Oracle Utilities SGG V2.0.0 and MDM V2.0.1 Integrations

Utility Reference Model

4.2.1.1a SGG-MDM. Upload Device Measurements (L+G)

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Oracle Utilities SGG V2.0.0 to MDM V2.0.1 Integration Utility Reference Model 4.2.1.1a

Contents

Contents

Chapter 1

Overview **1-1**
Brief Description 1-2

Chapter 2

Detailed Business Process Model Description **2-1**
Business Process Diagrams 2-2
Upload Device Measurements (L+G) Page 1 2-2
Upload Device Measurements (L+G) Page 2 2-3
Upload Device Measurements (L+G) Page 3 2-4
Upload Device Measurements (L+G) Page 4 2-5
Upload Device Measurements (L+G) Page 5 2-6
Upload Device Measurements (L+G) Page 6 2-7
SGG-MDM Upload Device Measurements (L+G) Description 2-8
1.0 Create Payload and Place Into Directory 2-10
1.1 Poll File Location Based on Configured Frequency 2-10
1.2 Parse, Analyze File and Identify Records 2-10
1.3 Transform Meter Read Record to 'Plain' XML 2-11
1.4 Process Message Through Generator Notifications 2-11
1.5 Create and Send Statistical Notification 2-11
1.6 Route Notification Through JMS Queue to OUAF 2-11
1.7 Create and Publish Additional Notification(s) 2-11
1.8 Perform Custom Pre-Processing 2-12
1.9 Validate Meter Read Record 2-12
2.0 Transform “Plane” XML Meter Read Record to SGG IMD Standard Format 2-12
2.1 Create and Send Error Notification 2-12
2.2 Perform Custom Post-Processing 2-13
2.3 Send IMD Record 2-13
2.4 Route IMD Record Through JMS Queue to OUAF 2-13
2.5 Determine Head-End System, Device, Measuring Component, and UOM 2-13
2.6 Populate Start Date/Time & End Date/Time 2-14
2.7 Adjust Date/Time in Multiples of SPI and Convert to Standard Time considering DST 2-14
2.8 Check Interval Data Integrity 2-15
2.9 Determine Processing Method 2-15
3.0 Create IMD in 'Error' State and Log Errors 2-16
3.1 Create To Do 2-16
3.2 Populate Default Data 2-16
3.3 Create IMD Record in 'Pending' State 2-17
3.4 Process Pending IMDs 2-17
3.5 Perform L+G Head-End Specific Mapping and Update State to 'Additional Mapping' 2-17
3.6 Calculate Pre-VEE Values and Consumption 2-18
3.7 Update IMD to 'Mapping Error' State and Log Error 2-18
3.8 Create To Do 2-19

3.9 Review IMD 2-19
4.0 Populate Changes and Request to Update IMD 2-19
4.1 Update IMD 2-19
4.2 Request to Perform Additional Mapping 2-20
4.3 Request to Delete 2-20
4.4 Delete IMD 2-20
4.5 Gather IMD Requirements 2-20
4.6 Submit Request 2-20
4.7 Check for any Missing Interval Data 2-21
4.8 Check If Data Is Within Boundary Of Previous Day Data 2-21
4.9 Update IMD to 'VEE Ready' State 2-22
5.0 Update IMD to 'Error' State and Log Errors 2-22
5.1 4.2.1.2 MDM. V2.0.1. Manage VEE and VEE Exceptions. Manage VEE 2-22
5.2 4.2.1.2 MDM. Manage VEE and VEE Exceptions. Finalize IMD 2-22
5.3 Preprocess Activity 2-23
5.4 Create Pending Payload Statistics Activity 2-23
5.5 Validate Notification Data (Service Provider, File Name) 2-23
5.6 Transition Activity to Validation Error State and Log Error 2-24
5.7 Create To Do 2-24
5.8 Transition To Active State 2-25
5.9 Monitor Statistic Aggregation 2-25
6.0 Transition Activity to Inactive 2-25
6.1 Accumulate File Statistics for Events and IMDs 2-26
6.2 Review Active Payload Statistic Records 2-26
6.3 Request Accumulate Statistics 2-26
6.4 Request Inactivate Payload Statistics 2-26
6.5 Request Delete Payload Statistics 2-27
6.6 Delete Payload Statistics 2-27
6.7 Preprocess Activity 2-27
6.8 Create Pending Payload Error Notification Activity 2-27
6.9 Find Payload Statistics for Processed Payload and Transition to Validate State 2-28
7.0 Update Payload Statistics with Error Information and Transition to Completed State 2-28
7.1 Preprocess Activity 2-28
7.2 Create Pending Payload Summary Activity 2-29
7.3 Update Payload Statistics with Payload Summary and Transition to Complete State 2-29
7.4 Analyze, Work Errors and To Do 2-29
7.5 Request to Discard 2-30
7.6 Complete To Do(s) 2-30
7.7 Update IMD to 'Discard' State 2-30
7.8 Request to Reprocess 2-31
7.9 Update IMD to 'Reprocessed' State and Initialize Reprocessing 2-31
8.0 Identify IMD in 'Error' State 2-31
8.1 Request to Remove 2-31
8.2 Update IMD to 'Remove' State 2-32
8.3 Update IMD to 'Additional Mapping' State and Continue Processing 2-32
8.4 Evaluate Criteria to Run Automated Retry Process 2-33
8.5 Identify IMD in 'Mapping Error' State 2-33
8.6 Update IMD to 'VEE Ready' State and Continue Processing 2-34
8.7 Identify IMD in 'Error' State 2-34
8.8 Request to Reprocess 2-34
8.9 Transition Activity Status to Validate and Initialize Reprocessing 2-35
9.0 Identify Activity in Validation Error State 2-35
9.1 Contact Vendor 2-35
9.2 Review Error 2-35
9.3 Resolve Error 2-36

Business Objects Life Cycle 2-37
D1-IMDSeeder 2-37
Initial Load IMD Interval 2-38
Initial Load IMD Scalar 2-39

Chapter 1

Overview

This chapter provides a brief description of the SGG-MDM Upload Device Measurements (L+G) business process and associated process diagrams. This includes:

- **Brief Description**

Brief Description

Business Process: 4.2.1.1a SGG-MDM.Upload Device Measurements (L+G)

Process Type: Sub-Process

Parent Process: 4.2.1 SGG-MDM.Collect and Process Device Measurements

Sibling Processes:

This process takes place when device measurements (IMDs) are collected in Landis and Gyr Command Center (L+G Head End System) and require further processing. Command Center extracts reads and sends them to SGG. SGG receives IMDs from the Landis + Gyr Head End System, transforms and upload them. Authorized Users can review and analyze payload statistics. SGG pre-processes IMDs and prepare them for VEE process that takes place in Meter Data Management (MDM) application.

Chapter 2

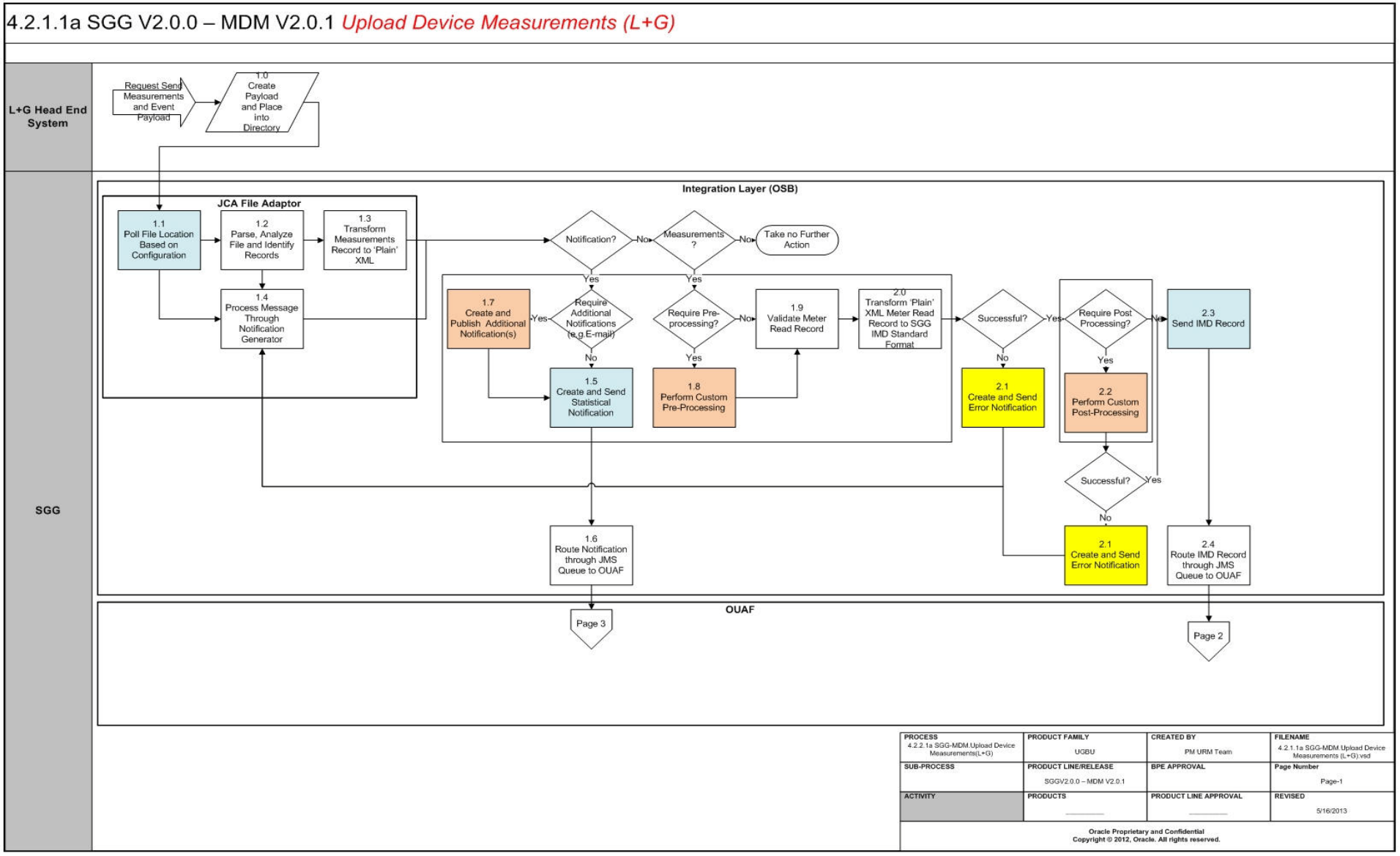
Detailed Business Process Model Description

