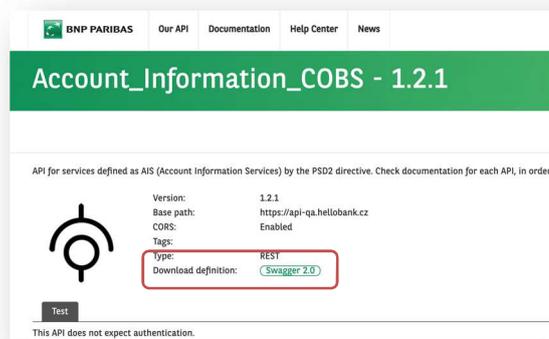# BNP Paribas PF PSD2 Services

BNP Paribas PF provides the following open-banking APIs:

- TPP management
- Authentication service (oAuth 2.0)
- Balance check for card-issuing providers (CIS)
- Account information service (AIS)
- Payment initiation service (PIS)

For SandBox setup and testing, we do recommend to download to use Swagger 2.0

TPP Management

TPP Management API can be used for registration of TPP to the Bank.

```
swagger: '2.0'
info:
  title: TPP Management API
  description: API for managing Third Party Payment Providers
  version: 1.7.0
host: api.hellobank.cz
schemes:
  - https
produces:
  - application/json
basePath: /tpp-management/api/v1
paths:
  /tpps:
    post:
      summary: TPP Registration
      description: |
        The TPP Registration Endpoint.
      consumes:
        - application/json
      parameters:
        - $ref: '#/parameters/x-api-header'
        - $ref: '#/parameters/x-user-agent-info'
        - in: body
          name: profile
          required: true
          schema:
```

BNP Paribas PF CEE region – API Documentation

```yaml
          $ref: '#/definitions/TPPRegistrationRequest'
      tags:
        - tpps
      responses:
        '201':
          description: Created
          schema:
            $ref: '#/definitions/RegistrationResponse'
        '400':
          description: >-
            Invalid request. A mandatory field is missing in the request, or it
            is in an unsuitable / invalid format.
          schema:
            $ref: '#/definitions/Errors'
        '401':
          description: The client is not unauthorized to execute the request.
          schema:
            $ref: '#/definitions/Errors'
        '403':
          description: Insufficient authorization to use the required scope.
          schema:
            $ref: '#/definitions/Errors'
        '500':
          description: Server error.
          schema:
            $ref: '#/definitions/Errors'

definitions:
  TPPRegistrationRequest:
    type: object
    required:
     - redirect_uris
     - scopes
    properties:
      applicationType:
        type: string
        description: >-
          Type of application which uses this account (web or native). Will not
          be used for CZ. This field will be ignored if comming on the request.
      redirectUris:
        type: array
        description: >-
          Enumeration of URL where the authentication flow is redirected at the
          end. The authorization request must contain just one of these
          registered URIs in the exact format.
        items:
          type: string
      clientName:
        type: string
        description: >-
          Name of the client application. Will not be used in CZ. This field
          will be ignored if comming on the request.
      clientName#en-US:
        type: string
        description: >-
          Name of the client application in the relevant language/coding. Will
          not be used in CZ. This field will be ignored if comming on the
          request.
      logoUri:
        type: string
        description: >-
          URI of the application logo (or the place from where it may be
          downloaded on the registration). Will not be used in CZ. This field
          will be ignored if comming on the request.
      contact:
        type: string
        description: >-
          E-mail as a contact to the responsible person on the part of the
          client application.
      portalPassword:
        type: string
        description: The initial password for the user account on the API Gateway.
      scopes:
        type: array
        description: >-
          The field of applications of required scopes. On the registration,
```

```yaml
          scopes are validated against the content of the certificate used.
        items:
          $ref: '#/definitions/Role'
  Role:
    type: string
    description: Role of the TPP.
    enum:
      - PSP_AI
      - PSP_IC
      - PSP_PI
      - PSP_AS

  RegistrationResponse:
    type: object
    description: The information about the TPP extracted from the certificate.
    properties:
      _links:
        $ref: '#/definitions/Links'
      clientId:
        type: string
        description: the TPP id.
      clientSecret:
        type: string
        description: the client password. We will return NOT_PROVIDED always
        enum:
          - NOT_PROVIDED
      apiKey:
        type: string
        description: Not used in CZ. We will return NOT_PROVIDED always.
        enum:
          - NOT_PROVIDED

  Links:
    type: object
    properties:
      first:
        type: string
        example: api/v1/firstPage/
        description: Navigation link for paginated account reports.

      last:
        type: string
        example: api/v1/lastPage/
        description: Navigation link for paginated account reports.

      next:
        type: string
        example: api/v1/nextPage/
        description: Navigation link for paginated account reports.

      previous:
        type: string
        example: api/v1/previousPage/
        description: Navigation link for paginated account reports.

      self:
        type: string
        example: api/v1/payments/sepa-credit-transfers/1234-wertiq-983
        description: 'Self: The link to the payment initiation resource created by the request
itself. This link can be used later to retrieve the transaction status of the payment
initiation.'

    title: Links
    description: 'Links '

  Errors:
    type: array
    description: >-
      The list of errors thrown.
    items:
      $ref: '#/definitions/Error'

  Error:
    type: object
    properties:
      error:
```

```
          type: string
          description: >-
            Contains the specific error code.
        scope:
          type: string
          description: >-
            It determines the JSON path of the request element that caused the error status.
        message:
          type: string
          description: >-
            Optional text description. It is not intended for interpretation to the end user
but, for example, to enrich the error log.
        parameters:
          description: >-
            The field of additional elements specific for the given error code. These parameters
are always specified in the description of a specific error code.
          type: object
```

oAuth 2.0

oAuth2 is used to securely link the client with TPP.

```
swagger: '2.0'
info:
  description: API operations for oauth2.
  version: '1.0'
  title: Oauth2 API
host: int-dev-caas-cz.int.hosting.local
basePath: /oauth2
paths:
  /api/v1/oauth2/revoke:
    post:
      tags:
        - API for managing OAUTH public operations
      summary: Oauth2 token revoking endpoint
      operationId: revokeTokenUsingPOST
      consumes:
        - application/x-www-form-urlencoded
      produces:
        - application/json
      parameters:
        - name: x-api-header
          in: header
          description: The standard api header for the psd2 exposed services base64 encoded
          required: true
          type: string
        - name: x-user-agent-info
          in: header
          description: The User Agent information retrieved from the PSD2 headers base64
encoded
          required: true
          type: string
        - name: token
          in: formData
          required: true
          type: string
      responses:
        '200':
          description: OK
        '201':
          description: Created
        '400':
          description: >-
            Invalid request. A mandatory field is missing in the request, or it
            is in an unsuitable / invalid format.
          schema:
            type: array
            items:
              $ref: '#/definitions/ErrorMessage'
        '401':
```

```yaml
        description: Unauthorized
      '403':
        description: >-
          Access to the requested resource is not granted or is not possible
          for the user.
        schema:
          type: array
          items:
            $ref: '#/definitions/ErrorMessage'
      '404':
        description: Not Found
      '500':
        description: Server error.
        schema:
          type: array
          items:
            $ref: '#/definitions/ErrorMessage'
  /api/v1/oauth2/token:
    post:
      tags:
        - API for managing OAUTH public operations
      summary: The Oauth2 refresh token endpoint.
      operationId: refreshTokenUsingPOST
      consumes:
        - application/x-www-form-urlencoded
      produces:
        - application/json
      parameters:
        - name: x-api-header
          in: header
          description: The standard api header for the psd2 exposed services. Please refer to
PSD2_API_headers.yaml file and see /definitions/APIHeader for the structure.
          required: true
          type: string
        - name: x-user-agent-info
          in: header
          description: The User Agent information retrieved from the PSD2 headers base64
encoded
          required: true
          type: string
        - name: code
          in: formData
          description: The authorization code returned from the authentication flow. example
'zb328465af42c674d0b1c1128c37c2g'
          required: false
          type: string
        - name: clientId
          in: formData
          description: Id of the TPP application. example 'PSDES-BDE-3DFD2'
          required: false
          type: string
        - name: clientSecret
          in: formData
          description: Client secret-password/token issued by the bank IDP for the TPP
application. for HelloBank this will be always NOT_PROVIDED. example 'NOT_PROVIDED'
          required: false
          type: string
        - name: redirectUri
          in: formData
          description: Redirect URL identical to the URL deliveered in the authentication
request. example 'https://tppdomain'
          required: false
          type: string
        - name: grantType
          in: formData
          description: According to the existing definition/practice, OAuth2 will be the value
of authorization_code if the code is replaces by the refresh_token, or refresh_token in case
tha access_token is replaces by the refresh_token. example 'authorization_code'
          required: true
          type: string
        - name: refreshToken
          in: formData
          description: The refresh token used for retrieving a new access_token. example
'be9eef9b0af42c674d0b1c1128c37c2g'
          required: false
          type: string
```

```yaml
      responses:
        '200':
          description: The request executed successfully
          schema:
            $ref: '#/definitions/TokenRefreshResponse'
        '201':
          description: Created
        '400':
          description: >-
            Invalid request. A mandatory field is missing in the request, or it
            is in an unsuitable / invalid format.
