THE *Berlin* GROUP
A EUROPEAN STANDARDS INITIATIVE

Berlin Group
openFinance

openFinance API Framework

A Guide to Version 2.2 and a Preview on Version 2.3

31 July 2025

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[*] The 'Joint Initiative pan-European PSD2-Interface Interoperability' brings together participants of the Berlin Group with additional European banks (ASPSPs), banking associations, payment associations, payment schemes and interbank processors.

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1   Introduction

With [PSD2] the European Union has published a directive on payment services in the internal market. Among others [PSD2] contains regulations on services to be operated by so called Third Party Payment Service Providers (TPP) on behalf of a Payment Service User (PSU). These services are

- Payment Initiation Service (PIS) to be operated by a Payment Initiation Service Provider (PISP) TPP as defined by article 66 of [PSD2],

- Account Information Service (AIS) to be operated by an Account Information Service Provider (AISP) TPP as defined by article 67 of [PSD2], and

- Confirmation on the Availability of Funds Service (FCS) to be used by a Payment Instrument Issuing Service Provider (PIISP) TPP as defined by article 65 of [PSD2].

To implement these services, an interface has been defined in the Berlin Group **NextGenPSD2 XS2A** Framework. This XS2A Framework is now extended to premium services and developed into a Version 2 API family. This interface is addressed in the following as **openFinance API**.

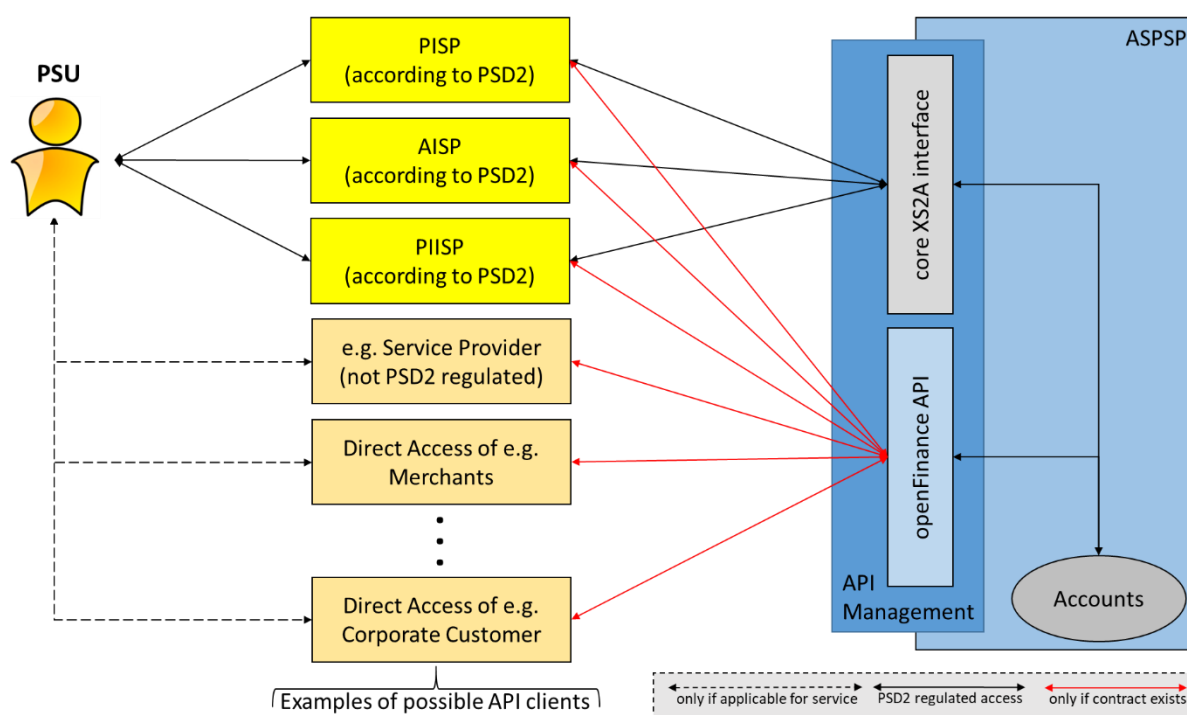The following account access methods are covered by this framework:

Figure 1: Core XS2A interface and openFinance API

Berlin Group had started to publish first openFinance Service specifications in 2021 and 2022, which were technically based still on the NextGenPSD API V1.3.x. The Berlin Group reviewed this framework to adapt it better to the extended scope of the framework. This review results

into a Version 2 of the full openFinance API Framework. As part of the review, the documentation has been fully re-structured.
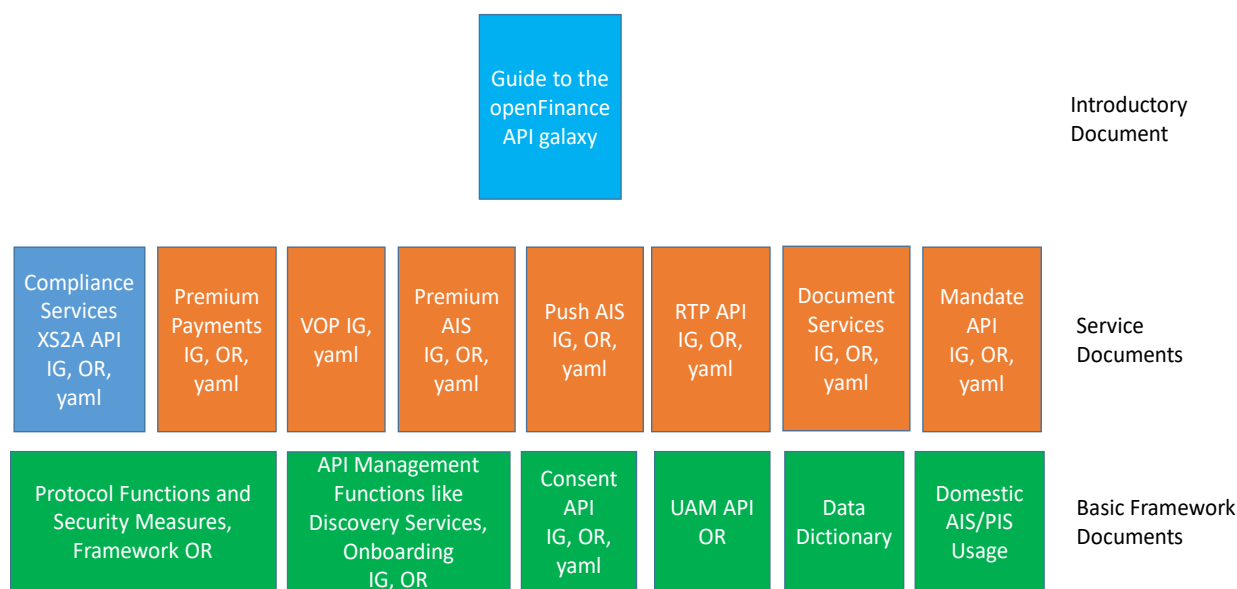
Inbetween, Berlin Group has extended existing services by more functions and published several new services. This document gives an overview

- on the new documentation,

- on the new services covered,

- on the major changes from NextGenPSD2 API Framework Version 1.3.x to openFinance API Framework Version 2.0

- and from Version 2.0 to Version 2.1 as well as from Version 2.1 to Version 2.2,

- a pre view on Version 2.3 to be published soon.

2   Documentation Overview

The openFinance API Framework V2.2, resp. V2.3[2] is structured in its documentation as follows:

2.1   Service Description

The service descriptions are divided into the descriptions for

- compliance services: [oFA-OR-Com] , [oFA-IG-Com]

  These services are covering payment initiation (PIS), account information for payment accounts (AIS) and confirmation of funds on payment accounts (PIIS) based on the PSD2 requirements.

- premium payment services: [oFA-OR-XPIS], [oFA-IG-XPIS]

  These services are covering premium payment initiation services like payments with reservations of funds, payments with flexible execution and adapted amounts or recurring payments with adapted amounts or multiple recurring payments..

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[2] Please note that some of the documents will only be published together with Version 2.3. Since Version 2.3 is planned to be published in autumn 2025, this introduction provides a first view into Version 2.3 and is listing already all documents to be expected.

- Verification of Party (a.o. VOP) Services: [oFA-IG-VOP]

  These services cover the verification of a party name or identification with the actual owner name or identification of an addressed party, as confirmed by the account servicer of the addressed party. Besides a related API in the inter-PSP sphere, this document also addressed related VOP services offered as API from an ASPSP towards their own customers. In addition, the document specifies the integration of a VOP service into payment initiation services.

- premium account information services: [oFA-IG-XAIS]

  These services are covering AIS for accounts different from payment accounts, i.e. single card accounts, loans and savings accounts as well as securities accounts. In the latest version, also the account statements for current accounts are added.

- Push account information services: [oFA-OR-PAIS], [oFA-IG-PAIS]

  In addition, a service to push AIS related information like account entries, balances or incoming request to pays is covered. These services are also the adding the possibility to provide not only transaction reports like in compliance PSD APIs, but also account statements.

- RTP Services: [oFA-OR-RTP], [oFA-IG-RTP]

  The Request to Pay Services cover a pure messaging service to request a payment from a debtor via API, including an e-invoice. A consent or subscription to such a service might be mandated.

- postal services for documents: [oFA-OR-Doc], [oFA-IG-Doc]

  These services offer the possibility to post documents to the PSU mailboxes via the openFinance API. A consent or subscription to such a service might be mandated.