This chapter provides a detailed description of the SGG-MDM Upload Device Measurements (L+G) business process. This includes:

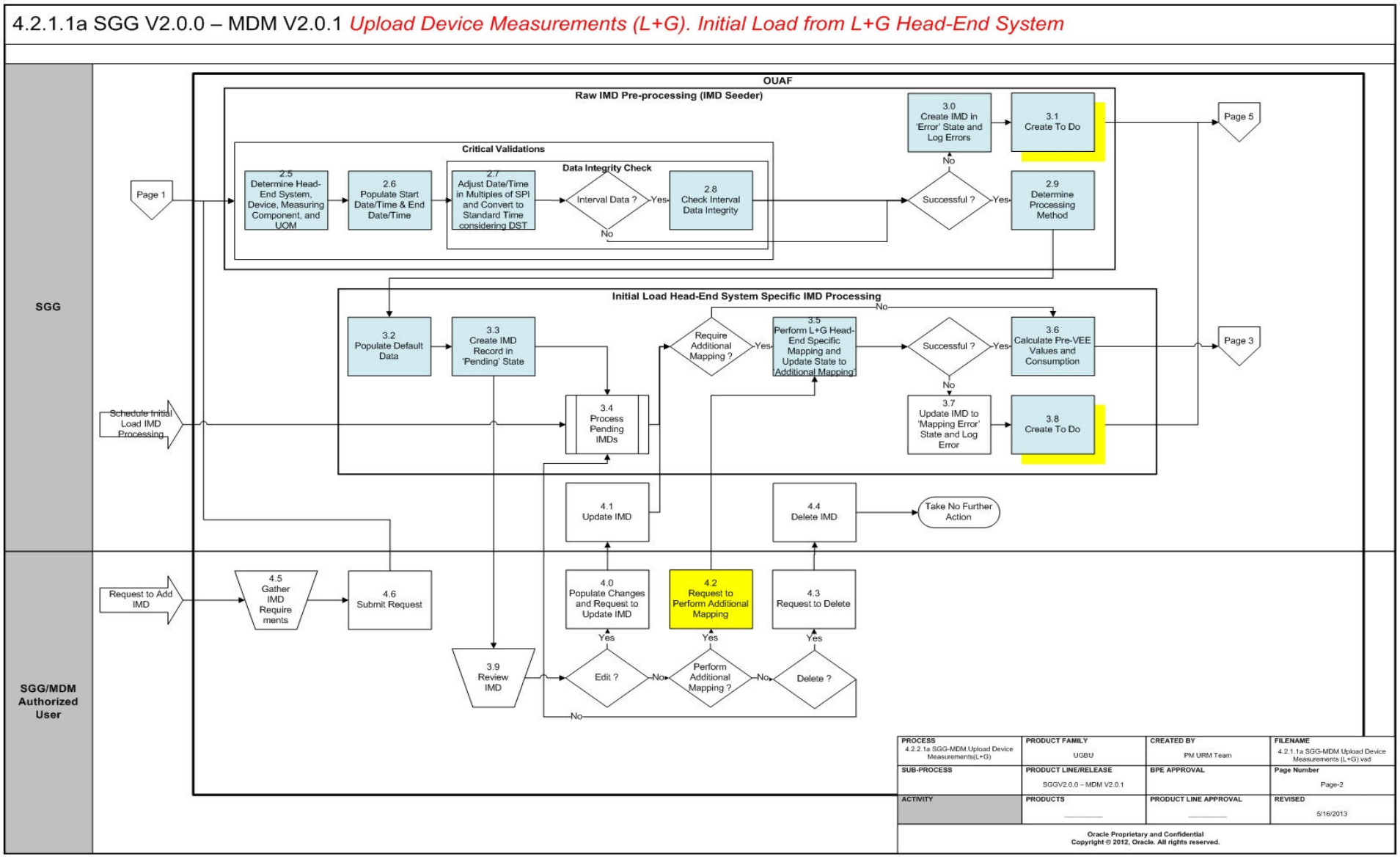
- **Business Process Diagrams**
  - **Upload Device Measurements (L+G) Page 1**
  - **Upload Device Measurements (L+G) Page 2**
  - **Upload Device Measurements (L+G) Page 3**
  - **Upload Device Measurements (L+G) Page 4**
  - **Upload Device Measurements (L+G) Page 5**
  - **Upload Device Measurements (L+G) Page 6**
- **SGG-MDM Upload Device Measurements (L+G) Description**
- **Business Objects Life Cycle**
  - **D1-IMDSeeder**
  - **Initial Load IMD Interval**
  - **Initial Load IMD Scalar**

Business Process Diagrams

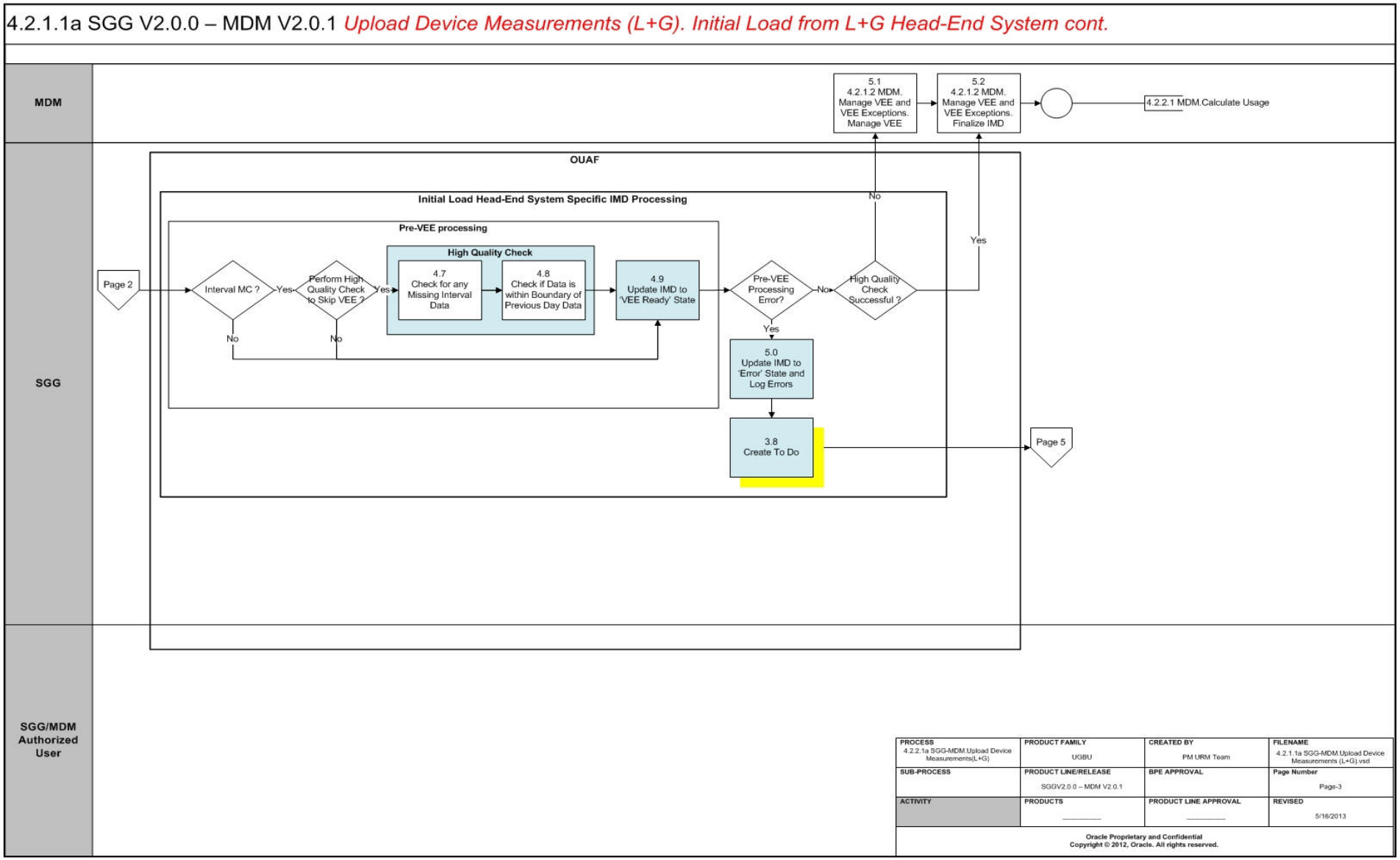
Upload Device Measurements (L+G) Page 1



Upload Device Measurements (L+G) Page 2



Upload Device Measurements (L+G) Page 3



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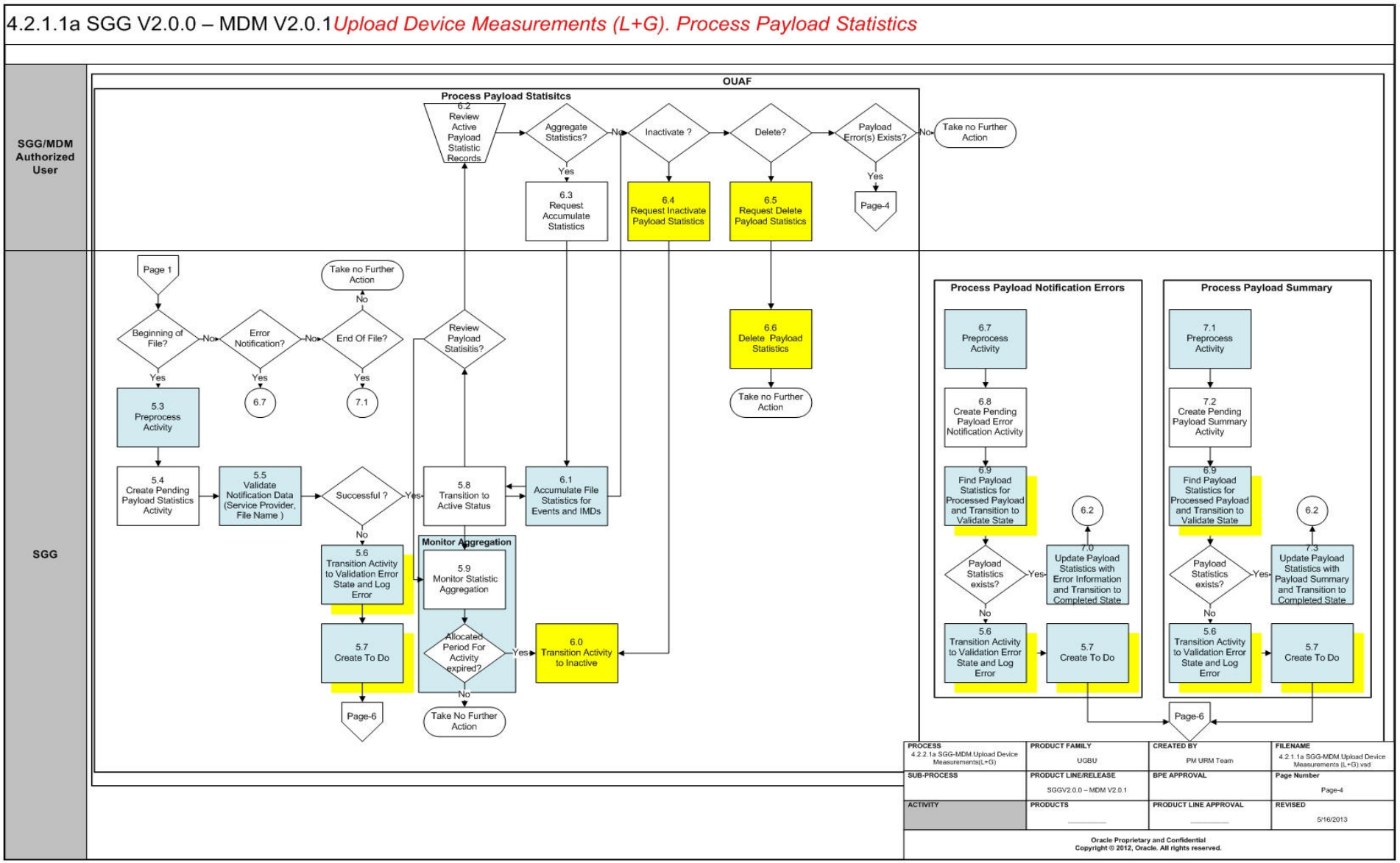
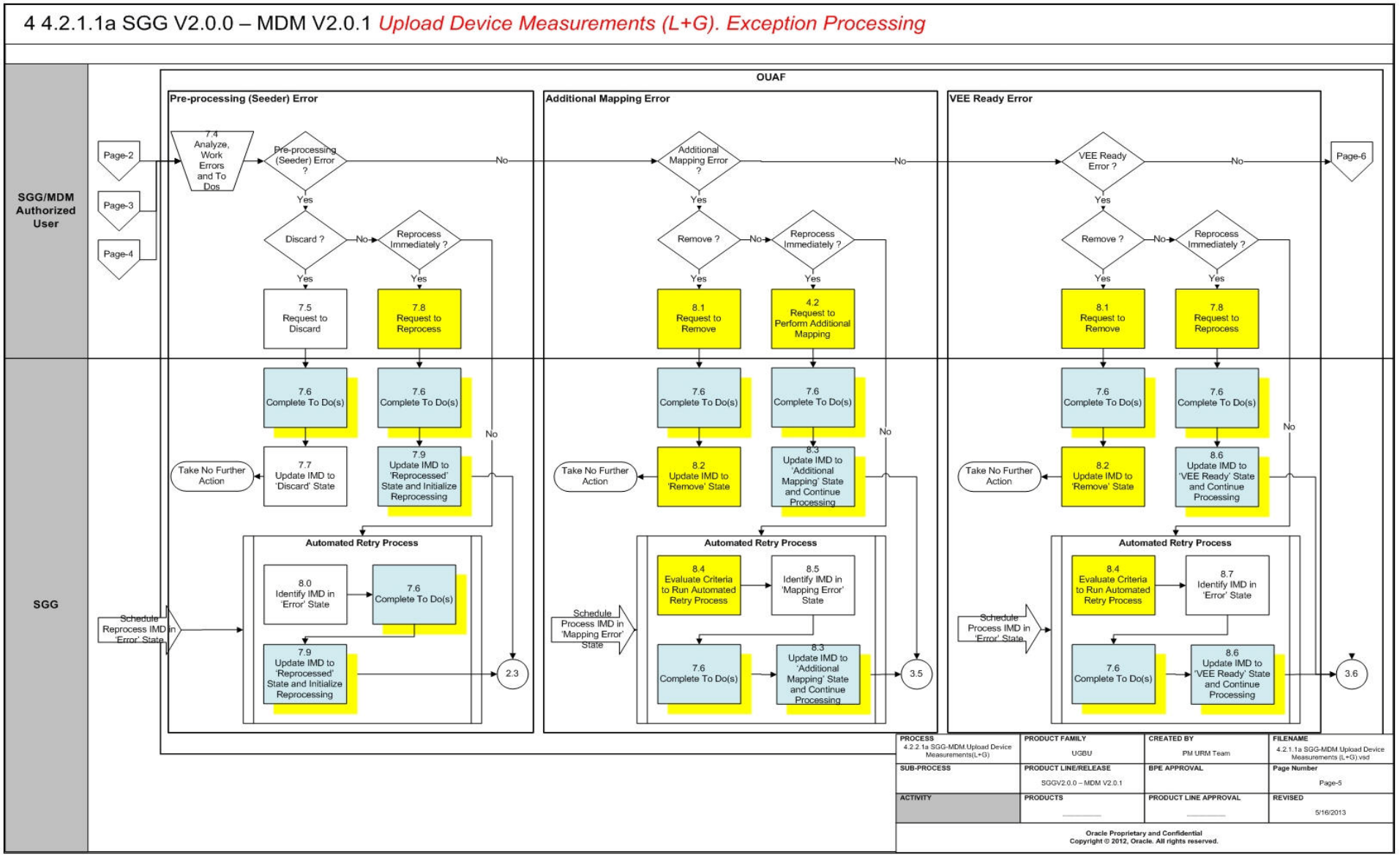
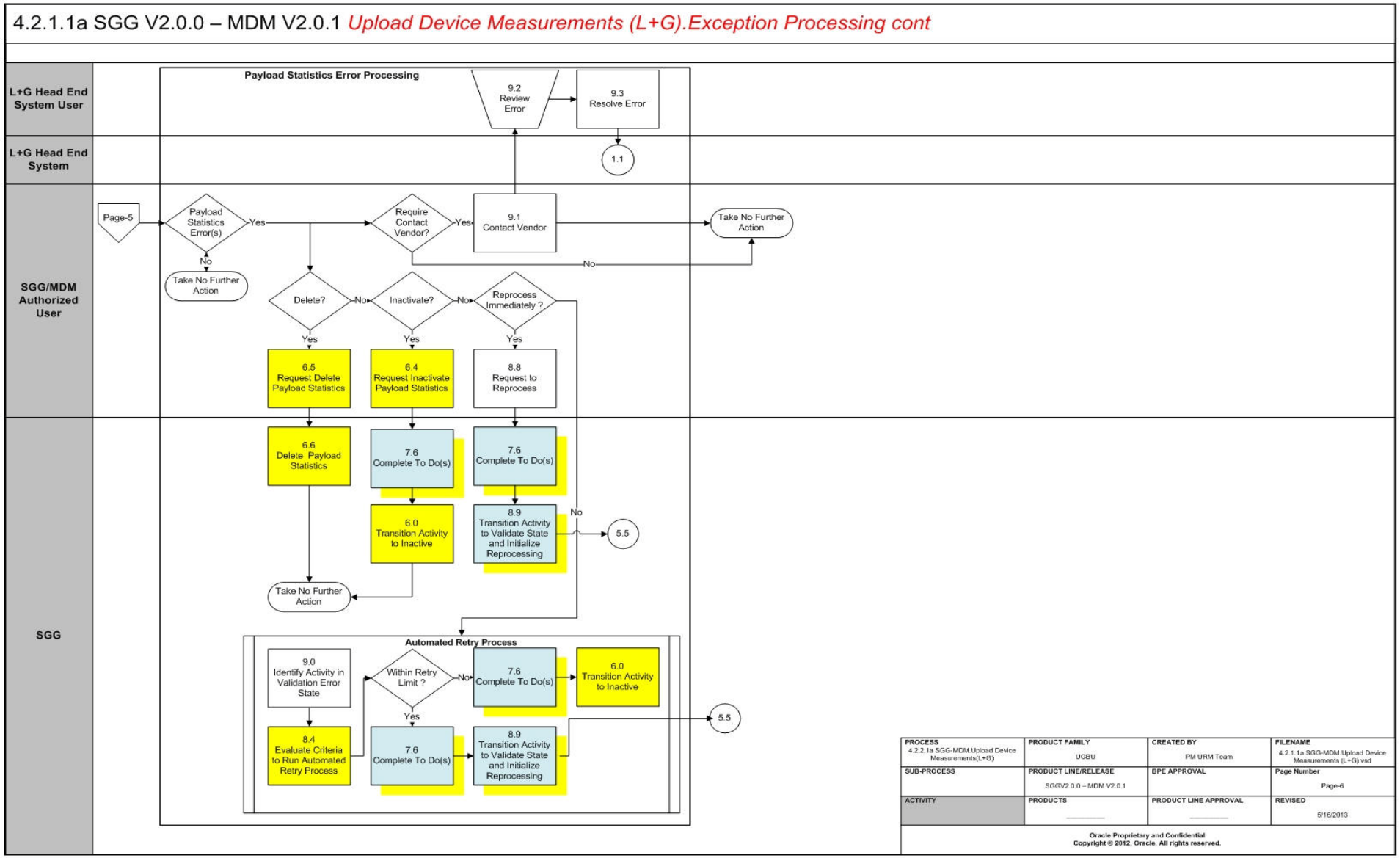


Upload Device Measurements (L+G) Page 5



Upload Device Measurements (L+G) Page 6



SGG-MDM Upload Device Measurements (L+G) Description

This section includes detailed descriptions of the steps involved in the SGG-MDM Upload Device Measurements (L+G) business process, including:

- **1.0 Create Payload and Place Into Directory**
- **1.1 Poll File Location Based on Configured Frequency**
- **1.2 Parse, Analyze File and Identify Records**
- **1.3 Transform Meter Read Record to 'Plain' XML**
- **1.4 Process Message Through Generator Notifications**
- **1.5 Create and Send Statistical Notification**
- **1.6 Route Notification Through JMS Queue to OUAF**
- **1.7 Create and Publish Additional Notification(s)**
- **1.8 Perform Custom Pre-Processing**
- **1.9 Validate Meter Read Record**
- **2.0 Transform "Plane" XML Meter Read Record to SGG IMD Standard Format**
- **2.1 Create and Send Error Notification**
- **2.2 Perform Custom Post-Processing**
- **2.3 Send IMD Record**
- **2.4 Route IMD Record Through JMS Queue to OUAF**
- **2.5 Determine Head-End System, Device, Measuring Component, and UOM**
- **2.6 Populate Start Date/Time & End Date/Time**
- **2.7 Adjust Date/Time in Multiples of SPI and Convert to Standard Time considering DST**
- **2.8 Check Interval Data Integrity**
- **2.9 Determine Processing Method**
- **3.0 Create IMD in 'Error' State and Log Errors**
- **3.1 Create To Do**
- **3.2 Populate Default Data**
- **3.3 Create IMD Record in 'Pending' State**
- **3.4 Process Pending IMDs**
- **3.5 Perform L+G Head-End Specific Mapping and Update State to 'Additional Mapping'**
- **3.6 Calculate Pre-VEE Values and Consumption**
- **3.7 Update IMD to 'Mapping Error' State and Log Error**
- **3.8 Create To Do**
- **3.9 Review IMD**
- **4.0 Populate Changes and Request to Update IMD**
- **4.1 Update IMD**
- **4.2 Request to Perform Additional Mapping**
- **4.3 Request to Delete**

- **4.4 Delete IMD**
- **4.5 Gather IMD Requirements**
- **4.6 Submit Request**
- **4.7 Check for any Missing Interval Data**
- **4.8 Check If Data Is Within Boundary Of Previous Day Data**
- **4.9 Update IMD to 'VEE Ready' State**
- **5.0 Update IMD to 'Error' State and Log Errors**
- **5.1 4.2.1.2 MDM. V2.0.1. Manage VEE and VEE Exceptions. Manage VEE**
- **5.2 4.2.1.2 MDM. Manage VEE and VEE Exceptions. Finalize IMD**
- **5.3 Preprocess Activity**
- **5.4 Create Pending Payload Statistics Activity**
- **5.5 Validate Notification Data (Service Provider, File Name)**
- **5.6 Transition Activity to Validation Error State and Log Error**
- **5.7 Create To Do**
- **5.8 Transition To Active State**
- **5.9 Monitor Statistic Aggregation**
- **6.0 Transition Activity to Inactive**
- **6.1 Accumulate File Statistics for Events and IMDs**
- **6.2 Review Active Payload Statistic Records**
- **6.3 Request Accumulate Statistics**
- **6.4 Request Inactivate Payload Statistics**
- **6.5 Request Delete Payload Statistics**
- **6.6 Delete Payload Statistics**
- **6.7 Preprocess Activity**
- **6.8 Create Pending Payload Error Notification Activity**
- **6.9 Find Payload Statistics for Processed Payload and Transition to Validate State**
- **7.0 Update Payload Statistics with Error Information and Transition to Completed State**
- **7.1 Preprocess Activity**
- **7.2 Create Pending Payload Summary Activity**
- **7.3 Update Payload Statistics with Payload Summary and Transition to Complete State**
- **7.4 Analyze, Work Errors and To Do**
- **7.5 Request to Discard**
- **7.6 Complete To Do(s)**
- **7.7 Update IMD to 'Discard' State**
- **7.8 Request to Reprocess**
- **7.9 Update IMD to 'Reprocessed' State and Initialize Reprocessing**
- **8.0 Identify IMD in 'Error' State**

- **8.1 Request to Remove**
- **8.2 Update IMD to 'Remove' State**
- **8.3 Update IMD to 'Additional Mapping' State and Continue Processing**
- **8.4 Evaluate Criteria to Run Automated Retry Process**
- **8.5 Identify IMD in 'Mapping Error' State**
- **8.6 Update IMD to 'VEE Ready' State and Continue Processing**
- **8.7 Identify IMD in 'Error' State**
- **8.8 Request to Reprocess**
- **8.9 Transition Activity Status to Validate and Initialize Reprocessing**
- **9.0 Identify Activity in Validation Error State**
- **9.1 Contact Vendor**
- **9.2 Review Error**
- **9.3 Resolve Error**

1.0 Create Payload and Place Into Directory

See **Upload Device Measurements (L+G) Page 1** on page 2-2 for the business process diagram associated with this activity.

Actor/Role: L+G Head End System

Description: The Landis+Gyr Command Center extracts device measurements (IMDs) and creates file(s) on a daily basis. Extract is typically scheduled to occur immediately after all the data from the Data Collectors or Take Out Points have been uploaded into Command Center.

The files are created in a Landis+Gyr specific directory.

1.1 Poll File Location Based on Configured Frequency

See **Upload Device Measurements (L+G) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Integration Layer (OSB)

Group: JCA File Adapter

Actor/Role: SGG

Description: The JCA File Adapter service polls the designated directory based on the configured path and frequency.

Entities to Configure
Payload File Path
Polling Frequency

1.2 Parse, Analyze File and Identify Records

See **Upload Device Measurements (L+G) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Integration Layer (OSB)

Group: JCA File Adapter

Actor/Role: SGG

Description: JCA File Adapter parses the file and identifies records and determines types of records.

1.3 Transform Meter Read Record to 'Plain' XML

See **Upload Device Measurements (L+G) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Integration Layer (OSB)

Group: JCA File Adapter

Actor/Role: SGG

Description: JCA File Adapter transforms records from the L+G format to the 'Plain' XML structure.

1.4 Process Message Through Generator Notifications

See **Upload Device Measurements (L+G) Page 1** on page 2-2 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: JSA file adapter identifies type of messages being processed (beginning of file, end of file, errors) and initiates Notification processing.

1.5 Create and Send Statistical Notification

See **Upload Device Measurements (L+G) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Integration Layer (OSB)

Actor/Role: SGG

Description: OSB creates and sends Statistical Notification when OSB starts and finishes processing payload.

Customizable Service
NotificationBusinessService

1.6 Route Notification Through JMS Queue to OUAF

See **Upload Device Measurements (L+G) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Integration Layer (OSB)

Actor/Role: SGG

Description: Notification message is sent through JMS Queue to OUAF.

1.7 Create and Publish Additional Notification(s)

See **Upload Device Measurements (L+G) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Integration Layer (OSB)

Actor/Role: SGG

Description: If business requires create additional notification, OSB creates and publish this notification.

Note: This is a custom process that allows implement additional functionality such as generating and sending e-mails to recipients etc

Customizable Service
NotificationProxyService

1.8 Perform Custom Pre-Processing

See **Upload Device Measurements (L+G) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Integration Layer (OSB)

Actor/Role: SGG

Description: This task is being executed if additional preprocessing is required.

Customizable Service
PreProcessingProxyService

1.9 Validate Meter Read Record

See **Upload Device Measurements (L+G) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Integration Layer (OSB)

Actor/Role: SGG

Description: Processing Proxy Service validates the meter read record

2.0 Transform “Plane” XML Meter Read Record to SGG IMD Standard Format

See **Upload Device Measurements (L+G) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Integration Layer (OSB)

Actor/Role: SGG

Description: Processing Proxy Service transforms "Plain " XML meter read record to SGG IMD format.

2.1 Create and Send Error Notification

See **Upload Device Measurements (L+G) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Integration Layer (OSB)

Actor/Role: SGG

Description: If error(s) occur during preprocessing, validation or transformation steps, OSB generates and route error notification. OSB also generates and routes error notification if error takes place during post-processing.

Customizable Service
NotificationBusinessService

2.2 Perform Custom Post-Processing

See **Upload Device Measurements (L+G) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Integration Layer (OSB)

Actor/Role: SGG

Description: This task is being executed if additional post-processing is required.

Customizable Service
PostProcessingProxyService

2.3 Send IMD Record

See **Upload Device Measurements (L+G) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Integration Layer (OSB)

Actor/Role: SGG

Description: OSB creates and sends meter read result message to JMS Queue.

Customizable Service
DestinationBusinessService

2.4 Route IMD Record Through JMS Queue to OUAF

See **Upload Device Measurements (L+G) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Integration Layer (OSB)

Actor/Role: SGG

Description: JMS Queue routes record to OUAF.

2.5 Determine Head-End System, Device, Measuring Component, and UOM

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Group: Raw IMD Pre-Processing (IMD Seeder)

Group: Critical Validations

Actor/Role: SGG

Description: SGG initiates pre-processing of the raw meter data by performing series of critical validations. This task is the first task among critical validations. SGG attempts to read the raw data received and determines the head-end system (Service Provider), device, measuring component, and unit of measure. Based on the identified measuring component and the Head-End System, the SGG determine the type of data received.

Entities to Configure
Measuring Component Device Device Configuration Head-End System (Service Provider)

Business Objects	Available Algorithms
D1-IMDSeeder	D1-DER-SPRMC (Determine Service Provider Measuring Component)

2.6 Populate Start Date/Time & End Date/Time

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Group: Raw IMD Pre-Processing (IMD Seeder)

Group: Critical Validations

Actor/Role: SGG

Description: SGG populates the Start Date/Time and End Date/Time. The system performs this task for both interval and scalar types of data.

Entities to Configure
Measuring Component Type

Business Objects	Available Algorithms
D1-IMDSeeder	D1-VALDR-INP (Derive IMD Date/Time Values)

2.7 Adjust Date/Time in Multiples of SPI and Convert to Standard Time considering DST

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Group: Raw IMD Pre-Processing (IMD Seeder)

Group: Critical Validations

Group: Data Integrity Check

Actor/Role: SGG

Description: SGG adjusts the Start Date/Time, Intervals, and End Date/Time so that they are in multiples of SPI and converts them from local to standard time considering the Daylight Savings Time (DST).

Entities to Configure
Measuring Component Device (Incoming Data Shift) Device Configuration Service Point

Business Objects	Available Algorithms
D1-IMDSeeder	D1-DODTTMADJ (Perform Date/Time Adjustments and Undercount/Overcount Check)

2.8 Check Interval Data Integrity

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Group: Raw IMD Pre-Processing (IMD Seeder)

Group: Critical Validations

Group: Data Integrity Check

Actor/Role: SGG

Description: SGG performs the over count and under count check for the interval data.

Business Objects	Available Algorithms
D1-IMDSeeder	D1-DODTTMADJ (Perform Date/Time Adjustments and Undercount/Overcount Check)

2.9 Determine Processing Method

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Group: Raw IMD Pre-Processing (IMD Seeder)

Actor/Role: SGG

Description: SGG determines the Processing Method for the raw measurement data received. Depending on the type of data and Head End System, the Initial Load IMD or Manual IMD or Estimate IMD is instantiated.

Business Objects	Available Algorithms
D1-IMDSeeder **Initial Load IMD Interval** **Initial Load IMD Scalar**	D1-DER-SPRMC (Determine Service Provider and Measuring Component)

3.0 Create IMD in 'Error' State and Log Errors

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Group: Raw IMD Pre-Processing (IMD Seeder)

Actor/Role: SGG

Description: If any error occurs during any step of IMD pre-processing, the system creates a seeder record in 'Error' state and logs an error.

Business Objects	Available Algorithms
D1-IMDSeeder	D1-LOG-SEEDR (Create Initial Measurement Data Seeder Log Entries)

3.1 Create To Do

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Group: Raw IMD Pre-Processing (IMD Seeder)

Actor/Role: SGG

Description: If business identifies the needs to create To Dos to report preprocessing errors and system is configured accordingly, the SGG creates a To Do entry when the SGG logs the errors. It allows Authorized Users review the error and attempt to fix the problem.

Business Objects	Available Algorithms
D1-IMDSeeder	D1-CRE-SEDTD (Create To Do for IMD Seeder)

3.2 Populate Default Data

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Group: Initial Load Head-End System Specific IMD Processing

Actor/Role: SGG

Description: SGG populates the default data such as Date/Time and Time Zone based on the details from the raw meter data received from the Head End system if they are not populated.

Business Objects	Available Algorithms
Initial Load IMD (Interval) Initial Load IMD (Scalar) D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar	D1-INT-SPEC (Validate Interval Initial Measurement Data Input)

3.3 Create IMD Record in 'Pending' State

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Group: Initial Load Head-End System Specific IMD Processing

Actor/Role: SGG

Description: SGG ensures the availability of common input data such as Measuring Component Identifier, Device Identifier, UOM and creates an IMD in the pending state.

Business Objects	Available Algorithms
Initial Load IMD (Interval) Initial Load IMD (Scalar) D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar	D1-IMD-COMM (Validate Initial Measurement Data Common Input) F1-AT-RQJ (Transition to Default Next Status)

3.4 Process Pending IMDs

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Group: Initial Load Head-End System Specific IMD Processing

Actor/Role: SGG

Description: System automatically initiates processing the IMD records in pending status. This step represents SGG capability to process the IMDs in batch if required due to high volume.

Business Objects	Available Algorithms
Initial Load IMD (Interval) Initial Load IMD (Scalar) D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar	F1-AT-RQJ (Transition to Default Next Status)

3.5 Perform L+G Head-End Specific Mapping and Update State to 'Additional Mapping'

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Group: Initial Load Head-End System Specific IMD Processing

Actor/Role: SGG

Description: This step takes place only if the there is a need to perform additional L+G Head End system specific mapping.

Business Objects	Available Algorithms
Initial Load IMD (Interval) Initial Load IMD (Scalar) D3-InitialLoadIMDInterval	D1-PBSCMTOCC Interval Status Code Mapping to Condition Codes

3.6 Calculate Pre-VEE Values and Consumption

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Group: Initial Load Head-End System Specific IMD Processing

Actor/Role: SGG

Description: SGG calculates the Pre-VEE values and consumption and prepares data for VEE processing.

Business Objects	Available Algorithms
Initial Load IMD (Interval) Initial Load IMD (Scalar) D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar	D1-PRCLINIMD (Calculate Interval Consumption and Prepare IMD) D1-PRCLSCIMD (Calculate and Prepare Scalar Consumption)

3.7 Update IMD to 'Mapping Error' State and Log Error

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Group: Initial Load Head-End System Specific IMD Processing

Actor/Role: SGG

Description: If any error occurs during head-end specific additional mapping, SGG automatically updates IMD status to 'Mapping Error' and logs an error.

Business Objects	Available Algorithms
Initial Load IMD (Interval) Initial Load IMD (Scalar) D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar	F1-AT-RQJ (Transition to Default Next Status)

3.8 Create To Do

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Group: Initial Load Head-End System Specific IMD Processing

Actor/Role: SGG

Description: SGG creates a To Do entry.

Entities to Configure
To Do Type To Do Role

Business Objects	Available Algorithms
Initial Load IMD (Interval) Initial Load IMD (Scalar) D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar	D1-CRE-TDNVE (Create IMD To Do for Error States)

3.9 Review IMD

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG/MDM Authorized User

Description: SGG/MDM Authorized User reviews and analyzes the pending IMD before further processed using Review Pending State IMD page.

4.0 Populate Changes and Request to Update IMD

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Group: Initial Load Head-End System Specific IMD Processing

Actor/Role: SGG/MDM Authorized User

Description: If an Authorized User decides that the pending IMD requires modifications, the Authorized User makes required changes using Edit IMD Details page and requests to update the IMD record.

4.1 Update IMD

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG updates the IMD record.

Business Objects	Available Algorithms
D1-InitialLoadIMDInterval D1-InitialLoadIMDScalar D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar	D1-AUD-QTYUE (Audit IMD Quantity Changes and Set User-Edited Flag)

4.2 Request to Perform Additional Mapping

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG/MDM Authorized User

Description: If SGG/MDM Authorized User determines that pending IMD should be processed immediately and the business requires additional head end system mapping as a next step, then authorized user requests to perform additional mapping.

4.3 Request to Delete

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG/MDM Authorized User

Description: The SGG/MDM Authorized User requests to delete the IMD record in pending status.

4.4 Delete IMD

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG deletes the IMD Record in pending status.

Note: Once a record is deleted it is permanently removed from the system and it cannot be retrieved.

4.5 Gather IMD Requirements

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG/MDM Authorized User

Description: The Authorized User gathers all the required information required for adding an initial measurement.

4.6 Submit Request

See **Upload Device Measurements (L+G) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG/MDM Authorized User

Description: The SGG/MDM Authorized User adds initial measurement data (IMD) records to the SGG application by using the Initial Measurement Upload Portal or uploading an XML document using Load IMDs/Events (XML) portal. SGG performs an audit of the IMD added.

Entities to Configure
Measuring Component Device Start and End Date and Time Consumption for Scalar IMD Intervals and respective data for Interval IMD

Business Objects	Available Algorithms
D1-InitialLoadIMDInterval D1-InitialLoadIMDScalar D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar	D1-AUD-QTYUE (Audit IMD Quantity Changes and Set User-Edited Flag)

4.7 Check for any Missing Interval Data

See **Upload Device Measurements (L+G) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Initial Load Head-End System Specific IMD Processing

Group: High Quality Check

Actor/Role: SGG

Description: SGG checks if there are any missing intervals in the current IMD in process.

Business Objects	Available Algorithms
D1-InitialLoadIMDInterval D3-InitialLoadIMDInterval	D1-HIGHQUALV (High Quality Check - Vector Band Based)

4.8 Check If Data Is Within Boundary Of Previous Day Data

See **Upload Device Measurements (L+G) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Initial Load Head-End System Specific IMD Processing

Group: High Quality Check

Actor/Role: SGG

Description: SGG checks if the Interval data is within a pre-defined quantity tolerance boundary (pre-defined tolerance levels) of the previous day's corresponding interval data.

Business Objects	Available Algorithms
D1-InitialLoadIMDInterval D3-InitialLoadIMDInterval	D1-HIGHQUALV (High Quality Check - Vector Band Based)

4.9 Update IMD to 'VEE Ready' State

See **Upload Device Measurements (L+G) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Initial Load Head-End System Specific IMD Processing

Actor/Role: SGG

Description: SGG updates the IMD status to VEE Ready.

Note: If the High Quality Check has been successful, VEE process is skipped and the IMD transitions to normalization and finalization steps. If the High Quality Check fails, the IMD transitions to VEE Processing.

Business Objects	Available Algorithms
Initial Load IMD (Interval) Initial Load IMD (Scalar) D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar	F1-AT-RQJ (Transition to Default Next Status)

5.0 Update IMD to 'Error' State and Log Errors

See **Upload Device Measurements (L+G) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Initial Load Head-End System Specific IMD Processing

Actor/Role: SGG

Description: If any error occurs while SGG prepares data for VEE, SGG updates IMD status to 'Error' state and logs an error.

Business Objects	Available Algorithms
Initial Load IMD (Interval) Initial Load IMD (Scalar) D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar	F1-AT-RQJ (Transition to Default Next Status)

5.1 4.2.1.2 MDM. V2.0.1. Manage VEE and VEE Exceptions. Manage VEE

See **Upload Device Measurements (L+G) Page 3** on page 2-4 for the business process diagram associated with this activity.

Actor/Role: MDM

Description: The Meter Data Management application performs VEE. This step represents IMD VEE processing described in 4.2.1.2 MDM. V2.0.1. Manage VEE and VEE Exceptions. Manage VEE document.

5.2 4.2.1.2 MDM. Manage VEE and VEE Exceptions. Finalize IMD

See **Upload Device Measurements (L+G) Page 3** on page 2-4 for the business process diagram associated with this activity.

Actor/Role: MDM

Description: The Meter Data Management application finalizes IMD processing and creates final measurements. This process is described in 4.2.1.2 MDM. V2.0.1. Manage VEE and VEE Exceptions. Finalize IMD document.

5.3 Preprocess Activity

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Statistics

Actor/Role: SGG

Description: SGG preprocesses payload statistic that contains information from the file's header record.

Business Objects	Available Algorithms
D1-PayloadStatistics	D1-PLSTCRBO (Set Payload Statistics BO name) D1-DETACTTYP (Determine Activity Type)

5.4 Create Pending Payload Statistics Activity

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Statistics

Actor/Role: SGG

Description: Application creates Payload Statistics Activity in Pending status.

Business Objects
D1-PayloadStatistics

5.5 Validate Notification Data (Service Provider, File Name)

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Statistics

Actor/Role: SGG

Description: Application validates message received.

Business Objects	Available Algorithms
D1-PayloadStatistics	D1-VALACTTYP Validate Activity Type D1-VALACTFIL Validate Activity File Name D1-SPRIDAGG Service Provider Identification (for Aggregation)

5.6 Transition Activity to Validation Error State and Log Error

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Statistics

Group: Process Payload Notification Errors

Group: Process Payload Summary

Actor/Role: SGG

Description: If any error occurs during validations, SGG transitions the Activity to Validation Error state and logs an error.

Business Objects	Available Algorithms
D1-PayloadStatistics D1-PayloadErrorNotif D1-PayloadSummary D1-PayloadNotification	See list of algorithms associated with validations

5.7 Create To Do

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Statistics

Group: Process Payload Notification Errors

Group: Process Payload Summary

Actor/Role: SGG

Description: Application creates a To Do entry for the Authorized User to analyze error.

Entities to Configure
To Do Type To Do Role

Business Objects	Available Algorithms
D1-PayloadStatistics D1-PayloadErrorNotif D1-PayloadSummary D1-PayloadNotification	D1-CREATTODO

5.8 Transition To Active State

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Statistics

Actor/Role: SGG

Description: If processing record successfully passed the validations, application transitions Payload Statistics activity to Active status.

Business Objects
D1-PayloadStatistics

5.9 Monitor Statistic Aggregation

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Statistics

Actor/Role: SGG

Description: SGG monitors payload statistics in Active state, evaluates payload cut off day and controls transition to the next logical step of the process (state).

Business Objects	Available Algorithms
D1-PayloadStatistics	D1-PRFACTAGG (Perform Activity Aggregation)

6.0 Transition Activity to Inactive

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Statistics

Group: Payload Statistics Error Processing

Actor/Role: SGG

Description: Application transitions payload statistics to Inactive state.

Automated Process: This step is performed if system detects that payload cut off date is in the past.

Manual Process: System also performs this task after Authorized User requests to inactivate payload statistics.

Business Objects
D1-PayloadStatistics

6.1 Accumulate File Statistics for Events and IMDs

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Statistics

Actor/Role: SGG

Description: Application collects statistics about all the events and IMDs uploaded as a result of payload processing.

Business Objects	Available Algorithms
D1-PayloadStatistics	D1-ACCSTATS (Accumulate Statistics Algorithm)

6.2 Review Active Payload Statistic Records

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Statistics

Actor/Role: SGG/MDM Authorized User

Description: Authorized User reviews and analyzes payload statistics using Payload Statistics screen.

6.3 Request Accumulate Statistics

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Statistics

Actor/Role: SGG/MDM Authorized User

Description: If required, Authorized User requests accumulate payload statistics.

6.4 Request Inactivate Payload Statistics

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Statistics

Group: Payload Statistics Error Processing

Actor/Role: SGG/MDM Authorized User

Description: Authorized User requests inactivate payload statistics.

6.5 Request Delete Payload Statistics

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Statistics

Group: Payload Statistics Error Processing

Actor/Role: SGG/MDM Authorized User

Description: Authorized User requests delete payload statistics.

6.6 Delete Payload Statistics

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Statistics

Group: Payload Statistics Error Processing

Actor/Role: SGG

Description: Application deletes payload statistics.

Business Objects
D1-PayloadStatistics

6.7 Preprocess Activity

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Notification Errors

Actor/Role: SGG

Description: Application preprocesses error notifications received from integration layer.

Business Objects	Available Algorithms
D1-PayloadNotification D1-PayloadErrorNotif	D1-DETACTTYP Determine Activity Type

6.8 Create Pending Payload Error Notification Activity

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Notification Errors

Actor/Role: SGG

Description: Application creates pending error notification activity.

Business Objects
D1-PayloadNotification D1-PayloadErrorNotif

6.9 Find Payload Statistics for Processed Payload and Transition to Validate State

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Notification Errors

Group: Process Payload Summary

Actor/Role: SGG

Description: SGG validates error notification and identifies Payload Statistics Activity created for processing Payload and couples it with currently processing notification.

Business Objects	Available Algorithms
D1-PayloadNotification D1-PayloadErrorNotif D1-PayloadSummary	D1-SPRIDAGG (Service Provider Identification (for Aggregation) D1-CPLPLST (Couple with Payload Statistics)

7.0 Update Payload Statistics with Error Information and Transition to Completed State

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Notification Errors

Actor/Role: SGG

Description: Application updates payload statistics with information from error notification.

Business Objects	Available Algorithms
D1-PayloadNotification D1-PayloadErrorNotif	D1-UPERRINFO Update Error Info onto Payload Statistics Algorithm Type

7.1 Preprocess Activity

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Summary

Actor/Role: SGG

Description: Application preprocesses payload summary message (file trailer data) received from integration layer.

Business Objects	Available Algorithms
D1-PayloadSummary	D1-DETACTTYP (Determine Activity Type) D1-PLSUCRBO (Set Payload Summary BO name)

7.2 Create Pending Payload Summary Activity

See **Upload Device Measurements (L+G) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Process Payload Summary

Actor/Role: SGG

Description: Application creates pending payload summary activity

Business Objects
D1-PayloadSummary

7.3 Update Payload Statistics with Payload Summary and Transition to Complete State

See **Upload Device Measurements (L+G) Page 5** on page 2-6 for the business process diagram associated with this activity.

Group: Process Payload Summary

Actor/Role: SGG

Description: Application updates payload statistics with information from summary notification received from middleware (file trailer).

Business Objects	Available Algorithms
D1-PayloadSummary	D1-UMWSTAT (Update Middleware Statistics onto Payload Statistics

7.4 Analyze, Work Errors and To Do

See **Upload Device Measurements (L+G) Page 5** on page 2-6 for the business process diagram associated with this activity.

Actor/Role: SGG/MDM Authorized User

Description: SGG/MDM Authorized User analyzes the error and corresponding To Do entry.

7.5 Request to Discard

See **Upload Device Measurements (L+G) Page 5** on page 2-6 for the business process diagram associated with this activity.

Group: Pre-Processing (Seeder) Error Processing

Actor/Role: SGG/MDM Authorized User

Description: The SGG/MDM Authorized User the user requests to discard IMD record in "Error" state.

7.6 Complete To Do(s)

See **Upload Device Measurements (L+G) Page 5** on page 2-6 for the business process diagram associated with this activity.

Group: Pre-Processing (Seeder) Error Processing

Group: Additional Mapping Error Processing

Group: VEE Ready Error Processing

Group: Payload Statistics Error Processing

Actor/Role: SGG

Description: Application automatically completes To Do entries before reprocessing.

Business Objects	Available Algorithms
D1-IMDSeeder Initial Load IMD (Interval) Initial Load IMD (Scalar) D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar D1-PayloadSummary D1-PayloadStatistics	D1-COMP-TD (Complete To Do Entries for Initial Measurement Data) D1-GTDCBO Generic To Do completion for BO

7.7 Update IMD to 'Discard' State

See **Upload Device Measurements (L+G) Page 5** on page 2-6 for the business process diagram associated with this activity.

Group: Pre-Processing (Seeder) Error Processing

Actor/Role: SGG

Description: SGG transitions the IMD seeder to 'Discard' status indicating that it cannot be used further.

Business Objects
D1-IMDSeeder

7.8 Request to Reprocess

See **Upload Device Measurements (L+G) Page 5** on page 2-6 for the business process diagram associated with this activity.

Group: Pre-Processing (Seeder) Error Processing

Group: VEE Ready Error Processing

Actor/Role: SGG/MDM Authorized User

Description: After the problem is resolved and required changes are made SGG/MDM Authorized User requests to reprocess the data.

7.9 Update IMD to 'Reprocessed' State and Initialize Reprocessing

See **Upload Device Measurements (L+G) Page 5** on page 2-6 for the business process diagram associated with this activity.

Group: Pre-Processing (Seeder) Error Processing

Actor/Role: SGG

Description: SGG transitions the seeder to 'Reprocessed' state and initializes reprocessing.

Business Objects	Available Algorithms
D1-IMDSeeder	D1-CRE-IMDSD (Attempt to Reprocess Seeder Initial Measurement)

8.0 Identify IMD in 'Error' State

See **Upload Device Measurements (L+G) Page 5** on page 2-6 for the business process diagram associated with this activity.

Group: Automated Retry Process

Actor/Role: SGG

Description: This task is the first task of automated seeder retry process. SGG identifies the IMD seeder records in 'Error' state.

Customizable process
Generic IMD Monitor - IMD Seeder (D1-GNIMD)

Business Objects	Available Algorithms
D1-IMDSeeder	DM_IMD (IMD Monitor - Standard AutoTransition)

8.1 Request to Remove

See **Upload Device Measurements (L+G) Page 5** on page 2-6 for the business process diagram associated with this activity.

Group: Additional Mapping Error Processing

Group: VEE Ready Error Processing

Actor/Role: SGG/MDM Authorized User

Description: SGG/MDM Authorized User requests to remove IMD record using Initial Measurement page.

Business Objects
D1-InitialLoadIMDInterval D1-InitialLoadIMDScalar D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar

8.2 Update IMD to 'Remove' State

See **Upload Device Measurements (L+G) Page 5** on page 2-6 for the business process diagram associated with this activity.

Group: Additional Mapping Error Processing

Group: VEE Ready Error Processing

Actor/Role: SGG/MDM Authorized User

Description: SGG updates the IMD to 'Remove' state.

Business Objects	Available Algorithms
D1-InitialLoadIMDInterval D1-InitialLoadIMDScalar D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar	F1-AT-RQJ (Transition to Default Next Status)

8.3 Update IMD to 'Additional Mapping' State and Continue Processing

See **Upload Device Measurements (L+G) Page 5** on page 2-6 for the business process diagram associated with this activity.

Group: Additional Mapping Error Processing

Actor/Role: SGG

Description: SGG transitions the IMD to 'Additional Mapping' state and initiates re-processing steps associated with additional mapping.

Business Objects	Available Algorithms
D1-InitialLoadIMDInterval D1-InitialLoadIMDScalar D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar	F1-AT-RQJ (Transition to Default Next Status)

8.4 Evaluate Criteria to Run Automated Retry Process

See **Upload Device Measurements (L+G) Page 5** on page 2-6 for the business process diagram associated with this activity.

Group: Automated Retry Process

Actor/Role: SGG

Description: This task is the first task of an automated retry process. Application determines necessity to re-initiate:

- Additional mapping for IMDs in "Additional mapping Error" state based on one or more specific criteria (e.g. number of errors to be processed before run terminates)
- VEE ready processing for IMDs in VEE Ready Error " state based on one of more specific criteria (e.g. number of errors to be processed before run terminates)

Customizable Processes
D1-IMD - IMD Monitor - Physical Devices

Business Objects	Available Algorithms
D1-InitialLoadIMDInterval D1-InitialLoadIMDScalar D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar	D1-IMD-RETRY Retry Initial Measurement Data Processing

8.5 Identify IMD in 'Mapping Error' State

See **Upload Device Measurements (L+G) Page 5** on page 2-6 for the business process diagram associated with this activity.

Group: Automated Retry Process

Actor/Role: SGG

Description: Application identifies IMD record in 'Mapping Error'.

Customizable Processes
D1-IMD - IMD Monitor - Physical Devices

Business Objects	Available Algorithms
D1-InitialLoadIMDInterval D1-InitialLoadIMDScalar D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar	D1-IMD-RETRY (Retry Initial Measurement Data Processing)

8.6 Update IMD to 'VEE Ready' State and Continue Processing

See **Upload Device Measurements (L+G) Page 5** on page 2-6 for the business process diagram associated with this activity.

Group: VEE Ready Error Processing

Actor/Role: SGG

Description: SGG transition the IMD in an 'Error' state to 'VEE Ready' and initiates re-processing.

Customizable Processes
D1-IMD - IMD Monitor - Physical Devices

Business Objects	Available Algorithms
D1-InitialLoadIMDInterval D1-InitialLoadIMDScalar D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar	F1-AT-RQJ (Transition to Default Next Status) D1-IMD-RETRY (Retry Initial Measurement Data Processing

8.7 Identify IMD in 'Error' State

See **Upload Device Measurements (L+G) Page 5** on page 2-6 for the business process diagram associated with this activity.

Group: Automated Retry Process

Actor/Role: SGG

Description: Application identifies IMD record in 'Error' state and initiates re-processing.

Customizable Processes
D1-IMD-RETRY (Retry Initial Measurement Data Processing)

Business Objects	Available Algorithms
D1-InitialLoadIMDInterval D1-InitialLoadIMDScalar D3-InitialLoadIMDInterval D3-InitialLoadIMDScalar	D1-IMD-RETRY (Retry Initial Measurement Data Processing)

8.8 Request to Reprocess

See **Upload Device Measurements (L+G) Page 6** on page 2-7 for the business process diagram associated with this activity.

Group: Payload Statistics Error Processing

Actor/Role: SGG/MDM Authorized User

Description: SGG/MDM Authorized User requests to reprocess payload statistics.

8.9 Transition Activity Status to Validate and Initialize Reprocessing

See **Upload Device Measurements (L+G) Page 6** on page 2-7 for the business process diagram associated with this activity.

Group: Payload Statistics Error Processing

Actor/Role: SGG

Description: SGG transition the seeder to Reprocessed state and initializes reprocessing.

Business Objects	Available Algorithms
D1-PayloadStatistics	D1-RBOE

9.0 Identify Activity in Validation Error State

See **Upload Device Measurements (L+G) Page 6** on page 2-7 for the business process diagram associated with this activity.

Group: Payload Statistics Error Processing

Actor/Role: SGG

Description: Application continuously monitors payload statistics records to identify the records in validation error state.

Business Objects	Available Algorithms
D1-PayloadStatistics	D1-RBOE

9.1 Contact Vendor

See **Upload Device Measurements (L+G) Page 6** on page 2-7 for the business process diagram associated with this activity.

Group: Payload Statistics Error Processing

Actor/Role: SGG/MDM Authorized User

Description: SGG/MDM Authorized User contacts L+G Head End Head System User to report error.

9.2 Review Error

See **Upload Device Measurements (L+G) Page 6** on page 2-7 for the business process diagram associated with this activity.

Group: Payload Statistics Error Processing

Actor/Role: L+G Head End Head System User

Description: L+G Head End Head System User reviews and analyzes error.

9.3 Resolve Error

See **Upload Device Measurements (L+G) Page 6** on page 2-7 for the business process diagram associated with this activity.

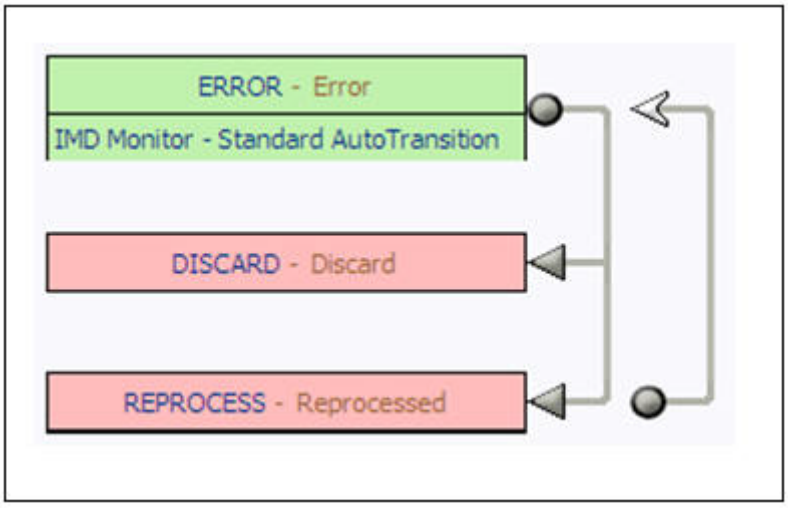
Group: Payload Statistics Error Processing

Actor/Role: L+G Head End Head System User

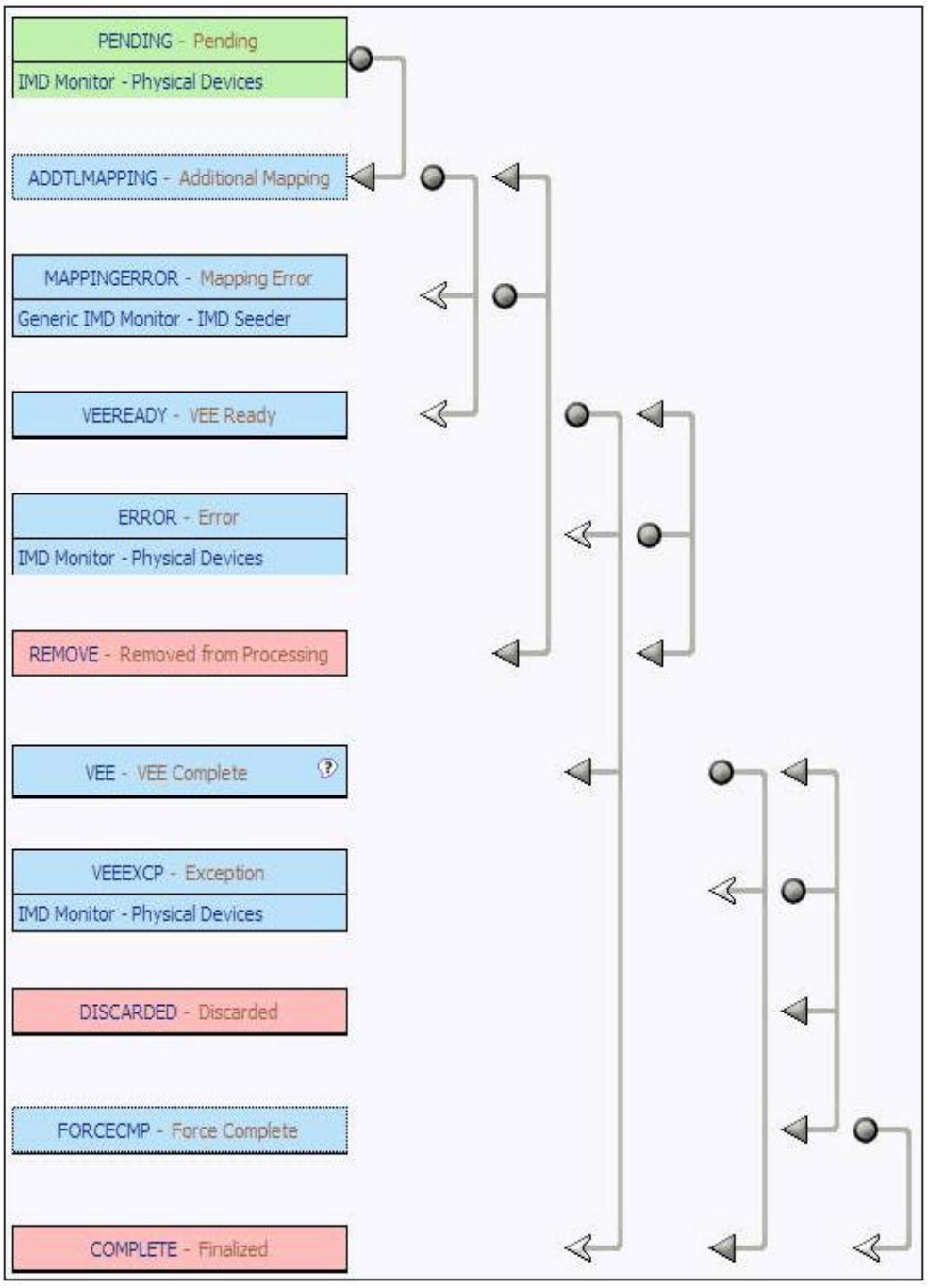
Description: L+G Head End Head System User works on payload error resolution.

Business Objects Life Cycle

D1-IMDSeeder



Initial Load IMD Interval



Initial Load IMD Scalar