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# Introduction

## Purpose and Scope

This document provides the reader with detailed interface agreement specifications for integrating Amdocs AIA with MuleSoft. The document provides complete information required to estimate the work and the tasks needed to implement this interface.

## Related Documentation

The following documents will assist the reader in obtaining a broader understanding of the subject-matter of this document:

| DC# | Document Name | Attachment |
| --- | --- | --- |
|  | Scale\_TechnicalSpecification\_Experience\_gigalife-loyalty-exp-api v0.3.docx |  |
|  |  |  |
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## Terms and Definitions

Following is a list of terms used in this document, with which the reader should be familiar:

| Term/Acronym | Definition |
| --- | --- |
| MSISDN | Mobile Station International Subscriber Directory Number |
| TPS | Transactions per second |
|  |  |
|  |  |
|  |  |
|  |  |

# General Information

## Technical Information

MuleSoft will expose a REST API allowing external applications to access the Loyalty Platform (Evolution Plus) APIs.

AIA will be calling the adjust balance endpoint for the purpose of points crediting.

AIA will expose a REST API allowing MuleSoft to send Sim Reg updates.

## General Assumptions

| Unique ID | Assumption |
| --- | --- |
| GA-01 |  |
| GA-02 |  |

## Interface Master List Traceability Matrix

| S. No | IDD Section <Chapter# + Interface Name> | IML ID |
| --- | --- | --- |
|  | Chapter 3, AdjustBalance | AIA212 |
|  | Chapter 4, Sim Reg Updates | AIA227 |
|  |  |  |
|  |  |  |

# Loyalty API

## Description

AIA will be using an API exposed by MuleSoft for crediting loyalty points.

The recipient of the points is a Prepaid or Postpaid Wireless customer.

## Technology

**Provider:** MuleSoft API Gateway

**Consumer**: Amdocs Engage (AIA)

**Type of Integration**: Web Services

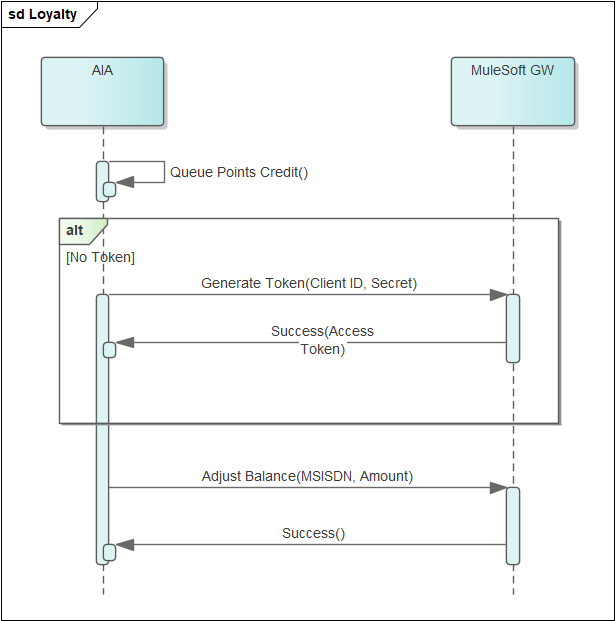
**Interface Type**: Online

**Protocol:** REST/HTTPS, Post/Json payload

**Security:** Token based authentication

## Flow Diagrams

### Flow Diagram



### Flow Description

1. AIA performs a set of business rules which can result in points crediting to a wireless prepaid customer.
2. If not done previously, AIA requests MuleSoft GW for a new access token.
3. AIA invokes the Adjust Balance API exposed by MuleSoft GW processes the request.
4. MuleSoft GW replies to AIA with the operation result.

## Assumptions

### Description

| Unique ID | Assumption |
| --- | --- |
|  | The flow is only supported for Wireless Prepaid and Postpaid customers |
|  |  |
|  |  |

## Interface Structure

### Generate Token

* **HTTP Method**: POST
* **URL**: https://<HOST>:<PORT>/{env}-gigalife-loyalty-exp-api/api/v1/generateToken (exact URLs per environment will be provided later)

#### Request Headers Structure

| Parameter | Type | Mandatory | Description |
| --- | --- | --- | --- |
| client-id | String(10) | Y | Unique client id which will be provided during implementation. |
| client-secret | String(35) | Y | client secret which will be provided during implementation. |
| X-correlation-Id | String(35) | Y | Transaction or Event ID. A unique identifier value that is attached to requests and messages that allow reference to a particular transaction or event chain.  Generated by AIA. |

#### Request Body Structure

| Parameter | Type | Mandatory | Description |
| --- | --- | --- | --- |
| audience | String | Y | AIA will populate with the value ‘gigalife-loyalty-exp-api’ |