- Mandate API: [oFA-OR-Man], [oFA-IG-Man]

  These services offer the possibility to authorise a direct debit mandate via the openFinance API.

For each service, the documentation is divided into 3 parts:

- An operational rules document, which explains the business processes and business requirements for the underlying service.

- An implementation guideline document, defining the essential API messaging and flows.

- A yaml file with all messaging details.

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2.2   Framework documentation

The underlying framework documentation is divided into the following parts:

- Protocol functions and security measures: [oFA PFSM], [oFA-OR-FW]

  The first document introduces notations and formats used throughout the openFinance API Framework. It covers authorisation processes (including signing baskets) as well as header parameters used in all services. It introduces message and body signing including encryption functions as well as a resource status notification function. In the upcoming version, it will also cover signed requests as SCA approach to prepare e.g. the usage of the openFinance API as corporate direct access. In addition, it will also contain the payment formats used in several service specifications.

  A second document will cover the description of all these framework functions on an Operational Rules level to support reading by e.g. product management staff without the related technical background.

- Consent API: [oFA-OR-Co], [oFA-IG-Co]

  Explicit consent management via the API is needed not only for AIS but also for several premium services. These documents describe and specifiy the related consent API in detail.

- User and Account Management Services: [oFA-OR-UAM]

  For corporate direct access, several data management functions need to be offered:

  - Services to manage user certificates as well as user data, account access rights and payment authorisation limits.

  - Services to manage existing accounts of a corporate as well as account details.

  A corresponding detailed implementation guidelines is developed till end of 2025.

- API management functions: [oFA-OR-Adm], [oFA-IG-Adm], [oFA Disc]

  For premium services, specific onboarding functions are mandated to ensure that e.g. scheme directory or fee information like price lists is properly handled on API level. The related services will allow API Clients to post signed price lists to the API to automise fee changes applicable to the API. In addition, detailed discovery services are standardised . These services shall ensure a compact documentation of the APIs provided by the ASPSP with technical, operational and business parameters.

- Data dictionary:[oFA DaD]

  A separate data dictionary describes all complex data types and code lists used within version 2.x of the openFinance API Framework. These data structures will be used in compliances as well as premium services. This document has been enriched quite far, by adding data models for the new services. In addition, the payment formats are enriched by the possibility to support hybrid address formats and some more query parameter have been added for AIS functions.

- Domestic formats: [oFA Dom]

  Payment data formats are separately documented with all adaptions to SEPA payments as well as domestic payment instruments. Starting from Version 2.3, the payment formats as such will be integrated in [oFA PFSM] and only requirements on domestic AIS or PIS formats will stay in this document.

openFinance APIFramework V2.1 – An Introduction resp. V2.3

Major Changes openFinance API Framework from V2.1 to V2.2

3   Major Changes openFinance API Framework from V2.1 to V2.2 resp. V2.3

Several new services have been added on business service as well as framework service level, see above. For several services, which have been announced in summer 2024, the documentation has been finalised and published in-between.

The following changes have been applied to the underlying framework document [oFA PFSM] in version 2.2:

- The structure of the framework documentation has been optimised by introducing two different natures of services, one of which is related to transaction initiations (existed already) and the other is related to the creation of service resources.

  In more detail, the description of a service resource, the header parameters of a service resource creation request and the links of the response of the service resource creation are correspondingly added.

- The requirement not to restrict redirect URIs to TPP domains protected by the QWAC has been detailed for PSD2 compliance services.

- Some new features have been added to support the integration of a Verification of payee function into payment initiation APIs.

- The examples for signing messages have been completely reworked.

In addition, a new version 2.3 of the Framework documentation is announced for autumn 2025 which will address the following points:

A description of the technical functions as defined in [oFA PFSM] on a product properties level will be added in [oFA-OR-FW] to support readability of the overall openFinance API Framework documentation.

In addition, the payment format definitions used for [oFA-IG-XAIS], [oFA-IG-XPIS] as well as [oFA-IG-RTP] will be integrated into [oFA PFSM] to enable a clear release control for payment formats as well.

The openFinance API Framework in its next version will also support a.o. digital signatures as an SCA approach, in the beginning for the support of direct access of corporate customers of ASPSPs via the openFinance API.

4   Major Changes openFinance API Framework from V2.0 to 2.1

First, the framework documentation has been completed and more business services have been integrated as listed above. All technical functions like status notification and signing baskets have been adapted to cover also the new services.

In addition, the following points have been adapted besides many editorial clarifications, clarifications on code usage and many adaptions on attribute level.

- All header parameters with "TPP-" prefix have been adapted to "Client-" prefix. The reason behind that is further preparatory work for the usage of all APIs also in a corporate direct access mode, i.e. directly between banks and their corporate customers. A standardisation of such APIs on European level is seen as very important e.g. for all real-time use cases. The re-usage of the PSD2 infrastructure for the related direct access scenario will offer lots of implementation and documentation synergies.