          schema:
            type: array
            items:
              $ref: '#/definitions/ErrorMessage'
        '401':
          description: Unauthorized
        '403':
          description: Insufficient authorization to use the required scope.
          schema:
            type: array
            items:
              $ref: '#/definitions/ErrorMessage'
        '404':
          description: Not Found
        '500':
          description: Server error.
          schema:
            type: array
            items:
              $ref: '#/definitions/ErrorMessage'
/internal/api/v1/oauth2/create:
  post:
    tags:
      - API for managing OAUTH Authentication
    summary: Create token
    operationId: createTokenUsingPOST
    consumes:
      - application/json
    produces:
      - application/json
    parameters:
      - name: x-user-agent-info
        in: header
        description: >-
          The User Agent information retrieved from the PSD2 headers base64
          encoded
        required: true
        type: string
      - in: body
        name: tokenCreationRequest
        description: General information about the token and the holder.
        required: true
        schema:
          $ref: '#/definitions/TokenCreationRequest'
    responses:
      '200':
        description: The request executed successfully
        schema:
          $ref: '#/definitions/TokenCreationResponse'
      '201':
        description: Created
      '400':
        description: >-
          Invalid request. A mandatory field is missing in the request, or it
          is in an unsuitable / invalid format.
        schema:
          type: array
          items:
            $ref: '#/definitions/ErrorMessage'
      '401':
        description: Unauthorized
      '403':
        description: >-
          Access to the requested resource is not granted or is not possible
          for the user.
```

```yaml
          schema:
            type: array
            items:
              $ref: '#/definitions/ErrorMessage'
        '404':
          description: Not Found
        '500':
          description: Server error.
          schema:
            type: array
            items:
              $ref: '#/definitions/ErrorMessage'
  '/internal/api/v1/oauth2/{tokenId}':
    get:
      tags:
        - API for managing OAUTH Authentication
      summary: Oauth2 token validation endpoint
      operationId: validateTokenUsingGET
      consumes:
        - application/json
      produces:
        - application/json
      parameters:
        - name: x-api-header
          in: header
          description: The standard api header for the psd2 exposed services base64 encoded
          required: true
          type: string
        - name: x-user-agent-info
          in: header
          description: >-
            The User Agent information retrieved from the PSD2 headers base64
            encoded
          required: true
          type: string
        - name: tokenId
          in: path
          description: General information about the token and the holder.
          required: true
          type: string
        - name: tokenType
          in: query
          description: It defines the type of the token.
          required: false
          type: string
      responses:
        '200':
          description: OK
          schema:
            $ref: '#/definitions/TokenValidationResponse'
        '400':
          description: >-
            Invalid request. A mandatory field is missing in the request, or it
            is in an unsuitable / invalid format.
          schema:
            type: array
            items:
              $ref: '#/definitions/ErrorMessage'
        '401':
          description: Unauthorized
        '403':
          description: >-
            Access to the requested resource is not granted or is not possible
            for the user.
          schema:
            type: array
            items:
              $ref: '#/definitions/ErrorMessage'
        '404':
          description: Not Found
        '500':
          description: Server error.
          schema:
            type: array
            items:
              $ref: '#/definitions/ErrorMessage'
```

```yaml
definitions:
  ErrorMessage:
    type: object
    properties:
      error:
        type: string
        description: Contains the specific error code
      message:
        type: string
        description: >-
          Optional text description. It is not intended for interpretation to
          the end user but, for example, to enrich the error log.
      parameters:
        type: array
        description: Optional key value pairs with further description
        items:
          type: object
      scope:
        type: string
        description: >-
          It determines the JSON path of the request element that caused the
          error status.
    description: Custom error message
  TokenCreationRequest:
    type: object
    required:
      - customerId
      - tokenScope
    properties:
      authId:
        type: string
        description: The authorization id under which this token was created.
      customerId:
        type: string
        description: The id of the client for which the token was created.
      tokenScope:
        type: string
        description: The scope of the token.
      tppId:
        type: string
        description: The id of the tpp for which the token was provided.
    description: "\tGeneral information about the token and the holder."
  TokenCreationResponse:
    type: object
    required:
      - expiresIn
      - tokenScope
      - tokenType
    properties:
      access_token:
        type: string
        description: The client access token.
      code:
        type: string
        description: >-
          The authorization code to be used by TPP to retrieve access and
          refresh tokens.
      expiresIn:
        type: integer
        format: int64
        description: Token expiration time in seconds.
      tokenScope:
        type: string
        description: the scope of the token.
      tokenType:
        type: string
        description: The token type.
    description: "\tGeneral information about the token and the holder."
  TokenRefreshResponse:
    type: object
    properties:
      accessToken:
        type: string
        description: >-
          A short-term (in some cases, a one-time) token that may be generated
          again using the refresh_token. The token serves for the authorization
```

```
            of the request at API.
      acr:
        type: string
        description: >-
          Verification level. It may have the values between 0 and 4. Default 3.
          The value „0" corresponds to nonSCA. example: '0'
      expiresIn:
        type: integer
        format: int32
        description: >-
          A time left before the expiration of access_token - in seconds.
          example: 1000
      refreshToken:
        type: string
        description: A long-term token issued based on replacement by the one-time code.
      tokenType:
        type: string
        description: 'The token type. example: ''Bearer'''
    description: General information about the token and the holder
  TokenValidationResponse:
    type: object
    required:
      - customerId
      - expiresIn
      - tokenScope
    properties:
      customerId:
        type: string
        description: The id of the client for which the token was requested.
      deviceId:
        type: string
        description: The device id.
      expiresIn:
        type: integer
        format: int64
        description: Token expiration time in seconds.
      tokenScope:
        type: string
        description: The scope of the token.
      tppId:
        type: string
        description: The id of the tpp for which the token was provided.
    description: "\tGeneral information about the token and the holder."
```

Balance Check for Card-Issuing Payment Service Providers (CIS)

The service allows card-issuing payment service providers to check disposible balance of a linked account.

```
swagger: '2.0'
info:
  title: CIS API
  description: API for the acquisition of information on sufficient funds of the payer
(client) at a specific financial institution.
  version: 1.1.0
schemes:
  - https
basePath: /api/v1/accounts/balanceCheck
produces:
  - application/json
paths:
  /:
    parameters:
      - $ref: '#/parameters/x-api-header'
      - $ref: '#/parameters/x-user-agent-info'
    post:
      summary: Checking the balance for a specific payment account of the account payer.
      description: |
        Checking the balance for a specific payment account of the account payer.
      consumes:
        - application/json
      parameters:
```

```yaml
        - in: body
          name: balanceInquiry
          required: true
          schema:
            $ref: '#/definitions/CardPaymentDetails'
      tags:
        - accounts/balanceCheck
      responses:
        '200':
          description: Success
          schema:
            $ref: '#/definitions/CISSummary'
        '400':
          description: >-
            Invalid request. A mandatory field is missing in the request, or it
            is in an unsuitable / invalid format.
          schema:
            $ref: '#/definitions/Errors'
        '401':
          description: The client is not unauthorized to execute the request.
          schema:
            $ref: '#/definitions/Errors'
        '403':
          description: Insufficient authorization to use the required scope.
          schema:
            $ref: '#/definitions/Errors'
        '500':
          description: Server error.
          schema:
            $ref: '#/definitions/Errors'
parameters:
  x-api-header:
    name: x-api-header
    in: header
    required: true
    type: string
    format: byte
    description: 'The standard api header for the psd2 exposed services base64 encoded.'
  x-user-agent-info:
    name: x-user-agent-info
    in: header
    required: true
    type: string
    format: byte
    description: 'The User Agent information retrieved from the PSD2 headers base64 encoded.'

definitions:

  CISSummary:
    type: object
    required:
     - responseIdentification
     - exchangeIdentification
     - responseCode
    properties:
      responseIdentification:
        type: string
        description: >-
         Unique identification of response to query for Balance Check (from ASPSP).
      exchangeIdentification:
        type: string
        description: >-
          Repeated identification of a payment transaction (query for Balance Check) from the
issuer of the card to which the request for Balance Check linked to the account.
      responseCode:
        $ref: '#/definitions/ResponseCode'
     _links:
        $ref: '#/definitions/Links'

  CardPaymentDetails:
    type: object
    required:
     - exchangeIdentification
     - debtorAccount
     - transactionDetails
```

```yaml
    properties:
      exchangeIdentification:
        type: string
        description: >-
          Clear query identification.
      card:
        $ref: '#/definitions/CardDetails'
      debtorAccount:
        $ref: '#/definitions/DebtorAccountDetails'
      authenticationMethod:
        $ref: '#/definitions/AuthenticationCode'
      merchant:
        $ref: '#/definitions/MerchantDetails'
      transactionDetails:
        $ref: '#/definitions/TransactionDetails'

  CardDetails:
    type: object
    required:
     - maskedPan
    properties:
      cardholderName:
        type: string
        description: >-
          Card holder name.
      maskedPan:
        type: string
        description: >-
          Masked card number.