#### Response Structure

| Parameter | Type | Mandatory | Description |
| --- | --- | --- | --- |
| tokenType | String | Y | The token type |
| accessToken | String | Y | The token to be used by AIA for any subsequent calls to the loyalty API. |
| expiresIn | String | Y | The token expiration time in seconds |
| refreshToken | String | N | Not used by AIA |
| refreshExpiresIn | String | N | Not used by AIA |
| notBeforePolicy | Integer | N | Not used by AIA |

#### Examples

##### Request

HTTP Headers:

* client-id: b527f1d61b7b406193c0eff71dbd2290
* client-secret: E094488D37Bb4dD28c8c5F082eE39D87
* X-correlation-id: test-correlationid-1234

HTTP Content:

{

"audience": "gigalife-loyalty-exp-api"

}

##### Response

Success

{

"tokenType": "User-Authentication",

"accessToken": "7676abd757bda77ffa877781675656329732739",

"expiresIn": "1800"

}

Failure

{

"error": "Invalid client id or secret"

}

### Adjust Balance

* **HTTP Method**: POST
* **URL**: https://<HOST>:<PORT>/{env}-gigalife-loyalty-exp-api/api/v1/prepayBalance/adjustBalance (exact URLs per environment will be provided later)

#### Request Headers Structure

| Parameter | Type | Mandatory | Description |
| --- | --- | --- | --- |
| client-id | String(10) | Y | Unique client id which will be provided during implementation. |
| client-secret | String(35) | Y | client secret which will be provided during implementation. |
| X-correlation-Id | String(35) | Y | Transaction or Event ID. A unique identifier value that is attached to requests and messages that allow reference to a particular transaction or event chain.  Generated by AIA. |
| User-Authentication | String | Y | Common access token required for all endpoints. Token to be used is from /generateToken of security-exp-api. Length may vary. |
| source-channel | String(10) | Y | The channel the request is coming from.  AIA will populate the value ‘AIA’ |
| target-channel | String(10) | Y | The channel the request is routed to.  AIA will populate the value ‘LP’ |

#### Request Body Structure

| Parameter | Type | Mandatory | Description |
| --- | --- | --- | --- |
| rrn | String | Y | Reference Number  Unique ID generated by AIA. |
| number | String | Y | MSISDN of the subscriber in international format, e.g., 639385231354 |
| eventName | String | Y | The event name.  AIA will populate the value ‘Adhoc\_Reward’ |
| eventBody | Element | Y | Details of the event for crediting.  AIA will only use the Adhoc type. |
| type | String | N | Not populated by AIA |

#### Event Body Structure

| Parameter | Type | Mandatory | Description |
| --- | --- | --- | --- |
| amount | Long | Y | Amount of points to be credited |
| expiryDate | DateTime | Y | Time stamp of the reward  Format: YYYY-MM-DD’T’HH24:MM:SS  E.g., 2022-12-31T23:59:59 |
| reason | String | Y | Reason of rewarding  AIA will populate the value ‘Adhoc\_Reward’ |
| brand | String | Y | Brand Name  Possible Values:   * SMART Prepaid * TNT * SMART Bro Prepaid * PLDT Prepaid Home WiFi * SMART Postpaid * SMART Bro Postpaid   **Note: brands which are not included in the above list will not be supported.** |
| referrer | String | N | Referrer  Not populated by AIA. |
| channel | String | Y | Source Channel  AIA will populate the value ‘AIA’ |

#### Response Structure

| Parameter | Type | Mandatory | Description |
| --- | --- | --- | --- |
| responseCode | Integer | Y | HTTP response code  HTTP code 200 = Success |
| responseStatus | String | Y | HTTP response Message |
| correlationId | String | Y | A unique identifier value that is attached to requests and messages that allow reference to a particular transaction or event chain. |
| timestamp | DateTime | Y | Timestamp when the transaction was completed.  Format: YYYY-MM-DD’T’HH24:MM:SS.SSS’Z’ |
| errorDetails | Element | N | Details of the error, will include the code, status and message sub elements. |

#### Examples

##### Request

HTTP Headers:

* client-id: b527f1d61b7b406193c0eff71dbd2290
* client-secret: E094488D37Bb4dD28c8c5F082eE39D87
* X-correlation-id: test-correlationid-1234
* User-Authentication: token generated by MuleSoft
* target-channel – LP
* source-channel – AIA

HTTP Content:

{

"rrn": "RRN\_12345",

"number": "639456306909",

"eventName": "Adhoc\_Reward",

"eventBody": {

"amount": 100,

"expiryDate": "2022-12-31T23:59:59",

"channel": "AIA",

"reason": "Adhoc\_Reward",

"brand": "SMART Prepaid"

}

}

##### Response

Success

{

"responseCode": 200,

"responseStatus": "Success",

"correlationId": "2313dd23ac-b654-d235-12ab-46c7667abc54",

"timestamp": "2021-07-06T10:33:31.187Z"

}

Failure with expired token

{

"responseCode": 401,

"responseStatus": "HTTP POST on resource failed: unauthorized (401).",

"correlationId": "2313dd23ac-b654-d235-12ab-46c7667abc54",

"timestamp": "2021-07-06T10:33:31.187Z"

"errorDetails": {

"code": "XAPI005",

"status": "SEC003:INVALID\_TOKEN",

"message": "Token is either expired or invalid."

