GET

## PSD2 - TPP Technical Design

	<ul style="list-style-type: none"> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>			
<b>PSU-Device-ID</b>	<p>UUID (Universally Unique Identifier) for a device, which is used by the PSU, if available.</p> <p>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.</p>	String	OPT	<p><b>UUID</b></p> <p><math>^{\wedge}[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}\\$</math></p> <p>E.g.</p> <p>PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7</p>
<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	<p><b>RFC 2426</b></p> <p><math>^{\wedge}GEO:[\backslash d]^*.[\backslash d]^*[:,;][\backslash d]^*.[\backslash d]^*\\$</math></p> <p>E.g.</p> <p>PSU-Geo-Location: GEO:90.023856;25.345963</p>
<b>Digest</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	MAN	<p><math>^{\wedge}.\{1,100\}\\$</math></p> <p>E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==</p>
<b>Signature</b>	<p>Is contained if and only if the "Signature" element is contained in the header of the request.</p> <p>See 6.1Signature for more information.</p>	String	MAN	See annexes
<b>TPP-</b>	A signature of the	String	MAN	$^{\wedge}.\{1,5000\}\$$

## PSD2 - TPP Technical Design

<b>Signature-Certificate</b>	request by the TPP on application level. See 6.1Signature for more information.			E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwI BAgIIZzZvBQIt0Uc wDQYJ.....KoZI hvcNAQELBQAwSTE LMAkGA1UEBhMCMV VMxEzARBgNVBA
------------------------------	--	--	--	---

### Body

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

### 3.3.3.2 Response

#### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>account</b>	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": {...}
<b>balances</b>	A list of balances	List<Balance	MAN	E.g.

## PSD2 - TPP Technical Design

	regarding this account, e.g. the current balance, the last booked balance.	>		"balances": {...}
<b>psuMessage</b>	Text to show to the PSU.	String	OPT	^.{1,512}\$ E.g. "psuMessage": "Information for PSU"
<b>tppMessages</b>	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 2YotnFZFEjrlzCsicMWpAA

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



## **PSD2 - TPP Technical Design**

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": "ES11111111111111111111111111111111"
  },
  "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:

## PSD2 - TPP Technical Design

Type of access	Description
<b>availableAccounts</b>	This type of access does not allow consumption of this service.
<b>availableAccountsWithBalances</b>	This type of access does not allow consumption of this service.
<b>account</b>	This type of access does not allow consumption of this service.
<b>balances</b>	If the consent associated with the request has this type of access, the balances may be requested if the ASPSP supports it.
<b>transactions</b>	If the consent associated with the request has this type of access, the account activity may be queried.
<b>allPsd2</b>	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
<b>provider</b>	URL of the HUB where the service is published	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>account-id</b>	Identifier of the account that will be used in the data reading. Obtained previously in	String	MAN	^.{1,100}\$ E.g. account-id=a1q5w

## PSD2 - TPP Technical Design

	<p>the reading of the account list.</p> <p>Must be valid at least while the consent lasts.</p> <p>This id may be tokenised.</p>			
--	---	--	--	--

### Query parameters

Field	Description	Type	Man.	Format
<b>dateFrom</b>	<p>Starting date (inclusive the date dateFrom) of the transaction list, mandated if no delta access is required and if bookingStatus does not equal "information". Might be ignored if a delta function is used or if bookingStatus equals "information".</p> <p>For booked transactions, the relevant date is the booking date. For pending transactions, the relevant date is the entry date, which may not be transparent neither in this API nor other channels of the ASPSP.</p>	String	COND	<p><b>ISODate</b></p> <p>E.g. dateFrom=2017-10-25</p>
<b>dateTo</b>	<p>End date of query. Its default value is the current date, unless otherwise indicated.</p> <p>For booked transactions, the relevant date is the booking date. For pending transactions, the relevant date is the entry date, which may not be transparent neither in this API nor other channels of the ASPSP.</p>	String	OPT	<p><b>ISODate</b></p> <p>E.g. dateTo=2017-11-05</p>

**PSD2 - TPP Technical Design**

<b>entryReferenceFrom</b>	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 are ignored.	String	OPT	E.g. entryReferenceFrom=1234-asdf-567
<b>bookingStatus</b>	<p>Permitted codes are "booked", "pending", "both" and "information".</p> <p>"booked" shall be supported by the ASPSP.</p> <p>To support the "pending" and "both" feature is optional for the ASPSP, Error code if not supported in the online banking frontend. If supported, "both" means to request transaction reports of transaction of bookingStatus either "pending" or "booked".</p> <p>To support the "information" feature is optional for the ASPSP. Currently the booking status "information" only covers standing orders. Error code if not supported.</p>	String	MAN	E.g. bookingStatus=booked
<b>deltaList</b>	<p>Indicates that the AISP is in favour of obtaining all the transactions after the last access to the report for this PSU and account.</p> <p>This indicator could be rejected by the ASPSP if this function is not compatible.</p>	Boolean	OPT	E.g. deltaList=false

## PSD2 - TPP Technical Design

<b>withBalance</b>	<p>If it is included, this function includes the balances.</p> <p>This request will be rejected if access to balances does not include consent or the ASPSP does not support this parameter.</p>	Boolean	OPT	E.g. true
--------------------	--	---------	-----	-----------

### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<p><b>UUID</b></p> <p><math>^{\wedge}[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\}\\$</math></p> <p>E.g.</p> <p>X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7</p>
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	<p>E.g.</p> <p>Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA</p>
<b>Consent-ID</b>	Identification of the consent resource	String	MAN	<p><math>^{\wedge}\{1,36\}\\$</math></p> <p>E.g. Consent-ID: 7890-asdf-4321</p>
<b>Accept</b>	Response format supported. Supported values: application/json	String	OPT	<p><math>^{\wedge}\{1,50\}\\$</math></p> <p>E.g. Accept: application/json</p>
<b>PSU-IP-Address</b>	The forwarded IP Address header field	String	COND	<p><math>^{\wedge}[0-9]\{1,3\}\.[0-9]\{1,3\}\.[0-</math></p>

## PSD2 - TPP Technical Design

	<p>consists of the corresponding HTTP request IP Address field between PSU and TPP.</p> <p>If not available, the TPP shall use the IP Address used by the TPP when submitting this request.</p>			<p>9]{1,3}.[0-9]{1,3}\$</p> <p>E.g.</p> <p>PSU-IP-Address: 192.168.16.5</p>
<b>PSU-IP-Port</b>	<p>The forwarded IP Port header field consists of the corresponding HTTP request IP Port field between PSU and TPP, if available.</p>	String	OPT	<p>^\d{1,5}\$</p> <p>E.g. PSU-IP-Port: 443</p>
<b>PSU-Accept</b>	<p>The forwarded Accept header fields consist of the corresponding HTTP request Accept header fields between PSU and TPP, if available.</p>	String	OPT	<p>^.{1,50}\$</p> <p>E.g. PSU-Accept: application/json</p>
<b>PSU-Accept-Charset</b>	See above	String	OPT	<p>^.{1,50}\$</p> <p>E.g. PSU-Accept-Charset: utf-8</p>
<b>PSU-Accept-Encoding</b>	See above	String	OPT	<p>^.{1,50}\$</p> <p>E.g. PSU-Accept-Encoding: gzip</p>
<b>PSU-Accept-Language</b>	See above	String	OPT	<p>^.{1,50}\$</p> <p>E.g. PSU-Accept-Language: es-ES</p>
<b>PSU-User-Agent</b>	<p>The forwarded Agent header field of the HTTP request between PSU and TPP, if available.</p>	String	OPT	<p>E.g.</p> <p>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)</p>
<b>PSU-Http-Method</b>	<p>HTTP method used at the PSU – TPP interface, if available.</p>	String	OPT	<p>E.g. PSU-Http-Method: GET</p>

## PSD2 - TPP Technical Design

	<p>Valid values are:</p> <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>			
<b>PSU-Device-ID</b>	<p>UUID (Universally Unique Identifier) for a device, which is used by the PSU, if available.</p> <p>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.</p>	String	OPT	<p><b>UUID</b></p> <p><math>^{[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\}}\\$</math></p> <p>E.g.</p> <p>PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e- d75958b172e7</p>
<b>PSU-Geo-Location</b>	<p>The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.</p>	String	OPT	<p><b>RFC 2426</b></p> <p><math>^{GEO:[\d]*\.[\d]*[;][\d]*\.[\d]*}\\$</math></p> <p>E.g.</p> <p>PSU-Geo-Location: GEO:90.023856;25.345963</p>
<b>Digest</b>	<p>The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.</p>	String	MAN	<p><math>^{.\{1,100\}}\\$</math></p> <p>E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==</p>
<b>Signature</b>	<p>Is contained if and only if the "Signature" element is contained in the header of the request.</p> <p>See 6.1Signature for</p>	String	MAN	See annexes

## PSD2 - TPP Technical Design

	more information.			
<b>TPP-Signature-Certificate</b>	A signature of the request by the TPP on application level. See 6.1Signature for more information.	String	MAN	$\wedge.\{1,5000\}\$$ E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIHvcNAQELBQAwSTE LMAkGA1UEBhMCMCV VMxEzARBgNVBA

### Body

Data are not sent in the body in this request.

### 3.3.4.2 Response

#### Header

Field	Description	Type	Man.	Format
<b>Content-Type</b>	Possible values: application/json	String	MAN	E.g. Content-Type: application/json
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> $\wedge[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{12\}\$$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

### Body

Field	Description	Type	Man.	Format
<b>account</b>	Identifier of the addressed account. Remark for Future: It is recommended to use	AccountReference	OPT	E.g. "account": {...}



## PSD2 - TPP Technical Design

	this data element. The condition might change to "mandatory" in a next version of the specification.			
<b>transactions</b>	JSON based account report.  This account report contains transactions resulting from the query parameters.	AccountReport	OPT	E.g. "transactions": {...}
<b>balances</b>	A list of balances regarding this account, which might be restricted to the current balance.	List<Balance>	OPT	E.g. "balances": [...]
<b>_links</b>	List of hyperlinks to be recognised by the TPP.  Types supported in this response:  " <b>download</b> ": Download link for the query data when the data returned are of a substantial weight. Only for camt-data.	Links	OPT	E.g. "_links": {...}
<b>psuMessage</b>	Text to show to the PSU	String	OPT	^.{1,512}\$  E.g. "psuMessage": "Information for the PSU"
<b>tppMessages</b>	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

## **PSD2 - TPP Technical Design**

<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 2YotnFZFEjrlzCsicMWpAA  
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 2YotnFZFEjrlzCsicMWpAA  
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

## **PSD2 - TPP Technical Design**

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": "ES11111111111111111111111111111111"
  },
  "transactions": {
    "booked": [
      {
        "transactionId": "1234567",
        "creditorName": "John Miles",
        "creditorAccount": {
          "iban": "ES11111111111111111111111111111111"
        },
        "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": {
```

**PSD2 - TPP Technical Design**

```
        "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": {
```

## PSD2 - TPP Technical Design

```
        "href":
        "/v1/accounts/qwer3456tzui7890/transactions?page[number]=1&page[size]=15
    },
    "previous": {
        "href":
        "/v1/accounts/qwer3456tzui7890/transactions?page[number]=2&page[size]=15"
    },
    "next": {
        "href":
        "/v1/accounts/qwer3456tzui7890/transactions?page[number]=4&page[size]=15"
    },
    "last": {
        "href":
        "/v1/accounts/qwer3456tzui7890/transactions?page[number]=10&page[size]=15"
    }
    }
}
}
```

### Example of response with list of standing orders

```
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": "ES11111111111111111111111111111111"
  },
  "transactions":{
    "information": [
      {
        "creditorName": "John Miles",
```

## PSD2 - TPP Technical Design