  DebtorAccountDetails:
    type: object
    required:
      - accountIdentification
    properties:
      accountIdentification:
        $ref: '#/definitions/AccountIdentification'

  AccountIdentification:
    type: object
    description: >-
      Payer account identification.
    properties:
      iban:
        type: string
        pattern: '[A-Z]{2,2}[0-9]{2,2}[a-zA-Z0-9]{1,30}'
      other:
        $ref: '#/definitions/OtherIdentification'

  OtherIdentification:
    type: object
    description: >-
      Other identification for account (BBAN, contract number).
    properties:
      identification:
        type: string

  MerchantDetails:
    type: object
    required:
      - identification
      - shortName
      - commonName
      - merchantCategoryCode
    properties:
      identification:
        type: string
        description: >-
          Merchant identification
      type:
        $ref: '#/definitions/MerchantType'
      shortName:
        type: string
        description: >-
          Merchant name.
      commonName:
```

```yaml
          type: string
          description: >-
            Merchant name as stated in the payment receipt.
        address:
          type: string
          description: >-
            Merchant address.
        countryCode:
          type: string
          description: >-
            ISO 3166 - Merchant country code.
        merchantCategoryCode:
          type: string
          description: >-
            ISO 18245 - Merchant code following the transaction type.

  TransactionDetails:
    type: object
    required:
      - currency
      - totalAmount
    properties:
      currency:
        type: string
        description: >-
          ISO 4217 - Balance query currency.
      totalAmount:
        type: number
        description: >-
          Balance query amount.

  ResponseCode:
    type: string
    enum:
      - APPR
      - DECL
    description: >-
      * APPR - Enough funds on this account.

      * DECL - Unsufficient funds on this account.

  AuthenticationCode:
    type: string
    enum: [NPIN, PPSG, PSWD, SCRT, SCNL, SNCT, CPSG, ADDB, BIOM, CDHI, CRYP, CSCV, PSVE, CSEC,
ADDS, TOKP]

  MerchantType:
    type: string
    enum: [OPOI, MERC, ACCP, ITAG]
    description: >-
      * OPOI - OriginatingPOI - Point Of Interaction initiating the card payment transaction.

      * MERC - Merchant -  Merchant providing goods and service in the card payment
transaction

      * ACCP - Acceptor - Card acceptor, party accepting the card and presenting transaction
data to the acquirer.

      * ITAG - IntermediaryAgent - Party acting on behalf of other parties to process or
forward data to other parties.

  Errors:
    type: object
    properties:
      errors:
        type: array
        description: >-
          The list of errors thrown.
        items:
          $ref: '#/definitions/Error'
    required:
      - errors

  Error:
    type: object
    properties:
```

```
        error:
          type: string
          description: >-
            Contains the specific error code.
        scope:
          type: string
          description: >-
            It determines the JSON path of the request element that caused the error status.
        message:
          type: string
          description: >-
            Optional text description. It is not intended for interpretation to the end user
but, for example, to enrich the error log.
        parameters:
          description: >-
            The field of additional elements specific for the given error code. These parameters
are always specified in the description of a specific error code.
          type: object

  Links:
    type: object
    properties:
      payment:
        type: string
        example: api/v1/my/payments/
        description: >-
          POST a new payment. Requires the authorization of user/client as part of the API
call
```

Account Information Service (AIS)

This service provides basic information about client's accounts.

```
swagger: '2.0'
info:
  title: AIS API
  description: API for services defined as AIS (Account Information Services) by the PSD2
directive.
  version: 1.2.2
schemes:
  - http
  - https
basePath: /api/v1/my/accounts
produces:
  - application/json
paths:
  /:
    get:
      summary: Obtain the list of the client's accounts
      description: 'List of client accounts. Each account contains a unique id usable for URI
referencing, e.g. for the account detail. The pagination is not applied.'
      tags:
        - accounts
      parameters:
        - $ref: '#/parameters/x-api-header'
        - $ref: '#/parameters/x-user-agent-info'
        - $ref: '#/parameters/sort'
        - $ref: '#/parameters/order'
      responses:
        '200':
          description: A list of accounts (sorted if so requested). The pagination is not
used.
          schema:
            allOf:
              - $ref: '#/definitions/PageMetadata'
              - $ref: '#/definitions/Accounts'
        '400':
          description: Invalid request. A mandatory parameter is missing or it is in an
unsuitable / invalid format.
          schema:
            $ref: '#/definitions/Errors'
        '401':
```

```
          description: The client is not authorized to execute the request.
          schema:
            $ref: '#/definitions/Errors'
        '404':
          description: The requested page does not exist
          schema:
            $ref: '#/definitions/Errors'
        '500':
          description: Server error.
          schema:
            $ref: '#/definitions/Errors'
  '/{id}/balance':
    get:
      summary: Obtain the balance of the specified client's account
      description: 'Obtain the balance of the specific client account according to the
reference id account. '
      tags:
        - accounts
      parameters:
        - $ref: '#/parameters/x-api-header'
        - $ref: '#/parameters/x-user-agent-info'
        - in: path
          name: id
          type: string
          required: true
          description: System identifier of client account
        - in: query
          name: currency
          type: string
          description: Required account currency (ISO 4217 currency code) for multi-currency
accounts
      responses:
        '200':
          description: The current balance(s) of the client's account
          schema:
            $ref: '#/definitions/Balances'
        '400':
          description: Invalid request. A mandatory parameter is missing or it is in an
unsuitable / invalid format.
          schema:
            $ref: '#/definitions/Errors'
        '401':
          description: The client is not authorized to execute the request.
          schema:
            $ref: '#/definitions/Errors'
        '404':
          description: The requested account does not exist
          schema:
            $ref: '#/definitions/Errors'
        '500':
          description: Server error.
          schema:
            $ref: '#/definitions/Errors'
  '/{id}/transactions':
    get:
      summary: Obtain the transactions on the specified client's account
      description: Obtain a paged list of transactions of a selected client account
      tags:
        - accounts
      parameters:
        - $ref: '#/parameters/x-api-header'
        - $ref: '#/parameters/x-user-agent-info'
        - in: path
          name: id
          type: string
          required: true
          description: System identifier of client account
        - in: query



          name: fromDate
          type: string
          description: Date and time of the start of required transaction history
        - in: query
```

```yaml
          name: toDate
          type: string
          description: Date and time of the end of required transaction history (inclusive)
        - $ref: '#/parameters/size'
        - $ref: '#/parameters/page'
        - $ref: '#/parameters/sort'
        - $ref: '#/parameters/order'
      responses:
        '200':
          description: Paged list of transactions of the specified client account
          schema:
            allOf:
              - $ref: '#/definitions/PageMetadata'
              - $ref: '#/definitions/Transactions'
        '400':
          description: Invalid request. A mandatory parameter is missing or it is in an
unsuitable / invalid format.
          schema:
            $ref: '#/definitions/Errors'
        '401':
          description: The client is not authorized to execute the request.
          schema:
            $ref: '#/definitions/Errors'
        '404':
          description: The requested account or page does not exist
          schema:
            $ref: '#/definitions/Errors'
        '500':
          description: Server error.
          schema:
            $ref: '#/definitions/Errors'
parameters:
  x-api-header:
    name: x-api-header
    in: header
    required: true
    type: string
    format: byte
    description: The standard api header for the psd2 exposed services base64 encoded.
  x-user-agent-info:
    name: x-user-agent-info
    in: header
    required: true
    type: string
    format: byte
    description: The User Agent information retrieved from the PSD2 headers base64 encoded.
  size:
    name: size
    in: query
    type: integer
    description: 'It defines the required number of records on the page. If the parameter is
not specified, the API returns the entire set.'
  page:
    name: page
    in: query
    type: integer
    description: 'It defines the required page number. Pages are numbered from 0. If the
parameter is not specified, the API returns the first (zero) page.'
    default: 0
  sort:
    name: sort
    in: query
    type: array
    items:
      type: string
    description: 'It defines a list of fields for sorting. The individual fields in the list
are separated by a comma '
  order:
    name: order
    in: query
    type: array
    items:
      type: string
      enum:
        - asc
        - desc
```

```yaml
      description: It defines the sorting direction for each field listed in the sort parameter.