}

}

### Volume and Sizing

Total per day: 500K

TPS: 20

Timeout to be set on AIA: 5 seconds

## Data Security

### Network-Level Security Protocol

Networking protocol will be HTTPS.

### API Authentication

AIA will request MuleSoft for the access token. The token will be used in subsequent API calls.

The access token generated by MuleSoft will expire after 30 minutes. For subsequent API calls, AIA will request a new token to be generated.

## Error Handling

For any I/O or HTTP error, AIA will perform up to 3 retries. Interval between the retries will be 20 min.

The number of retries and interval between retries will be configurable.

# Common Endpoint Details

## Technology

**Provider:** Amdocs Engage (AIA)

**Type of Integration**: REST

**Interface Type**: Online, HTTPS

**Authentication**: JWT

## Data Types

The endpoints exposed by AIA uses the following data types.

| Data Type | Description |
| --- | --- |
| Integer | A positive integer value, e.g., 100 |
| Decimal | A numeric value with optional fraction parts, e.g., 10.34 |
| String | A string of text |
| String Enum | Predefined string values. Values are defined per field as specified in the specifications. |
| Boolean | A Boolean value: true or false.  In JSON it will be represented using the native Boolean type. |
| DateTime | Dates are in format ISO 8601, UTC time zone  YYYY-MM-DD’T’hh:mm:ss’Z’  E.g. 2020-05-06T10:49:22Z |
| Array | A list of values/objects.  In JSON this will be an array. |
| Object | A collection of name/value pairs.  In JSON this will be an object. |

## Data Objects

### ProcessingStatus Object

This object will be returned in all responses (for valid requests).

| Name | Type | M/O | Description/Sample Values |
| --- | --- | --- | --- |
| StatusCode | Integer | M | Processing status code |
| StatusText | String | M | Processing status description text |

### Common Status Codes

| Status Code | Description |
| --- | --- |
| 0 | Success |
| 101 | MSISDN not found |
| 102 | Invalid token |
| 103 | Expired token |

## HTTP Status Codes

Below table details the possible status codes.

| HTTP Code | Status Code | Description | Retry Handling |
| --- | --- | --- | --- |
| 200 | 0 | Success | N/A |
| 200 | 103 | Expired token | Client should request for a new token |
| 200 | Any other code |  | Write event to file |
| 400 | N/A | Bad Request | No retry needed |
| 500 | N/A | Internal Server Error | Write event to file |
| Any other code | N/A |  | Write event to file |

# Get Token Endpoint

## General

This endpoint allows client to fetch an access token.

## Description

A client application requires an access token for consuming the application services.

## Assumptions

### Description

| Unique ID | Assumption |
| --- | --- |
|  |  |
|  |  |
|  |  |

## Get Token

This endpoint allows a client application to acquire an access token.

### Endpoint

URI: pldt-smart-mulesoft/v1/get-token

HTTP Method: POST

HTTP Content Type: application/json

### Request Parameters

| Name | Type | M/O | Description/Sample Values |
| --- | --- | --- | --- |
| ClientID | String(15) | M | Unique client ID which will be provided during implementation. |
| ClientSecret | String(35) | M | Client secret which will be provided during implementation. |
| Audience | String(20) | M | Populate with mulesoft-notification |

### Response Parameters

| Name | Type | M/O | Description/Sample Values |
| --- | --- | --- | --- |
| Status | Processing Status | M | The processing status.  Refer to ‎4.3.1 |
| Token | String(50) | M | The generated access token. |

### Status Codes

| Code | Description |
| --- | --- |
| 1000 | Invalid request parameters |

# Notification Endpoint

## General

Mulesoft will be sending notification events via an online interface exposed in AIA.

## Description

The following events will be sent to AIA:

* Sim Registration Update

## Assumptions

### Description

| Unique ID | Assumption |
| --- | --- |
|  |  |
|  |  |
|  |  |

## Customer Events

This endpoint allows Mulesoft to post customer events.

