NBFC - Account Aggregator (AA) API Specification

Version 2.0.0

Version History:

Version: 2.0.0	**Date**: August 9, 2023
Version: 1.1	**Date:** November 8, 2019

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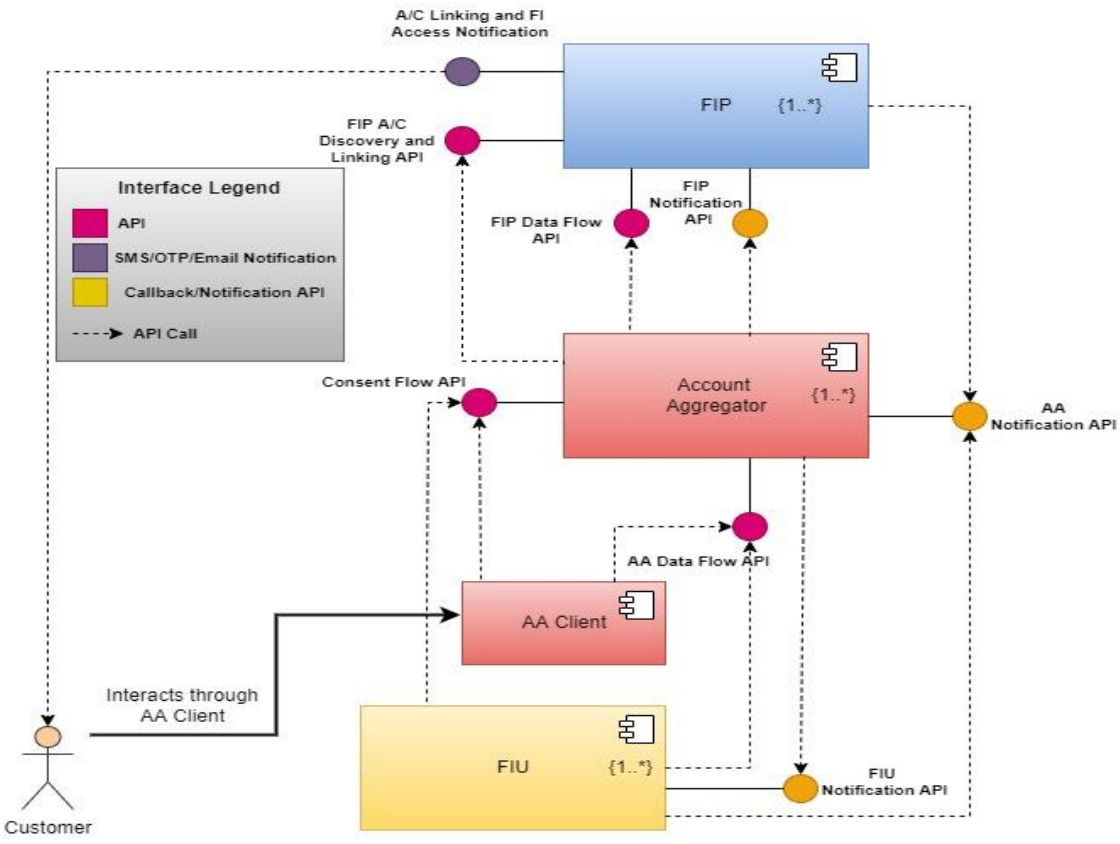
I. Introduction

The Reserve Bank of India (RBI) has published the Master Direction[1] for the non-banking financial companies (NBFC) undertaking the business of Account Aggregator (AA). As defined in section 3(1) (iv) of the Master Direction[1], the business of an account aggregator means the business of providing under a contract, the service of, retrieving or collecting such financial information pertaining to its customer, as may be specified by RBI from time to time; and consolidating, organizing, and presenting such information to the customer or any other financial information user as may be specified by RBI.