- The framework got a new option to select a debtor IBAN in payment APIs in the decoupled and embedded SCA approach. This is a more efficient solution for the "No manual IBAN entry" requirement from the regulators and the market.

- The message signing algorithm using QSealsC certificates has been adapted to also protect URI, i.e. to protect e.g. payment resources. Such a change was needed, since the new services come with payment initiation calls with a prior PSU authorisation, which comes with new technical risks to be mitigated.

- The framework will also offer to manage the QSealCs only via the dedicated onboarding endpoints, where API Clients will be mandated to use key references regarding the QSealCs applied within the business services. This will enable a more efficient certificate evaluation within the ASPSP.

- The framework offers a new SCA approach "ASPSP-Channel". This is an approach, where the authorisation follows later in the ASPSP online channel. This SCA approach is only applicable to premium services. The API Client then still might change its view and authorise the transaction later on via the API, e.g. if the PSU is in a session with the API client inbetween. Please note that this asynchronous authorisation is different from the RTP authorisation since the SCA channel can be dynamically changed and the resource is fully addressable and under control in the new SCA approach (differently to RTP, where the control is solely on ASPSP side and the related payment resource is not retrievable in the API).

5   Major Changes in the transition from NextGenPSD2 1.3.x to openFinance 2.x

The following major changes are introduced in the framework, when migrating from Version 1.3.x to Version 2. Please note that the openFinance API Framework cannot mandate any implementation transition plans from Version 1.3.x to Version 2.0.

- Compliance Services

  Header parameters with prefix "TPP-" have been changed to the prefix "Client-" due to the fact that the openFinance APIs are intended to be used also for direct access by corporate customers in a next step. Only header parameters which are needed in a third party model only like "TPP-Redirect-URI" keep the "TPP-" prefix.

  The attribute "tppMessages" has been renamed to "apiClientMessages" to recognize this also on message body level.

  A new header "TPP-SCA-Approach-Preference" has been added to combine the semantics of the two headers "TPP-Redirect-Preferred" and "TPP-Decoupled-Preferred" in one entry.

  psuName is not any more delivered in transactionStatus in PIS nor on account details level in AIS but only within the status of the authorisation sub resource. The reason is that this element is a PSU related information and not payment or account information.

  The function to submit a second password has been removed from the services.

  The AIS / PIS session combination has been removed. It is now covered by introducing the access right "paymentInitiations" to the consent for optional support by the ASPSP.

  ISO20022 Reason codes specifically for the transactionStatus "Rejected" have been introduced. This is replacing the former proprietary message codes in some situations.

  If a cancellation of a payment needs an authorisation, the related authorisation process can be an implicit authorisation as for payment authorisation itself. The same applies to authorising a signing basket.

- Consent API

  The access attribute has been structured in more detail. It is now separating different account categories explicitly and is relating access rights to each single account.

  The consent type is now an explicit attribute "consentType" in the request, better separating the detailed, aspspManaged, accountList and global consent type. A dedicated message code "CONSENT_TYPE_NOT_SUPPORTED" has been introduced for the case of a mismatch.

  The attribute "validUntil" was re-named into "validTo".

A new consentStatus has been introduced: "replacedByTpp" indicating explicitly that a consent resource has been invalidated by a TPP by submitting a new consent.

The ASPSP is required to offer in the consent resource also for the aspspManged and global consent all account references and links to the related APIs after successful SCA. Thus reading the consent resource after PSU authentication will provide a lot of information to the API Client. This was introduced to save pings in the API when several account categories are covered.

The extended service defined for confirmation of funds was adapted to the new consent data model for harmonisation reasons.

The optional extended Multiple Consents Service was integrated into this document.

A new premium consent category "user parameter access" is supported. The related discovery function for user parameter like signing rights, limits etc. will be introduced later.

- Basic framework

Protocol functions like the signing basket function or the resource status notification has been added to this document. The authorisation descriptions are now provided generically for all business transactions (yielding to related API resources after submission) supported in the API.

In the whole document, the situation of API Clients being a TPP in a compliance PSD2 scenario or any access client to an ASPSP API is differentiated, e.g. in certificate usage.

Message signing has been migrated from the sign http procedure to the ETSI JADES profile described in the OBE signing proposal.

A rule for interval borders related to attributes with "From" or "To" as suffix has been added to clarify that the intervals are including the border values.

- Data dictionary

The payment formats and account reports for Version 2.0 have been adapted to the formats already published in 2022. The reason was to integrate all requirements collected during the last years from several countries and several premium services in one unified data structure.

The full structured ISO20022 address format is supported now.

- Payment formats

See above.

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