```
    "creditorAccount": {
      "iban": "ES1111111111111111111111"
    },
    "transactionAmount": {
      "currency": "EUR",
      "amount": "256.67"
    },
    "remittanceInformationUnstructured": "Example for
Remittance Information",
    "bankTransactionCode": "PMNT-ICDT-STDO",
    "additionInformationStructured":{
      "standingOrderDetails":{
        "startDate": "2018-03-01",
        "endDate": "2020-06-31",
        "executionRule": "preceding",
        "frequency": "monthly",
        "dayOfExecution": "24"
      }
    }
  }
}
```

### Example of response with error

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

## PSD2 - TPP Technical Design

### 3.4 FCS: Establish consent for the fund confirmation service

#### 3.4.1 Fund confirmation consent

Using this service, a TPP can report a confirmation consent for ASPSP funds on the specified account.

Unlike the request to establish information consent on the account, this consent does not have secondary effects on other existing ones.

E.g. does not invalidate prior consent.

##### 3.4.1.1 Request

###### Endpoint

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

###### Path

Field	Description	Type	Man.	Format
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name

###### Query parameters

No additional fields are specified.

###### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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}\$

## PSD2 - TPP Technical Design

				E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2- 946e-d75958b172e7
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpA A
<b>PSU-IP-Address</b>	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}.\$  E.g. PSU-IP-Address: 192.168.16.5
<b>PSU-IP-Port</b>	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
<b>PSU-Accept</b>	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
<b>PSU-Accept-Charset</b>	See above	String	OPT	^{1,50}\$  E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^{1,50}\$  E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-</b>	See above	String	OPT	^{1,50}\$



**PSD2 - TPP Technical Design**

<b>Language</b>				E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available. Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: POST
<b>PSU-Device-ID</b>	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	<b>UUID</b>  ^[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
<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	<b>RFC 2426</b>  ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*\$  E.g. PSU-Geo-Location: GEO:90.023856;25.345963

**PSD2 - TPP Technical Design**

<p><b>TPP-Redirect-Preferred</b></p>	<p>If it equals "true", the TPP prefers a redirect over an embedded SCA approach.</p> <p>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.</p> <p>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.</p> <p><b>EMBEDDED NOT SUPPORTED IN THIS VERSION</b></p>	<p>Boolean</p>	<p>OPT</p>	<p>E.g. TPP-Redirect-Preferred: true</p>
<p><b>TPP-Redirect-URI</b></p>	<p>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".</p> <p>It is recommended to always use this header field.</p> <p><b>Remark for Future:</b> This field might be changed to mandatory in the next version of the</p>	<p>String</p>	<p>COND</p>	<p>^.{1,250}\$</p> <p>E.g. TPP-Redirect-URI:"https://tpp.example.es/cb"</p>

## PSD2 - TPP Technical Design

	specification.			
<b>TPP-Nok-Redirect-URI</b>	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	$\wedge.\{12,50\}\$$ E.g. TPP-Nok-Redirect-URI: "https://tpp.example.es/cb/nok"
<b>TPP-Explicit-Authorisation-Preferred</b>	<p>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.</p> <p>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.</p> <p><b>Note:</b> the ASPSP may not take it into account if it does not support it.</p>	Boolean	OPT	E.g. TPP-Explicit-Authorisation-Preferred: false
<b>Digest</b>	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	$\wedge.\{1,100\}\$$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRI MzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
<b>Signature</b>	A signature of the	String	MAN	See annexes

## PSD2 - TPP Technical Design

	request by the TPP on application level. See 6.1Signature for more information.			
<b>TPP-Signature-Certificate</b>	The certificate used for signing the request, in base64 encoding.	String	MAN	$\wedge.\{1,5000\}\$$ E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIZzZvBQIt0UcwDQYJ..... ....KoZIHvcNAQELBQAWS TELMAkGA1UEBhMCVVM xEzARBgNVBA

### Body

Field	Description	Type	Man.	Format
<b>account</b>	Account, where the confirmation of funds service is aimed to be submitted to.	Account Reference	MAN	E.g. "access": {...}
<b>cardNumber</b>	Card Number of the card issued by the PIISP. Should be delivered if available.	String	OPT	$\wedge.\{1,35\}\$$
<b>cardExpiryDate</b>	Expiry date of the card issued by the PIISP	String	OPT	<b>ISODate</b> E.g. "validUntil": "2018-05-17"
<b>cardInformation</b>	Additional explanation for the card product.	String	OPT	$\wedge.\{1,140\}\$$
<b>registrationInformation</b>	Additional information about the registration process for the PSU, e.g. a reference to the TPP / PSU contract	String	OPT	$\wedge.\{1,140\}\$$

### 3.4.1.2 Response

#### Response code

HTTP 201 response code if the resource is correctly created.

## PSD2 - TPP Technical Design

### Header

Field	Description	Type	Man.	Format
<b>Location</b>	Contains the link to the resource generated.	String	MAN	<b>Max512Text</b> E.g. Location: /v2/consents/confirmation-of-funds/{consentId}
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>ASPSP-SCA-Approach</b>	Value returned if the SCA method has been fixed. Possible values: <ul style="list-style-type: none"> <li>EMBEDDED</li> <li>DECOUPLED</li> <li>REDIRECT</li> </ul> <p>The SCA based on OAuth will be taken as REDIRECT.</p>	String	COND	E.g. ASPSP-SCA-Approach: REDIRECT

### Body

Field	Description	Type	Man.	Format
<b>consentStatus</b>	Consent authentication status. See values defined in 6.5Consent status	String	MAN	E.g. "consentStatus": "received"
<b>consentId</b>	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"

**PSD2 - TPP Technical Design**

<p><b>scaMethods</b></p>	<p>This data element might be contained, if SCA is required and if the PSU has a choice between different authentication methods.</p> <p>If this data element is contained, then there is also a hyperlink of type "startAuthorisationWithAuthenticationMethodSelection" contained in the response body.</p> <p>These methods shall be presented towards the PSU for selection by the TPP.</p> <p><b>Note:</b> Only if ASPSP supports selection of the SCA method</p>	<p>List&lt;AuthenticationObject&gt;</p>	<p>COND</p>	<p>E.g. "scaMethods": [...]</p>
<p><b>_links</b></p>	<p>A list of hyperlinks to be recognised by the TPP.</p> <p>Type of links admitted in this response:</p> <ul style="list-style-type: none"> <li>• scaRedirect: In case of an SCA Redirect Approach, the ASPSP is transmitting the link to which to redirect the PSU browser.</li> <li>• 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</li> </ul>	<p>Links</p>	<p>MAN</p>	<p>E.g. "_links": {...}</p>

**PSD2 - TPP Technical Design**

	<p>identification nor PSU authentication data to be uploaded).</p> <ul style="list-style-type: none"> <li>• startAuthorisationWithAuthenticationMethodSelection: The link to the authorisation endpoint, where the authorisation sub-resource has to be generated while selecting the authentication method. This link is contained under exactly the same conditions as the data element "scaMethods"</li> <li>• self: link to the resource created by this request.</li> <li>• status: The link to retrieve the transaction status</li> <li>• 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.</li> </ul>			
<b>psuMessage</b>	Text to be displayed to the PSU	String	OPT	^.{1,512}\$ E.g. "psuMessage": "Information for the

## PSD2 - TPP Technical Design

				PSU"
<b>tppMessages</b>	Message to the TPP	List<TppMessages>	OPT	E.g. "tppMessages": [...]

### 3.4.1.3 Examples

#### Example of consent request

POST <https://www.hub.com/aspsp-name/v2/consents/confirmation-of-funds>

Content-Encoding: gzip

Content-Type: application/json

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

Authorization: Bearer 2YotnFZFEjrlzCsicMWpAA

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

```
{
  "account": {
    "iban": "ES1111111111111111111111"
  },
  "cardNumber": "123456781234",
  "cardExpiryDate": "2020-12-31",
  "cardInformation": "MyMerchant Loyalty Card",
```



## **PSD2 - TPP Technical Design**

```
"registrationInformation": "Your contrat Number 1234 with MyMerchant is completed with the registration with your bank."
}
```

### **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: </v2/consents/confirmation-of-funds/123-asdf-456>

Content-Type: application/json

```
{
  "consentStatus": "received",
  "consentId": "123-asdf-456",
  "_links": {
    "scaRedirect": {
      "href": "https://hub.example.es/authorization "
    },
    "self": {
      "href": "/v2/consents/confirmation-of-funds/123-asdf-456",
    },
    "status": {
      "href": "/v2/consents/confirmation-of-funds/123-asdf-456/status"
    },
    "scaStatus": {
      "href": "/v2/consents/123-asdf-456/authorisations/confirmation-of-funds/123auth456"
    }
  }
}
```

### **Example of response in the case of decoupled SCA**

HTTP/1.1 201 Created

## PSD2 - TPP Technical Design

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

ASPSP-SCA-Approach: DECOUPLED

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

Location: </v2/consents/confirmation-of-funds/123-asdf-456>

Content-Type: application/json

```
{
  "consentStatus": "received",
  "consentId": "123-asdf-456",
  "_links": {
    "self": {
      "href": "/v2/consents/confirmation-of-funds/123-asdf-456",
      "status": {
        "href": "/v2/consents/confirmation-of-funds/123-asdf-456/status"
      }
    }
  },
  "psuMessage": "Please use your XXX Bank app to authorise consent"
}
```

### 3.4.2 Getconsent status

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

#### 3.4.2.1 Request

##### Endpoint

GET {provider}/{aspsp}/v2/consents/confirmation-of-funds/{consent-id}/status

##### Path

Field	Description	Type	Man.	Format
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to	String	MAN	E.g. aspsp-

## PSD2 - TPP Technical Design

	which the request is made.			name
<b>consentId</b>	Identifier of the resource that references the consent.  Sent previously as a response to a request message for consent from the TPP.	String	MAN	^.{1,36}\$  E.g.123-qwerty-456

### Query parameters

No additional fields are specified.

### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b>  ^[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
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g.  Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
<b>PSU-IP-Address</b>	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	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

## PSD2 - TPP Technical Design

	used by the TPP when submitting this request.			
<b>PSU-IP-Port</b>	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
<b>PSU-Accept</b>	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
<b>PSU-Accept-Charset</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available.  Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> </ul>	String	OPT	E.g. PSU-Http-Method: GET

**PSD2 - TPP Technical Design**

	<ul style="list-style-type: none"> <li>DELETE</li> </ul>			
<b>PSU-Device-ID</b>	<p>UUID (Universally Unique Identifier) for a device, which is used by the PSU, if available.</p> <p>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.</p>	String	OPT	<p><b>UUID</b></p> <p><math>\wedge[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\}\\$</math></p> <p>E.g.</p> <p>PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7</p>
<b>PSU-Geo-Location</b>	<p>The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.</p>	String	OPT	<p><b>RFC 2426</b></p> <p><math>\wedge\text{GEO}:[\backslash d]^*.[\backslash d]^*[:,;][\backslash d]^*.[\backslash d]^*\\$</math></p> <p>E.g.</p> <p>PSU-Geo-Location: GEO:90.023856;25.345963</p>
<b>Digest</b>	<p>Is contained if and only if the "Signature" element is contained in the header of the request.</p> <p>See 6.1Signature for more information.</p>	String	MAN	<p><math>\wedge.\{1,100\}\\$</math></p> <p>E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYtZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==</p>
<b>Signature</b>	<p>A signature of the request by the TPP on application level.</p> <p>See 6.1Signature for more information.</p>	String	MAN	<p>See annexes</p>
<b>TPP-Signature-Certificate</b>	<p>The certificate used for signing the request, in base64 encoding.</p>	String	MAN	<p><math>\wedge.\{1,5000\}\\$</math></p> <p>E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIZzZvBQlt0Uc wDQYJ.....KoZI</p>

## PSD2 - TPP Technical Design

				hvcNAQELBQAwSTE LMAkGA1UEBhMCMV VMxEzARBgNVBA
--	--	--	--	---

### Body

No additional data are sent.

### 3.4.2.2 Response

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

### Response code

HTTP 200 response code.

### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> $^{[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{12\}}\$$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7

### Body

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

## PSD2 - TPP Technical Design

				PSU"
<b>tppMessages</b>	Message for the TPP	List<Tp pMessa ge>	OPT	E.g. "tppMessages":[... ]

### 3.4.2.3 Examples

#### Example of request

GET <https://www.hub.com/aspsp-name/v2/consents/confirmation-of-funds/123asdf456/status>

Accept: application/json

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

Authorization: Bearer 2YotnFZFEjrlzCsicMWpAA

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"
}
```

## PSD2 - TPP Technical Design

### 3.4.3 Getconsent

#### 3.4.3.1 Request

This message is sent by the TPP as a request to recover the information on previously created consent for fund confirmation. Particularly useful for the TPP in cases where the consent was managed directly between the ASPSP and the PSU.

#### Endpoint

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

#### Path

Field	Description	Type	Man.	Format
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>consentId</b>	Identifier of the resource that references the consent.  Sent previously as a response to a request message for consent from the TPP.	String	MAN	^.{1,36}\$  E.g. 7890-asdf-4321

#### Query parameters

No additional fields are specified.

#### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b>  ^[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.



## PSD2 - TPP Technical Design

				X-Request-ID: 1b3ab8e8-0fd5- 43d2-946e- d75958b172e7
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsic MWpAA
<b>PSU-IP-Address</b>	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}.\$  E.g. PSU-IP-Address: 192.168.16.5
<b>PSU-IP-Port</b>	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
<b>PSU-Accept</b>	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
<b>PSU-Accept-Charset</b>	See above	String	OPT	^.{1,50}\$  E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^.{1,50}\$  E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	^.{1,50}\$  E.g. PSU-Accept-Language: es-ES

## PSD2 - TPP Technical Design

<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available.  Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: GET
<b>PSU-Device-ID</b>	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	<b>UUID</b>  ^[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
<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	<b>RFC 2426</b>  ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*\$  E.g. PSU-Geo-Location: GEO:90.023856;25.345963
<b>Digest</b>	Is contained if and only if the "Signature" element is contained in	String	MAN	^.{1,100}\$  E.g. Digest: SHA-256=NzdmZjA4YjY

## PSD2 - TPP Technical Design

	the header of the request. See 6.1Signature for more information.			5M2M2NDYyMmVjO WFmMGNmYTziNT U3MjVmNDI4NTRIM zJkYzE3ZmNmMDE 3ZGFmMjhhNTc5OT U3OQ==
<b>Signature</b>	A signature of the request by the TPP on application level. See 6.1Signature for more information.	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}\$ E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwI BAgIIzZzVbQlt0Uc wDQYJ.....KoZI hvcNAQELBQAwSTE LMAkGA1UEBhMCV VMxEzARBgNVBA

### Body

No additional data are sent.

### 3.4.3.2 Response

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

### Response code

HTTP 200 response code.

### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined	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}\$

## PSD2 - TPP Technical Design

	by the initiating party.			E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
--	--------------------------	--	--	--

### Body

Field	Description	Type	Man.	Format
<b>account</b>	Account, where the confirmation of funds service is aimed to be submitted to.	Account Reference	MAN	E.g. "access": {...}
<b>cardNumber</b>	Card Number of the card issued by the PIISP. Should be delivered if available.	String	OPT	^.{1,35}\$
<b>cardExpiryDate</b>	Expiry date of the card issued by the PIISP	String	OPT	<b>ISODate</b> E.g. "validUntil": "2018-05-17"
<b>cardInformation</b>	Additional explanation for the card product.	String	OPT	^.{1,140}\$
<b>registrationInformation</b>	Additional registration information.	String	OPT	^.{1,140}\$
<b>consentStatus</b>	The status of the consent resource.	String	MAN	E.g. "consentStatus": "valid"
<b>psuMessage</b>	Text sent to TPP to be shown to the PSU.	String	OPT	^.{1,512}\$ E.g. "psuMessage": "Information for PSU"
<b>tppMessages</b>	Message for the TPP.	List<TppMessage>	OPT	E.g. "tppMessages": [...]

## **PSD2 - TPP Technical Design**

### **3.4.3.3 Examples**

#### **Example of request**

GET <https://www.hub.com/aspsp-name/v2/consents/confirmation-of-funds/7890-asdf-4321/>

```
Accept: application/json
X-Request-ID: 96201400-6ff9-11e8-adc0-fa7ae01bbebc
Authorization: Bearer 2YotnFZFEjrlzCsicMWpAA
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"
  },
  "cardNumber": "123456781234",
  "cardExpiryDate": "2020-12-31",
  "cardInformation": "MyMerchant Loyalty Card",
  "registrationInformation": "Your contrat Number 1234 with MyMerchant is completed with the registration with your bank."
  "consentStatus": "valid"
```

## PSD2 - TPP Technical Design

}

### 3.4.4 Revoke consent

#### 3.4.4.1 Request

This service allows a request for the removal of consent previously created in the ASPSP.

#### Endpoint

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

#### Path

Field	Description	Type	Man.	Format
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>consentId</b>	Identifier of the resource that references the consent.  Sent previously as a response to a request message for consent from the TPP.	String	MAN	^{1,36}\$ E.g. 7890-asdf-4321

#### Query parameters

No additional fields are specified.

#### Header

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

## PSD2 - TPP Technical Design

				F]{12}\$ E.g. X-Request-ID: 1b3ab8e8-0fd5- 43d2-946e- d75958b172e7
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsic MWpAA
<b>PSU-IP-Address</b>	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}.\$ E.g. PSU-IP-Address: 192.168.16.5
<b>PSU-IP-Port</b>	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
<b>PSU-Accept</b>	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
<b>PSU-Accept-Charset</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-</b>	See above	String	OPT	^.{1,50}\$

## PSD2 - TPP Technical Design

<b>Language</b>				E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available.  Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: DELETE
<b>PSU-Device-ID</b>	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	<b>UUID</b>  ^[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
<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	<b>RFC 2426</b>  ^GEO:[\\d]*.[\\d]*[;][\\d]*.[\\d]*\$  E.g. PSU-Geo-Location: GEO:90.023856;25.345963



## PSD2 - TPP Technical Design

<b>Digest</b>	Is contained if and only if the "Signature" element is contained in the header of the request.  See 6.1Signature for more information.	String	MAN	^.{1,100}\$  E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYtZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
<b>Signature</b>	A signature of the request by the TPP on application level.  See 6.1Signature for more information.	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}\$  E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIzZzVbQlt0UcwDQYJ.....KoZIHvcNAQELBQAwSTELMAkGA1UEBhMCMVVMxEzARBgNVBA

### Body

No additional data are sent.

### 3.4.4.2 Response

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

### Response code

HTTP 204 response code for correct cancellation.

### Header

Field	Description	Type	Man.	Format
<b>X-Request-</b>	ID of the	String	MAN	<b>UUID</b>

## PSD2 - TPP Technical Design

<b>ID</b>	request, 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

No additional fields are specified.

### 3.4.4.3 Examples

#### Example of request

DELETE <https://www.hub.com/aspsp-name/v2/consents/confirmation-of-funds/7890-asdf-4321>

Accept: application/json

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

Authorization: Bearer 2YotnFZFEjrlzCsicMWpAA

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

## **PSD2 - TPP Technical Design**

### **3.4.5 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 the case of SCA decoupled flow, the TPP will receive in the psuMessage field the message it must show to the PSU and direct to the PSU's bank app.

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.

## **3.5 FCS: Fund Confirmation Service**

### **3.5.1 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.

#### **Rules that are applied to confirm funds in multi-currency accounts**

- If no card number, but the PSU account identifier is contained: check on default account registered by customer.
- If no card number but the PSU and the account identifier with currency is contained: check the availability of funds on the corresponding sub-account.
- If card number and the PSU account identifier is contained: check on sub-account addressed by card, if the addressed card is registered with one of the sub-accounts.
- If the card number is not registered for any of the sub-accounts, or if the card number is registered for a different sub-account the card number might be ignored.

#### **3.5.1.1 Request**

##### **Endpoint**

## PSD2 - TPP Technical Design

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

### Path

Field	Description	Type	Man.	Format
<b>provider</b>	URL of the HUB where the service is published	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name

### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>Authorisation</b>	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
<b>Consent-ID</b>	Identifier of the consent obtained in the transaction requesting consent.  Only if the	String	COND	^.{1,36}\$ E.g. Consent-ID: 7890-asdf-4321

## PSD2 - TPP Technical Design

	consent management has been carried out through the API.			
<b>Digest</b>	Is contained if and only if the "Signature" element is contained in the header of the request.  See 6.1Signature for more information.	String	MAN	^.{1,100}\$  E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
<b>Signature</b>	A signature of the request by the TPP on application level.  See 6.1Signature for more information.	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	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
<b>cardNumber</b>	Card Number of the card issued by the PIISP. Should be delivered if available.	String	OPT	E.g. "cardNumber": "1111-1111-1111-1111"
<b>account</b>	PSU's account number.	Accou	MAN	E.g. "account":

## PSD2 - TPP Technical Design

		ntReference		{"iban":"ES11111111111111111111"}
<b>payee</b>	The merchant where the card is accepted as an information to the PSU.	String	OPT	^.{1,70}\$ E.g. "payee":"Merchant name"
<b>instructedAmount</b>	Transaction amount to be checked within the funds check mechanism.	Amount	MAN	E.g. "instructedAmount": {...}

### 3.5.1.2 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
<b>Location</b>	Contains the link to the resource generated.	String	MAN	
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
-------	-------------	------	------	--------

## PSD2 - TPP Technical Design

<b>fundsAvailable</b>	Equals true if sufficient funds are available at the time of the request, false otherwise.	Boolean	MAN	E.g. "fundsAvailable": true
<b>tppMessages</b>	Message for the TPP.	List<TppMessage>	OPT	E.g. "tppMessages": [...]

### 3.5.1.3 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 2YotnFZFEjrlzCsicMWpAA

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

## PSD2 - TPP Technical Design

```
{
  "fundsAvailable": true
}
```

### 3.6 OAuth2 as pre-step

#### 3.6.1 Obtain authorisation

##### 3.6.1.1 Request

The TPP redirects the PSUs so that it carries out the following request to the HUB:

- Web authentication
- Biometric authentication with app-to-app redirection

##### Endpoint for web authentication

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}

##### Endpoint for biometric authentication with app-to-app redirection (personal)

GET /{aspsp}/biometric/app-to-app/personal/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}

##### Endpoint for biometric authentication with app-to-app redirection (business)

GET /{aspsp}/biometric/app-to-app/business/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
-------	-------------	------	------	--------



## PSD2 - TPP Technical Design

<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name

### Query parameters

Field	Description	Type	Man.	Format
<b>response_type</b>	Its value must be established at "code".	String	MAN	E.g. response_type=code
<b>client_id</b>	organizationIdentifier" provided in the eIDAS certificate formed as: <ul style="list-style-type: none"> <li>- PSD</li> <li>- 2 characters from the NCA country code (according to ISO 3166)</li> <li>- Carácter "-"</li> <li>- 2-8 characters for the NCA identifier (A-Z in upper case)</li> <li>- Carácter "-"</li> <li>- PSP identifier</li> </ul>	String	MAN	^.{1,70}\$ E.g. client_id=PSDES-BDE-3DFD246
<b>scope</b>	Possible scope: <ul style="list-style-type: none"> <li>• PIS</li> <li>• AIS</li> <li>• FCS</li> <li>• SVA</li> </ul> May indicate more than one, separated by a +	String	MAN	^.{1,64}\$ E.g. scope=PIS+AIS+SVA
<b>state</b>	Opaque value generated by the TPP. Used to prevent "cross-site request	String	MAN	^.{1,64}\$ E.g. state=XYZ

## PSD2 - TPP Technical Design

	forgery" XSRF attacks.			
<b>redirect_uri</b>	URL returned to the HUB where it will report the authorisation "code" that will be used subsequently to obtain the access token.	String	MAN	$\wedge.\{1,250\}\$$ E.g. redirect_uri=https%3A%2F%2Fwww%2Etp%2Ecom%2Fcb
<b>code_challenge</b>	PKCE challenge used to prevent code injection attacks. According to RFC 7636.	String	MAN	$\wedge.\{1,128\}\$$ E.g. code_challenge=E9Melh oa2OwvFrEMTJguCHaoe K1t8URWbuGJSstw-cM
<b>code_challenge_method</b>	Method to verify the code that may be "plain" or "S256". S256 (SHA 256) preferred	String	OPT	$\wedge.\{1,120\}\$$ E.g. code_challenge_method=S256

### Header

No additional fields are specified.

### Body

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

### 3.6.1.2 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
<b>Location</b>	Contains the URL	String	MAN	E.g. Location:

## PSD2 - TPP Technical Design

	where the redirection is carried out to the TPP.			https://www.tpp.com/cb
<b>code</b>	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=SpIxlOBeZQQYbYS6WxSbIA
<b>state</b>	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 browser back to the TPP. Used to prevent "cross-site request forgery" attacks.	String	MAN	^.{1,64}\$ E.g. state=XYZ

### Body

Data are not sent in the body in this request.

### 3.6.1.3 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
<b>Location</b>	Contains the URL that is redirected to the TPP.	String	MAN	E.g. Location: https://www.tpp.com/cb
<b>error</b>	Code that indicates the error that has occurred.	String	MAN	E.g. error=invalid_r

## PSD2 - TPP Technical Design

				equest
<b>state</b>	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.

#### 3.6.1.4 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](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=Sp1xl0BeZQQYbYS6WxSbIA&state=xyz>

##### Example of NOK response

HTTP/1.1 302 Found

Location: [https://www.tpp.com/cb?error=access\\_denied&state=xyz](https://www.tpp.com/cb?error=access_denied&state=xyz)

### 3.6.2 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.

#### 3.6.2.1 Request

##### Endpoint

## PSD2 - TPP Technical Design

POST {provider}/{aspsp}/token

### Path

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

### Request Parameters

Field	Description	Type	Mand.	Format
<b>grant_type</b>	Must take the value of "authorisation_code"	String	MAN	E.g. grant_type=author ization_code
<b>client_id</b>	"organizationIdentifier" provided in the eIDAS certificate formed as: <ul style="list-style-type: none"> <li>- PSD</li> <li>- 2 characters from the NCA country code (according to ISO 3166)</li> <li>- Carácter "-"</li> <li>- 2-8 characters for the NCA identifier (A-Z in upper case)</li> <li>- Carácter "-"</li> <li>- PSP identifier</li> </ul>	String	MAN	^.{1,70}\$  E.g. client_id=PSDES- BDE-3DFD246
<b>code</b>	Authorisation code returned by the ASPSP in the previous	String	MAN	^.{1,64}\$  E.g.

## PSD2 - TPP Technical Design

	application requesting an authorisation code			code=SplxIOBeZQ QY bYS6WxSbIA
<b>redirect_uri</b>	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%2Eetpp%2Ecom%2Fcb
<b>code_verifier</b>	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.

### 3.6.2.2 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
<b>access_token</b>	Access token issued by the HUB and joined to the scope that was requested in the request	String	MAN	^.{1,64}\$  E.g. "access_token": "2YotnFZFEjr1zCsicMWpAA"

## PSD2 - TPP Technical Design

	and confirmed by the PSU.			
<b>token_type</b>	Type of token issued. Will take the value "Bearer".	String	MAN	E.g. "token_type":"Bearer"
<b>expires_in</b>	Life of the access token in seconds.	Integer	OPT	E.g. "expires_in":300
<b>refresh_token</b>	Refresh token. May be used to obtain a new access token if it has expired.	String	OPT	^.{1,64}\$ E.g. "refresh_token":"tGzv3JOkFOXG5Qx2TIKWIA"

### 3.6.2.3 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
<b>error</b>	Code that indicates the error that has occurred. For more return codes see the annexes.	String	MAN	E.g. "error":"invalid_request"

### 3.6.2.4 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=Sp1xl0BeZQQYbYS6WxSbIA&redirect\_uri=https%3A%2F%2Fwww%2Etp%2Ecom%2Fcb&code\_verifier=dBjftJeZ4CVP-mB92K27uhbUJU1p1r\_wW1gFWFOEjXk

## **PSD2 - TPP Technical Design**

### **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"
}
```

## **3.7 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.

### **3.7.1 Request**

#### **Endpoint**

POST {provider}/{aspsp}/token

#### **Path**



## PSD2 - TPP Technical Design

Field	Description	Type	Mand.	Format
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>grant_type</b>	Must take the value of "refresh_token"	String	MAN	E.g. grant_type=refresh_token
<b>client_id</b>	organizationIdentifier" provided in the eIDAS certificate formed as: <ul style="list-style-type: none"> <li>- PSD</li> <li>- 2 characters from the NCA country code (according to ISO 3166)</li> <li>- Carácter "-"</li> <li>- 2-8 characters for the NCA identifier (A-Z in upper case)</li> <li>- Carácter "-"</li> <li>- PSP identifier</li> </ul>	String	MAN	^.{1,70}\$ E.g. client_id=PSDES-BDE-3DFD246
<b>refresh_token</b>	The refresh token necessary to be able to obtain an unexpired access_token.	String	MAN	^.{1,64}\$ E.g. refresh_token=tGzv3JOkF0XG5Qx2TIKWIA

### Header

No additional data are specified.

### Body

No additional data are specified.

## PSD2 - TPP Technical Design

### 3.7.2 Response

Field	Description	Type	Man.	Format
<b>access_token</b>	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"
<b>token_type</b>	Type of token issued. Will take the value "Bearer".	String	MAN	E.g. "token_type":"Bearer"
<b>expires_in</b>	Life of the access token in seconds.	Integer	OPT	E.g. "expires_in":300
<b>refresh_token</b>	Refresh token. May be used to obtain a new access token if it has expired.	String	OPT	^.{1,64}\$ E.g. "refresh_token":"28JD3JOkF0NM5Qx2TlKWIA"

### 3.7.3 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",

## **PSD2 - TPP Technical Design**

```
"token_type": "Bearer",  
"expires_in": 300,  
"access_token": "28JD3JOkF0NM5Qx2T1CCC"  
}
```

### **3.8 Sessions: combination of AIS and PIS services**

The session support allows you to combine the AIS and PIS services in the same session.

The session support is determined by the access token obtained after carrying out the OAuth2 (pre-step) protocol.

To ensure the session is supported, the access token must have been obtained for the PIS, AIS and TPP scope, and have the roles of PISP and AISP available in its eIDAS certificate.

### **3.9 Processes common to the services.**

#### **3.9.1 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.

## PSD2 - TPP Technical Design

- 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.

### 3.9.1.1 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
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. hub.example.es
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>payment-service</b>	Possible values are: <ul style="list-style-type: none"> <li>payments</li> <li>bulk-payments</li> <li>periodic-payments</li> </ul>	String	COND	E.g. {provider}/v1/payments
<b>payment-product</b>	Payment product to be used. List of supported products: <ul style="list-style-type: none"> <li>sepa-credit-transfers</li> <li>instant-sepa-credit-transfers</li> <li>target-2-payments</li> <li>cross-border-credit-transfers</li> </ul>	String	COND	E.g. {provider}/v1/payments/sepa-credit-transfers/
<b>paymentId, consentId</b>	Identifier of the resource that references the payment initiation or consent.	String	MAN	^.{1,36}\$ E.g.123-qwe-

## PSD2 - TPP Technical Design

				456
--	--	--	--	-----

### Query parameters

No additional parameters are specified for this request.

### Header

Field	Description	Type	Man.	Format
<b>Content-Type</b>	Value: application/json	String	MAN	Content-Type: application/json
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
<b>PSU-IP-Address</b>	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}\$ E.g. PSU-IP-Address: 192.168.16.5
<b>PSU-IP-Port</b>	The forwarded IP Port header field consists of the corresponding HTTP request IP Port field between PSU and	String	OPT	^\d{1,5}\$ E.g. PSU-IP-Port: 443

## PSD2 - TPP Technical Design

	TPP, if available.			
<b>PSU-Accept</b>	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
<b>PSU-Accept-Charset</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available.  Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: POST
<b>PSU-Device-ID</b>	UUID (Universally Unique Identifier) for a device, which is used by the PSU, if available.	String	OPT	<b>UUID</b> ^[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}\$

## PSD2 - TPP Technical Design

	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.			E.g. PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7
<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	<b>RFC 2426</b> ^GEO:[\\d]*.[\\d]*[;],[\\d]*.[\\d]*\$ E.g. PSU-Geo-Location: GEO:90.023856;25.345963
<b>Digest</b>	Is contained if and only if the "Signature" element is contained in the header of the request.  See 6.1Signature for more information.	String	MAN	^.{1,100}\$  E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
<b>Signature</b>	A signature of the request by the TPP on application level.  See 6.1Signature for more information.	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}\$  E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIZzZvBQIt0UcwDQYJ... .....KoZIHvcNAQELBQAwSTELMAkGA1UEBhM CVVMxEzARBgNVBA

### Body

No additional fields are specified.

## PSD2 - TPP Technical Design

### 3.9.1.2 Response

#### Header

Field	Description	Type	Man.	Format
<b>Location</b>	Contains the link related to the resource generated.	String	MAN	E.g. Location: /v1/payments/{payment-product}/{paymentId}/authorisations/123qwert/456
<b>X-Request-ID</b>	Unique identifier of the transaction assigned by the TPP and submitted through the HUB to the ASPSP	String	MAN	<b>UUID</b> ^[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
<b>ASPSP-SCA-Approach</b>	Value returned if the SCA method has been fixed. Possible values: <ul style="list-style-type: none"> <li>EMBEDDED</li> <li>DECOUPLED</li> <li>REDIRECT</li> </ul> <p>The SCA based on OAuth2 will be taken as REDIRECT.</p>	String	COND	E.g. ASPSP-SCA-Approach: REDIRECT

#### Body

Field	Description	Type	Man.	Format
<b>scaStatus</b>	SCA status	String	MAN	E.g. "scaStatus": "received"
<b>authorisationId</b>	Identifier of the resource that references the authorisation of sub-resource created.	String	MAN	^.{1,36}\$ E.g. "authorisationId": "1b3ab8e8-0fd5-43d2-946e-d75958b172e7"



**PSD2 - TPP Technical Design**

<p><b>scaMethods</b></p>	<p>This element is contained if SCA is required and if PSU can choose between the different methods of authentication.</p> <p>If this data is contained the link "selectAuthenticationMethod" will also be reported.</p> <p>These methods must be presented to the PSU.</p> <p><b>Note:</b> Only if ASPSP supports selection of the SCA method</p>	<p>List&lt;AuthenticationObject&gt;</p>	<p>COND</p>	<p>E.g. "scaMethods": [...]</p>
<p><b>_links</b></p>	<p>List of hyperlinks to be recognised by the TPP. Types supported in this response:</p> <ul style="list-style-type: none"> <li>• scaRedirect: in case of SCA by redirection. Link where the PSU navigator must be redirected by the TPP.</li> <li>• selectAuthenticationMethod: link to the authorisation sub-resource or the cancellation authorisation where the SCA method selected will be reported.</li> <li>• scaStatus: link to query the SCA status corresponding to the authorisation</li> </ul>	<p>Links</p>	<p>MAN</p>	<p>E.g. "_links": {...}</p>

## PSD2 - TPP Technical Design

	sub-resource.			
<b>psuMessage</b>	Text sent to TPP through the HUB to be shown to PSU.	String	OPT	^.{1,512}\$ E.g. "psuMessage": "Information for the PSU"
<b>tppMessages</b>	Message for the TPP sent through the HUB.	List<TppMessage>	OPT	E.g. "tppMessages": [...]

### 3.9.1.3 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 2YotnFZFEjrlzCsicMWpAA

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

## PSD2 - TPP Technical Design

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"
    }
  }
}
```

### 3.9.2 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 may depend on the SCA method selected.

#### 3.9.2.1 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
-------	-------------	------	------	--------

## PSD2 - TPP Technical Design

<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. hub.example.es
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>payment-service</b>	Possible values are: <ul style="list-style-type: none"> <li>• payments</li> <li>• bulk-payments</li> <li>• periodic-payments</li> </ul>	String	COND	E.g. {provider}/{aspsp}/v1/payments
<b>payment-product</b>	Payment product to be used. List of supported products: <ul style="list-style-type: none"> <li>• sepa-credit-transfers</li> <li>• instant-sepa-credit-transfers</li> <li>• target-2-payments</li> <li>• cross-border-credit-transfers</li> </ul>	String	COND	E.g. {provider}/v1/payments/sepa-credit-transfers/
<b>paymentId, consentId</b>	Identifier of the resource that references the payment initiation.	String	MAN	^.{1,36}\$ E.g.123-qwe-456
<b>authorisationId</b>	Identifier of the sub-resource associated with the consent.	String	COND	^.{1,36}\$
<b>cancellationId</b>	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
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-

## PSD2 - TPP Technical Design

				[0-9a-fA-F]{12}\$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2- 946e-d75958b172e7
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWp AA
<b>PSU-IP-Address</b>	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}\$  E.g. PSU-IP-Address: 192.168.16.5
<b>PSU-IP-Port</b>	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
<b>PSU-Accept</b>	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
<b>PSU-Accept-Charset</b>	See above	String	OPT	^.{1,50}\$  E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^.{1,50}\$  E.g. PSU-Accept-Encoding: gzip
<b>PSU-</b>	See above	String	OPT	^.{1,50}\$

## PSD2 - TPP Technical Design

<b>Accept-Language</b>				E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available. Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: GET
<b>PSU-Device-ID</b>	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	<b>UUID</b>  ^[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
<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	<b>RFC 2426</b>  ^GEO:[\\d]*.[\\d]*[;,.][\\d]*.[\\d]*\$  E.g. PSU-Geo-Location: GEO:90.023856;25.345963

## PSD2 - TPP Technical Design

<b>Digest</b>	Is contained if and only if the "Signature" element is contained in the header of the request.  See 6.1Signature for more information.	String	MAN	^.{1,100}\$  E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
<b>Signature</b>	A signature of the request by the TPP on application level.  See 6.1Signature for more information.	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}\$  E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ... .....KoZIHvcNAQELBQAwSTELMAkGA1UEBhM CVVMxEzARBgNVBA

### Body

Field	Description	Type	Man.	Format
<b>authenticationMethodID</b>	Identifier of the authentication method.	String	MAN	^.{1,35}\$  E.g. "authenticationMethodID": "123"

### 3.9.2.2 Response

#### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	Unique identifier of the transaction assigned by the TPP and submitted through the HUB to the ASPSP	String	MAN	<b>UUID</b>  ^[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}\$

## PSD2 - TPP Technical Design

				E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2- 946e-d75958b172e7
<b>ASPSP-SCA-Approach</b>	Value returned if the SCA method has been fixed. Possible values: <ul style="list-style-type: none"> <li>EMBEDDED</li> <li>DECOUPLED</li> <li>REDIRECT</li> </ul> <p>The SCA based on OAuth2 will be taken as REDIRECT.</p>	String	OPT	E.g. ASPSP-SCA-Approach: REDIRECT

### Body

Field	Description	Type	Man.	Format
<b>_links</b>	List of hyperlinks to be recognised by the HUB. Types supported in this response: <ul style="list-style-type: none"> <li>scaRedirect: in case of SCA by redirection. Link where the PSU navigator must be redirected by the TPP.</li> <li>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.</li> </ul>	Links	MAN	E.g. "_links": {...}



## PSD2 - TPP Technical Design

<b>scaStatus</b>	SCA status	String	MAN	E.g. "scaStatus": "received"
<b>psuMessage</b>	Text sent to TPP through the HUB to be shown to PSU.	String	OPT	^.{1,512}\$ E.g. "psuMessage": "Information for the PSU"
<b>tppMessages</b>	Message for the TPP sent through the HUB.	List<Tpp Message >	OPT	E.g. "tppMessage": [...]

### 3.9.2.3 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 2YotnFZFEjrlzCsicMWpAA

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

ASPS-SCA-Approach: REDIRECT

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

Content-Type: application/json

## PSD2 - TPP Technical Design

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

### 3.9.3 Getauthorisation sub-resources

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

#### 3.9.3.1 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
<b>provider</b>	URL of the ASPSP where the service is published.	String	MAN	E.g. hub.example.es
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>payment-service</b>	Possible values are: <ul style="list-style-type: none"> <li>payments</li> <li>bulk-payments</li> <li>periodic-payments</li> </ul>	String	COND	E.g. {provider}/v1/payments
<b>payment-product</b>	Payment product to be used. List of supported	String	COND	E.g. {provider}/v1/pa

## PSD2 - TPP Technical Design

	products: <ul style="list-style-type: none"> <li>• sepa-credit-transfers</li> <li>• instant-sepa-credit-transfers</li> <li>• target-2-payments</li> <li>• cross-border-credit-transfers</li> </ul>			payments/sepa-credit-transfers/
<b>paymentId</b>	Identifier of the resource that references the payment initiation.	String	MAN	$\wedge.\{1,36\}\$$ E.g.123-qwe-456

### Query parameters

No additional fields are specified.

### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> $\wedge[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{12\}\$$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
<b>PSU-IP-Address</b>	The forwarded IP Address header field consists of the corresponding HTTP request IP Address field between PSU and TPP. If not available, the	String	OPT	$\wedge[0-9]\{1,3\}.\{0-9\}\{1,3\}.\{0-9\}\{1,3\}.\{0-9\}\{1,3\}\$$ E.g. PSU-IP-Address: 192.168.16.5

## PSD2 - TPP Technical Design

	TPP shall use the IP Address used by the TPP when submitting this request.			
<b>PSU-IP-Port</b>	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
<b>PSU-Accept</b>	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
<b>PSU-Accept-Charset</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	^.{1,50}\$ E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available. Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> </ul>	String	OPT	E.g. PSU-Http-Method: DELETE

## PSD2 - TPP Technical Design

	<ul style="list-style-type: none"> <li>• PATCH</li> <li>• DELETE</li> </ul>			
<b>PSU-Device-ID</b>	<p>UUID (Universally Unique Identifier) for a device, which is used by the PSU, if available.</p> <p>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.</p>	String	OPT	<p><b>UUID</b></p> <p><math>^{\wedge}[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\}\\$</math></p> <p>E.g.</p> <p>PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7</p>
<b>PSU-Geo-Location</b>	<p>The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.</p>	String	OPT	<p><b>RFC 2426</b></p> <p><math>^{\wedge}GEO:[\backslash d]^*.[\backslash d]^*[,;][\backslash d]^*.[\backslash d]^*\\$</math></p> <p>E.g.</p> <p>PSU-Geo-Location: GEO:90.023856;25.345963</p>
<b>Digest</b>	<p>Is contained if and only if the "Signature" element is contained in the header of the request.</p> <p>See 6.1Signature for more information.</p>	String	MAN	<p><math>^{\wedge}.\{1,100\}\\$</math></p> <p>E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==</p>
<b>Signature</b>	<p>A signature of the request by the TPP on application level.</p> <p>See 6.1Signature for more information.</p>	String	MAN	<p>See annexes</p>
<b>TPP-Signature-Certificate</b>	<p>The certificate used for signing the request, in base64 encoding.</p>	String	MAN	<p><math>^{\wedge}.\{1,5000\}\\$</math></p> <p>E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIZzZvBQIt0UcwDQYJ...</p>

## PSD2 - TPP Technical Design

				.....KoZIhvcNAQELBQ AwSTELMAkGA1UEBhM CVVMxEzARBgNVBA
--	--	--	--	---

### Body

No additional data are specified.

### 3.9.3.2 Response

#### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	Unique identifier of the transaction assigned by the TPP and submitted through the HUB to the ASPSP	String	MAN	<b>UUID</b> ^[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
<b>cancellationIds</b>	Array of cancellationIds connected to the payment resource. <b>Note:</b> mandatory if it is a cancellation	Array<String>	COND	E.g. "cancellationIds": [...]
<b>psuMessage</b>	Text sent to TPP through the HUB to be shown to PSU.	String	OPT	^.{1,512}\$ E.g. "psuMessage": "Information for the PSU"
<b>tppMessages</b>	Message for the TPP sent through the HUB.	List<TppMessage>	OPT	E.g. "tppMessages": [...]

## **PSD2 - TPP Technical Design**

### **3.9.3.3 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 2YotnFZFEjrlzCsicMWpAA

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"]
}
```

### **3.9.4 GetSCA status**

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

#### **3.9.4.1 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}

## PSD2 - TPP Technical Design

### Path

Field	Description	Type	Man.	Format
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. hub.example.es
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name
<b>payment-service</b>	Possible values are: <ul style="list-style-type: none"> <li>payments</li> <li>bulk-payments</li> <li>periodic-payments</li> </ul>	String	COND	E.g. {provider}/v1/payments
<b>payment-product</b>	Payment product to be used. List of supported products: <ul style="list-style-type: none"> <li>sepa-credit-transfers</li> <li>instant-sepa-credit-transfers</li> <li>target-2-payments</li> <li>cross-border-credit-transfers</li> </ul>	String	COND	E.g. {provider}/v1/payments/sepa-credit-transfers/
<b>paymentId, consentId</b>	Identifier of the resource that references the payment initiation or consent	String	MAN	^.{1,36}\$ E.g.123-qwe-456
<b>authorisationId</b>	Identifier of the sub-resource associated with the consent.	String	COND	^.{1,36}\$
<b>cancellationId</b>	Identifier of the sub-resource associated with the payment cancellation.	String	COND	^.{1,36}\$

### Query parameters

No additional fields are specified.



## PSD2 - TPP Technical Design

### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> $^{[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{12\}}\$$ E.g. X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7
<b>Authorization</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
<b>PSU-IP-Address</b>	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	$^{[0-9]\{1,3\}\. [0-9]\{1,3\}\. [0-9]\{1,3\}}\$$ E.g. PSU-IP-Address: 192.168.16.5
<b>PSU-IP-Port</b>	The forwarded IP Port header field consists of the corresponding HTTP request IP Port field between PSU and TPP, if available.	String	OPT	$^{[0-9]\{1,5\}}\$$ E.g. PSU-IP-Port: 443
<b>PSU-Accept</b>	The forwarded Accept header fields consist of the corresponding HTTP request Accept header fields between PSU and TPP, if available.	String	OPT	$^{[a-zA-Z0-9_/\-]\{1,50\}}\$$ E.g. PSU-Accept: application/json

## PSD2 - TPP Technical Design

<b>PSU-Accept-Charset</b>	See above	String	OPT	$\wedge.\{1,50\}\$$ E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	$\wedge.\{1,50\}\$$ E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	$\wedge.\{1,50\}\$$ E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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)
<b>PSU-Http-Method</b>	HTTP method used at the PSU – TPP interface, if available.  Valid values are: <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: GET
<b>PSU-Device-ID</b>	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	<b>UUID</b> $\wedge[0-9a-fA-F]\{8\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{4\}-[0-9a-fA-F]\{12\}\$$ E.g. PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7

## PSD2 - TPP Technical Design

<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	<b>RFC 2426</b> ^GEO:[\\d]*.[\\d]*[;,.] [\\d]*.[\\d]*\$ E.g. PSU-Geo-Location: GEO:90.023856;25.345963
<b>Digest</b>	Is contained if and only if the "Signature" element is contained in the header of the request.  See 6.1Signature for more information.	String	MAN	^.{1,100}\$ E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMG NmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
<b>Signature</b>	A signature of the request by the TPP on application level.  See 6.1Signature for more information.	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	The certificate used for signing the request, in base64 encoding.	String	MAN	^.{1,5000}\$ E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAg IIZzZvBQIt0UcwDQYJ... .....KoZIHvcNAQELBQ AwSTELMAkGA1UEBhM CVVMxEzARBgNVBA

### Body

No additional data are specified.

### 3.9.4.2 Response

#### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	Unique identifier of the transaction assigned by the TPP and	String	MAN	<b>UUID</b> ^[0-9a-fA-F]{8}-[0-

## PSD2 - TPP Technical Design

	submitted through the HUB to the ASPSP			<p>9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}\$</p> <p>E.g.</p> <p>X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7</p>
--	--	--	--	--

### Body

Field	Description	Type	Man.	Format
<b>scaStatus</b>	SCA status	String	MAN	E.g. "scaStatus": "finalised"
<b>psuMessage</b>	Text sent to TPP through the HUB to be shown to PSU.	String	OPT	<p>^.{1,512}\$</p> <p>E.g. "psuMessage": "Information for the PSU"</p>
<b>tppMessages</b>	Message for the TPP sent through the HUB.	List<TppMessage>	OPT	E.g. "tppMessages": [...]

### 3.9.4.3 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 2YotnFZFEjrlzCsicMWpAA

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

***PSD2 - TPP Technical Design***

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"  
}
```

## PSD2 - TPP Technical Design

### 4. DESCRIPTION OF VALUE-ADDED SERVICES

#### 4.1 Available ASPSPs service

This message is sent by the TPP 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
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com

###### Header

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>Digest</b>	Is contained if and only if the "Signature" element is contained in the header of the request.  See 6.1 Signature for more	String	MAN	E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==

## PSD2 - TPP Technical Design

	information.			
<b>Signature</b>	A signature of the request by the TPP on application level.  See 6.1Signature for more information.	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	The certificate used for signing the request, in base64 encoding.	String	MAN	<b>eIDAS</b> E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIZzZvB Qlt0UcwDQYJ.....KoZIHvcNA QELBQAwSTELMAkGA1UEBhMC VVMxEzARBgNVBA

### Body

No additional fields are specified.

#### 4.1.1.2 Response

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

#### 4.1.1.3 Examples

##### Example of request

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

Content-Encoding: gzip

## **PSD2 - TPP Technical Design**

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**

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

##### **Header**



## PSD2 - TPP Technical Design

Field	Description	Type	Man.	Format
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>Digest</b>	Is contained if and only if the "Signature" element is contained in the header of the request.  See 6.1Signature for more information.	String	MAN	E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ==
<b>Signature</b>	A signature of the request by the TPP on application level.  See 6.1Signature for more information.	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	The certificate used for signing the request, in base64 encoding.	String	MAN	<b>eIDAS</b> E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIZzZvBQIt0UcwDQYJ.....KoZIHvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA

### Body

No additional fields are specified.

## PSD2 - TPP Technical Design

### 4.1.2.2 Response

Field	Description	Type	Man.	Format
<b>aspmps</b>	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. "aspmps":[]
<b>tpmMessages</b>	Contains the type of message and the code associated with it	Tppmessage	MAN	E.g. "tpmMessages":{ }

### 4.1.2.3 Examples

#### Example of request

```
GET https://www.hub.com/v2/sva/aspmps
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

{
  "aspmps": [
    {
      "bic": "XXXXESMMXXX",
      "name": "Bank name",
      "apiName": "nombreBanco1"
    },
    {
      "bic": "YYYYESMMXXX",
      "name": "Bank 2 name",
      "apiName": "nombreBanco2"
    }
  ]
}
```

## PSD2 - TPP Technical Design

```

    }
  ]
}

```

### 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
<b>provider</b>	URL of the HUB where the service is published.	String	MAN	E.g. www.hub.com
<b>aspsp</b>	Name of the ASPSP to which the request is made.	String	MAN	E.g. aspsp-name

## PSD2 - TPP Technical Design

<b>payment-product</b>	<p>Payment product to be used. List of supported products:</p> <ul style="list-style-type: none"> <li>• sepa-credit-transfers</li> <li>• instant-sepa-credit-transfers</li> <li>• target-2-payments</li> <li>• cross-border-credit-transfers</li> </ul>	String	MAN	E.g. {provider}/{aspsp}/v1/payments/sepa-credit-transfers/
------------------------	---	--------	-----	---

### Header

Field	Description	Type	Man.	Format
<b>Content-Type</b>	Value: application/json	String	MAN	Content-Type: application/json
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<p><b>UUID</b></p> <p>^[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}\$</p> <p>E.g.</p> <p>X-Request-ID: 1b3ab8e8-0fd5-43d2-946e-d75958b172e7</p>
<b>Authorisation</b>	Bearer Token. Obtained in a prior authentication on OAuth2.	String	MAN	E.g. Authorisation: Bearer 2YotnFZFEjr1zCsicMWpAA
<b>Consent-ID</b>	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	String	OPT	<p>^.{1,36}\$</p> <p>E.g. Consent-ID: 7890-asdf-4321</p>

## PSD2 - TPP Technical Design

	prior to this payment initiation.			
<b>PSU-IP-Address</b>	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}\$  E.g. PSU-IP-Address: 192.168.16.5
<b>PSU-IP-Port</b>	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
<b>PSU-Accept</b>	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
<b>PSU-Accept-Charset</b>	See above	String	OPT	^.{1,50}\$  E.g. PSU-Accept-Charset: utf-8
<b>PSU-Accept-Encoding</b>	See above	String	OPT	^.{1,50}\$  E.g. PSU-Accept-Encoding: gzip
<b>PSU-Accept-Language</b>	See above	String	OPT	^.{1,50}\$  E.g. PSU-Accept-Language: es-ES
<b>PSU-User-Agent</b>	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

## PSD2 - TPP Technical Design

				Firefox/3.5.5 (.NET CLR 3.5.30729)
<b>PSU-Http-Method</b>	<p>HTTP method used at the PSU – TPP interface, if available.</p> <p>Valid values are:</p> <ul style="list-style-type: none"> <li>• GET</li> <li>• POST</li> <li>• PUT</li> <li>• PATCH</li> <li>• DELETE</li> </ul>	String	OPT	E.g. PSU-Http-Method: POST
<b>PSU-Device-ID</b>	<p>UUID (Universally Unique Identifier) for a device, which is used by the PSU, if available.</p> <p>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.</p>	String	OPT	<p><b>UUID</b></p> <p><math>^{[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\}}\\$</math></p> <p>E.g.</p> <p>PSU-Device-ID: 5b3ab8e8-0fd5-43d2-946e-d75958b172e7</p>
<b>PSU-Geo-Location</b>	The forwarded Geo Location of the corresponding HTTP request between PSU and TPP if available.	String	OPT	<p><b>RFC 2426</b></p> <p><math>^{GEO:[\d]*.[\d]*[;][\d]*.[\d]*\\$}</math></p> <p>E.g.</p> <p>PSU-Geo-Location: GEO:90.023856;25.345963</p>
<b>TPP-Redirect-Preferred</b>	<p>If it equals "true", the TPP prefers a redirect over an embedded SCA approach.</p> <p>If it equals "false", the TPP prefers not to be redirected for SCA. The ASPSP will then choose</p>	Boolean	OPT	E.g. TPP-Redirect-Preferred: true

**PSD2 - TPP Technical Design**

	<p>between the Embedded or the Decoupled SCA approach, depending on the choice of the SCA procedure by the TPP/PSU.</p> <p>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.</p> <p><b>EMBEDDED NOT SUPPORTED IN THIS VERSION</b></p>			
<b>TPP-Redirect-URI</b>	<p>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".</p> <p>It is recommended to always use this header field.</p> <p><b>Remark for Future:</b> This field might be changed to mandatory in the next version of the specification.</p>	String	COND	<p>^.{1,250}\$</p> <p>E.g. TPP-Redirect-URI:"https://tpp.example.es/cb"</p>
<b>TPP-Nok-Redirect-URI</b>	<p>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.</p>	String	OPT	<p>^.{1,250}\$</p> <p>E.g. TPP-Nok-Redirect-URI:"https://tpp.example.es/cb/nok"</p>
<b>Digest</b>	<p>If it equals "true", the</p>	String	MAN	<p>^.{1,100}\$</p>

## PSD2 - TPP Technical Design

	<p>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.</p> <p>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.</p> <p><b>Note:</b> the ASPSP may not take it into account if it does not support it.</p>			<p>E.g. Digest: SHA-256=NzdmZjA4YjY5M2M2NDYyMmVjOWFmMGNmYTZiNTU3MjVmNDI4NTRIMzJkYzE3ZmNmMDE3ZGFmMjhhNTc5OTU3OQ= =</p>
<b>Signature</b>	<p>Is contained if and only if the "Signature" element is contained in the header of the request.</p> <p>See 6.1Signature for more information.</p>	String	MAN	See annexes
<b>TPP-Signature-Certificate</b>	<p>A signature of the request by the TPP on application level.</p> <p>See 6.1Signature for more information.</p>	String	MAN	<p>^.{1,5000}\$</p> <p>E.g. TPP-Signature-Certificate: MIIHgZCCBmugAwIBAgIIZzZvBQlt0UcwDQYJ.....KoZIHvcNAQELBQAwSTELMAkGA1UEBhMCVVMxEzARBgNVBA</p>

### Body

Field	Description	Type	Man.	Format
<b>instructedA</b>	Information on the transfer	Amount	MAN	E.g. "instructedAmount":



