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

Utility Reference Model

5.6.3.4b SGG-MDM.Manage Device Remote Connect (Echelon)

April 2013

ORACLE

Oracle Utilities SGG V2.0.0 to MDM V2.0.1 Integration Utility Reference Model 5.6.3.4b

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Chapter 1

Overview

This chapter provides a brief description of the SGG-MDM.Manage Device Remote Connect (Echelon) business process and associated process diagrams. This includes:

- **Brief Description**

Brief Description

Business Process: 5.6.3.4b SGG-MDM.Manage Device Remote Connect (Echelon)

Process Type: Process

Parent Process: 5.6.3 SGG-MDM.Manage Devices

Sibling Processes: 5.6.3.1b SGG-MDM.Manage On-Demand Read (Echelon), 5.6.3.6b SGG-MDM.Manage Device Device Status Check (Echelon)

This process gets initiated when a 3rd Party application (E.g. Customer Care and Billing application), makes a request for a Device Remote Connect or a MDM or SGG Authorized User manually requests for a Device Remote Connect within SGG system. SGG initiates Remote Connect by communicating with respective Echelon Head-End System that in turn communicates with the Smart Meter device, for device connection, and sends response back to SGG. Head-End System also checks load status and collects meter read from Smart Meter device, if required, as part of Device Remote Connect process.

Chapter 2

Detailed Business Process Model Description

This chapter provides a detailed description of the SGG-MDM.Manage Device Remote Connect (Echelon) business process. This includes:

- **Business Process Diagrams**
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- **Business Objects Lifecycle**
  - **D1-RemoteConnect**
  - **D4-ConnectLoad**
  - **D4-ConnectLoadNtf**
  - **D1-Completion Event**

