Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
PSU-IP-Address	String	Conditional	The forwarded IP Address header field consists of the corresponding HTTP request IP Address field between PSU and TPP. It shall be contained if and only if this request was actively initiated by the PSU.
Consent-ID	String	Mandatory	Identification of the corresponding consent as granted by the PSU.
Authorization	String	Conditional	Is contained only, if an OAuth2 based authentication was performed in a pre-step or an OAuth2 based SCA was performed in the related consent authorisation.

Request Body

No request body.

Response Header

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

Response Body

Attribute	Type	Condition	Description
cardAccount	Account Reference	optional	Identifier of the addressed card 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.

Attribute	Type	Condition	Description
debitAccounting	Boolean	Optional	If true, the amounts of debits on the reports are quoted positive with the related consequence for balances. If false, the amount of debits on the reports are quoted negative.
balances	Array of Balance	Mandatory	A list of balances regarding this card account, e.g. the current balance, the last booked balance.

Example

```
{
  "cardAccount": {"maskedPan": "525412******3241"},
  "debitAccounting": true,
  "balances": [
    {
      "balanceAmount": { "currency": "EUR", "amount": "14355.78"},
      "balanceType": "interimBooked"
    },{
      "balanceAmount": { "currency": "EUR", "amount": "4175.86"},
      "balanceType": "nonInvoiced",
    }
  ]
}
```

6.6.4 Read Card Account Transaction List

Call

```
GET /v1/card-accounts/{account-id}/transactions {query-parameters}
```

Reads account data from a given card account addressed by "account-id".

Remark: This account-id can be a tokenised identification due to data protection reason since the path information might be logged on intermediary servers within the ASPSP sphere. This account-id then can be retrieved by the "GET Card Account List" call, cp. Section 6.6.1.

Note: The ASPSP might use standard compression methods on application level for the response message as indicated in the content encoding header.

Remark: Please note that the PATH might be already given in detail by the response of the "Read Card Account List" call within the _links subfield.

Path Parameters

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

Query Parameters

Attribute	Type	Condition	Description
dateFrom	ISODate	Conditional	Starting date (inclusive the date dateFrom) of the transaction list, mandated if no delta access is required
dateTo	ISODate	Optional	End date (inclusive the data dateTo) of the transaction list, default is "now" if not given.
bookingStatus	String	Mandatory	Permitted codes are "booked", "pending" and "both" "booked" shall be supported by the ASPSP. To support the "pending" and "both" feature is optional for the ASPSP, Error code if not supported in the online banking frontend

Attribute	Type	Condition	Description
deltaList	Boolean	Optional if supported by API provider	This data attribute is indicating that the AISP is in favour to get all transactions after the last report access for this PSU on the addressed account. This delta indicator might be rejected by the ASPSP if this function is not supported.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
PSU-IP-Address	String	Conditional	The forwarded IP Address header field consists of the corresponding HTTP request IP Address field between PSU and TPP. It shall be contained if and only if this request was actively initiated by the PSU.
Consent-ID	String	Mandatory	Identification of the consent for this access as granted by the PSU.
Authorization	String	Conditional	Is contained only, if an OAuth2 based authentication was performed in a pre-step or an OAuth2 based SCA was performed in the related consent authorisation.

Request Body

No request body.

Response Code

HTTP Response Code equals 200.

Response Header

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

Response Body

Attribute	Type	Condition	Description
cardAccount	Account Reference	optional	Identifier of the addressed card 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.
debitAccounting	Boolean	Optional	If true, the amounts of debits on the reports are quoted positive with the related consequence for balances. If false, the amount of debits on the reports are quoted negative.
cardTransactions	Card Account Report	Optional	JSON based account report.
balances	Array of Balance	Optional	A list of balances regarding this account, which might be restricted to the current balance.
_links	Links	Optional	A list of hyperlinks to be recognised by the TPP. Type of links admitted in this response: "download": a link to a resource, where the transaction report might be downloaded from in case where transaction reports have a huge size.

Example

```
GET https://api.testbank.com/psd2/v1/card-accounts/3d9a81b3-a47d-4130-8765-
a9c0ff861b99/transactions?dateFrom=2017-10-01&dateTo= 2017-10-30
Accept: application/json, text/plain;q=0.9, application/xml;q=0.8
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7721
Consent-ID:             123cons456
```

Response (Example 1)

Response in JSON format for an access on a regular account

```
HTTP/1.x 200 Ok
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7757
Date:                   Sun, 06 Aug 2017 15:05:47 GMT
Content-Type:           application/json

{
  "cardAccount": {
    "maskedPan": "525412******3241"
  },
  "debitAccounting": true,
  "cardTransactions": {
    "booked": [
      {
        "cardTransactionId": "201710020036959",
        "transactionAmount": { "currency": "EUR", "amount": "256.67" },
        "transactionDate": "2017-10-25",
        "bookingDate": "2017-10-26",
        "originalAmount": { "currency": "SEK", "amount": "2499" },
        "cardAcceptorAddress": {
          "townName": "STOCKHOLM",
          "country": "SE"
        },
        "maskedPan": "525412******3241",
        "proprietaryBankTransactionCode": "PURCHASE",
        "invoiced": false,
        "transactionDetails": "WIFIMARKET.SE"
      }, {
        "cardTransactionId": "201710020091863",
        "transactionAmount": { "currency": "EUR", "amount": "10.72" },
        "transactionDate": "2017-10-25",
        "bookingDate": "2017-10-26",
        "originalAmount": { "currency": "SEK", "amount": "99" },
        "cardAcceptorAddress": {
          "townName": "STOCKHOLM",
          "country": "SE"
        },
```

```
        "maskedPan": "525412******8999",
        "proprietaryBankTransactionCode": "PURCHASE",
        "invoiced": false,
        "transactionDetails": "ICA SUPERMARKET SKOGHA"
      }
    ],
    "pending": [ ],
    "_links": {
      "cardAccount": {
        "href": "/psd2/v1/card-accounts/3d9a81b3-a47d-4130-8765-
a9c0ff861b99"
      }
    }
  }
}
```

7 Processes used commonly in AIS and PIS Services

Processes on starting authorisations, update PSU identification or PSU authentication data and explicit authorisation of transactions by using SCA are very similar in PIS and AIS services. The API calls supporting these processes are described in the following independently from the service/endpoint. For reasons of clarity, the endpoints are defined always for the Payment Initiation Service, the Payment Cancellation, the Signing Basket function and the Account Information Service separately. These processes usually are used following a hyperlink of the ASPSP. The usage is defined at the beginning of the following sections.