The individual sorting directions are separated by commas precisely as the field names in the
sort parameter and are listed in the same order as the fields listed in the sort parameter.
definitions:
  PageMetadata:
    type: object
    properties:
      pageNumber:
        type: integer
        description: Number of current page
      pageCount:
        type: integer
        description: Total number of query pages
      nextPage:
        type: integer
        description: 'The number of the next page. If the current page is at the same time the
last page of the list, then this parameter is not listed or is given with a null value'
      pageSize:
        type: integer
        description: 'Number of entries per page. This parameter can match the required size
value from the query, except for the cases when it is the last page, or when the requested
page range exceeded the maximum limit defined for the particular API resource'
      totalCount:
        type: integer
        description: 'Optional data about the total number of entries for all pages. If this
value cannot be precisely determined, it is not stated'
  Accounts:
    type: object
    properties:
      accounts:
        type: array
        description: Set of client accounts
        items:
          $ref: '#/definitions/Account'
      _links:
        $ref: '#/definitions/AccountsListLinks'
    required:
      - accounts
  Account:
    type: object
    properties:
      id:
        type: string
        description: API Payment account identifier
      identification:
        $ref: '#/definitions/AccountIdentification'
      currency:
        $ref: '#/definitions/ISOCurrencyCode'
      servicer:
        $ref: '#/definitions/ServiceProviderIdentification'
      nameI18N:
        type: string
        description: Account name / label
      productI18N:
        type: string
        description: Product name
      _links:
        $ref: '#/definitions/AccountLinks'
    required:
      - id
      - identification
      - servicer
  Balances:
    type: object
    properties:
      balances:
        type: array
        description: Set of balances of client payment account
        items:
          $ref: '#/definitions/Balance'
      _links:
        $ref: '#/definitions/BalancesListLinks'
    required:
      - balances
  Balance:
    type: object
```

```
      description: Account balance information
    properties:
      type:
        $ref: '#/definitions/BalanceType'
      creditLine:
        $ref: '#/definitions/OverdraftInformation'
      amount:
        type: object
        description: Value/amount of account balance according to balance type. Currency
corresponds to the account currency to which the statement is generated
        properties:
          value:
            type: number
            description: Amount of account balance
          currency:
            $ref: '#/definitions/ISOCurrencyCode'
        required:
          - value
          - currency
      creditDebitIndicator:
        type: string
        enum:
          - DBIT
          - CRDT
        description: Indication of whether the balance in the account for which the statement
is generated is positive or negative
      date:
        type: object
        description: Date (and time) of balance of the account for which the statement is
generated
        properties:
          dateTime:
            $ref: '#/definitions/ISODateTime'
        required:
          - dateTime
    required:
      - type
      - amount
      - creditDebitIndicator
      - date
  Transactions:
    type: object
    properties:
      transactions:
        type: array
        description: Set of transactions of client payment account
        items:
          $ref: '#/definitions/Transaction'
      _links:
        $ref: '#/definitions/TransactionsListLinks'
    required:
      - transactions
  Transaction:
    type: object
    properties:
      entryReference:
        type: string
        maxLength: 35
        description: Identification of the payment assigned by the bank
      amount:
        type: object
        description: Payment amount in the account currency for which payment history is
generated
        properties:
          value:
            type: number
            description: Payment amount
          currency:
            $ref: '#/definitions/ISOCurrencyCode'
        required:
          - value
          - currency
      creditDebitIndicator:
        type: string
        enum:
          - DBIT
```

```yaml
            - CRDT
        description: Indication of whether it is a debit payment or credit payment of the
account
      reversalIndicator:
        type: boolean
        description: Indication of whether it is a cancellation
      status:
        type: string
        enum:
          - BOOK
          - PDNG
        description: 'Item status (debited or credited payments) of the account from the point
of view of the bank. The statement will present only posted items, with the constant BOOK, or
blocked items, with the constant PDNG'
      bookingDate:
        type: object
        description: Date (or date and time) of processing/posting of payment by bank in the
ISO 8601 format
        properties:
          date:
            $ref: '#/definitions/ISODateTime'
      valueDate:
        type: object
        description: Due date (or date and time)/payment foreign currency in the ISO 8601
format
        properties:
          date:
            $ref: '#/definitions/ISODateTime'
      bankTransactionCode:
        $ref: '#/definitions/BankTransactionCode'
      entryDetails:
        type: object
        description: Turnover details. The level repeats only for the given item
        properties:
          transactionDetails:
            $ref: '#/definitions/TransactionDetails'
    required:
      - amount
      - creditDebitIndicator
      - status
      - bookingDate
      - valueDate
      - bankTransactionCode
  TransactionDetails:
    type: object
    description: Payment details. The level repeats only for the given item
    properties:
      references:
        $ref: '#/definitions/PaymentReferences'
      amountDetails:
        $ref: '#/definitions/PaymentAmountDetails'
      charges:
        type: object
        description: Information on fees (only for foreign payments)
        properties:
          bearer:
            type: string
            enum:
              - OUR
              - SHA
              - BEN
            description: Indicates whose debit the payments will be charged to
      relatedParties:
        allOf:
          - $ref: '#/definitions/TransactionParties'
          - type: object
            description: 'Information on the payer, the payer''s account and the original
payer and payee, the payee''s account and the final payee in the payment'
      relatedAgents:
        allOf:
          - $ref: '#/definitions/TransactionAgents'
          - type: object
            description: Information on the payer bank and the payee bank in the payment
      purpose:
        type: object
        description: Payment purpose
```

```yaml
      properties:
        code:
          type: string
          description: Payment purpose as stated in the external list of payment purpose
codes
        proprietary:
          type: string
          maxLength: 35
          description: 'Payment purpose in free text format, as entered by payer'
    remittanceInformation:
      type: object
      description: 'Information that allows match (i.e. pairing, reconciliation) of payments
with which the payment should be settled, such as commercial invoices in the receivables
system'
      properties:
        unstructured:
          type: string
          maxLength: 140
          description: Additional payment information filled in in the payment as
unstructured information. For example note for the recipient or payer's reference.
        structured:
          $ref: '#/definitions/StructuredRemittanceInformation'
          example: '"reference": [ "VS:123456","SS:879213546", "KS:456789"]'
    additionalTransactionInformation:
      type: string
      maxLength: 500
      description: 'Additional information provided by the bank. Only stated if it is
included in the record. Additional info for SEPA DD is entered here (e.g., Creditor
Identifier, Payment scheme, SEPA collection order, etc.)'
  BalanceType:
    type: object
    description: Determines the balance type to which information on account balance applies
    properties:
      codeOrProprietary:
        type: object
        properties:
          code:
            type: string
            enum:
              - PRCD
              - OPBD
              - CLBD
              - ITBD
              - CLAV
              - FWAV
            description: |
              Type of balance
               * PRCD - Balance of the account at the previously closed account reporting
period. The opening booked balance for the new period has to be equal to this balance.
               * OPBD - Book balance of the account at the beginning of the account reporting
period. It always equals the closing book balance from the previous report.
               * CLBD - 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.
               * ITBD - Balance calculated in the course of the account serviceri¿½s 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. This balance type is only present in CAMT.052.
               * CLAV - Closing balance of amount of money that is at the disposal of the
account owner on the date specified.
               * FWAV - Forward available balance of money that is at the disposal of the
account owner on the date specified.
          required:
            - code
      required:
        - codeOrProprietary
  OverdraftInformation:
    type: object
    description: Information on agreed permitted debit/overdraft
    properties:
      included:
        type: boolean
        description: Indicates if overdraft is possible
      amount:
        type: object
        description: Amount of agreed permitted debit
```

```
        properties:
          value:
            type: number
            description: Amount of agreed permitted debit
          currency:
            $ref: '#/definitions/ISOCurrencyCode'
  BankTransactionCode:
    type: object
    description: The code of banking transaction according to the code list of the Czech
Banking Association assigned to a specific payment
    properties:
      proprietary:
        type: object
        description: 'Each bank uses an own code list to identify payments which is, however,
based on the 1st to 3rd level of transaction code list according to the CBA Standard for
camt.053'
        properties:
          code:
            type: string
            maxLength: 35
            description: Proprietary code based on the CBA Standard for camt.053
          issuer:
            type: string
            maxLength: 35
            description: Identification of the code list issuer for banking transactions which
acquires the value of the Czech Banking Association
  PaymentReferences:
    type: object
    description: A set of references unambiguously identifying the payment
    properties:
      messageIdentification:
        type: string
        maxLength: 35
        description: Assumed payment identification entered by the client on its initiation or
order of the payment in the payment history
      accountServicerReference:
        type: string
        maxLength: 35
        description: 'A banking reference assigned to the payment, e.g., on initiation through
direct banking services'
      paymentInformationIdentification:
        type: string
        maxLength: 35
        description: 'Another/next banking reference assigned to the payment assigned by the
bank, the card sequence number or the specific symbol'
      instructionIdentification:
        type: string
        maxLength: 35
        description: 'Payment identification entered by a third party, or a constant symbol '
      endToEndIdentification:
        type: string
        maxLength: 35
        description: 'A unique identifier specified by the client initiating the payment that
serves for unambiguous payment identification and is passed in the unchanged state throughout
the payment chain, or a variable symbol. If the value is NOTPROVIDED, then is not displayed to
customer in transaction history and therefore it will be not send as part of response to AIS
Transaction history request.'
      mandateIdentification:
        type: string
        maxLength: 35
        description: Unique Mandate Reference stated for the given SEPA collection (mandatory
for SEPA collections)
      chequeNumber:
        type: string
        maxLength: 35
        description: For cheque transactions the cheque number; for card transactions a masked
or incomplete card number.
      clearingSystemReference:
        type: string
        maxLength: 35
        description: 'A bank-defined code list value identifying the type of payment or
payment type used. For card transactions, card association identification may be indicated.'