Business Process Diagrams

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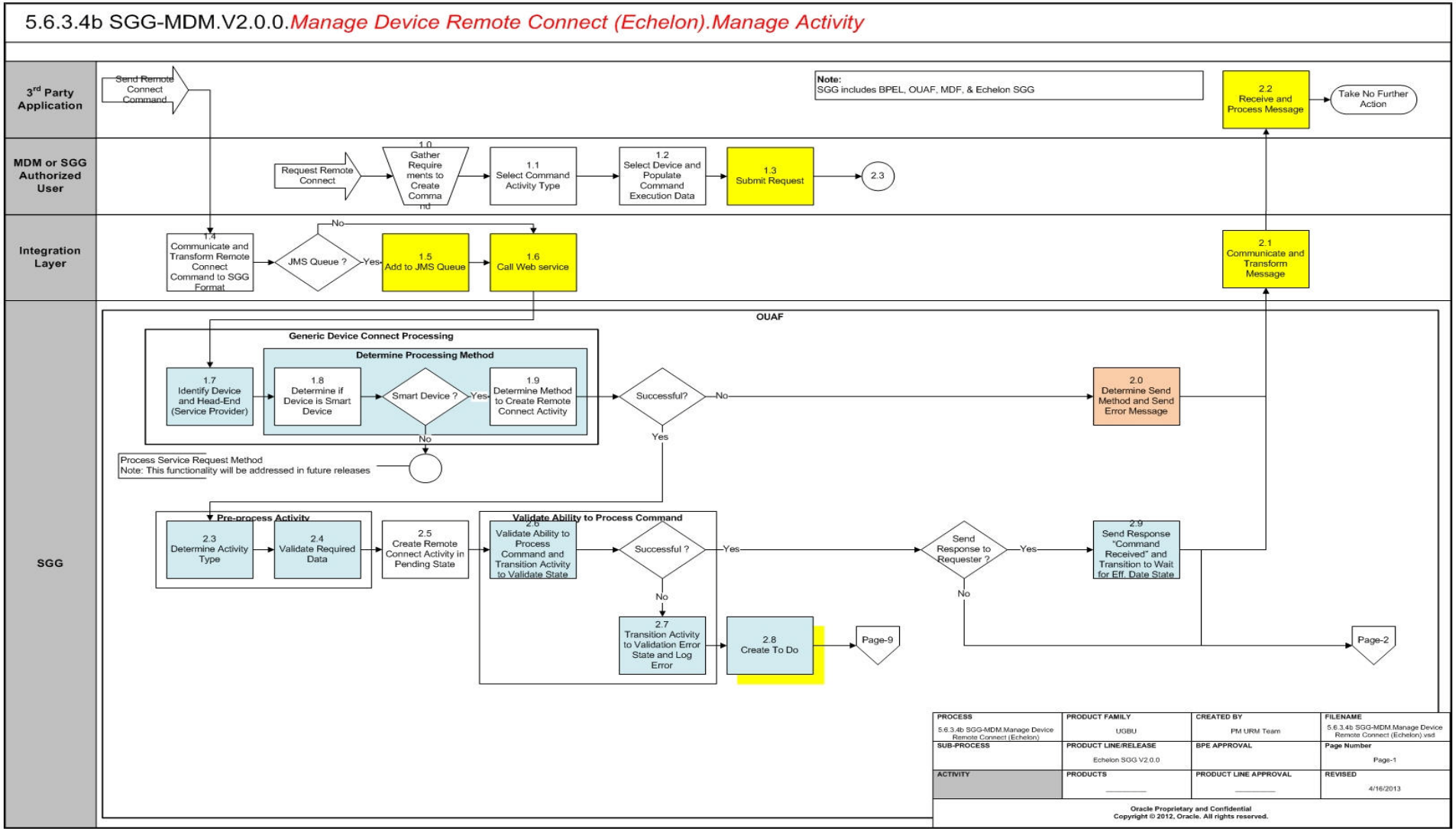
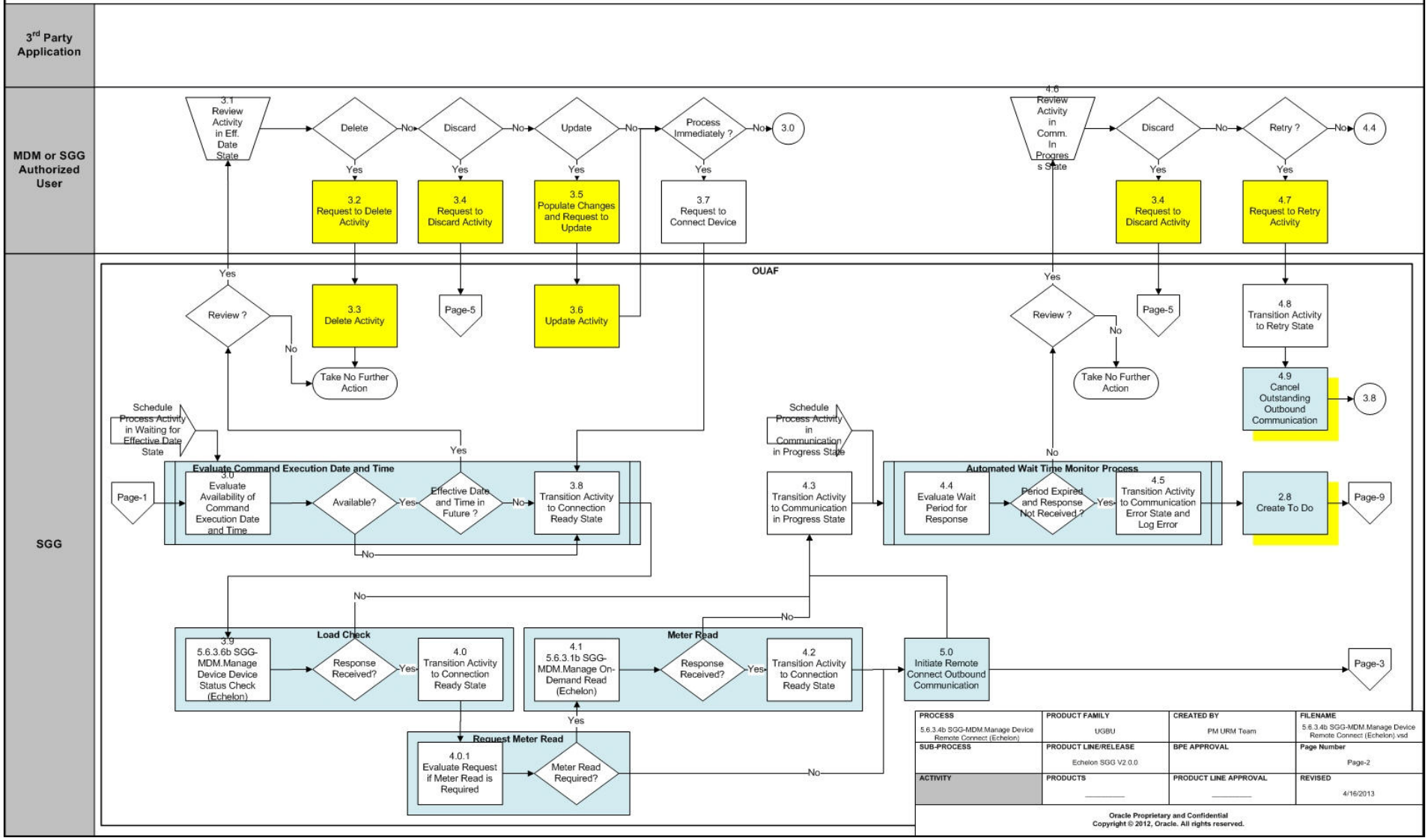