## PSD2 - TPP Technical Design

<b>mount</b>	carried out.			{...}
<b>creditorAccount</b>	Creditor account	AccountReference	MAN	E.g. "creditorAccount": {"iban": "ES11111111111111111111"}
<b>creditorName</b>	Creditor's name	String	MAN	^.{1,70}\$ E.g. "creditorName": "Name"
<b>creditorAgent</b>	BIC of the creditor account.	String	OPT	^.{1,12}\$ E.g. "creditorAgent": "XSXHSMMXXX"
<b>creditorAddress</b>	Creditor's address	Address	OPT	E.g. "creditorAddress": {...}
<b>remittanceInformationUnstructured</b>	Additional information	String	OPT	^.{1,140}\$ E.g. "remittanceInformationUnstructured": "Additional information"

### 4.2.1.2 Response

#### Header

Field	Description	Type	Man.	Format
<b>Location</b>	Location of the created resource (if created)	String	MAN	E.g. Location: /v1/payments/{payment-product}/{payment-id}
<b>X-Request-ID</b>	ID of the request, unique to the call, as determined by the initiating party.	String	MAN	<b>UUID</b> ^[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
<b>ASPSP-SCA-Approach</b>	This data element must be contained,	String	COND	E.g. ASPSP-SCA-Approach: REDIRECT

## PSD2 - TPP Technical Design

	<p>if the SCA Approach is already fixed. Possible values are:</p> <ul style="list-style-type: none"> <li>• EMBEDDED</li> <li>• DECOUPLED</li> <li>• REDIRECT</li> </ul> <p>The OAuth SCA approach will be subsumed by REDIRECT.</p>			
--	---	--	--	--

### Body

Field	Description	Type	Man.	Format
<b>transactionStatus</b>	Status of the transaction.  Values defined in annexes in 6.4 Transaction status	String	MAN	<b>ISO 20022</b>  E.g. "transactionStatus": "RCVD"
<b>paymentId</b>	Identifier of the resource that references the payment initiation.	String	MAN	^.{1,36}\$  E.g. "paymentId": "1b3ab8e8-0fd5-43d2-946e-d75958b172e7"
<b>transactionFees</b>	Fees associated with the payment.	Amount	OPT	E.g. "transactionFees": {...}
<b>transactionFeeIndicator</b>	If equal to "true", the transaction will involve a fee depending on the ASPSP or what has been agreed	Boolean		E.g. "transactionFeeIndicator": true

**PSD2 - TPP Technical Design**

	<p>between the ASPSP and the PSU.</p> <p>If equal to "false", the transaction will not involve any additional fee for the PSU.</p>			
<b>_links</b>	<p>List of hyperlinks to be recognised by the TPP. Types supported in this response:</p> <ul style="list-style-type: none"> <li>• <b>scaRedirect</b>: in case of SCA by redirection. Link where the PSU navigator must be redirected by the TPP.</li> <li>• <b>startAuthorisation</b>: if an explicit initiation of the transaction authorisation is necessary (there is no selection of the SCA method)</li> <li>• <b>startAuthorisationWithAuthenticationMethodSelection</b>: link to the authorisation endpoint where the authorisation sub-resource has to be generated while the SCA method is selected. This link is contained</li> </ul>	Links	MAN	E.g. "_links": {...}

## PSD2 - TPP Technical Design

	<p>under the same conditions as the "scaMethods" field</p> <ul style="list-style-type: none"> <li>• self: link to the resource created by this request.</li> <li>• status: link to recover the transaction status.</li> <li>• 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.</li> </ul>			
<b>psuMessage</b>	Text to show to the PSU.	String	OPT	$\wedge.\{1,512\}\$$ E.g. "psuMessage": "Information for the PSU"
<b>tppMessages</b>	Message for the TPP	List<Tpp Message >	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

## **PSD2 - TPP Technical Design**

```
Content-Type: application/json
X-Request-ID: 10391c7e-ad88-49ec-a2ad-00aacb1f6541
Authorization: Bearer 2YotnFZFEjrlzCsicMWpAA
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": "ES22222222222222222222222222222222"
  },
  "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
```

## PSD2 - TPP Technical Design

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

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

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

## 5. DEFINITION OF 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
<b>accounts</b>	Is asking for detailed account information. If the array is empty, the TPP is asking for an accessible account list. This may be restricted in a	List<AccountReference>	OPT	E.g. "accounts": [...]

**PSD2 - TPP Technical Design**

	PSU/ASPSP authorization dialogue. If the array is empty, also the arrays for balances or transactions shall be empty, if used.			
<b>balances</b>	<p>Is asking for balances of the addressed accounts.</p> <p>If the array is empty, the TPP is asking for the balances of all accessible account lists. This may be restricted in a PSU/ASPSP authorization dialogue. If the array is empty, also the arrays for accounts or transactions shall be empty, if used.</p>	List<AccountReference>	OPT	E.g. "balances": [...]
<b>transactions</b>	<p>Is asking for transactions of the addressed accounts.</p> <p>If the array is empty, the TPP is asking for the transactions of all accessible account lists. This may be restricted in a PSU/ASPSP authorization dialogue. If the array is empty, also the arrays for accounts or balances shall be empty, if used.</p>	List<AccountReference>	OPT	E.g. "transactions": [...]
<b>additionalInformation</b>	This attribute will be ignored by the ASPSP	AdditionalInformationAccess	OP	Ej: "additionalInformation": {...}
<b>availableAccounts</b>	Only the value "allAccounts" is	String	OPT	E.g. "availableAccounts":

## PSD2 - TPP Technical Design

	admitted.			"allAccounts"
<b>availableAccountsWithBalances</b>	Only the value "allAccounts" is admitted	String	OPT	E.g. "availableAccountsWithBalances": "allAccounts"
<b>allPsd2</b>	Only the value "allAccounts" is admitted	String	OPT	E.g. "allPsd2": "allAccounts"

### 5.2 AccountDetails

Field	Description	Type	Man.	Format
<b>resourceId</b>	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"
<b>iban</b>	IBAN of the account	String	OPT	E.g. "iban": "ES11111111111111111111"
<b>bban</b>	BBAN of the account if it does not have an IBAN.	String	OPT	E.g. "bban": "20385778983000760236"
<b>msisdn</b>	Alias to access a payment account through a registered mobile phone number.	String	OPT	^.{1,35}\$  E.g. "msisdn": "..."
<b>currency</b>	Account currency.	String	MAN	<b>ISO 4217</b>  E.g. "currency": "EUR"
<b>name</b>	Name of the account given by the bank or the PSU in Online-	String	OPT	^.{1,35}\$  E.g. "name": "Name"



**PSD2 - TPP Technical Design**

	Banking			
<b>ownerName</b>	Name of the legal account owner (In this case, the name of the connected PSU).  For a corporate account, the corporate name is used for this attribute.	String	OPT	^.{1,140}\$  E.g. "ownerName": "Heike Mustermann"
<b>product</b>	Product Name of the Bank for this account, proprietary definition	String	OPT	^.{1,35}\$  E.g. "product": "Main Account"
<b>cashAccountType</b>	Specifies the nature or use of the account.	String	OPT	<b>ExternalCashAccountType1Code de ISO 2002</b>  E.g. "cashAccountType": "CACC"
<b>status</b>	Account status. The value is one of the following: <ul style="list-style-type: none"> <li>enabled: the account is available</li> <li>deleted: account closed</li> <li>blocked: account blocked</li> </ul>	String	OPT	E.g. "status": "enabled"
<b>bic</b>	BIC of the account.	String	OPT	^.{1,12}\$  E.g. "bic": "XSXHXSMXXX"
<b>linkedAccounts</b>	This data attribute is a field, where an ASPSP can name a cash account associated to pending card transactions.	String	OPT	^.{1,70}\$

## PSD2 - TPP Technical Design

<b>usage</b>	Specifies the use of the account. Possible values: <ul style="list-style-type: none"> <li>• PRIV: private personal account</li> <li>• ORGA: business account</li> </ul>	String	OPT	^.{1,4}\$ E.g. "usage": "PRIV"
<b>details</b>	Specifications that might be provided by the ASPSP. <ul style="list-style-type: none"> <li>• Account characteristics</li> <li>• Card characteristics</li> </ul>	String	OPT	^.{1,140}\$
<b>balances</b>	Account balances.	List<Balance>	COND	"balances": [...]
<b>_links</b>	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
<b>iban</b>	IBAN of the account	String	COND	E.g. "iban": "ES11111111111111111111"

## PSD2 - TPP Technical Design

<b>bban</b>	BBAN of the account if it does not have an IBAN.	String	COND	E.g. "bban": "20385778983000760236"
<b>pan</b>	Primary Account Number (PAN) of a card, can be tokenised by the ASPSP due to PCI DSS requirements.	String	COND	^.{1,35}\$ E.g. "pan": "1234567891234567"
<b>maskedPan</b>	Primary Account Number (PAN) of a card in a masked form.	String	COND	^.{1,35}\$ E.g. "maskedPan": "123456*****4567"
<b>msisdn</b>	Alias to access a payment account through a registered mobile phone number.	String	COND	^.{1,35}\$ E.g. "msisdn": "..."
<b>currency</b>	Currency.	String	OPT	<b>ISO 4217</b> E.g. "currency": "EUR"

### 5.4 AccountReport

Field	Description	Type	Man.	Format
<b>booked</b>	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": [{"..}]
<b>pending</b>	Transactions pending in the account.  Not contained if the bookingStatus parameter is established as "booked".	List<Transactions>	OPT	E.g. "pending": [{"..}]

## PSD2 - TPP Technical Design

<b>information</b>	List of standing orders.  Must be included if the bookingStatus parameter is set to "information".	List<Transactions>	OP	Ej: "information":[...]
<b>_links</b>	The following links are accepted in this object: <ul style="list-style-type: none"> <li>• account (MAN)</li> <li>• first (OPT)</li> <li>• next (OPT)</li> <li>• previous (OPT)</li> <li>• last (OPT)</li> </ul>	Links	MAN	E.g. "_links":[...]

### 5.5 AdditionalInformationAccess

Field	Description	Type	Mand.	Format
<b>trustedBeneficiaries</b>	This attribute Will be ignored by the ASPSP	List<AccountReference>	OP	Ej: "trustedBeneficiaries": {...}
<b>ownerName</b>	This attribute Will be ignored by the ASPSP	List<AccountReference>	OP	Ej: "ownerName": {...}

### 5.6 Address

Field	Description	Type	Mand.	Format
<b>street</b>	Street	String	OPT	^.{1,70}\$ E.g. "street": "Example of street"
<b>buildingNumber</b>	Number	String	OPT	E.g. "buildingNumber": "5"
<b>city</b>	City	String	OPT	E.g. "city": "Córdoba"
<b>postalCode</b>	Postcode	String	OPT	E.g. "postalCode": "14100"

## PSD2 - TPP Technical Design

<b>country</b>	Country code	String	MAN	<b>ISO 3166</b> E.g. "country": "ES"
----------------	--------------	--------	-----	---

### 5.7 Amount

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

### 5.8 AuthenticationObject

Field	Description	Type	Mand.	Format
<b>authenticationType</b>	Type of authentication method. Possible values: <ul style="list-style-type: none"> <li>SMS_OTP</li> <li>CHIP_OTP</li> <li>PHOTO_OTP</li> <li>PUSH_OTP</li> </ul> See annex 6.6 Types of authentication for more information.	String	MAN	E.g. "authenticationType": "SMS_OTP"
<b>authenticationVersion</b>	Version of the tool associated with the authenticationType.	String	COND	E.g. "authenticationVersion": "1.0"
<b>authenticationMethodId</b>	Id of the authentication method provided by the ASPSP.	String	MAN	^.{1,35}\$

## PSD2 - TPP Technical Design

<b>name</b>	Name of the authentication method defined by the PSU in the ASPSP online banking.  It may also be a description provided by the ASPSP.  If the TPP has it available, it must present it to the PSU.	String	MAN	E.g. "name": "SMS OTP to phone 666777888"
<b>explanation</b>	Detailed information about the SCA method for the PSU	String	OPT	

### 5.9 Aspsp

Field	Description	Type	Man.	Format
<b>bic</b>	BIC code of the ASPSP.	String	MAN	E.g. "bic": "XXXXXXXXXXXX"
<b>name</b>	Name of the ASPSP	String	OPT	E.g. "name": "ASPSP Name"
<b>apiName</b>	Name of the ASPSP used in the request PATH.  <b>Note:</b> Only available for V2 of the list of available ASPSPs.	String	COND	E.g. "apiName": "nombreBanco"

### 5.10 Balance

Field	Description	Type	Man.	Format
<b>balanceAmount</b>	Amount and currency of the balance	Amount	MAN	E.g. "balanceAmount": {...}
<b>balanceTy</b>	Type of balance.	String	MAN	E.g. "balanceType":

## PSD2 - TPP Technical Design

<b>pe</b>	Values supported in the annex 6.7Balance type			"closingBooked"
<b>creditLimitIncluded</b>	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
<b>lastChangeDateTime</b>	Date of the last action carried out on the account.	String	OPT	<b>ISODateTime</b> E.g. "lastChangeDateTime": "2017-10-25T15:30:35.035Z"
<b>referenceDate</b>	Reference date of the balance	String	OPT	<b>ISODate</b> E.g. "referenceDate": "2017-10-25"
<b>lastCommittedTransaction</b>	entryReference of the last committed transaction to support the TPP in identifying whether all PSU transactions are already known.	String	OPT	<b>Max35Text</b> E.g. "lastCommittedTransaction": "1234-asd-567"

### 5.11 ExchangeRate

Field	Description	Type	Man.	Format
<b>currencyFrom</b>	Source currency	String	MAN	E.g. "currencyFrom": "USD"
<b>rate</b>	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"
<b>currencyTo</b>	Destination currency	String	MAN	E.g. "currencyTo": "EUR"

## PSD2 - TPP Technical Design

<b>rateDate</b>	Date of fee	String	MAN	<b>ISODateTame</b>
<b>rateContract</b>	Reference to the fee contract	String	OPT	

### 5.12 Href

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

### 5.13 Links

Field	Description	Type	Man.	Format
<b>scaRedirect</b>	URL used to carry out the SCA, through redirecting the PSU navigator.	Href	OPT	E.g. "scaRedirect": {...}
<b>startAuthorisation</b>	Link to the endpoint where the authorisation of the transaction or the authorisation of the cancellation transaction must be initiated.	Href	OPT	E.g. "startAuthorisation":{...}
<b>startAuthorisationWithAuthenticationMethodSelection</b>	Link to the endpoint where the authorisation of a transaction or cancellation	Href	OPT	E.g. "startAuthorisationWithAuthenticationMethodSelection ": {...}



## PSD2 - TPP Technical Design

<b>on</b>	transaction must be initiated, where the SCA method must be informed with the corresponding call.			
<b>selectAuthenticationMethod</b>	Link where the TPP may select the 2-factor authentication method applicable for the PSU, if there is more than one.	Href	OPT	E.g. "selectAuthenticationMethod": {...}
<b>self</b>	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": {...}
<b>status</b>	The link to recover the transaction status. For example, payment initiation status.	Href	OPT	E.g. "status": {...}
<b>account</b>	Link to the resource that provides the information on an account.	Href	OPT	E.g. "account": {...}
<b>balances</b>	Link to the resource that provides the account balances.	Href	OPT	E.g. "balances": {...}
<b>transactions</b>	Link to the resource that provides the account activity.	Href	OPT	E.g. "transactions": {...}
<b>first</b>	Navigation link for reports on paginated accounts.	Href	OPT	E.g. "first": {...}
<b>next</b>	Navigation link for reports on paginated accounts.	Href	OPT	E.g. "next": {...}
<b>previous</b>	Navigation link for reports on paginated accounts.	Href	OPT	E.g. "previous": {...}

## PSD2 - TPP Technical Design

<b>last</b>	Navigation link for reports on paginated accounts.	Href	OPT	E.g. "last": {...}
<b>download</b>	Download link for large AIS data packages. Only for camt-data.	Href	OPT	E.g. "download": {...}

### 5.14 PaymentExchangeRate

Field	Description	Type	Man.	Format
<b>unitCurrency</b>	Currency in which the rate of exchange is expressed in a currency exchange. In the example 1EUR = xxxCUR, the unit currency is EUR.	String	OPT	<b>ISO 4217</b> E.g. "unitCurrency": "EUR"
<b>exchangeRate</b>	Factor used to convert an amount from one currency into another. This reflects the price at which one currency was bought with another currency.	String	OPT	E.g. "exchangeRate": "1.3"
<b>contractIdentification</b>	Unique identification to unambiguously identify the foreign exchange contract.	String	OPT	E.g. "contractIdentification": "1234-geru-23"
<b>rateType</b>	Specifies the type used to complete the currency exchange. Permitted values: <ul style="list-style-type: none"> <li>• SPOT</li> <li>• SALE</li> </ul>	String	OPT	E.g. "rateType": "SPOT"

## PSD2 - TPP Technical Design

	<ul style="list-style-type: none"> <li>• AGRD</li> </ul>			
--	--	--	--	--

### 5.15 ReportExchangeRate

Field	Description	Type	Man.	Format
<b>sourceCurrency</b>	Currency from which an amount is to be converted in a currency conversion.	String	MAN	<b>ISO 4217</b> E.g. "sourceCurrency": "EUR"
<b>exchangeRate</b>	Factor used to convert an amount from one currency into another. This reflects the price at which one currency was bought with another currency.	String	MAN	E.g. "exchangeRate": "1.3"
<b>unitCurrency</b>	Currency in which the rate of exchange is expressed in a currency exchange. In the example 1EUR = xxxCUR, the unit currency is EUR.	String	MAN	<b>ISO 4217</b> E.g. "unitCurrency": "EUR"
<b>targetCurrency</b>	Currency into which an amount is to be converted in a currency conversion.	String	MAN	<b>ISO 4217</b> E.g. "targetCurrency": "USD"
<b>quotationDate</b>	Date at which an exchange rate is quoted.	String	MAN	<b>ISODate</b> E.g. "quotationDate": "2019-01-24"
<b>contractIdentification</b>	Unique identification to unambiguously identify the foreign exchange contract.	String	OPT	E.g. "contractIdentification": "1234-qeru-23"

### 5.16 SinglePayment

## PSD2 - TPP Technical Design

Field	Description	Type	Man.	Format
<b>instructed Amount</b>	Information on the transfer carried out.	Amount	MAN	E.g. "instructedAmount": {...}
<b>debtorAccount</b>	The debtor's account. <b>Note:</b> this field may be optional in some services such as bulk payments	Account Reference	MAN	E.g. "debtorAccount": { "iban": "ES11111111111111111111111111111111" }
<b>creditorAccount</b>	Creditor account	Account Reference	MAN	E.g. "creditorAccount": { "iban": "ES11111111111111111111111111111111" }
<b>creditorName</b>	Creditor's name	String	MAN	^.{1,70}\$ E.g. "creditorName": "Name"
<b>creditorAgent</b>	BIC of the creditor account.	String	OPT	E.g. "creditorAgent": "XSXH XSMMXXX"
<b>creditorAddress</b>	Creditor's address	Address	OPT	E.g. "creditorAddress": {...}
<b>chargeBearer</b>	Only for payment-product: <ul style="list-style-type: none"> <li>target-2-payments</li> <li>cross-border-credit-transfers</li> </ul> Permitted values: <ul style="list-style-type: none"> <li>DEBT</li> <li>CRED</li> <li>SHAR</li> <li>SLEV</li> </ul>	String	OPT	<b>ChargeBearerType1Code of ISO 20022</b> E.g. "chargeBearer": "SLEV"
<b>remittanceInformationUnstructured</b>	Additional information. See annex 6.9 Good practice guide remittanceInformationUnstructured field for recommendations on use.	String	OPT	^.{1,140}\$ E.g. "remittanceInformationUnstructured": "Additional information"
<b>requestedExecution</b>	Execution date requested for future	String	COND	<b>ISODate</b>

## PSD2 - TPP Technical Design

<b>Date</b>	payments. <b>Note:</b> only if supported by the ASPSP			
<b>requested ExecutionTime</b>	Requested time of execution. <b>Note:</b> only if supported by the ASPSP	String	COND	<b>ISODateTime</b>

### 5.17 StandingOrderDetails

Field	Description	Type	Mand.	Format
<b>startDate</b>	The first applicable day of execution starting from this date the first payment was/will be executed.	String	OB	<b>ISODate</b> Ej: "startDate":"2018-12-20"
<b>endDate</b>	The last applicable day of execution If not given, it is an infinite standing order.	String	OP	<b>ISODate</b> Ej: "endDate":"2019-01-20"
<b>executionRule</b>	"following" or "preceding" supported as values. This data attribute defines the behavior when a transaction date resulting from a standing order falls on a weekend or bank holiday. The payment is then executed either the "preceding" or "following" working day.	String	OP	Ej: "executionRule":"following"
<b>withinAMonthFlag</b>	This element is only used in case of frequency equals	Boolean	OP	Ej: "withinAMonthFlag":

**PSD2 - TPP Technical Design**

	<p>"monthly".</p> <p>If this element equals false it has no effect. If this element equals true, then the execution rule is overruled if the day of execution would fall into a different month using the execution rule.</p> <p>Example: executionRule equals "preceding", dayOfExecution equals "02" and the second of a month is a Sunday. In this case, the transaction date would be on the last day of the month before. This would be overruled if withinAMonthFlag equals true and the payment is processed on Monday the third of the Month.</p> <p><b>Remark:</b> This attribute is rarely supported in the market.</p>			true
<b>frequency</b>	The frequency of the recurring payment resulting from this standing order.	String	OB	<p><b>EventFrequency7Code de ISO 20022</b></p> <p>Ej: "frequency":"Monthly"</p>
<b>monthsOfExecution</b>	The format is following the regular expression $\backslash d\{1,2\}$ . The array is restricted to 11 entries. The values contained In the array entries shall all	List<String>	COND	Ej:"monthsOfExecution":["1", "4", "10"]

**PSD2 - TPP Technical Design**

	<p>be different and the maximum value of one entry is 12.</p> <p>This attribute is contained if and only if the frequency equals "MonthlyVariable".</p> <p>Example: An execution on January, April and October each year is addressed by ["1", "4", "10"].</p>			
<b>multiplicator</b>	<p>This is multiplying the given frequency resulting the exact frequency, e.g.</p> <p>Frequency=weekly and multiplicator=3 means every 3 weeks.</p> <p><b>Remark:</b> This attribute is rarely supported in the market.</p>	Integer	OP	Ej: "multiplicator": 3
<b>dayOfExecution</b>	<p>"31" is ultimo.</p> <p>The format is following the regular expression <math>\backslash d\{1,2\}</math>.</p> <p>Example: The first day is addressed by "1".</p> <p>The date is referring to the time zone of the ASPSP.</p>	String	COND	$\backslash d\{1,2\}$ Ej: "dayOfExecution": "01"
<b>limitAmount</b>	<p>Amount limit for fund skimming, e.g. skim all funds above this limit to savings account, i.e. typically a specific periodic payments with fixed</p>	Amount	COND	Ej: "limitAmount": {...}

## PSD2 - TPP Technical Design

	<p>remaining amount rather than fixed transaction amount. Amount may be zero as well as below zero, i.e. negative.</p> <p>Constraints: transactionAmount needs to be zero and bankTransactionCode needs to specify PMNT-MCOP-OTHR for fund skimming</p>			
--	---	--	--	--

### 5.18 StructuredAdditionalInformation

Field	Description	Type	Man.	Format
<b>standingOrderDetails</b>	Details of underlying standing orders.	StandingOrders	OB	Ej: "standingOrderDetails": {...}

### 5.19 TppMessage

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



## PSD2 - TPP Technical Design

	text.			text"
--	-------	--	--	-------

### 5.20 Transactions

Field	Description	Type	Man.	Format
<b>transactionId</b>	Can be used as access-ID in the API, where more details on a transaction is offered.	String	OPT	E.g. "transactionId":"123-asdf-456"
<b>entryReference</b>	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"
<b>endToEndId</b>	Unique end-to-end identifier.	String	OPT	^.{1,35}\$ E.g. "endToEnd":"..."
<b>mandateId</b>	Identification of Mandates, e.g. a SEPA Mandate ID	String	OPT	^.{1,35}\$ E.g. "mandateId":"..."
<b>checkId</b>	Cheque identifier	String	OPT	^.{1,35}\$ E.g. "checkId":"..."
<b>creditorId</b>	Identification of the beneficiary. For example, an ID of a SEPA beneficiary.	String	OPT	^.{1,35}\$ E.g. "creditorId":"..."
<b>bookingDate</b>	The Date when an entry is posted to an account on the ASPSPs books.	String	OPT	<b>ISODate</b> "bookingDate":"2017-10-23"
<b>valueDate</b>	The Date at which assets become available to the account owner in case of a credit	String	OPT	<b>ISODate</b> E.g. "valueDate":"2017-10-23"
<b>transactionAmount</b>	The amount of the transaction as billed to the account.	Amount	MAN	E.g. "transactionAmount": [{}]

## PSD2 - TPP Technical Design

<b>currencyExchange</b>	Exchange rate	List<ReportExchangeRate>	OPT	E.g. "currencyExchange": [ {... } ]
<b>creditorName</b>	Name of the creditor if a "Debited" transaction	String	OPT	^.{1,70}\$ E.g. "creditor": "Nombre"
<b>creditorAccount</b>	Creditor's account.	AccountReference	COND	E.g. "creditorAccount": { ... }
<b>ultimateCreditor</b>	Ultimate creditor.	String	OPT	^.{1,70}\$ E.g. "ultimateCreditor": "Nombre"
<b>debtorName</b>	Name of the debtor if a "Credited" transaction	String	OPT	^.{1,70}\$ E.g. "debtor": "Nombre"
<b>debtorAccount</b>	The debtor's account.	AccountReference	COND	E.g. "debtorAccount": { ... }
<b>ultimateDebtor</b>	Name of ultimate debtor.	String	OPT	^.{1,70}\$ E.g. "ultimateDebtor": "Nombre"
<b>remittanceInformationUnstructured</b>	Field to include additional information on the remittance.	String	OPT	^.{1,140}\$ E.g. "remittanceInformationUnstructured": "Additional information"
<b>remittanceInformationStructured</b>	Reference as contained in the structured remittance reference structure	String	OPT	^.{1,140}\$ E.g. "remittanceInformationStructured": "Ref. 12344567"
<b>additionalInformationStructured</b>	Is used if and only if the bookingStatus entry equals "information". Every active standing order related to the dedicated payment account result into one entry.	Structured Additional Information	OP	Ej: "additionalInformationStructured": { ... }
<b>purposeCode</b>	ExternalPurpose1Code	String	OPT	<b>ExternalPurpose1Code</b>

**PSD2 - TPP Technical Design**

de	e ISO 20022			de ISO 20022
<b>bankTransactionCode</b>	<p>Bank transaction code as used by the ASPSP and using the sub elements of this structured code defined by ISO20022.</p> <p>For standing order reports the following codes are applicable:</p> <p>"PMNT-ICDT-STDO" for credit transfers,</p> <p>"PMNT-IRCT-STDO" for instant credit transfers</p> <p>"PMNT-ICDT-XBST" for cross-border credit transfers</p> <p>"PMNT-IRCT-XBST" for cross-border real time credit transfers and</p> <p>"PMNT-MCOP-OTHR" for specific standing orders which have a dynamical amount to move left funds e.g. on month end to a saving account.</p>	String	OPT	<p><b>ExternalBankTransactionDomain1Code</b></p> <p>Ej: "bankTransactionCode" : "PMNT-ICDT-STDO"</p>
<b>proprietaryBankTransactionCode</b>	Proprietary bank transaction code	String	OPT	^.{1,35}\$
<b>_links</b>	<p>Possible values:</p> <ul style="list-style-type: none"> <li>transactionDetails</li> </ul>	Links	OPT	E.g. "_links": {...}

## PSD2 - TPP Technical Design

### 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
<b>keyId</b>	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=YYYYYYYYYYYYYYYY" Where "XXX" is the serial number of the certificate in hexadecimal code and "YYYYYYYYYYYYYYYY" is the full "Distinguished Name" of the certification authority.
<b>Algorithm-ID</b>	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.
<b>Headers</b>	String	OPT	Is used to specify the list of HTTP headers	The required fields to be signed are:

## PSD2 - TPP Technical Design

			<p>included when the signature is generated for the message.</p> <p>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.</p> <p>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.</p>	<ul style="list-style-type: none"> <li>• digest</li> <li>• x-request-id</li> </ul> <p>Conditionally, if they travel and are supported, they must include:</p> <ul style="list-style-type: none"> <li>• psu-id</li> <li>• psu-corporate-id</li> <li>• tpp-redirect-uri</li> </ul>
<b>Signature</b>	String	MAN	<p>The "signature" parameter must be in Base64 according to RFC 4648.</p> <p>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.</p>	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"
```

## **PSD2 - TPP Technical Design**

```
    },  
    "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:

## **PSD2 - TPP Technical Design**

- Hexadecimal:  
A5F1CF405B28E44ED29507E0F64495859BA877893D2A714512D16CE3BD8  
BE562
- Base64: pfHPQFso5E7SIQfg9kSVhZuod4k9KnFFEtFs472L5WI=

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

SHA256=pfHPQFso5E7SIQfg9kSVhZuod4k9KnFFEtFs472L5WI=

The headers you have so far are:

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

Digest=SHA256=pfHPQFso5E7SIQfg9kSVhZuod4k9KnFFEtFs472L5WI=

### **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=pfHPQFso5E7SIQfg9kSVhZuod4k9KnFFEtFs472L5WI=

## **PSD2 - TPP Technical Design**

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:

```
la8LV3Fny2so4c400kYFtZvr1mOkOVY1n87iKfIggEkXQjZNcyjp9fFkNtQc+5ZVNESdiq
KG8xrawYa5gAm46CvcKChNTPaakiEJHcXM5RZPWN0Ns5HjV5mUY2QzD+g5mwqcW
vXtBr1vg0bZKN8Zt3+uJMN37NQg9tJNE2yKIJIEPIAYOjC2PA/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=pfHPQFso5E7SIQfg9kSVhZuod4k9KnFFEtFs472L5WI=
```

```
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="
```

```
la8LV3Fny2so4c400kYFtZvr1mOkOVY1n87iKfIggEkXQjZNcyjp9fFkNtQc+5ZVNESdiq
KG8xrawYa5gAm46CvcKChNTPaakiEJHcXM5RZPWN0Ns5HjV5mUY2QzD+g5mwqcW
vXtBr1vg0bZKN8Zt3+uJMN37NQg9tJNE2yKIJIEPIAYOjC2PA/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:



## **PSD2 - TPP Technical Design**

<b>HTTP code</b>	<b>Description</b>
<b>200 OK</b>	<p>PUT, GET Response Codes</p> <p>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.</p> <p>The POST for a Funds request will also return 200 since it does not create a new resource.</p> <p>DELETE Response Code where a payment resource has been cancelled successfully and no further cancellation authorisation is required.</p>
<b>201 Created</b>	<p>POST response code where Payment Initiation or Consent Request was correctly performed.</p>
<b>202 Accepted</b>	<p>DELETE response code, where a payment resource can be cancelled in general, but where a cancellation authorisation is needed in addition.</p>
<b>204 No Content</b>	<p>DELETE response code where a consent resource was successfully deleted. The code indicates that the request was performed, but no content was returned.</p> <p>Also used in DELETE requests of a payment initiation where authentication is not needed.</p>
<b>400 Bad Request</b>	<p>Validation error occurred. This code will cover malformed syntax in request or incorrect data in payload.</p>
<b>401 Unauthorised</b>	<p>The TPP or the PSU is not correctly authorized to perform the request. Retry the request with correct authentication information.</p>
<b>403 Forbidden</b>	<p>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.</p>
<b>404 Not found</b>	<p>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.</p>

## PSD2 - TPP Technical Design

	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.
<b>405 Method Not Allowed</b>	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.
<b>406 Not Acceptable</b>	The ASPSP cannot generate the content that the TPP specified in the Accept header.
<b>408 Request Timeout</b>	The server is still working correctly, but an individual request has timed out.
<b>409 Conflict</b>	The request could not be completed due to a conflict with the current state of the target resource.
<b>415 Unsupported Media Type</b>	The TPP has supplied a media type which the ASPSP does not support.
<b>429 Too Many Requests</b>	The TPP has exceeded the number of requests allowed by the consent or by the RTS.
<b>500 Internal Server Error</b>	Internal server error occurred.
<b>503 Service Unavailable</b>	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
<b>SIGNATURE CERTIFICATE</b>	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

## PSD2 - TPP Technical Design

		KED	blocked by the ASPSP or the related NCA.
	401	CERTIFICATE_REVO KED	Signature/corporate seal certificate has been revoked by QSTP.
	401	CERTIFICATE_MISSI NG	Signature/corporate seal certificate was not available in the request but is mandated for the corresponding.
<b>SIGNATUR E</b>	401	SIGNATURE_INVALI D	Application layer eIDAS Signature for TPP authentication is not correct.
	401	SIGNATURE_MISSIN G	Application layer eIDAS Signature for TPP authentication is mandated by the ASPSP but is missing.
<b>GENERAL</b>	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_C ONSISTENT	Parameters submitted by TPP are not consistent. This applies only for query parameters.
	400	PARAMETER_NOT_S UPPORTED	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

**PSD2 - TPP Technical Design**

			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.

**PSD2 - TPP Technical Design**

	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) 400 (if goes in payload)	RESOURCE_UNKNOWN	The addressed resource is unknown relative to the TPP.
	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 additional authorisation.
<b>OAuth2</b>	302	invalid_request	The request is not well formed because there are parameters missing, value not supported, or

**PSD2 - TPP Technical Design**

			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

## PSD2 - TPP Technical Design

			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.
<b>PIS</b>	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.
<b>AIS</b>	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

## PSD2 - TPP Technical Design

			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.
<b>FCS</b>	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
<b>ACCC</b>	AcceptedSettlementCompleted	Settlement on the creditor's account has been completed.
<b>ACCP</b>	AcceptedCustomerProfile	Preceding check of technical validation was successful. Customer profile check was also successful.
<b>ACFC</b>	AcceptedFundsChecked	Pre-ceeding check of technical validation and customer profile was successful and an automatic funds check was positive . <b>Remark:</b> This code is accepted as new code by ISO20022.
<b>ACSC</b>	AcceptedSettlementCompleted	Settlement on the debtor's account has been completed. <b>Usage:</b> this can be used by the first agent to report to the debtor that the transaction has been completed. <b>Warning:</b> this status is provided for transaction status reasons, not for financial



## PSD2 - TPP Technical Design

		information. It can only be used after bilateral agreement
<b>ACSP</b>	AcceptedSettlementInProcess	All preceding checks such as technical validation and customer profile were successful and therefore the payment initiation has been accepted for execution.
<b>ACTC</b>	AcceptedTechnicalValidation	Authentication and syntactical and semantical validation are successful
<b>ACWC</b>	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.
<b>ACWP</b>	AcceptedWithoutPosting	Payment instruction included in the credit transfer is accepted without being posted to the creditor customer's account.
<b>RCVD</b>	Received	Payment initiation has been received by the receiving agent.
<b>PATC</b>	PartiallyAcceptedTechnicalCorrect	The payment initiation needs multiple authentications, where some but not yet all have been performed. Syntactical and semantical validations are successful.  <b>Remark:</b> This code is accepted as new code by ISO20022.
<b>PDNG</b>	Pending	Payment initiation or individual transaction included in the payment initiation is pending. Further checks and status update will be performed.
<b>RJCT</b>	Rejected	Payment initiation or individual transaction included in the payment initiation has been rejected.
<b>CANC</b>	Cancelled	Payment initiation has been cancelled before execution  <b>Remark:</b> This code is accepted as new code by ISO20022.
<b>PART</b>	PartiallyAccepted	A number of transactions have been accepted, whereas another number of transactions have not yet achieved

## PSD2 - TPP Technical Design

		<p>'accepted' status.</p> <p><b>Remark:</b> 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.</p>
--	--	--

### 6.5 Consent status

Code	Description
<b>received</b>	The consent data have been received and are technically correct. The data is not authorised yet.
<b>rejected</b>	The consent data have been rejected e.g. since no successful authorisation has taken place.
<b>partiallyAuthorised</b>	The consent is due to a multi-level authorisation, some but not all mandated authorisations have been performed yet.
<b>valid</b>	The consent is accepted and valid for GET account data calls and others as specified in the consent object.
<b>revokedByPsu</b>	The consent has been revoked by the PSU towards the ASPSP.
<b>expired</b>	The consent expired.
<b>terminatedByTpp</b>	The corresponding TPP has terminated the consent by applying the DELETE method to the consent resource.

### 6.6 Types of authentication

Code	Description
<b>SMS_OTP</b>	An SCA method, where an OTP linked to the transaction to be authorised is sent to the PSU through a SMS channel.
<b>CHIP_OTP</b>	An SCA method, where an OTP is generated by a chip card, e.g. an TOP derived from an EMV cryptogram. To contact the card, the PSU normally needs a (handheld) device. With this device, the PSU either reads the challenging data through a visual interface like flickering or the PSU types in the challenge

## PSD2 - TPP Technical Design

	through the device key pad. The device then derives an OTP from the challenge data and displays the OTP to the PSU.
<b>PHOTO_OTP</b>	An SCA method, where the challenge is a QR code or similar encoded visual data which can be read in by a consumer device or specific mobile app.  The device resp. the specific app then derives an OTP from the visual challenge data and displays the OTP to the PSU.
<b>PUSH_OTP</b>	An OTP is pushed to a dedicated authentication APP and displayed to the PSU.

### 6.7 Balance type

Code	Description
<b>closingBooked</b>	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.
<b>expected</b>	Balance composed of booked entries and pending items known at the time of calculation, which projects the end of day balance if everything is booked on the account and no other entry is posted.
<b>openingBooked</b>	Book balance of the account at the beginning of the account reporting period. It always equals the closing book balance from the previous report.
<b>interimAvailable</b>	Available balance calculated in the course of the account 'servicer's business day, at the time specified, and subject to further changes during the business day. The interim balance is calculated on the basis of booked credit and debit items during the calculation time/period specified.
<b>interimBooked</b>	Balance calculated in the course of the account servicer's business day, at the time specified, and subject to further changes during the business day. The interim balance is calculated on the basis of booked credit and debit items during the calculation time/period specified.

## PSD2 - TPP Technical Design

<b>forwardAvailable</b>	Forward available balance of money that is at the disposal of the account owner on the date specified.
-------------------------	--

### 6.8 Charge Bearer

Code	Description
<b>DEBT</b>	All transaction charges are to be borne by the debtor.
<b>CRED</b>	All transaction charges are to be borne by the creditor.
<b>SHAR</b>	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.
<b>SLEV</b>	Charges are to be applied following the rules agreed in the service level and/or scheme.

### 6.9 Good practice guide

#### 6.9.1 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
<b>/DNR/</b>	Debtor's alias
<b>/CNR/</b>	Creditor's alias. (we recommend sending the merchant's FUC)

## **PSD2 - TPP Technical Design**

<b>/DOC/</b>	Reference data for the corresponding request. (The Hub mobilises X-Request-Id of the TPP)
<b>/TXT/</b>	Additional text/item

### **Example**

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

### **6.9.2 Life of the scaRedirect link**

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

## **PSD2 - TPP Technical Design**

### **6.10 Annex exposed services Entity**

The architecture designed for the provision of payment service providers of the services linked to the PSD2 directive follow all the functional and technical specifications of the Redsys API.

The functionalities supported in our Entity configuration are the following:

#### **PIS: Payment initiation service**

- Payment initiation
  - sepa-credit-transfers
  - instant-sepa-credit-transfers (\*)
  - target-2-payments (\*)
  - cross-border-credit-transfers
- Payment initiation for future dated payments
- Initiation for standing orders for recurring/periodic payments
- Get payment status
- Get payment initiation
- Payment cancellation
- Multilevel sca for payments
- Payment initiation for bulk payments
- SVA: payment initiation with list of available accounts for PISP

(\*)Functionality not available since you do not have the operation in your online banking.

#### **AIS: Establish account information consent service**

- Get Consent Status
- Retrieve Consent Information
- Remove Consent

#### **AIS: Account Data Reading Service**

- Accounts list Reading
- Reading account details
- Reading Balance
- Reading of Transaction
- List of standing orders

#### **FCS: Fund Confirmation Service**

- Confirmation of funds

## ***PSD2 - TPP Technical Design***

### **INFRASTRUCTURE:**

- Oauth2 as pre-step
- Obtain Authorization
- Obtain access token
- Token renewal request
- Login access through biometrics

The **functionalities not supported** in the configuration of our entity as they are not currently available in our electronic banking, are the following:

- AIS: Card Data Reading
- SIGNING BASKET: Simultaneous signing of multiple operations