High-level Architecture

AA acts as an intermediary and helps connect the Customer to multiple Financial Information Provider (FIP)s through standardized API interfaces. In this process, the NBFC-AA ecosystem needs an interoperable, consent-driven architecture, and a set of standard APIs that will facilitate secure, seamless, and consented sharing of various kinds of financial information. The below diagram is the high-level architecture which shows various interfaces and system interactions in the AA ecosystem as follows:

[1] Master Direction- Non-Banking Financial Company - Account Aggregator (Reserve Bank) Directions, 09 Nov 2017, https://rbi.org.in/Scripts/BS_ViewMasDirections.aspx?id=10598



As shown above, the Customer interacts with the AA for requesting services. The AA client component interfaces with the AA either directly or via the API exposed by the AA to facilitate this interaction. Further, the Customer interacts with the AA to link accounts and generates consent. All the interactions of account linking, and consent management must happen directly between the Customer and the AA through AA application or AA Client.

The AA Client, provided by AA, is authorized software that interacts with the AA service. It may be implemented as a library, Software Development Kit (SDK) or might interact via direct authorized AA API calls. The AA Client could be a web-based application, a mobile-based application offered by the AA, or SDK/library with limited data flow. AA is the owner of the AA Client.

The architecture uses an asynchronous API design by defining the call-back notification APIs. This design approach facilitates not to wait for a response from the API provider, thereby decoupling the execution of when the request is made and when the response is received by the requester.

As shown in the high-level architecture diagram above, the following Interfaces have been defined:

Interface	Summary
FIP A/C Discovery & Linking API	This API enables the discovery and linking of FIP account(s) of the Customer with an AA account. A linked FIP account can only be associated using the consent artefact, and the Customer then allows the FIU to access his/her financial information.
FIP Data Flow API	This API provides an interface for AA to retrieve financial information of a customer programmatically. The collected information is based on a digitally signed consent artefact approved by the customer.
FIP Notification API	This API provides an interface for AA to send the consent artefact and consent status update notifications to FIP.
A/C Linking and FI Access Notification	This interface is hosted by the FIP to notify the Customer about the A/C linking events and FI data access request events.
AA Consent Flow	This AA interface collects Customer consent and enables management of all consent artefacts throughout its lifecycle.
AA Data Flow	A FIU uses this interface to receive financial information from AA.
AA notification API	This interface is hosted by the AA to receive notifications about the A/C linking events and Financial Information events.
FIU Notification API	This interface, hosted by a Financial Information User (FIU), is used by AA to send consent status updates and Financial Information related notifications.

II. High-level Specifications

The high-level specifications of the AA ecosystem have been categorized into the following flows.

1. Account discovery and linking flow
2. Consent flow
3. Consent handle management flow
4. FI data flow
5. Notification flow
6. Monitoring flow

Below are the functionalities hosted by the participating entities with respect to the categories.

Category	AA	FIP	FIU
Account Discovery and Linking	N/A	• Account Discovery • Account Linking/Delinking • Authenticating Link/Delink Request	N/A
Consent	• Consent Request	• Posting Consent	N/A
Consent Handle Management	• Consent Status Request • Getting Consent	N/A	N/A
FI Data Flow	• FI Data - Request • FI Data - Fetch	• FI Data - Request • FI Data - Fetch	N/A
Notification	• Linking Status • Consent Status • FI Data Status	• Consent Status	• Consent Status • FI Data Status
Monitoring	• Heartbeat API	• Heartbeat API	N/A

N/A – API is not applicable

Account Aggregator (AA) APIs

The description of AA APIs is given as follows:

Entity		Account Aggregator
Method	**API Path**	**Description**
Consent		
Consent Request		
POST	/Consent	This API is intended for AA Client/FIU to request the generation of digitally signed consent artefacts. The customer uses the AA application to select accounts and approve the consent request. Once the customer approves the consent request on the AA application, AA generates the digitally signed consent artefact. Note - The AA Client/FIU never sees the account of the customer, nor directly participates in the consent generation.
Consent Handle Management		
Consent Status Request		
POST	/Consent/handle	This API is intended for checking the status of a previously submitted consent artefact creation request.
Get Consent		
POST	/Consent/fetch	This API is intended for fetching the information associated with the specific consent id.

FI Data Flow		
FI Data - Request		
POST	/FI/request	The FIU or the customer submits the consent ID required for fetching financial information from the FIP(s). A session ID is generated and returned which enables the FIU, or the Customer, to fetch the information from the AA, once it is available.
FI Data - Fetch		
POST	/FI/fetch	This API is used by the FIU to fetch the financial information from AA.
Notifications		
Consent Status		
POST	/Consent/Notification	This API can be used by AA Client, FIU and FIP to place a request for consent status update to AA in specific use cases.
FI Data Status		
POST	/FI/Notification	This API is used by FIU and FIP to send notifications related to FI data flow to AA.
Linking Status		
POST	/Account/link/Notification	This API is intended to be used by FIP to send account link notifications to AA.
Monitoring		

Heartbeat API		
GET	/Heartbeat	This is the monitoring API Interface for checking the service availability of AA.

Financial Information Provider (FIP) APIs

The description of FIP APIs is given as follows:

Entity		Financial Information Provider
Method	**API Path**	**Description**
Account Discovery and Linking		
Account Discovery		
POST	/Accounts/discover	This API enables the AA to discover accounts belonging to a Customer based on the Customer identifiers. A set of masked account information and corresponding link reference number for each discovered account, is returned based on identifier matching logic at FIP.
Account Linking		
POST	/Accounts/link	This API is used for initiating an account link request to link selected account(s) with the AA customer address.
Account Delinking		
POST	/Accounts/delink	This API is used to delete a previously established account linkage to the customer's profile. Once deleted, the customer cannot share financial information for these accounts using Account Aggregator.
Authenticate Link/Delink Request		

POST	/Accounts/link/verify	This API is used only in the case of token-based authentication for linking or delinking the accounts. The AA submits the token (received from the customer) to the FIP so that account linkage or de-linkage can be completed. In the case of FIP direct authentication, this method will not be used.
Consent		
Post Consent		
POST	/Consent	This API enables the AA to send the consent artefact to the FIP on consent creation.
FI Data Flow		
FI Data – Request		
POST	/FI/request	This API enables AA to submit the FI data fetch request coming from FIU to the FIP. FIP verifies the request against consent artefact shared by AA and processes it only if the verification is successful.
FI Data – Fetch		
POST	/FI/fetch	This API enables the AA to fetch the financial information from FIP against a given SessionID.
Notification		
Consent Status		

POST	/Consent/Notification	This API is intended to be used by AA to notify the change in consent status due to the consent management operations performed by the customer.
Monitoring		
Heartbeat API		
GET	/Heartbeat	This API enables the AAs to check the service availability of FIPs.

Financial Information User (FIU) APIs

The description of FIU APIs is given as follows:

Entity		Financial Information User
Method	**API Path**	**Description**
Notification		
	Consent Status	
POST	/Consent/Notification	This API is intended to be used by AA to notify FIU about the change in consent status due to the consent management operations performed by the Customer.
	FI Data Status	
POST	/FI/Notification	This API is used by AA to send notifications related to FI data flow to FIU.

For further illustrative information on NBFC-AA ecosystem API Specification, please refer to https://api.rebit.org.in/

III. Financial Information (FI) Definition

The Account Aggregator (AA) ecosystem supports multiple types of FI as defined in Section 3 of the Master Direction[1]. The purpose of developing FI definitions is to enable the interoperability between the participating entities in AA ecosystem. The FI definition has the following purposes:

a. **Data description**: The definition provides a common and uniform format of the representation of FI in terms of structure (syntax) and meaning (semantics) interoperability.

b. **Data context**: The definition defines a minimal set of representational states of financial information corresponding to the financial information types.

c. **Data sharing**: The definition provides semantic interoperability in the NBFC-AA ecosystem.

d. **Data harmonization**: The definition enables a common format for analysing, viewing, and processing the transaction of financial information.

The structure of FI type definition adheres with the consent definition that has the following sections:

- **Profile**: This includes the basic profile of the Customer having details such as account owner information, masked account number and linked account reference numbers, type of account specific to the FI type and other generic details as might be pertinent for the specified FI type.
- **Summary:** This includes the value of the account, term of the deposits, if relevant and any other data that summarizes the funds in the account.
- **Transactions**: This include the transaction details that are posted in an account.

In this process, the FI type information is defined in XML (Extended Markup Language) format will be validated against the corresponding XSD (XML Schema Definition).
The XML structure of Financial Instrument is depicted below:

```
<Account type="">
   <Profile />
   <Summary />
   <Transactions />
</Account>
```

For further illustrative information, please refer to https://api.rebit.org.in/ or email: aa-api@rebit.org.in.