### Endpoint

URI: pldt-smart-mulesoft/v1/customer-event

HTTP Method: POST

HTTP Content Type: application/json

### Request Parameters

| Name | Type | M/O | Description/Sample Values |
| --- | --- | --- | --- |
| Token | String(50) | M | Token received from Get Token |
| MSISDN | String | M | MSISDN of the subscriber in international format |
| Brand | String | M | The subscriber brand. Possible values:   * Smart Prepaid * Smart Postpaid * Smart Bro Postpaid * Smart Bro Prepaid * Smart Infinity * Smart FLP * TNT * Ultera * PLDT Prepaid Home WiFi * PLDT Postpaid Home WiFi * PLDT Landline Plus Prepaid * PLDT Landline Plus Postpaid * PLDT Home - BRO Postpaid * PLDT Home - GSM Postpaid |
| EventType | String(50) | M | Event type  Possible values:   * SimRegUpdate |
| EventData | Object | M | The event data |

### Response Parameters

| Name | Type | M/O | Description/Sample Values |
| --- | --- | --- | --- |
| Status | Processing Status | M | The processing status.  Refer to ‎4.3.1 |

### Event Data

#### Sim Registration Notification

| Name | Type | M/O | Description/Sample Values |
| --- | --- | --- | --- |
| TransactionType | String | M | Transaction type. Possible values:   * Sim Registration Process * Manual Document Validation Process * Sim Registration Update Process |
| RegistrationDate | DateTime | M | The date and time of registration |
| ValidationDate | DateTime | O | The date and time of document validation |
| UpdateDate | DateTime | O | The date and time of registration update |

## Error Handling

For any I/O or application-level error, Mulesoft will write the same information in files which will be uploaded to AIA SFTP server.

# Fallout File Extracts

## Customer Events

### Description

Whenever Mulesoft can’t send notifications to AIA via the REST endpoint due to any technical or applicative reason, the same information will be stored in files and uploaded to AIA SFTP server.

#### Data Elements

The interface will comprise the following information/events:

* Sim registration updates

#### Flow Description

Mulesoft will upload the files to the remote folder using a temporary name (.tmp extension) and rename the files to the final names upon successful transfer.

AIA will load the files from the target folder.

AIA will be responsible for deleting the files.

### Common File Format

#### File Specifications

| Type | | Description |
| --- | --- | --- |
| **File Format** | Textual, delimiter-separated values | |
| **File Name Convention** | Mulesoft\_#name\_#time.csv  #name – content name  #time – generation timestamp, format: YYYYMMDDHH24MMSS  E.g., Mulesoft\_SIMREG\_20221122162000.csv | |
| **File Compression** | N/A | |
| **Record Format** | Char Encoding: UTF-8  Delimiter: comma (,). There will be no extra delimiter at the end of the line. Empty values will be denoted with two consecutive delimiters.  Quoting: Apostrophes (“)  New Line Character: UNIX (LF – 0x0A)  Header/trailer record: Header record will be included  DateTime format: YYYY-MM-DD HH24:MM:SS  DateTime TZ: local time zone  Date format: YYYY-MM-DD | |
| **File Place** | Will be defined during actual integration | |

### Sim Registration Updates

#### General

The file will contain sim registration update information.

#### File Specifications

| Type | | Description |
| --- | --- | --- |
| **File Name Convention** | Mulesoft\_SIMREG\_#time.csv | |
| **Number of Files** | Initial Load  1 file for day one initial loading with a full snapshot of all registered customers  Ongoing Operations  Up to 1 file will be published with incremental changes  If no data is available, no file will be created/uploaded | |

#### Detail Record

| Field No. | Attribute Name | Data Type | Field Description | Example | Must be populated |
| --- | --- | --- | --- | --- | --- |
|  | MSISDN | String | MSISDN of the subscriber in international format | 639709601060 | M |
|  | Brand | String | The subscriber brand. Refer to ‎6.4.2 | Smart Postpaid | M |
|  | Transaction Type | String | Transaction type. Refer to ‎6.4.4 |  | M |
|  | Registration Date | DateTime | The date and time of registration | 2022-09-06 14:16:44 | M |
|  | Validation Date | DateTime | The date and time of document validation |  | O |
|  | Update Date | DateTime | The date and time of registration update |  | O |

### Frequency

Files will be provided to AIA every 15 minutes

### Error/Recovery Handling

Mulesoft responsibility:

If there is an error in the file transfer, the client will retry the file transfer operation.

Amdocs responsibility:

1. If there is an error during record loading, AIA will write the error to an audit log. In this scenario, the file loading will not be cancelled.
2. If there is an error during record processing, AIA will write the error to an audit log.

### Archiving Handling

It is Mulesoft responsibility to keep a backup of the file for cases in which the upload of the file failed for a period of 5 days.

#### Archiving Process

AIA will archive the files and retain them for a period of at least 10 days.

#### Retention Period

Archive after one week.

Delete after one month.

### Data Security

The transfer protocol is Secured File Transfer Protocol (sFTP) using RSA authentication keys (no password will be used).

All files will be pushed to the Amdocs provided sFTP server.

# Open Issues

| OI ID# | Description | Status | Actions |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |