

|  |  |
| --- | --- |
| Functional Design | |
|  |  |
|  |  |
| Program | Investment Banking |
| Project | Alpha Bank |
| Line of Business or Department | Customers |
|  |  |
|  |  |
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Document Instructions

* Version 1.0 should be the first version that is sent out for review. After that every time changes to the document should be incremented by 0.1 and the changes reflected in the Change History. For major updates to interfaces, a major update to the document version number should be incremented, i.e. version 2.0.
* Program, Project, and Line of Business or property values of the Document, they are updated by going to File, Properties, Advanced Properties to update the values.
* DO NOT leave Sections blank. All Sections MUST be completed. If a Section is Not Applicable, please enter N/A in the section with a brief explanation.
* Remove/erase all instructional or sample (Emphasis Template Italic Instructions Style) text
* Remove blank rows from tables that are not used.
* DO NOT refer to other documents. If certain content is captured in other documents, please embed a link to that document OR “Copy and Paste.”
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About this Document

This document describes the detailed technical design of the application. This document is defined in two sections

1. Overview
2. Functional & Application Specifications

The overview describes the inputs developed in previous stages of the project which feed into specification and design.  Key inputs are contained within the Solution Blueprint and Requirements Documents most notably (1) To-be high-level business process flow, (2) To-be solution architecture, and (3) Detailed requirements and/or business specifications

The functional specification follows from the detailed requirements completed during the analysis phase, and provides the next level of detail of information which is commonly needed as inputs to the technical design.

Document Control

**Change History**

|  |  |  |  |
| --- | --- | --- | --- |
| Author/Contributor | Version | Date | Description of Changes |
| Developer Guide | 1.0 | 27-03-22 | Initial Draft |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Document Ownership and Responsibility

* These are suggested roles for review and approval
* Projects should reference the Deliverable Methodology Responsibility Matrix

**Document Owner**

|  |  |
| --- | --- |
| Project Role & Responsibility | Name |
| MuleSoft Architect | **Developer Guide** |

**Document Reviewers**

|  |  |
| --- | --- |
| Project Role & Responsibility | Name |
| IT Project Manager | **TBD** |
| Business Analyst | **TBD** |
| Solution Architect | **TBD** |
| End System Technical Leads | **TBD** |
|  |  |

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# Project Overview

## 1.1 Business Overview

This Document talk about Investment Banking of Alpha Bank. Here we have list of API for fund or Investment management system.

## 1.2 Business Benefits

An outline of the incremental benefit that this development brings to the business (e.g cost savings due to automation of high-volume processes, reduction of liability, shortening of average response time to customer, increased reliability, etc.) The incremental functionality this development brings to the standard system.

## 1.3 Overview of Payment Services

Provide a high-level description of each investment banking service in scope for project build.

### Service 1: retrieve-assessement-sapi-app-v1

### Service 2: record-assessement-sapi-app-v1

## 1.4 Functional Dependencies / Constraints

Indicate any dependencies or constraints that may impact development or implementation, in terms of requirements from internal or external applications, systems or teams, limited access to legacy system, time constraints or data restrictions. List only the key items which are of technical nature or impact technology design or decisions. It is not necessary to repeat dependencies or constraints from the requirements document.

## 1.5 Assumptions

Describe any assumptions that have been made in the process of completing this design. What functionality is expected of configuration or other developments that pass information to this development and/or retrieve the information processed by it (performance, triggers, exceptions, etc?)

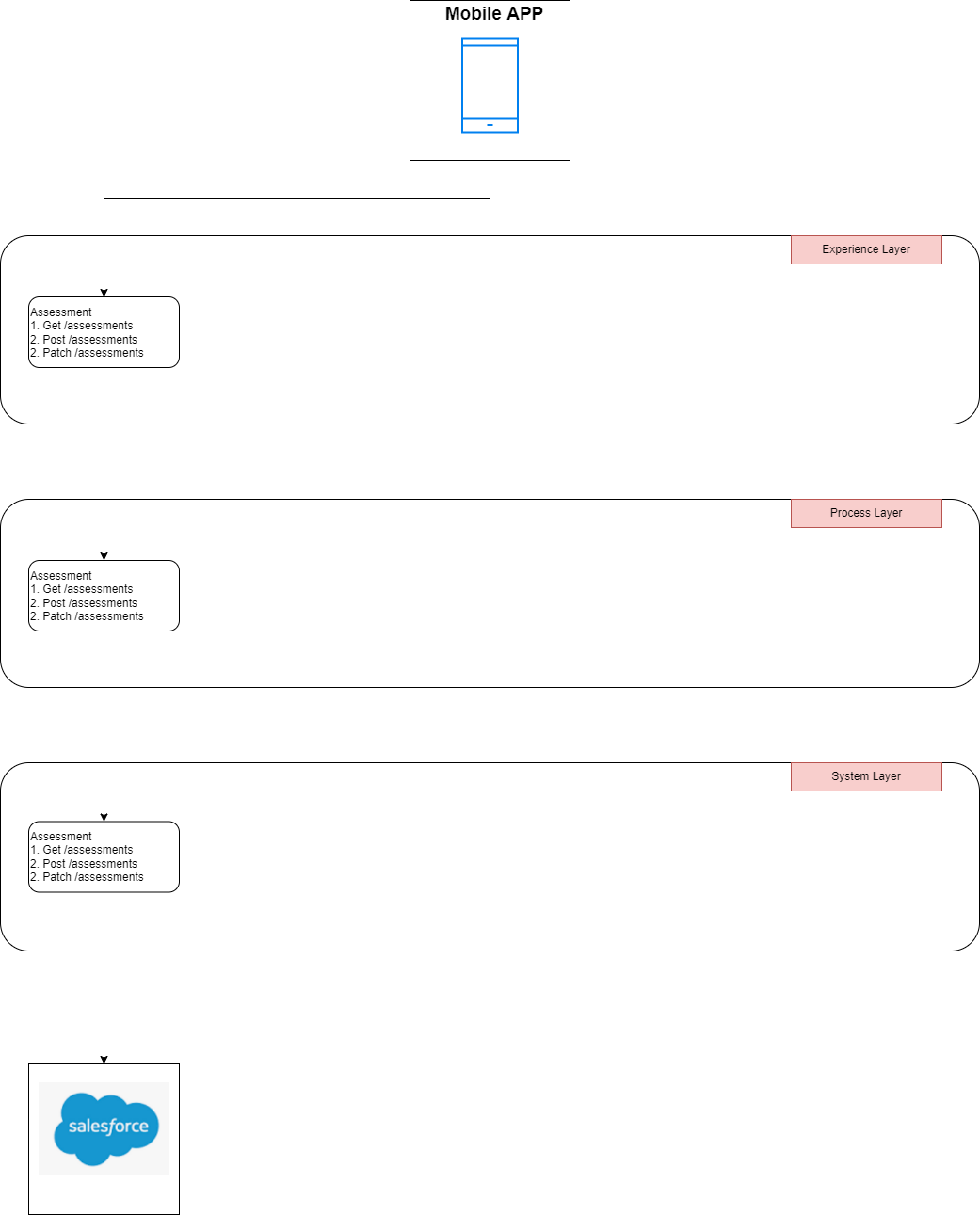
## 1.6 Document Audience

The document is intended to describe the project integration requirements. The document is intended for:

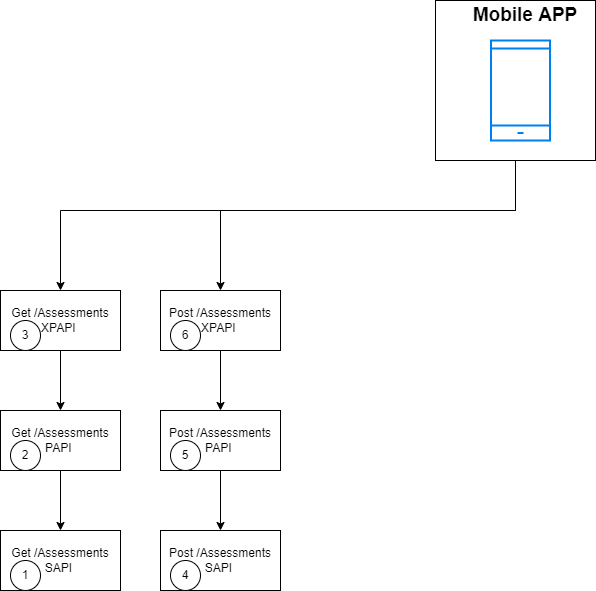
* Enterprise Integration team
* Project and Business Manager
* Source and Target System Leads

# Functional Requirement

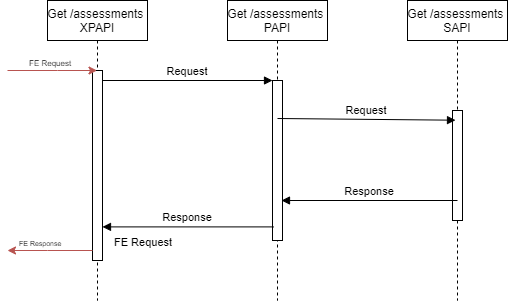
## API Landscape Diagram



## Flow Diagram



## **Sequence Diagram**



## **Service Details**

### **Retrieve Assessment SAPI**

#### Resource Details

|  |  |
| --- | --- |
| **Version** | v1 |
| **Resource URI** | /assessments |
| **Method** | Get |
| **Objective / Description** | This API will retrieve set of questions answer from salesforce system. |

#### Request

##### Headers

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Field Rule** | **Mandatory** | **Type** |
| **x-fms-transactionId** | Use for logging and tracking purposes. Example: hdsfhjdh-jxbv859-sjdf7643-3746bbd  MinLength = 36  MaxLength = 36 | Y | String |
| **x-fms-clientId** | Ex: hsdfgysdhfcdshf37er6twgsdhfjcd | Y | String |
| **x-fms-clientSecret** | Ex: dsgfhaegur457r6ewsewegrfjesh | Y | String |

##### URI Parameters

NA

##### Query Parameters

NA

##### Body

NA

#### Response

##### (MIME-Type= application/json)

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Field Rule** | **Mandatory** | **Type** |
| **retrieveAssessmnetResponce** | Indentation: 1 | Y | array |
| **question** | Indentation: 2  Ex: “dsfhsdfvjhdfew87yr4r8e4r” | Y | String |
| **answer** | Indentation: 2 | Y | array |
| **option** | Indentation: 3  Ex: “option1” | Y | string |

Example:

{

"retrieveAssessmnetResponce":[

{

"question": "What Is an Investment Objective",

"answer": [

{

"option":"Option1"

},

{

"option":"Option1"

},

{

"option":"Option1"

},

{

"option":"Option1"

}

]

}

]

}

#### Integration Frequency and Volume

|  |  |
| --- | --- |
| Component | Details |
| Processing Type: [Real time, near real time, batch] | Realtime Rest API |
| Frequency [daily, weekly, monthly, etc] | NA |
| Initiation Method [Push, Pull] | NA |
| Data Size | 1KB |
| Daily Volume [Average] | 500 times |
| Hours of Operations | 24 hours |
| SLA / Response Time | 3 Sec |

### Record Assessment SAPI

#### Resource Details

|  |  |
| --- | --- |
| **Version** | v1 |
| **Resource URI** | /assessments |
| **Method** | Post |
| **Objective / Description** | This API will Record set of questions answer to salesforce system. |

#### Request

##### Headers

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Field Rule** | **Mandatory** | **Type** |
| **x-fms-transactionId** | Use for logging and tracking purposes. Example: hdsfhjdh-jxbv859-sjdf7643-3746bbd  MinLength = 36  MaxLength = 36 | Y | String |
| **x-fms-clientId** | Ex: hsdfgysdhfcdshf37er6twgsdhfjcd | Y | String |
| **x-fms-clientSecret** | Ex: dsgfhaegur457r6ewsewegrfjesh | Y | String |

##### URI Parameters

NA

##### Query Parameters

NA

##### Body

##### (MIME-Type= application/json)

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Field Rule** | **Mandatory** | **Type** |
| **recordAssessmnetRequest** | Indentation: 1 | Y | object |
| userDetails | Indentation: 2 | Y | object |
| userId | Indentation: 3  Ex: “REG1001” | Y | String |
| name | Indentation: 3  Ex: “Kumar” | Y | String |
| assessmentdetails | Indentation: 2 | Y | array |
| question | Indentation: 3  Ex: “What Is an Investment Objective” | Y | String |
| answer | Indentation: 3  Ex: "Option1" | Y | String |
| submitionDateTime | Indentation: 2  Ex: "01-03-2022T12:20:30" | Y | string |

Example:

{

" **recordAssessmnetRequest** ":{

"userDetails": {

"userId":"REG1001",

"Name":"Kumar"

},

"assessmentdetails": [

{

"question":"What Is an Investment Objective",

"answer":"Option1"

},

{

"question":"What Is an Investment Objective",

"answer":"Option1"

}

],

"submitionDateTime":"01-03-2022T12:20:30"

}

}

#### Response

##### (MIME-Type= application/json)

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Field Rule** | **Mandatory** | **Type** |
| **recordAssessmnetResponse** | Indentation: 1 | Y | object |
| **eventInstanceId** | Indentation: 2  Ex: “dsfhsdfvjhdfew87yr4r8e4r” | Y | String |
| **status** | Indentation: 2  Enum : “success” | Y | String |

Example:

{

"recordAssessmentResponse" : {

"eventInstanceId" : "dsfhdbf-hsbdfhjs-b3784t2-wfsd",

"status": "success"

}

}

#### Integration Frequency and Volume

|  |  |
| --- | --- |
| Component | Details |
| Processing Type: [Real time, near real time, batch] | Realtime Rest API |
| Frequency [daily, weekly, monthly, etc] | NA |
| Initiation Method [Push, Pull] | NA |
| Data Size | 1KB |
| Daily Volume [Average] | 500 times |
| Hours of Operations | 24 hours |
| SLA / Response Time | 3 Sec |

### Exchange Rate SAPI

### Exchange Rate SAPI

### Exchange Rate SAPI

### Exchange Rate SAPI

### Send Notification SAPI

## Data Mapping

For complex mapping please upload the mapping document to the project SharePoint and provide the link. For simple mapping, fill-in the table below. Add sections for each EI service.eg. given for Service 1.

## Non-Functional Requirements

### Error, Audit and Performance Handling

The EIRS Logging Framework provides a framework for capturing and recording service events from trivial path sequence up to severe, critical error messages. The Logging Framework will also capture Audit and Performance requirement. Detailed Error Exceptions, Audit and performance details will be provided in in TD. Capture only specific project non-functional requirements here.

### 1.7.1 Error Requirements

|  |  |  |  |
| --- | --- | --- | --- |
| Error name | Error Description | Source of Exception | Severity |
| CUSTOM:DUPLICATE\_ERROR | Duplicate CCB bucket file | idempotent-message-validator |  |
| Error during mapping audit log | Error during mapping audit log | Audit\_Start\_Sub\_Flow & Audit\_end\_Sub\_Flow |  |
| Provide Logger(error) storing Timestamp | Error while storing Timestamp in object store | CCB File Picked(object store) |  |

### 

### 1.7.2 Common Error

#### 1.7.2.1 BAD Request

##### Http Status: 400

Body:

MIME-Type= application/json

Output message

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Field Rule** | **Mandatory** | **Type** |
| msg | Indentation: 1 | Y | String |
| code | Indentation: 1 | Y | Integer |
| eventId | Indentation: 1 | Y | string |
| error | Indentation: 1 | Y | Object |
| type | Indentation: 2 | Y | String |
| title | Indentation : 2 | Y | String |
| details | Indentation : 2 | Y | String |

example:

{

"msg" : "failed operation",

"code" : 400,

"eventId" : "dbfhjsdb-hfb-do8ryt-876t7-5ty"

"error" : {

"type" : "BAD\_REQUEST",

"title" : "Invalid Request",

"details" : "The input contains invalid data"

}

}

#### 1.7.2.2 Un-Authorized

##### Http Status: 401

Body: MIME-Type= application/json

Output message

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Field Rule** | **Mandatory** | **Type** |
| msg | Indentation : 1 | Y | String |
| code | Indentation : 1 | Y | Integer |
| success | Indentation : 1 | Y | Boolean |
| eventId | Indentation : 1 | Y | string |
| error | Indentation : 1 | Y | Object |
| type | Indentation : 2 | Y | String |
| title | Indentation : 2 | Y | String |
| details | Indentation : 2 | Y | String |

example:

{

"msg" : "failed operation",

"code" : 401,

"eventId" : "dbfhjsdbhfbdo8ryt876t75ty"

"error" : {

"type" : "Un\_Authorized",

"title" : "UnAuthorized",

"details" : "The Request is not Authorized"

}

}

#### 1.7.2.3 Not Found

##### Http Status : 404

Body: MIME-Type= application/json

Output message

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Field Rule** | **Mandatory** | **Type** |
| msg | Indentation : 1 | Y | String |
| code | Indentation : 1 | Y | Integer |
| success | Indentation : 1 | Y | Boolean |
| eventId | Indentation : 1 | Y | string |
| error | Indentation : 1 | Y | Object |
| type | Indentation : 2 | Y | String |
| title | Indentation : 2 | Y | String |
| details | Indentation : 2 | Y | String |

example:

{

"msg" : "failed operation",

"code" : 400,

"eventId" : "dbfhjsdbhfbdo8ryt876t75ty"

"error" : {

"type" : "NOT\_FOUND",

"title" : "Resource not found",

"details" : "The URI requested is invalid or the resource requested does not exists"

}

}

#### 1.7.2.4 Server Error

##### Http Status : 500

Body: MIME-Type= application/json

Output message

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Field Rule** | **Mandatory** | **Type** |
| msg | Indentation : 1 | Y | String |
| code | Indentation : 1 | Y | Integer |
| success | Indentation : 1 | Y | Boolean |
| eventId | Indentation : 1 | Y | string |
| error | Indentation : 1 | Y | Object |
| type | Indentation : 2 | Y | String |
| title | Indentation : 2 | Y | String |
| details | Indentation : 2 | Y | String |

example:

{

"msg" : "failed operation",

"code" : 400,

"eventId" : "dbfhjsdbhfbdo8ryt876t75ty"

"error" : {

"type" : "SERVER\_ERROR",

"title" : "Internal server error",

"details" : "The server encountered an unexpected condition which prevented it from fulfilling the request"

}

}

### 1.7.2 Audit Requirements

|  |  |  |
| --- | --- | --- |
| Audit Name | Audit Description | Frequency |
| Audit\_Start\_Sub\_Flow | Keep this values [Type InterfaceName SourceName TrackingID ServerID ThreadID AuditName AuditMessage InboundMessage] in logger | Start at flow(everyflow) |
| Audit\_End\_Sub\_Flow | Keep this values [Type InterfaceName SourceName TrackingID ServerID ThreadID AuditName AuditMessage InboundMessage] in logger | End at flow(everyflow) |

### 

### 1.7.1 Performance Requirements

|  |  |  |
| --- | --- | --- |
| Performance Name | Description | SLA |
|  |  |  |
|  |  |  |

## Functional Testing

Provide EI related business requirements:

|  |  |
| --- | --- |
| Business Requirement ID | Positive Scenarios |
| BR 1 | Eg> Make sure system returns premiseID for the account ID passed |
| BR 2 |  |
| BR 3 |  |
| BR 4 |  |

Provide business requirements for the positive test case scenarios. The scenarios should be documented in QTP and the QTP details can be provided in the below table:

|  |  |
| --- | --- |
| QTP Location | Enterprise\_Integration - EI\_TEST |
| Test Plan Location |  |
| Test Lab Locaction |  |
| QTP Script Names |  |
| Request Files Locaction |  |

## Functional Risks/Concerns

[Include any technical concerns around development, implementation, operations, or performance.]

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Risk # | Technical Risk Description | Probability | Impact Level | Impact | Priority | Mitigation Strategy/Action | Status |
| From PPMC | Description of risk |  |  |  |  | Mitigation strategy |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

Key to fields in above table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Probability | Impact Level | Impact | Priority | Status |
| High (H) | N – Negligible | C – Project Cost | VH - Very High | O - Open |
| Medium (M) | M – Marginal | P - Performance | H - High | C -Closed |
| Low (L) | Cr – Critical | S - Schedule | M - Medium |  |
|  | Ca – Catastrophic | M - Maintenance | L - Low |  |

# Reference Documentation

|  |  |  |  |
| --- | --- | --- | --- |
| Document Name | SharePoint Location | Ver. | Relationship |
| Scope and Charter | Enter Link to signed off deliverable in SharePoint |  | Reference |
| Business Requirements | Enter Link to signed off deliverable in SharePoint |  | Reference |
| Non Functional Requirements | Enter Link to signed off deliverable in SharePoint |  | Reference |
| Solution Blueprint | Enter Link to signed off deliverable in SharePoint |  | Reference |
| EI Solution Design | Enter Link to signed off deliverable in SharePoint |  | Reference |
| Integrated Architecture | Enter Link to signed off deliverable in SharePoint |  | Reference |
| Data Architecture | Enter Link to signed off deliverable in SharePoint |  | Reference |
| Test Plan | Enter Link to signed off deliverable in SharePoint |  | Reference |
|  |  |  |  |

# Definitions & Glossary of Terms

Key terms used in the detailed design. [Examples show below.]

|  |  |
| --- | --- |
| Term | Definition or Explanation |
| Requirement | End user description of function, feature or attribute desired in the system or application. Could also be the business rules for processing or calculation? (It’s the WHAT.) |
| Functional Specification | Technical description of the requirements stated in the Requirements Document. Describes more detailed business logic, data parameters, data states, processing requirements, etc so that a programmer could design the system or application. (It’s the WHAT as described in technical terms.) |
| Technical Design | The technical design describes how the application is to be constructed – what components will be built, what interfaces will be utilized, how data will flow between systems, handshake and validation details, etc. The result of the technical design is that all developers and installers will be able to develop, configure, and assemble the application (all layers) and infrastructure to support the application. |

# Appendix A

Reference Object