7.1 Start Authorisation Process

Usage

The start authorisation process is a process which is needed for creating a new authorisation or cancellation sub-resource. This applies in the following scenarios:

- The ASPSP has indicated with an "startAuthorisation" hyperlink in the pre-ceeding Payment Initiation Response that an explicit start of the authorisation process is needed by the TPP. The "startAuthorisation" hyperlink can transport more information about data which needs to be uploaded by using the extended forms
  - "startAuthorisationWithPsuIdentfication",
  - "startAuthorisationWithPsuAuthentication",
  - "startAuthorisationWithEncryptedPsuAuthentication",
  - "startAuthorisationWithAuthentciationMethodSelection"
- The related payment initiation cannot yet be executed since a multilevel SCA is mandated.
- The ASPSP has indicated with an "startAuthorisation" hyperlink in the pre-ceeding Payment Cancellation Response that an explicit start of the authorisation process is needed by the TPP. The "startAuthorisation" hyperlink can transport more information about data which needs to be uploaded by using the extended forms as indicated above.
- The related payment cancellation request cannot be applied yet since a multilevel SCA is mandate for executing the cancellation.
- The signing basket needs to be authorised yet.

Call in the context of a Payment Initiation Request

```
POST /v1/{payment-service}/{payment-product}/{paymentId}/authorisations
```

Starts the authorisation process for a payment initiation.

Call in the context of a Payment Cancellation Request

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

Starts the authorisation process for a payment cancellation where needed.

Call in context of an Account Information Consent Request

```
POST /v1/consents/{consentId}/authorisations
```

Starts an authorisation process for establishing account information consent data on the server.

Call in the context of a Signing Basket Authorisation Request

```
POST /v1/signing-baskets/{basketId}/authorisations
```

Starts the authorisation process for all transactions contained in the related signing basket.

Path Parameters

Attribute	Type	Description
payment-service	String	The possible values are “payments”, “bulk-payments” and “periodic-payments”
payment-product	String	The payment product, under which the payment under paymentId has been initiated. It shall be checked by the ASPSP, if the payment-product is matching the payment initiation addressed by paymentId.
paymentId, basketId or consentId	String	Resource identification of the related payment initiation, signing basket or consent resource.

Query Parameters

No specific query parameters.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
PSU-ID	String	Optional	Client ID of the PSU in the ASPSP client interface. Shall be transmitted if this Request is indicated by "startAuthorisationWithPsuIdentification" or "startAuthorisationWithPsuAuthentication" or "startAuthorisationWithEncryptedPsuAuthentication" and this field has not yet been transmitted before.
PSU-ID-Type	String	Optional	Type of the PSU-ID, needed in scenarios where PSUs have several PSU-IDs as access possibility. Shall be transmitted in this case, if this Request is indicated by "startAuthorisationWithPsuIdentification" or "startAuthorisationWithPsuAuthentication" or "startAuthorisationWithEncryptedPsuAuthentication" and this field has not yet been transmitted before.
PSU-Corporate-ID	String	Optional	Identification of a Corporate in the Online Channels. Shall be transmitted if this Request is indicated by "startAuthorisationWithPsuIdentification" or "startAuthorisationWithPsuAuthentication" or "startAuthorisationWithEncryptedPsuAuthentication" and this field has not yet been transmitted before, and only where generally needed in a corporate context.
PSU-Corporate-ID-Type	String	Optional	This is describing the type of the identification needed by the ASPSP to identify the PSU-Corporate-ID content. Shall be transmitted if this Request is indicated by "startAuthorisationWithPsuIdentification". or "startAuthorisationWithPsuAuthentication" or "startAuthorisationWithEncryptedPsuAuthentication" and this field has not yet been transmitted before. Mean and use is defined in the ASPSP's documentation. Only used in a corporate context.

Attribute	Type	Condition	Description
Authorization	String	Conditional	Bearer Token. Is contained only, if an OAuth2 based authentication was performed in a pre-step or an OAuth2 based SCA was performed in an preceding AIS service in the same session.
TPP-Redirect-Preferred	Boolean	Optional	If it equals "true", the TPP prefers a redirect over an embedded SCA approach. If it equals "false", the TPP prefers not to be redirected for SCA. The ASPSP will then choose between the Embedded or the Decoupled SCA approach, depending on the parameter TPP-Decoupled-Preferred and the choice of the SCA procedure by the TPP/PSU. If the parameter is not used, the ASPSP will choose the SCA approach to be applied depending on the SCA method chosen by the TPP/PSU.
TPP-Decoupled-Preferred	Boolean	Optional	If it equals "true", the TPP prefers a decoupled SCA approach. If it equals "false", the TPP prefers not to use the decoupled approach for SCA. The ASPSP will then choose between the embedded or the redirect SCA approach, depending on the choice of the SCA procedure by the TPP/PSU. If the parameter is not used, the ASPSP will choose the SCA approach to be applied depending on the parameter TPP-Redirect-Preferred and the SCA method chosen by the TPP/PSU. The parameter might be ignored by the ASPSP. If both parameters TPP-Redirect-Preferred and TPP-Decoupled-Preferred are present and true, the request is still not rejected, but it is up to the ASPSP, which approach will actually be used. RFU: TPP-Redirect-Preferred and TPP-Decoupled-Preferred will be revised in future versions, maybe merged. Currently kept separate for downward compatibility.

Attribute	Type	Condition	Description
TPP-Redirect-URI	String	Conditional	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". See Section 4.10 for further requirements on this header. This field may be ignored by the ASPSP for migration reasons. For this reason, the same TPP-Redirect-URI as used when creating the related resource shall be provided by the TPP. This specifically applies to the authorisation of a payment cancellation, where the same TPP-Redirect-URI as for the corresponding payment initiation shall be used. This applies also to multilevel SCA, where the TPP-Redirect-URI for all authorisation processes for one transaction shall be equal. It is recommended to always use this header field. **Remark for Future**: This field might be changed to mandatory in the next version of the specification. **Remark for Future:** The condition on keeping the TPP-Redirect-URI equal during a transaction lifecycle might be removed in the next version of the specification.
TPP-Nok-Redirect-URI	String	Optional	If this URI is contained, the TPP is asking to redirect the transaction flow to this address instead of the TPP-Redirect-URI in case of a negative result of the redirect SCA method. This may be ignored by the ASPSP. See Section 4.10 for further requirements on this header. The same condition as for TPP-Redirect-URI on keeping the URI equal during a transaction lifecycle applies also to this header.

Request Body

No request body.