  PaymentAmountDetails:
    type: object
    description: 'Details of the payment amount, especially if it is a conversion payment or
cashback'
```

```yaml
    properties:
      instructedAmount:
        type: object
        description: 'Amount and currency of payment in the currency that was required by the
client (e.g. for intra-bank payments, the payer account currency and the payment currency if
the client required the payment in the payer account currency)'
        properties:
          amount:
            $ref: '#/definitions/AmountWithCurrency'
        required:
          - amount
      transactionAmount:
        type: object
        description: The total amount and currency of payment for cumulated payments and
Cashback
        properties:
          amount:
            $ref: '#/definitions/AmountWithCurrency'
        required:
          - amount
      counterValueAmount:
        type: object
        description: The amount and currency of payment in the client account currency after
conversion of amount that was required by the client for transfer
        properties:
          amount:
            $ref: '#/definitions/AmountWithCurrency'
          currencyExchange:
            $ref: '#/definitions/CurrencyExchange'
        required:
          - amount
      proprietaryAmount:
        type: object
        description: 'Amount of cash withdrawal through the Cashback service (only the part of
total payment, to which the cash amount withdrawn falls within the Cashback service)'
        properties:
          type:
            type: string
            description: The constant "CASHBACK"
          amount:
            $ref: '#/definitions/AmountWithCurrency'
        required:
          - amount
  TransactionParties:
    type: object
    description: Information on the parties involved in a transaction
    properties:
      debtor:
        type: object
        description: 'Information on the payer. It is according to the payment direction, and
filled in in the case of counterparty'
        properties:
          name:
            type: string
            maxLength: 140
            description: Payer name
          postalAddress:
            allOf:
              - $ref: '#/definitions/PostalAddress'
              - type: object
                description: Payer postal address
          identification:
            type: object
            description: Payer identification (for SEPA either organisationIdentification  or
privateIdentification must be present)
            properties:
              organisationIdentification:
                $ref: '#/definitions/OrganizationIdentification'
              privateIdentification:
                $ref: '#/definitions/NaturalPersonIdentification'
      debtorAccount:
        type: object
        description: 'Information on the account payer. It is according to the payment
direction, and filled in in the case of counterparty. Revolving account uses non-standard
format of account number which is not transformable to IBAN format. Therefore Debtor account
will be stated in other identification message element.Iban message element will be filled
```

```yaml
with IBAN format of account. Other identification message element will be used for account
number in BBAN format in case of savings, current and basic accounts. If the value of BBAN is
not available message element other identification will be filled with no value'
        properties:
          identification:
            $ref: '#/definitions/AccountIdentification'
          currency:
            $ref: '#/definitions/ISOCurrencyCode'
          name:
            type: string
            maxLength: 70
            description: Payer account name
        required:
          - identification
      ultimateDebtor:
        type: object
        description: 'Information on the original/actual payer (only for SEPA). It is
according to the payment direction, and filled in in the case of counterparty'
        properties:
          name:
            type: string
            maxLength: 140
            description: Name of the original/actual payer
          postalAddress:
            allOf:
              - $ref: '#/definitions/PostalAddress'
              - type: object
                description: Postal address of the original payer
          identification:
            type: object
            description: Original      payer      identification      (for      SEPA      either
organisationIdentification or privateIdentification must be present)
            properties:
              organisationIdentification:
                $ref: '#/definitions/OrganizationIdentification'
              privateIdentification:
                $ref: '#/definitions/NaturalPersonIdentification'
      creditor:
        type: object
        description: 'Information on the payee. It is according to the payment direction, and
filled in in the case of counterparty'
        properties:
          name:
            type: string
            maxLength: 140
            description: Payee name
          postalAddress:
            allOf:
              - $ref: '#/definitions/PostalAddress'
              - type: object
                description: Payee postal address
          identification:
            type: object
            description: Payee identification
            properties:
              organisationIdentification:
                $ref: '#/definitions/OrganizationIdentification'
              privateIdentification:
                $ref: '#/definitions/NaturalPersonIdentification'
      creditorAccount:
        type: object
        description: 'Information on the payee account. It is according to the payment
direction, and filled in in the case of counterparty'
        properties:
          identification:
            $ref: '#/definitions/AccountIdentification'
          currency:
            $ref: '#/definitions/ISOCurrencyCode'
          name:
            type: string
            maxLength: 70
            description: Payee account name
        required:
          - identification
      ultimateCreditor:
        type: object
```

```yaml
            description: 'Information on the final payee (only for SEPA). It is according to the
payment direction, and filled in in the case of counterparty'
        properties:
          name:
            type: string
            maxLength: 140
            description: Final payee name
          postalAddress:
            allOf:
              - $ref: '#/definitions/PostalAddress'
              - type: object
                description: Final payee postal address
          identification:
            type: object
            description: Final payee identification
            properties:
              organisationIdentification:
                $ref: '#/definitions/OrganizationIdentification'
              privateIdentification:
                $ref: '#/definitions/NaturalPersonIdentification'
      proprietary:
        type: object
        description: For more detailed identification of which ATM a card transaction occurred
on
        properties:
          type:
            type: string
            maxLength: 35
            description: Indicates if own or external ATM was used
          party:
            type: object
            description: For identification of the ATM name/owner
            properties:
              name:
                type: string
                maxLength: 140
                description: For identification of ATM name/location
      transactionSource:
        type: object
        properties:
          name:
            type: string
            maxLength: 70
            description: Name of TPP via the client initiated the payment transaction
  TransactionAgents:
    type: object
    description: Information on the agents facilitating a transaction
    properties:
      debtorAgent:
        type: object
        description: 'Information on the payer bank. It is according to the payment direction,
and filled in in the case of counterparty'
        properties:
          financialInstitutionIdentification:
            $ref: '#/definitions/FinancialInstitutionIdentification'
        required:
          - financialInstitutionIdentification
      creditorAgent:
        type: object
        description: 'Information on the payee bank. It is according to the payment direction,
and filled in in the case of counterparty'
        properties:
          financialInstitutionIdentification:
            $ref: '#/definitions/FinancialInstitutionIdentification'
        required:
          - financialInstitutionIdentification
  StructuredRemittanceInformation:
    type: object
    description: 'Structured message for payee ï¿½ variable, specific, and constant symbol. If
the payment does not have a variable, specific or constant symbol, then the entire Structured
Remittance Information will be left empty'
    properties:
      creditorReferenceInformation:
        type: object
        description: Reference information provided by the payee that allows identification of
underlying documents (e.g. invoice)
```

```yaml
      properties:
        reference:
          type: array
          description: 'Information allowing to pass on information about the value of a
variable symbol, a specific symbol, or a constant symbol.'
          items:
            type: string
  OrganizationIdentification:
    type: object
    description: Identification information for an organization/legal entity
    properties:
      bicOrBei:
        $ref: '#/definitions/BIC'
      other:
        type: object
        description: Other identification as the organization/legal entity
        properties:
          identification:
            type: string
            maxLength: 35
            description: Other identification as the organization/legal entity in unstructured
form
          schemeName:
            $ref: '#/definitions/IdentificationScheme'
          issuer:
            type: string
            maxLength: 35
            description: 'Name  of  document  issuer,  i.e.  the  entity  assigning  the
identification'
        required:
          - identification
  NaturalPersonIdentification:
    type: object
    description: Identification information for a natural person
    properties:
      other:
        type: object
        description: Other identification as the natural person
        properties:
          identification:
            type: string
            maxLength: 35
            description: Other identification as the natural person in unstructured form
          schemeName:
            $ref: '#/definitions/IdentificationScheme'
          issuer:
            type: string
            maxLength: 35
            description: 'Name  of  document  issuer,  i.e.  the  entity  assigning  the
identification'
        required:
          - identification
  FinancialInstitutionIdentification:
    type: object
    description: A unique and unambiguous financial institution identification assigned by the
international standard
    properties:
      bic:
        $ref: '#/definitions/BIC'
      clearingSystemMemberIdentification:
        type: object
        description: Identification of participant in the local clearing system (only for
foreign payments outside EEA)
        properties:
          clearingSystemIdentification:
            type: object
            description: Clearing system identification
            properties:
              code:
                type: string
                description: A code identifying the local clearing system as stated in the
external code list
              proprietary:
                type: string
                maxLength: 35
                description: 'Identification  of  the  local  clearing  system,  in  free  text
```

```
format'
        memberIdentification:
          type: string
          maxLength: 35
          description: Participant's identification code or bank's clearing code
    name:
      type: string
      maxLength: 140
      description: 'Name under which the party is known, and which is normally used to
identify that party'
    postalAddress:
      allOf:
        - $ref: '#/definitions/PostalAddress'
        - type: object
          description: Postal address of the financial institution
    other:
      type: object
      description: Unique agent identification assigned to the institution using the
identification scheme (not used for SEPA)
      properties:
        identification:
          type: string
          maxLength: 35
          description: 'Other bank identification, mainly in the form of a local bank code'
      required:
        - identification
  IdentificationScheme:
    type: object
    description: Code type for identification as an organization/legal entity or natural
person
    properties:
      code:
        type: string
        description: Code type for identification in the form of code according to the ISO
code list
      proprietary:
        type: string
        maxLength: 35
        description: Code type for identification in free text format
    required:
      - proprietary
  PostalAddress:
    type: object
    description: A postal address
    properties:
      streetName:
        type: string
        maxLength: 70
        description: Street name
      buildingNumber:
        type: string
        maxLength: 16
        description: Land registry no.
      postCode:
        type: string
        maxLength: 16
        description: Postcode
      townName:
        type: string
        maxLength: 35
        description: Town name
      country:
        $ref: '#/definitions/ISOCountryCode'
      addressLine:
        type: string
        maxLength: 70
        description: 'Information that localizes and identifies the specific address as
defined by postal services, presented in the free text format'
  AccountIdentification:
    type: object
    description: 'Account identification (either IBAN or other, except for SEPA where IBAN is
mandatory).If the client use the Proxy_ID instead of IBAN as creditor account identifier, the
payment transaction will have in transaction history used Proxy_ID instead of IBAN.
Information about crediotor''s IBAN is not revealed to client.'
    properties:
      iban:
```

```yaml
        $ref: '#/definitions/IBAN'
      other:
        $ref: '#/definitions/OtherIdentification'
      contactDetails:
        $ref: '#/definitions/ContactDetails'
  IBAN:
    type: string
    description: Account number in the IBAN format which is defined by the international
standard ISO 13616.
    pattern: '[A-Z]{2,2}[0-9]{2,2}[a-zA-Z0-9]{1,30}'
  OtherIdentification:
    type: object
    description: 'Other identification for account (BBAN, contract number).'
    properties:
      identification:
        type: string
  ServiceProviderIdentification:
    type: object
    description: Bank / service provider identification.
    properties:
      bankCode:
        type: string
        description: National bank code (if any)
      countryCode:
        $ref: '#/definitions/ISOCountryCode'
      bic:
        $ref: '#/definitions/BIC'
  BIC:
    type: string
    pattern: '[A-Z]{6}[A-Z0-9]{2}|[A-Z]{6}[A-Z0-9]{5}'
    description: ISO 9362 BIC/BEI
  AmountWithCurrency:
    type: object
    description: Amount and currency of payment
    properties:
      value:
        type: number
        description: Payment amount
      currency:
        $ref: '#/definitions/ISOCurrencyCode'
    required:
      - value
      - currency
  CurrencyExchange:
    type: object
    description: Information on currencies and exchange rates
    properties:
      sourceCurrency:
        $ref: '#/definitions/ISOCurrencyCode'
      targetCurrency:
        $ref: '#/definitions/ISOCurrencyCode'
      exchangeRate:
        type: number
        format: float
        description: 'The exchange rate. In the case of cross conversion, only one rate is
filled in'
    required:
      - sourceCurrency
      - exchangeRate
  ContactDetails:
    type: object
    description: Information of the contact details
    properties:
      emailAddress:
        type: string
        maxLength: 2048
        description: Email address
      mobileNumber:
        type: string
        description: European economic area mobile number
      faxNumber:
        type: string
        description: Hungarian tax ID number
  ISOCountryCode:
    type: string
    description: ISO 3166 alphanumeric 3 country code
```

```yaml
        pattern: '[A-Z]{3}|[0-9]{3}'
  ISOCurrencyCode:
    type: string
    description: ISO 4217 currency code
    pattern: '[A-Z]{3}'
  ISODateTime:
    type: string
    description: Date (or date and time) in the ISO 8601 format
  Errors:
    type: object
    properties:
      errors:
        type: array
        description: The list of errors thrown.
        items:
          $ref: '#/definitions/Error'
    required:
      - errors
  Error:
    type: object
    properties:
      error:
        type: string
        description: Contains the specific error code.
      scope:
        type: string
        description: It determines the JSON path of the request element that caused the error
status.
      message:
        type: string
        description: 'Optional text description. It is not intended for interpretation to the
end user but, for example, to enrich the error log. '
      parameters:
        description: The field of additional elements specific for the given error code. These
parameters are always specified in the description of a specific error code.
        type: object
  AccountsListLinks:
    type: object
    properties:
      self:
        type: string
        example: api/v1/my/accounts/
        description: The link to the resource itself
      first:
        type: string
        example: api/v1/my/accounts/
        description: GET the first page of the account list
      last:
        type: string
        example: api/v1/my/accounts/?page=3&size=10
        description: GET the last page of the account list
      next:
        type: string
        example: api/v1/my/accounts/?page=2&size=10
        description: GET the next page of the account list
      previous:
        type: string
        example: api/v1/my/accounts/?page=1&size=10
        description: GET the previous page of the account list
  AccountLinks:
    type: object
    properties:
      balance:
        type: string
        example: api/v1/my/accounts/0123456789/balance
        description: GET the account's balance(s)
      transactions:
        type: string
        example: api/v1/my/accounts/0123456789/transactions
        description: GET the list of transactions on the account
      balanceCheck:
        type: string
        example: api/v1/my/payments/balanceCheck
        description: POST an inquiry about availability of funds. Requires the authorization
of user/client as part of the API call
      thirdPartyBalanceCheck:
```

```
      type: string
      example: api/v1/accounts/balanceCheck
      description: POST an inquiry about availability of funds. Does not require the
authorization of user/client as part of the API call
    payment:
      type: string
      example: api/v1/my/payments/
      description: POST a new payment. Requires the authorization of user/client as part of
the API call
  BalancesListLinks:
    type: object
    properties:
      self:
        type: string
        example: api/v1/my/accounts/0123456789/balance
        description: The link to the resource itself
      transactions:
        type: string
        example: api/v1/my/accounts/0123456789/transactions
        description: GET the list of transactions on the account
      accounts:
        type: string
        example: api/v1/my/accounts/
        description: GET the list of accounts
      payment:
        type: string
        example: api/v1/my/payments/
        description: POST a new payment. Requires the authorization of user/client as part of
the API call
  TransactionsListLinks:
    type: object
    properties:
      self:
        type: string
        example: api/v1/my/accounts/0123456789/transactions
        description: The link to the resource itself
      first:
        type: string
        example: api/v1/my/accounts/0123456789/transactions
        description: GET the first page of the account list
      last:
        type: string
        example: api/v1/my/accounts/0123456789/transactions?page=3&size=10
        description: GET the last page of the account list
      next:
        type: string
        example: api/v1/my/accounts/0123456789/transactions?page=2&size=10
        description: GET the next page of the account list
      previous:
        type: string
        example: api/v1/my/accounts/0123456789/transactions?page=1&size=10
        description: GET the previous page of the account list
      balance:
        type: string
        example: api/v1/my/accounts/0123456789/balance
        description: GET the account's balance(s)
      balanceCheck:
        type: string
        example: api/v1/my/payments/balanceCheck
        description: POST an inquiry about availability of funds. Requires the authorization
of user/client as part of the API call
      thirdPartyBalanceCheck:
        type: string
        example: api/v1/accounts/balanceCheck
        description: POST an inquiry about availability of funds. Does not require the
authorization of user/client as part of the API call
      payment:
        type: string
        example: api/v1/my/payments/
        description: POST a new payment. Requires the authorization of user/client as part of
the API call
      accounts:
        type: string
        example: api/v1/my/accounts/
        description: GET the list of accounts
```

Payment Initiation Service (PIS)

Payment initiation service allows clients to initiate various types of payments using TPPs' applications.

```
swagger: '2.0'
info:
  title: PISP API
  description: Public API for PISP.
  version: 1.2.2
host: api.hellobank.cz
schemes:
  - https
produces:
  - application/json
basePath: /api/v1/
paths:
  /my/payments:
    post:
      summary: Initiate a new payment.
      description: Resource for entering a new payment.
      parameters:
        - $ref: '#/parameters/x-api-header'
        - $ref: '#/parameters/x-user-agent-info'
        - in: body
          name: PaymentInitiationRequest
          schema:
            $ref: '#/definitions/PaymentInitiationRequest'
      tags:
        - payments
      responses:
        '200':
          description: OK
          schema:
            $ref: '#/definitions/PaymentInitiationResponse'
        '400':
          description: Missing mandatory field in the request or field value is not valid.
          schema:
            $ref: '#/definitions/Errors'
        '401':
          description: Missing certificate.
          schema:
            $ref: '#/definitions/Errors'
        '403':
          description: >-
            Calling of the method which does not correspond to the licence, or
            invalid certificate
          schema:
            $ref: '#/definitions/Errors'
        '500':
          description: Server error.
          schema:
            $ref: '#/definitions/Errors'
  '/my/payments/{paymentId}/status':
    get:
      summary: Display the status of the payment.
      description: >-
        The resource returns the information only for transactions entered
        through a specific provider
      parameters:
        - $ref: '#/parameters/x-api-header'
        - $ref: '#/parameters/x-user-agent-info'
        - in: path
          name: paymentId
          type: string
          required: true
          description: The id of the payment
      tags:
        - payments
      responses:
        '200':
          description: OK
          schema:
            $ref: '#/definitions/PaymentStatusResponse'
```

```yaml
        '400':
          description: Missing mandatory field in the request or field value is not valid.
          schema:
            $ref: '#/definitions/Errors'
        '401':
          description: Invalid/missing certificate
          schema:
            $ref: '#/definitions/Errors'
        '404':
          description: >-
            Calling of the method which does not correspond to the licence, or
            invalid certificate
          schema:
            $ref: '#/definitions/Errors'
        '500':
          description: Server error.
          schema:
            $ref: '#/definitions/Errors'
  '/my/payments/{paymentId}/sign':
    post:
      summary: Sing transaction
      description: This is the resource for signing a particular transaction.
      parameters:
        - $ref: '#/parameters/x-api-header'
        - $ref: '#/parameters/x-user-agent-info'
        - in: path
          name: paymentId
          type: string
          required: true
          description: The id of the payment
      tags:
        - payments
      responses:
        '200':
          description: OK
          schema:
            $ref: '#/definitions/PaymentSigningResponse'
        '400':
          description: Missing mandatory field in the request or field value is not valid.
          schema:
            $ref: '#/definitions/Errors'
        '401':
          description: Missing certificate.
          schema:
            $ref: '#/definitions/Errors'
        '403':
          description: >-
            Calling of the method which does not correspond to the licence, or
            invalid certificate
          schema:
            $ref: '#/definitions/Errors'
        '500':
          description: Server error.
          schema:
            $ref: '#/definitions/Errors'
  '/my/payments/{paymentId}':
    put:
      summary: Update a payment.
      description: Resource updating a payment.
      parameters:
        - $ref: '#/parameters/x-api-header'
        - $ref: '#/parameters/x-user-agent-info'
        - in: body
          name: PaymentUpdateRequest
          schema:
            $ref: '#/definitions/PaymentInitiationRequest'
        - in: path
          name: paymentId
          type: string
          required: true
          description: The id of the payment
      tags:
        - payments
      responses:
        '200':
          description: OK
```

```yaml
            schema:
              $ref: '#/definitions/PaymentInitiationResponse'
        '400':
          description: Missing mandatory field in the request or field value is not valid.
          schema:
            $ref: '#/definitions/Errors'
        '401':
          description: Missing certificate.
          schema:
            $ref: '#/definitions/Errors'
        '403':
          description: >-
            Calling of the method which does not correspond to the licence, or
            invalid certificate
          schema:
            $ref: '#/definitions/Errors'
        '500':
          description: Server error.
          schema:
            $ref: '#/definitions/Errors'
  /my/payments/balanceCheck:
    post:
      summary: Check the balance
      description: >-
        This is the resource for sending a request for balance check in a
        particular payer's payment           account.
      parameters:
        - $ref: '#/parameters/x-api-header'
        - $ref: '#/parameters/x-user-agent-info'
        - in: body
          name: BalanceCheckRequest
          schema:
            $ref: '#/definitions/BalanceCheckRequest'
      tags:
        - payments
      responses:
        '200':
          description: OK
          schema:
            $ref: '#/definitions/BalanceCheckResponse'
        '400':
          description: Missing mandatory field in the request or field value is not valid.
          schema:
            $ref: '#/definitions/Errors'
        '401':
          description: Missing certificate.
          schema:
            $ref: '#/definitions/Errors'
        '403':
          description: >-
            Calling of the method which does not correspond to the licence, or
            invalid certificate
          schema:
            $ref: '#/definitions/Errors'
        '500':
          description: Server error.
          schema:
            $ref: '#/definitions/Errors'
parameters:
  x-api-header:
    name: x-api-header
    in: header
    required: true
    type: string
    format: byte
    description: >-
      The standard api header for the psd2 exposed services. Please refer to
      PSD2_API_headers.yaml file and see /definitions/APIHeader for the
      structure.
  x-user-agent-info:
    name: x-user-agent-info
    in: header
    required: true
    type: string
    format: byte
    description: >-
```

```yaml
        The User Agent information retrieved from the PSD2 headers. Please refer
        to PSD2_API_headers.yaml file and see /definitions/APIHeader for the
        structure.
definitions:
  PaymentInitiationRequest:
    type: object
    description: Request used when initiating a new payment.
    required:
      - paymentIdentification
      - amount
      - debtorAccount
    properties:
      paymentIdentification:
        $ref: '#/definitions/PaymentIdentificationRequest'
      paymentTypeInformation:
        $ref: '#/definitions/PaymentType'
      amount:
        $ref: '#/definitions/Amount'
      requestedExecutionDate:
        $ref: '#/definitions/RequestedExecutionDate'
      startDate:
        $ref: '#/definitions/StartDate'
      endDate:
        $ref: '#/definitions/EndDate'
      frequency:
        $ref: '#/definitions/Frequency'
      debtor:
        $ref: '#/definitions/Debtor'
      debtorAccount:
        $ref: '#/definitions/DebtorAccount'
      creditor:
        $ref: '#/definitions/Creditor'
      creditorAccount:
        $ref: '#/definitions/CreditorAccount'
      remittanceInformation:
        $ref: '#/definitions/RemittanceInformation'
      paymentDescription:
        type: string
        description: The payment description
      noteForMe:
        type: string
        description: The payment description for the debtor.
  PaymentIdentificationRequest:
    type: object
    description: Set of elements used to identify the payment instruction
    required:
      - instructionIdentification
    properties:
      instructionIdentification:
        type: string
        maxLength: 35
        description: >-
          Unique identification assigned by PISP that identifies the
          instruction.
      endToEndIdentification:
        type: string
        maxLength: 35
        description: >-
          Identification agreed between the payer and the payee. If not filled
          in by the payer, then PISP will fill in „NOTPROVIDED".
  PaymentType:
    type: object
    description: A set of elements used to further determine the transaction type.
    properties:
      instructionPriority:
        type: string
        example: NORM
        description: >-
          If the element is not filled in, the payer's provider assigns a NORM
          value and makes a payment by default. If a HIGH value is indicated,
          the payer's provider will make the payment as priority
      serviceLevel:
        type: object
        required:
          - code
        description: >-
```

```yaml
          Service placement(within type of payment)
        properties:
          code:
            type: string
  Amount:
    type: object
    description: Amount information
    required:
      - instructedAmount
    properties:
      instructedAmount:
        type: object
        description: >-
          The amount to be transferred between the payer and the recipient
          before charges.
        required:
          - value
          - currency
        properties:
          value:
            type: number
          currency:
            $ref: '#/definitions/CurrencyCode'
      equivalentAmount:
        type: object
        properties:
          value:
            type: number
          currency:
            $ref: '#/definitions/CurrencyCode'
  ExchangeRateInformation:
    type: object
    description: The element provides details about the exchange rate and Contract
    properties:
      exchangeRate:
        type: number
        format: float
        description: Detail of Agreed Exchange rate.
      rateType:
        type: string
        enum:
          - AGREED
          - SALE
          - SPOT
      contractIdentification:
        type: string
        maxLength: 35
        description: >-
          Detail of Contract agreed with client for the execution of payments at
          the Agreed Exchange rate
  Debtor:
    type: object
    description: A party that owes money to the payee.
    properties:
      name:
        type: string
        maxLength: 70
        description: Name under which the party is known.
      postalAddress:
        $ref: '#/definitions/DebtorPostalAddress'
  DebtorAccount:
    type: object
    description: >-
      Clear identification of the payer account in which a debit item will be
      executed as the transaction result.
    required:
      - identification
    properties:
      identification:
        type: object
        properties:
          iban:
            $ref: '#/definitions/IBAN2007Identifier'
          other:
            type: object
            description: >-
```

```yaml
              Unique account identification assigned by the party administering
              the account.
            properties:
              identification:
                type: string
                maxLength: 34
                description: >-
                  An account number used for identification of the client
                  account.
      currency:
        $ref: '#/definitions/CurrencyCode'
  RequestedExecutionDate:
    type: string
    description: >-
      The date on which the initiating party requests payment processing by a
      settlement agent. Date (or date and time) in the ISO 8601 format
  StartDate:
    type: string
    description: >-
      The first applicable day of execution starting from this date is the first
      payment. Date (or date and time) in the ISO 8601 format
  EndDate:
    type: string
    description: >-
      The last applicable day of execution If not given, it is an infinite
      standing order. Date (or date and time) in the ISO 8601 format
  RemittanceInformation:
    type: object
    description: >-
      Information that allows match (i.e. pairing, reconciliation) of payments
      with which the payment should be settled.
    properties:
      unstructured:
        type: string
        maxLength: 140
        description: Unstructured message for payee.
  Creditor:
    type: object
    properties:
      name:
        type: string
        maxLength: 105
        description: The authentication method needed for this enrollment.
      postalAddress:
        $ref: '#/definitions/CreditorPostalAddress'
  CreditorAccount:
    type: object
    description: >-
      Clear identification of the payee account to which the credit item will be
      transferred as the transaction result.
    properties:
      identification:
        type: object
        properties:
          iban:
            $ref: '#/definitions/IBAN2007Identifier'
          other:
            type: object
            description: >-
              Unique account identification assigned by the party administering
              the account,
            properties:
              identification:
                type: string
                maxLength: 34
                description: An account number used by financial institutions
      currency:
        $ref: '#/definitions/CurrencyCode'
  IBAN2007Identifier:
    type: string
    description: >-
      Account number in the IBAN format which is defined by the international
      standard ISO 13616
    pattern: '[A-Z]{2,2}[0-9]{2,2}[a-zA-Z0-9]{1,30}'
  PaymentStatusResponse:
    type: object
```

```yaml
      required:
      - instructionStatus
      description: Status of entered payment
      properties:
        instructionStatus:
          $ref: '#/definitions/StatusCode'
  StatusCode:
    type: string
    enum:
      - ACTC
      - RJCT
      - ACSP
      - ACSC
      - ACWC
  Frequency:
    type: string
    description: The frequency of the recurring payment resulting from this standing order
    enum:
      - Daily
      - Weekly
      - EveryTwoWeeks
      - Monthly
      - EveryTwoMonths
      - Quarterly
      - SemiAnnual
      - Annual
  PaymentInitiationResponse:
    type: object
    required:
      - transactionIdentification
      - signInfo
    properties:
      paymentIdentification:
        $ref: '#/definitions/PaymentIdentificationResponse'
      paymentTypeInformation:
        $ref: '#/definitions/PaymentType'
      amount:
        $ref: '#/definitions/Amount'
      requestedExecutionDate:
        $ref: '#/definitions/RequestedExecutionDate'
      startDate:
        $ref: '#/definitions/StartDate'
      endDate:
        $ref: '#/definitions/EndDate'
      frequency:
        $ref: '#/definitions/Frequency'
      debtor:
        $ref: '#/definitions/Debtor'
      debtorAccount:
        $ref: '#/definitions/DebtorAccount'
      creditor:
        $ref: '#/definitions/Creditor'
      creditorAccount:
        $ref: '#/definitions/CreditorAccount'
      remittanceInformation:
        $ref: '#/definitions/RemittanceInformation'
      exchangeRateInformation:
        $ref: '#/definitions/ExchangeRateInformation'
      paymentDescription:
        type: string
        description: The payment description
      noteForMe:
        type: string
        description: The payment description for the debtor.
      signInfo:
        $ref: '#/definitions/SignInfo'
      _links:
        $ref: '#/definitions/PaymentsListLinks'
  PaymentIdentificationResponse:
    type: object
    description: Set of elements used to identify the payment instruction
    required:
      - instructionIdentification
      - transactionIdentification
    properties:
      instructionIdentification:
```

```
            type: string
            maxLength: 35
            description: >-
              Unique identification assigned by PISP that identifies the
              instruction.
          endToEndIdentification:
            type: string
            maxLength: 35
            description: >-
              Identification agreed between the payer and the payee. If not filled
              in by the payer, then PISP will fill in „NOTPROVIDED".
          transactionIdentification:
            type: string
            maxLength: 35
            description: The unique reference of the payer's bank
  PaymentsListLinks:
    type: object
    properties:
      self:
        type: string
        example: api/v1/my/payments/0123456789/status
        description: The link to the resource itself
  PaymentSigningResponse:
    type: object
    required:
      - scenarios
      - signInfo
    properties:
      scenarios:
        type: array
        items:
          type: string
        description: A set of possible authorization scenarios
      signInfo:
        $ref: '#/definitions/SignInfo'
  PaymentDescriptionSetRequest:
    type: object
    properties:
      paymentDescription:
        type: string
        description: The payment description

  SignInfo:
    type: object
    required:
      - state
      - signId
    properties:
      state:
        $ref: '#/definitions/State'
      signId:
        type: string
    description: Status information and id of unauthorized transactions

  BalanceCheckRequest:
    type: object
    required:
      - exchangeIdentification
      - payerAccount
    description: Request used to check the balance.
    properties:
      exchangeIdentification:
        type: string
        maxLength: 18
        description: >-
          Identification is assigned by the third party; the value will be
          contained in the response to request.
      card:
        type: object
        required:
          - maskedPan
        description: >-
          Payment card linked to the transaction, if the card was used for
          initiation.
        properties:
          cardholderName:
```

```yaml
          type: string
          maxLength: 45
          description: The field contains the name of card holder stated on the card.
        maskedPan:
          type: string
          maxLength: 30
          description: Masked card number.
    payerAccount:
      $ref: '#/definitions/PayerAccount'
    authenticationMethod:
      $ref: '#/definitions/CodeSet'
    merchant:
      $ref: '#/definitions/Merchant'
    transactionDetails:
      $ref: '#/definitions/TransactionDetails'
Merchant:
  type: object
  description: A merchant executing a balance query
  required:
    - identification
    - shortName
    - commonName
    - merchantCategoryCode
  properties:
    identification:
      type: string
      maxLength: 35
      description: Identification of an entity requesting a disposable balance
    type:
      $ref: '#/definitions/Code'
    shortName:
      type: string
      maxLength: 35
      description: Name of entity executing a query for disposable balance.
    commonName:
      type: string
      maxLength: 70
      description: Full name of entity as it will be stated in the payment receipt.
    address:
      type: string
      maxLength: 140
      description: Address of entity executing a query for disposable balance.
    countryCode:
      $ref: '#/definitions/CountryCode'
    merchantCategoryCode:
      type: string
      minLength: 3
      maxLength: 4
      description: Merchant code following the transaction type
Code:
  type: string
  enum:
    - OPOI
    - MERC
    - ACCP
    - ITAG
    - ACQR
    - CISS
    - DLIS
State:
  type: string
  enum:
    - OPEN
    - REJECTED
    - CLOSED
    - NONE
  description: Transaction authorization status
PayerAccount:
  type: object
  required:
    - payerAccountIdentification
  description: Payer account information
  properties:
    payerAccountIdentification:
      type: object
      description: Payer account identification
```

```yaml
      properties:
        iban:
          $ref: '#/definitions/IBAN2007Identifier'
        other:
          $ref: '#/definitions/OtherIdentification'
    currency:
      $ref: '#/definitions/CurrencyCode'
OtherIdentification:
  type: object
  description: 'Other identification for account (BBAN, contract number).'
  properties:
    identification:
      type: string
DebtorPostalAddress:
  type: object
  description: Postal address information
  properties:
    country:
      $ref: '#/definitions/CountryCode'
CreditorPostalAddress:
  type: object
  description: Postal address information
  properties:
    country:
      $ref: '#/definitions/CountryCode'
    addressLine:
      type: string
      maxLength: 70
TransactionDetails:
  type: object
  required:
    - currency
    - totalAmount
  description: Transaction details
  properties:
    currency:
      $ref: '#/definitions/CurrencyCode'
    totalAmount:
      type: number
      format: float
BalanceCheckResponse:
  type: object
  required:
    - responseIdentification
    - exchangeIdentification
    - response
  properties:
    responseIdentification:
      type: number
      description: >-
        Unique identification of response to query for Balance Check(from
        ASPSP)
    exchangeIdentification:
      type: number
      description: >-
        Repeated identification of a payment transaction (query for Balance
        Check) from the issuer of the card to which the request for Balance
        Check linked to the account
    response:
      $ref: '#/definitions/ResponseCodeSet'
CurrencyCode:
  type: string
  description: ISO 4217 currency code
  pattern: '[A-Z]{3}'
CountryCode:
  type: string
  pattern: '[A-Z]{2,2}'
CodeSet:
  type: string
  enum:
    - NPIN
    - PPSG
    - PSWD
    - SCRT
    - SCNL
    - SNCT
```

```
            - CPSG
            - ADDB
            - BIOM
            - CDHI
            - CRYP
            - CSCV
            - PSVE
            - CSEC
            - ADDS
            - TOKP
    ResponseCodeSet:
      type: string
      enum:
          - APPR
          - DECL
    Errors:
      type: array
      description: The list of errors thrown.
      items:
          $ref: '#/definitions/Error'
    Error:
      type: object
      properties:
        error:
          type: string
          description: Contains the specific error code.
        scope:
          type: string
          description: >-
            It determines the JSON path of the request element that caused the
            error status.
        message:
          type: string
          description: >-
            Optional text description. It is not intended for interpretation to
            the end user but, for example, to enrich the error log.
        parameters:
          description: >-
            The field of additional elements specific for the given error code.
            These parameters are always specified in the description of a specific
            error code.
          type: object
```