Note: If the hyperlinks in the following extended forms are used in the response message before, additional conditions on request body parameters apply as indicated in the following:

- "startAuthorisationWithPsuIdentification": Cp. Section 7.2.1
- "startAuthorisationWithPsuAuthentication": Cp. Section 7.2.2
- "startAuthorisationWithEncryptedPsuAuthentication": Cp. Section 7.2.2.
- "startAuthorsiationWithAuthenticationMethodSelection": Cp. Section 7.2.3.

The differences in the calls then are only whether to use a POST command to create the authorisation sub-resource and update the specified data at the same time or to use a PUT command to update the specified data to an already created sub-resource.

Response Code

HTTP response code equals 201.

Response Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
ASPSP-SCA-Approach	String	Conditional	Possible values are: • EMBEDDED • DECOUPLED • REDIRECT OAuth will be subsumed by the value REDIRECT

Response Body

Attribute	Type	Condition	Description
transactionFees	Amount	Optional	Might be used by the ASPSP to transport the total transaction fee relevant for the underlying payments. This field includes the entry of the currencyConversionFees if applicable.

Attribute	Type	Condition	Description
currencyConversion Fees	Amount	Optional	Might be used by the ASPSP to transport specific currency conversion fees related to the initiated credit transfer.
estimatedTotalAmount	Amount	Optional	The amount which is estimated to be debted from the debtor account. Note: This amount includes fees.
estimatedInterbank SettlementAmount	Amount	Optional	The estimated amount to be transferred to the payee.
scaStatus	SCA Status	Mandatory	
authorisationId	String	Mandatory	Unique resource identification of the created authorisation sub-resource.
scaMethods	Array of authentication objects	Conditional	This data element might be contained, if SCA is required and if the PSU has a choice between different authentication methods. Depending on the risk management of the ASPSP this choice might be offered before or after the PSU has been identified with the first relevant factor, or if an access token is transported. If this data element is contained, then there is also a hyperlink of type "selectAuthenticationMethod" contained in the response body. These methods shall be presented towards the PSU for selection by the TPP.
chosenSca Method	Authentication object	Conditional	This data element is only contained in the response if the ASPSP has chosen the Embedded SCA Approach, if the PSU is already identified e.g. with the first relevant factor or alternatively an access token, if SCA is required and if the authentication method is implicitly selected.
challengeData	Challenge	Conditional	It is contained in addition to the data element "chosenScaMethod" if challenge data is needed for SCA.

Attribute	Type	Condition	Description
			In rare cases this attribute is also used in the context of the "updatePsuAuthentication" or "updateEncryptedPsuAuthentication" link.
_links	Links	Mandatory	A list of hyperlinks to be recognised by the TPP. The actual hyperlinks used in the response depend on the dynamical decisions of the ASPSP when processing the request. **Remark**: All links can be relative or full links, to be decided by the ASPSP. Type of links admitted in this response, (further links might be added for ASPSP defined extensions): "scaRedirect": In case of an SCA Redirect Approach, the ASPSP is transmitting the link to which to redirect the PSU browser.

Attribute	Type	Condition	Description
			"scaOAuth": In case of a SCA OAuth2 Approach, the ASPSP is transmitting the URI where the configuration of the Authorisation Server can be retrieved. The configuration follows the OAuth 2.0 Authorisation Server Metadata specification. "confirmation": Might be added by the ASPSP if either the "scaRedirect" or "scaOAuth" hyperlink is returned in the same response message. This hyperlink defines the URL to the resource which needs to be updated with • a confirmation code as retrieved after the plain redirect authentication process with the ASPSP authentication server or • an access token as retrieved by submitting an authorization code after the integrated OAuth based authentication process with the ASPSP authentication server.

Attribute	Type	Condition	Description
			"updatePsuIdentification": The link to the authorisation or cancellation authorisation sub-resource, where PSU identification data needs to be uploaded. "udpatePsuAuthentication": The link to the authorisation or cancellation authorisation sub-resource, where PSU authentication data needs to be uploaded. "udpateEncryptedPsuAuthentication": The link to the authorisation or cancellation authorisation sub-resource, where encrypted PSU authentication data needs to be uploaded "selectAuthenticationMethod": The link to the authorisation or cancellation authorisation sub-resource, where the selected authentication method needs to be uploaded. This link is contained under exactly the same conditions as the data element "scaMethods" "authoriseTransaction": The link to the authorisation or cancellation authorisation sub-resource, where the authorisation data has to be uploaded, e.g. the TOP received by SMS. "scaStatus": The link to retrieve the scaStatus of the corresponding authorisation sub-resource.
psuMessage	Max500Text	Optional	

Note: If the hyperlinks in the following extended forms are used in the response message before, additional response parameters apply as indicated in the following:

- In case of "startAuthorisationWithPsuIdentification": Cp. Section 7.2.1
- In case of: "startAuthorisationWithPsuAuthentication": Cp. Section 7.2.2
- In case of: "startAuthorisationWithEncryptedPsuAuthentication": Cp. Section 7.2.2
- In case of: "startAuthorisationWithAuthenticationMethodSelection": Cp. Section 7.2.3.

Example

Request

```
POST https://api.testbank.com/psd2/v1/payments/sepa-credit-
transfers/qwer3456tzui7890/authorisations
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7721
PSU-ID:                 PSU-1234
```

Response

```
HTTP/1.x 201 CREATED
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7721
ASPSP-SCA-Approach:     DECOUPLED
Date:                   Sun, 06 Aug 2017 15:05:47 GMT
Location:               https://www.testbank.com/psd2/v1/payments/sepa-
credit-transfers/qwer3456tzui7890/authorisations/123auth456
Content-Type:           application/json
{
 "scaStatus": "received",
 "authorisationId": "123auth456",
 "psuMessage": "Please use your BankApp for transaction Authorisation.",
 "_links": {
   "scaStatus":  {"href": "/psd2/v1/payments/sepa-credit-
transfers/qwer3456tzui7890/
authorisations/123auth456"}
   }
}
```

7.2 Update PSU Data

There are several possible Update PSU Data requests needed, which depends on the SCA Approach:

- Redirect SCA Approach: A specific Update PSU Data Request is applicable for
  - the selection of authentication methods, before choosing the actual SCA approach.
- Decoupled SCA Approach: A specific Update PSU Data Request is only applicable for
  - adding the PSU Identification, if not provided yet in the Payment Initiation Request or the Account Information Consent Request, or if no OAuth2 access token is used, or
  - the selection of authentication methods.
- Embedded SCA Approach: The Update PSU Data Request might be used
  - to add credentials as a first factor authentication data of the PSU and
  - to select the authentication method.

The SCA Approach might depend on the chosen SCA method. For that reason, the following possible Update PSU Data request can apply to all SCA approaches:

- Select an SCA method in case of several SCA methods are available for the customer.

These different Update PSU Data Requests are differentiated in the following sub sections.

7.2.1 Update PSU Data (Identification)

This call is used, when in the preceding call the hyperlink of type "updatePsuIdentification" was contained, e.g. in case of a Decoupled Approach in the response and is now followed by the TPP.

Call in the context of a Payment Initiation Request

```
PUT /v1/{payment-service}/{payment-
product}/{paymentId}/authorisations/{authorisationId}
```

Updates the payment initiation authorisation sub-resource data on the server by PSU data, if requested by the ASPSP.

Call in the context of a Payment Cancellation Request

```
PUT /v1/{payment-service}/{payment-product}/{paymentId}/cancellation-
authorisations/{authorisationId}
```

Updates the payment initiation cancellation authorisation sub-resource data on the server by PSU data, if requested by the ASPSP.

Call in case of an Account Information Consent Request

```
PUT /v1/consents/{consentId}/authorisations/{authorsationId}
```

Updates the account information consent authorisation data on the server by PSU data, if requested by the ASPSP.

Call in the context of a Signing Basket Authorisation Request

```
PUT /v1/signing-baskets/{basketId}/authorisations/{authorisationId}
```

Updates the signing basket authorisation data on the server by PSU data, if requested by the ASPSP.

Path Parameters

Attribute	Type	Description
payment-service	String	The possible values are “payments”, “bulk-payments” and “periodic-payments”
payment-product	String	The payment product, under which the payment under paymentId has been initiated. It shall be checked by the ASPSP, if the payment-product is matching the payment initiation addressed by paymentId.
paymentId, basketId or consentId	String	Resource identification of the related payment initiation, signing basket or consent resource.
authorisationId	String	Resource identifciation of the related Payment Initiation, Payment cancellation, Signing Basket or Consent authorisation sub-resource.

Query Parameters

No specific query parameters.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
PSU-ID	String	Conditional	Contained if not yet contained in a pre-ceeding request, and mandated by the ASPSP in the related response
PSU-ID-Type	String	Conditional	Type of the PSU-ID, needed in scenarios where PSUs have several PSU-IDs as access possibility.
PSU-Corporate-ID	String	Conditional	Contained if not yet contained in a pre-ceeding request, and mandated by the ASPSP in the related response. This field is relevant only in a corporate context.
PSU-Corporate-ID-Type	String	Conditional	Might be mandated by the ASPSP in addition if the PSU-Corporate-ID is contained.

Request Body

No request body.

Response Code

HTTP response code is 200.

Response Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
ASPSP-SCA-Approach	String	Conditional	Possible values are: • EMBEDDED • DECOUPLED • REDIRECT OAuth will be subsumed by the value REDIRECT

Response Body

Attribute	Type	Condition	Description
transactionFees	Amount	Optional	Might be used by the ASPSP to transport the total transaction fee relevant for the underlying payments. This field includes the entry of the currencyConversionFees if applicable.
currencyConversion Fees	Amount	Optional	Might be used by the ASPSP to transport specific currency conversion fees related to the initiated credit transfer.
estimatedTotalAmount	Amount	Optional	The amount which is estimated to be debted from the debtor account. **Note:** This amount includes fees.
estimatedInterbank SettlementAmount	Amount	Optional	The estimated amount to be transferred to the payee.
scaMethods	Array of authentication objects	Conditional	Might be contained, if several authentication methods are available. (name, type)
_links	Links	Mandatory	A list of hyperlinks to be recognised by the TPP. The actual hyperlinks used in the response depend on the dynamical decisions of the ASPSP when processing the request. **Remark**: All links can be relative or full links, to be decided by the ASPSP. Type of links admitted in this response, (further links might be added for ASPSP defined extensions): "scaStatus": The link to retrieve the scaStatus of the corresponding authorisation sub-resource.

Attribute	Type	Condition	Description
			"selectAuthenticationMethod": This is a link to a resource, where the TPP can select the applicable second factor authentication methods for the PSU, if there are several available authentication methods and if the PSU is already sufficiently authenticated.. If this link is contained, then there is also the data element "scaMethods" contained in the response body
scaStatus	SCA Status	Mandatory	
psuMessage	Max500Text	Optional	

Example

Request

```
PUT https://api.testbank.com/psd2/v1/payments/sepa-credit-
transfers/qwer3456tzui7890/authorisations/123auth456
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7721
PSU-ID:                 PSU-1234
```

Response

```
HTTP/1.x 200 OK
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7721
ASPSP-SCA-Approach:     DECOUPLED
Date:                   Sun, 06 Aug 2017 15:05:47 GMT
Content-Type:           application/json
{
 "scaStatus": "psuIdentified",
 "psuMessage": "Please use your BankApp for transaction Authorisation.",
 "_links": {
   "scaStatus":  {"href": "/psd2/v1/payments/sepa-credit-
transfers/qwer3456tzui7890/
authorisations/123auth456"}
   }
}
```

7.2.2 Update PSU Data (Authentication) in the Decoupled or Embedded Approach

This call is used, when in the preceding call the hyperlink of type "updatePsuAuthentication", "updateEncryptedPsuAuthentication", "updateAdditionalPsuAuthentication" or "updateAdditionalEncryptedPsuAuthentication" was contained in the response and is followed by the TPP.[9]

Call in context of a Payment Initiation

```
PUT /v1/{payment-service}/{payment-
product}/{paymentId}/authorisations/{authorisationId}
```

Updates the payment initiation authorisation sub-resource data on the server by PSU credential data, if requested by the ASPSP

Call in context of a Payment Cancellation

```
PUT /v1/{payment-service}/{payment-product}/{paymentId}/cancellation-
authorisations/{authorisationId}
```

Updates the payment cancellation authorisation sub-resource data on the server by PSU credentials, if requested by the ASPSP

Call in context of an Account Information Consent Request

```
PUT /v1/consents/{consentId}/authorisations/{authorisationId}
```

Updates the account information consent authorisation sub-resource data on the server by PSU credential data, if requested by the ASPSP

Call in the context of a Signing Basket Authorisation Request

```
PUT /v1/signing-baskets/{basketId}/authorisations/{authorisationId}
```

Updates the signing basket authorisation data on the server by PSU credentials, if requested by the ASPSP.

Remark for Future: The next version of the specification might allow ASPSPs to mandate a payload encryption to protect the password contained in the payload.

[9] The next release of this specification might support encryption methods for transmission of the PSU password between TPP and ASPSP on application level.

Path Parameters

Attribute	Type	Description
payment-service	String	The possible values are “payments”, “bulk-payments” and “periodic-payments”
payment-product	String	The payment product, under which the payment under paymentId has been initiated. It shall be checked by the ASPSP, if the payment-product is matching the payment initiation addressed by paymentId.
paymentId, basketId or consentId	String	Resource identification of the related payment initiation, signing basket or consent resource.
authorisationId	String	Resource identifciation of the related Payment Initiation, Payment Cancellation, Signing Basket or Consent authorisation sub-resource.

Query Parameters

No specific query parameters.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
PSU-ID	String	Conditional	Contained if not yet contained in a pre-ceeding request, and mandated by the ASPSP in the related response
PSU-ID-Type	String	Conditional	Contained if not yet contained in a pre-ceeding request, and mandated by the ASPSP in the related response
PSU-Corporate-ID	String	Conditional	Contained if not yet contained in a pre-ceeding request, and mandated by the ASPSP in the related response. This field is relevant only in a corporate context.

Attribute	Type	Condition	Description
PSU-Corporate-ID-Type	String	Conditional	Contained if not yet contained in a pre-ceeding request, and mandated by the ASPSP documentation. Might be mandated by the ASPSP in addition if the PSU-Corporate-ID is contained.

Request Body

Attribute	Type	Condition	Description
psuData	PSU Data	Mandatory	The password, encryptedPassword, additionalPassword, or additionalEncryptedPassword subfield is used, depending whether the password or the additional password needs to be sent and depending on encryption requirements of the ASPSP as indicated in the corresponding hyperlink contained in the preceding response message of the ASPSP. **Remark for Future**: More details on the encrypted password transport will be published by a future bulletin.

Response Code

HTTP response code equals 200.

Response Header

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

Attribute	Type	Condition	Description
ASPSP-SCA-Approach	String	Conditional	Possible values are: • EMBEDDED • DECOUPLED • REDIRECT OAuth will be subsumed by the value REDIRECT

Response Body

Attribute	Type	Condition	Description
transactionFees	Amount	Optional	Might be used by the ASPSP to transport the total transaction fee relevant for the underlying payments. This field includes the entry of the currencyConversionFees if applicable.
currencyConversionFees	Amount	Optional	Might be used by the ASPSP to transport specific currency conversion fees related to the initiated credit transfer.
estimatedTotalAmount	Amount	Optional	The amount which is estimated to be debted from the debtor account. Note: This amount includes fees.
estimatedInterbankSettlementAmount	Amount	Optional	The estimated amount to be transferred to the payee.
chosenScaMethod	Authentication object	Conditional	A definition of the provided SCA method is contained, if only one authentication method is available, and if the Embedded SCA approach is chosen by the ASPSP.
challengeData	Challenge	Conditional	Challenge data might be contained, if only one authentication method is available, and if the Embedded SCA approach is chosen by the ASPSP.

Attribute	Type	Condition	Description
scaMethods	Array of authentication objects	Conditional	Might be contained, if several authentication methods are available. (name, type)
_links	Links	Conditional	A list of hyperlinks to be recognised by the TPP. Might be contained, if several authentication methods are available for the PSU. Type of links admitted in this response: "updateAdditionalPsuAuthentication" The link to the payment initiation or account information resource, which needs to be updated by an additional PSU password. This link is only contained in rare cases, where such additional passwords are needed for PSU authentications. "updateAdditionalEncryptedPsuAuthentication" The link to the payment initiation or account information resource, which needs to be updated by an additional encrypted PSU password. This link is only contained in rare cases, where such additional passwords are needed for PSU authentications. "selectAuthenticationMethod": This is a link to a resource, where the TPP can select the applicable second factor authentication methods for the PSU, if there were several available authentication methods. This link is only contained, if the PSU is already identified or authenticated with the first relevant factor or alternatively an access token, if SCA is required and if the PSU has a choice between different authentication methods. If this link is contained, then there is also the data element "scaMethods" contained in the response body "authoriseTransaction": The link to the resource, where the "Transaction

Attribute	Type	Condition	Description
			Authorisation Request" is sent to. This is the link to the resource which will authorise the transaction by checking the SCA authentication data within the Embedded SCA approach. "scaStatus": The link to retrieve the scaStatus of the corresponding authorisation sub-resource.
scaStatus	SCA Status	Mandatory	
psuMessage	Max500Text	Optional	

NOTE: In case of an incorrect password, the TPP needs to ask the PSU for re-entering the password. The newly entered password needs to be updated to the same path. It is recommended that the ASPSP is informing the TPP about this by adding a _links section in the additional error information and presenting a corresponding updatePsuAuthentication or updateEncryptedPsuAuthentication hyperlink.

Example

Request in case of Embedded Approach

```
PUT https://api.testbank.com/psd2/v1/payments/sepa-credit-
transfers/qwer3456tzui7890/authorisations/123auth456
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7721
PSU-ID:                 PSU-1234
{
"psuData": {
  "password": "start12"
  }
}
```

Response in case of the embedded approach

```
HTTP/1.x 200 OK
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7721
ASPSP-SCA-Approach:     EMBEDDED
Date:                   Sun, 06 Aug 2017 15:05:47 GMT
Content-Type:           application/json

{
  "scaStatus": "psuAuthenticated",
  "_links": {
   "authoriseTransaction": {"href": "/psd2/v1/payments/sepa-credit-
transfers/1234-wertiq-983/authorisations/123auth456"}
  }
}
```

7.2.3 Update PSU Data (Select Authentication Method)

This call is used, when in the preceding call the hyperlink of type "selectAuthenticationMethod" was contained in the response and was followed by the TPP.

Call in context of a Payment Initiation Request

```
PUT /v1/{payment-service}/{payment-
product}/{paymentId}/authorisations/{authorisationId}
```

Updates the payment initiation sub-resource data on the server by PSU data, if requested by the ASPSP.

Call in context of a Payment Cancellation Request

```
PUT /v1/{payment-service}/{payment-product}/{paymentId}/cancellation-
authorisations/{authorisationId}
```

Updates the payment cancellation sub-resource data on the server by PSU data, if requested by the ASPSP.

Call in context of an Account Information Consent Request

```
PUT /v1/consents/{consentId}/authorisations/{authorisationId}
```

Updates the account information consent authorisation data on the server by PSU data, if requested by the ASPSP

Call in the context of a Signing Basket Authorisation Request

```
PUT /v1/signing-baskets/{basketId}/authorisations/{authorisationId}
```

Updates the signing basket authorisation data on the server by PSU data, if requested by the ASPSP.

Path Parameters

Attribute	Type	Description
payment-service	String	The possible values are “payments”, “bulk-payments” and “periodic-payments”
payment-product	String	The payment product, under which the payment under paymentId has been initiated. It shall be checked by the ASPSP, if the payment-product is matching the payment initiation addressed by paymentId.
payment -product	String	Only in case of an Update Data Request in a Payment Initiation context.
paymentId, basketId or consentId	String	Resource identification of the related payment initiation, signing basket or consent resource.
authorisationId	String	Resource identiiciation of the related Payment Initiation, Payment Cancellation, Signing Basket or Consent authorisation sub-resource.

Query Parameters

No specific query parameters.

Response Code

The HTTP response code equals 200.

Request Header

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

Request Body

Attribute	Type	Condition	Description

authentication MethodId	String	Mandatory	The authentication method ID as provided by the ASPSP.

Response Code

HTTP response code equals 200.

Response Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
ASPSP-SCA-Approach	String	Optional	Possible values are: • EMBEDDED • DECOUPLED • REDIRECT OAuth will be subsumed by the constant REDIRECT

Response Body

Attribute	Type	Condition	Description
transactionFees	Amount	Optional	Might be used by the ASPSP to transport the total transaction fee relevant for the underlying payments. This field includes the entry of the currencyConversionFees if applicable.
currencyConversion Fees	Amount	Optional	Might be used by the ASPSP to transport specific currency conversion fees related to the initiated credit transfer.
estimatedTotalAmount	Amount	Optional	The amount which is estimated to be debted from the debtor account. **Note:** This amount includes fees.

Attribute	Type	Condition	Description
estimatedInterbank SettlementAmount	Amount	Optional	The estimated amount to be transferred to the payee.
chosenSca Method	Authentication object	Conditional	A definition of the provided SCA method is contained, if the Embedded SCA approach is chosen by the ASPSP.
challengeData	Challenge	Conditional	Challenge data might be contained, if the Embedded SCA approach is chosen by the ASPSP.

_links	Links	Conditional	A list of hyperlinks to be recognised by the TPP. The actual hyperlinks used in the response depend on the dynamical decisions of the ASPSP when processing the request. **Remark**: All links can be relative or full links, to be decided by the ASPSP. **Remark**: This method can be applied before or after PSU identification. This leads to many possible hyperlink responses. Type of links admitted in this response, (further links might be added for ASPSP defined extensions): "scaRedirect": In case of an SCA Redirect Approach, the ASPSP is transmitting the link to which to redirect the PSU browser. "scaOAuth": In case of a SCA OAuth2 Approach, the ASPSP is transmitting the URI where the configuration of the Authorisation Server can be retrieved. The configuration follows the OAuth 2.0 Authorisation Server Metadata specification. "confirmation": Might be added by the ASPSP if either the "scaRedirect" or "scaOAuth" hyperlink is returned in the same response message. This hyperlink defines the URL to the resource which needs to be updated with • a confirmation code as retrieved after the plain redirect authentication process with the ASPSP authentication server or • an access token as retrieved by submitting an authorization code after the integrated

Attribute	Type	Condition	Description
			OAuth based authentication process with the ASPSP authentication server.
			"updatePsuIdentification": The link to the authorisation or cancellation authorisation sub-resource, where PSU identification data needs to be uploaded. "updatePsuAuthentication": The link to the authorisation or cancellation authorisation sub-resource, where PSU authentication data needs to be uploaded. "updateEncryptedPsuAuthentication": The link to the authorisation or cancellation authorisation sub-resource, where encrypted PSU authentication data needs to be uploaded. "authoriseTransaction": The link to the authorisation or cancellation authorisation sub-resource, where the authorisation data has to be uploaded, e.g. the TOP received by SMS. "scaStatus": The link to retrieve the scaStatus of the corresponding authorisation sub-resource.
scaStatus	Sca Status	Mandatory	
psuMessage	Max500Text	Optional	

Example

Request in case of Embedded Approach

```
PUT https://api.testbank.com/psd2/v1/payments/sepa-credit-
transfers/qwer3456tzui7890/authorisations/123auth456
X-Request-ID:           asdfoeljkasdfoelkjasdf-123479093

{
authenticationMethodId: "myAuthenticationID"
}
```

Response in case of the embedded approach

```
HTTP/1.x 200 OK
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7721
ASPSP-SCA-Approach:     EMBEDDED
Date:                   Sun, 06 Aug 2017 15:05:47 GMT
Content-Type:           application/json

{
  "scaStatus": "scaMethodSelected",
  "chosenScaMethod": {
      "authenticationType": "SMS_OTP",
      "authenticationMethodId": "myAuthenticationID"},
  "challengeData": {
      "otpMaxLength": "6",
      "otpFormat": "integer"},
  "_links": {
     "authoriseTransaction": {"href": "/psd2/v1/payments/sepa-credit-
transfers/1234-wertiq-983/authorisations/123auth456"}
  }
}
```

7.3 Transaction Authorisation

This call is only used in case of an Embedded SCA Approach.

Call in context of a Payment Initiation Request

```
PUT /v1/payments/{payment-
product}/{paymentId}/authorisations/{authorisationId}
```

Transmit response data to the challenge for SCA checks by the ASPSP.

Call in context of a Payment Cancellation Request

```
PUT /v1/payments/{payment-product}/{paymentId}/cancellation-
authorisations/{authorisationId}
```

Transmit response data to the challenge for SCA checks by the ASPSP.

Call in context of an Account Information Consent Request

```
PUT /v1/consents/{consentId}/authorisation/{authorisationId}
```

Transfers response data to the challenge for SCA checks by the ASPSP.

Call in the context of a Signing Basket Authorisation Request

```
PUT /v1/signing-baskets/{basketId}/authorisations/{authorisationId}
```

Transfers response data to the challenge for SCA checks by the ASPSP.

Path Parameters

Attribute	Type	Description
payment -product	String	The related payment product of the payment initiation to be authorized.
paymentId, basketId or consentId	String	Resource identification of the related payment initiation, signing basket or consent resource.
authorisationId	String	Resource identification of the related Payment Initiation, Payment Cancellation, Signing Basket or Consent authorisation sub-resource.

Query Parameter

No specific query parameters.

Request Header

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

Attribute	Type	Condition	Description
Authorization	String	Conditional	Is contained only, if the optional Oauth Pre-Step was performed.

Request Body

Attribute	Type	Condition	Description
scaAuthenticationData	String	Mandatory	SCA authentication data, depending on the chosen authentication method. If the data is binary, then it is base64 encoded.

Response Code

HTTP response code equals 200.

Response Header

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

Response Body

Attribute	Type	Condition	Description
scaStatus	SCA Status	Mandatory	

NOTE: In case of incorrect scaAuthenticationData, the TPP needs to ask the PSU for re-entering the authentication data by repeating the SCA method first. Depending on the implementation of the corresponding SCA method, the TPP needs

- either to re-start the full authorisation process by generating a new authorisation sub-resource, e.g. in case of an SMS OTP,
- or to submit newly generated authentication data generated on a customer device to the same path as the first time, and where no new challenge data from the ASPSP is needed, e.g. in case of a CHIP OTP.

The ASPSP is informing the TPP about this by adding a _links section in the additional error information and presenting a corresponding startAuthorisation, or transactionAuthorisation hyperlink.

Example

Request

```
PUT https://api.testbank.com/psd2/v1/payments/sepa-credit-transfers/
qwer3456tzui7890/authorisations/123auth456
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7721
{
 "scaAuthenticationData": "123456"
}
```

Response in case of the embedded approach

Response Code 200

Response Body

```
{
  "scaStatus": "finalised",
  "_links": {
   "scaStatus":  {"href": "/psd2/v1/payments/sepa-credit-
transfers/qwer3456tzui7890/authorisations/123auth456"}
   }

}
```

7.4 Get Authorisation Sub-Resources Request

Call in context of a Payment Initiation Request

```
GET /v1/{payment-service}/{payment-product}/{paymentId}/authorisations
```

Will deliver an array of resource identifications of all generated authorisation sub-resources.

Call in context of an Account Information Consent Request

```
GET /v1/consents/{consentId}/authorisations
```

Will deliver an array of resource identifications of all generated authorisation sub-resources.

Call in the context of a Signing Basket Authorisation Request

```
GET /v1/signing-baskets/{basketId}/authorisations
```

Will deliver an array of resource identifications of all generated authorisation sub-resources.

Path Parameters

Attribute	Type	Description
payment-service	String	The possible values are “payments”, “bulk-payments” and “periodic-payments”
payment-product	String	The payment product, under which the payment under paymentId has been initiated. It shall be checked by the ASPSP, if the payment-product is matching the payment initiation addressed by paymentId.
paymentId, basketId or consentId	String	Resource identification of the related payment initiation, signing basket or consent resource.

Query Parameters

No specific query parameters defined.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
Authorization	String	Conditional	Is contained only, if an OAuth2 based authentication was performed in a pre-step or an OAuth2 based SCA was performed in the current PIS transaction or in a preceding AIS service in the same session, if no such OAuth2 SCA approach was chosen in the current PIS transaction.

Request Body

No request body.

Response Code

The HTTP response code equals 200.

Response Header

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

Response Body

Attribute	Type	Condition	Description
authorisationIds	Array of String	Mandatory	An array of all authorisationIds connected to this payment, signing basket or consent resource.

Example

Request

```
GET https://api.testbank.com/psd2/v1/payments/sepa-credit-transfers/1234-
wertiq-983/authorisations
Accept:                 application/json
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7723
Date:                   Sun, 06 Aug 2017 15:04:07 GMT
```

Response

```
HTTP/1.x 200 Ok
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7723
Date:                   Sun, 06 Aug 2017 15:04:08 GMT
Content-Type:           application/json

{
  "authorisationIds": ["123auth456"]
}
```

7.5 Get SCA Status Request

Call in context of a Payment Initiation Request

```
GET /v1/{payment-service}/{payment-
product}/{paymentId}/authorisations/{authorisationId}
```

Checks the SCA status of an authorisation sub-resource.

Call in context of a Payment Cancellation Request

```
GET /v1/{payment-service}/{payment-product}/{paymentId}/cancellation-
authorisations/{authorisationId}
```

Checks the SCA status of a cancellation authorisation sub-resource.

Call in context of an Account Information Consent Request

```
GET /v1/consents/{consentId}/authorisations/{authorisationId}
```

Checks the SCA status of a authorisation sub-resource.

Call in the context of a Signing Basket Authorisation Request

```
GET /v1/signing-baskets/{basketId}/authorisations/{authorisationId}
```

Checks the SCA status of a authorisation sub-resource.

Path Parameters

Attribute	Type	Description
payment-service	String	The possible values are “payments”, “bulk-payments” and “periodic-payments”
payment-product	String	The payment product, under which the payment under paymentId has been initiated. It shall be checked by the ASPSP, if the payment-product is matching the payment initiation addressed by paymentId.
paymentId, basketId or consentId	String	Resource identification of the related payment initiation, signing basket or consent resource.

Attribute	Type	Description
authorisationId	String	Resource identification of the related Payment Initiation, Payment Cancellation, Signing Basket or Consent authorisation sub-resource.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
Authorization	String	Conditional	Is contained only, if an OAuth2 based authentication was performed in a pre-step or an OAuth2 based SCA was performed in the current PIS transaction or in a preceding AIS service in the same session, if no such OAuth2 SCA approach was chosen in the current PIS transaction.

Query Parameters

No specific query parameters defined.

Request Body

No request body.

Response Code

The HTTP response code equals 200.

Response Header

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

Response Body

Attribute	Type	Condition	Description
scaStatus	SCA Status	Mandatory	This data element is containing information about the status of the SCA method applied.
psuName	Max140Text	Optional	Name of the PSU[10] In case of a corporate account, this might be the person acting on behalf of the corporate.
_links	Links	Optional	Should refer to next steps if the problem can be resolved via the interface e.g. for re-submission of credentials.
tppMessages	Array of TPP Message Information	Optional	Messages to the TPP on operational issues.

Example

Request

```
GET https://api.testbank.com/psd2/v1/payments/sepa-credit-transfers/1234-
wertiq-983/authorisations/123auth456
Accept:                 application/json
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7721
Date:                   Sun, 06 Aug 2017 15:04:07 GMT
```

Response

```
HTTP/1.x 200 Ok
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7721
Date:                   Sun, 06 Aug 2017 15:04:08 GMT
Content-Type:           application/json

{
```

[10] Usage is following the mandate resulting from EBA Q&A 2020_5165.

```
  "scaStatus": "finalised"
}
```

7.6 Confirmation Request

This request is used, when in the preceding response the hyperlink of type "confirmation" was contained and if a redirection authentication method has been applied. Before the call can be submitted by the TPP, an authorization code, respectively a confirmation code needs to be retrieved by the TPP after the SCA processing in a redirect to the ASPSP authentication server.

In case of the integrated OAuth SCA Approach, the overall procedure to receive the authorization code and the access token succedingly is described in Section 13.

In case of the Redirect SCA Approach, the procedure to retrieve the confirmation code is described in the following sub sections. The actual Confirmation Request Message is described in Section 7.6.4 for both the integrated OAuth2 SCA approach and the Redirect SCA Approach.

7.6.1 Retrieving the Confirmation Code in Redirect SCA approach

The TPP needs to fix the session of the PSU on the TPP browser with a nonce, where part of it is a unique state parameter.

In preparation of sending the authorization request, the TPP shall

- create a one-time use XSRF token to be conveyed to the ASPSP in the “state” parameter and,
- bind this value to the current session in the user agent.

Note: In case of the integrated OAuth SCA Approach, the TPP has to generate in addition a nonce for the challenge parameter. This has also to be bound to the session of the user agent.

7.6.2 Requirements on HTTP request of PSU browser

The TPP needs to forward the state parameter as query parameter to the PSU, which will lead to a GET HTTP request of the PSU browser as required as follows:

Query Parameter PSU Authorisation Request (GET command)

Attribute	Type	Condition	Description
state	string	mandated	state parameter as defined by the TPP as a unique parameter and bound to the PSU/TPP session.

Example

```
GET ASPSP-Redirect-URI?state=1234567er
```

After the customer authentication has taken place on the ASPSP server, the ASPSP responds with the same state parameter and a unique confirmationCode bound to the authorisation resource as query parameters. The confirmationCode will only be contained if SCA has been successfully performed.

Query Parameter PSU Authorisation Response (GET command response)

Attribute	Type	Condition	Description
state	string	Mandated	state parameter as used in the corresponding request.
code	string	Conditional	unique authorisation code of the ASPSP, bound to the related transaction, in case of Integrated OAuth SCA Approach.
confirmationCode	string	Conditional	unique authorisation code of the ASPSP, bound to the related transaction, in case of Redirect SCA Approach.

Example in case of Redirect SCA Approach

```
http 302?state=1234567er&confirmationCode=2256ffgh
```

7.6.3 Confirmation Call Pre-Condition

When retrieving the GET command from the PSU browser, the TPP must check whether the state parameter is linked to the current session.The “state” value is linked to the current session in the user agent. If the check is positive then the TPP further processes

- within context of the Integrated OAuth SCA Approach with retrieving the access Bearer token as described in Section 13 of this document and then proceed as described in Section 7.6.4.
- within context of the Redirect SCA Approach directly as described in Section 7.6.4.

If the check fails, the transaction must be stopped by the TPP.

7.6.4 Authorisation Confirmation Call

Call in the context of a Payment Initiation Request

```
PUT /v1/{payment-service}/{payment-
product}/{paymentId}/authorisations/{authorisationId}
```

Updates the payment initiation authorisation sub-resource data on the server by an authorization code, if requested by the ASPSP.

Call in the context of a Payment Cancellation Request

```
PUT /v1/{payment-service}/{payment-product}/{paymentId}/cancellation-
authorisations/{authorisationId}
```

Updates the payment initiation cancellation authorisation sub-resource data on the server by an authorization code, if requested by the ASPSP.

Call in case of an Account Information Consent Request

```
PUT /v1/consents/{consentId}/authorisations/{authorsationId}
```

Updates the account information consent authorisation data on the server by an authorization code, if requested by the ASPSP.

Call in the context of a Signing Basket Authorisation Request

```
PUT /v1/signing-baskets/{basketId}/authorisations/{authorisationId}
```

Updates the signing basket authorisation data on the server by an authorisation code, if requested by the ASPSP.

Path Parameters

Attribute	Type	Description
payment-service	String	The possible values are “payments”, “bulk-payments” and “periodic-payments”
payment-product	String	The payment product, under which the payment under paymentId has been initiated. It shall be checked by the ASPSP, if the payment-product is matching the payment initiation addressed by paymentId.

Attribute	Type	Description
paymentId, basketId or consentId	String	Resource identification of the related payment initiation, signing basket or consent resource.
authorisationId	String	Resource identification of the related Payment Initiation, Payment Cancellation, Signing Basket or Consent authorisation sub-resource.

Query Parameters

No specific query parameters.

Request Header

Attribute	Type	Condition	Description
X-Request-ID	UUID	Mandatory	ID of the request, unique to the call, as determined by the initiating party.
Authorization	String	Conditional	Authorization Bearer Token as retrieved by the TPP in case the integrated OAuthSCA Approach as described in Section 13.

Request Body

Attribute	Type	Condition	Description
confirmationCode	String	Conditional	Confirmation Code as retrieved by the TPP from the redirect based SCA process as described in Section 7.6.1 ff.

Response Code

HTTP response code is 200.

Response Header

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

Response Body

Attribute	Type	Condition	Description
scaStatus	SCA Status	Mandatory	Value "finalised" if the transaction authorisation and confirmation was successful. Value "failed" if the transaction authorisation or confirmation was not successful.
_links	Links	Mandatory	A list of hyperlinks to be recognised by the TPP. The actual hyperlinks used in the response depend on the dynamical decisions of the ASPSP when processing the request. **Remark**: All links can be relative or full links, to be decided by the ASPSP. Type of links admitted in this response, (further links might be added for ASPSP defined extensions): "status": The link to retrieve the status of the corresponding transaction resource.
psuMessage	Max512Text	Optional	

Example for integrated OAuth solution

Request

```
PUT https://api.testbank.com/psd2/v1/payments/sepa-credit-
transfers/qwer3456tzui7890/authorisations/123auth456
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7721
```

```
Authorization:          Bearer 1234567
```

Response

```
HTTP/1.x 200 OK
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7721
Date:                   Sun, 06 Aug 2017 15:05:47 GMT
Content-Type:           application/json
{
 "scaStatus": "finalised",
 "_links": {
   "status": {"href": "/psd2/v1/payments/sepa-credit-
transfers/qwer3456tzui7890/status"}
   }
```

Example for redirect solution

Request

```
PUT https://api.testbank.com/psd2/v1/payments/sepa-credit-
transfers/qwer3456tzui7890/authorisations/123auth456
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7721
{ "confirmationCode": "2256ffgh"}
```

Response

```
HTTP/1.x 200 OK
X-Request-ID:           99391c7e-ad88-49ec-a2ad-99ddcb1f7721
Date:                   Sun, 06 Aug 2017 15:05:47 GMT
Content-Type:           application/json
{
 "scaStatus": "finalised",
 "_links": {
   "status":  {"href": "/psd2/v1/payments/sepa-credit-
transfers/qwer3456tzui7890/status"}
   }
}
```