Manage Device Remote Connect (Echelon) Page 2

5.6.3.4b SGG-MDM.V2.0.0.*Manage Device Remote Connect (Echelon).Manage Activity*



PROCESS	PRODUCT FAMILY	CREATED BY	FILENAME
5.6.3.4b SGG-MDM.Manage Device Remote Connect (Echelon)	UGBU	PM URM Team	5.6.3.4b SGG-MDM.Manage Device Remote Connect (Echelon).vsd
SUB-PROCESS	PRODUCT LINE/RELEASE	BPE APPROVAL	Page Number
	Echelon SGG V2.0.0		Page-2
ACTIVITY	PRODUCTS	PRODUCT LINE APPROVAL	REVISED
			4/16/2013

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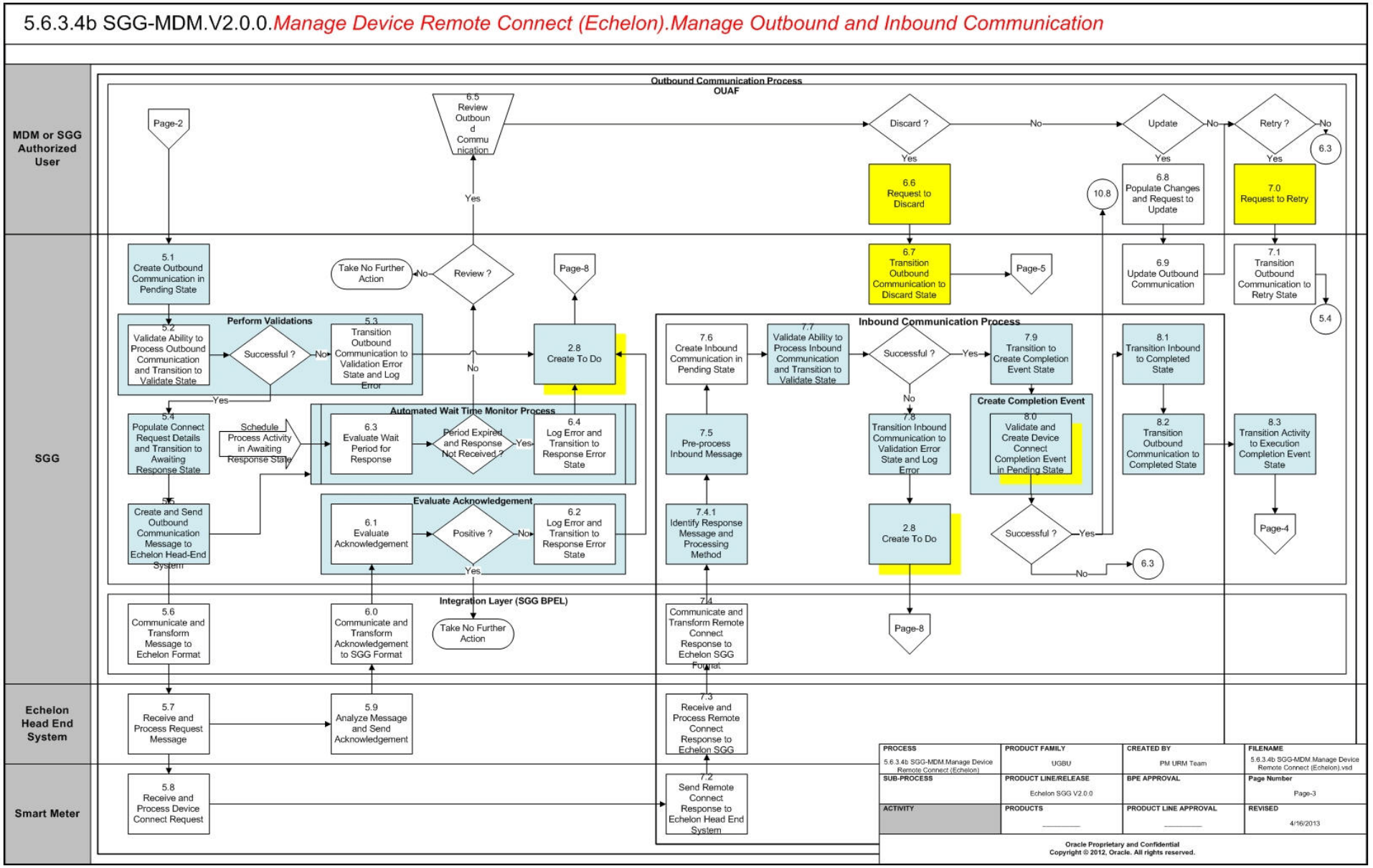
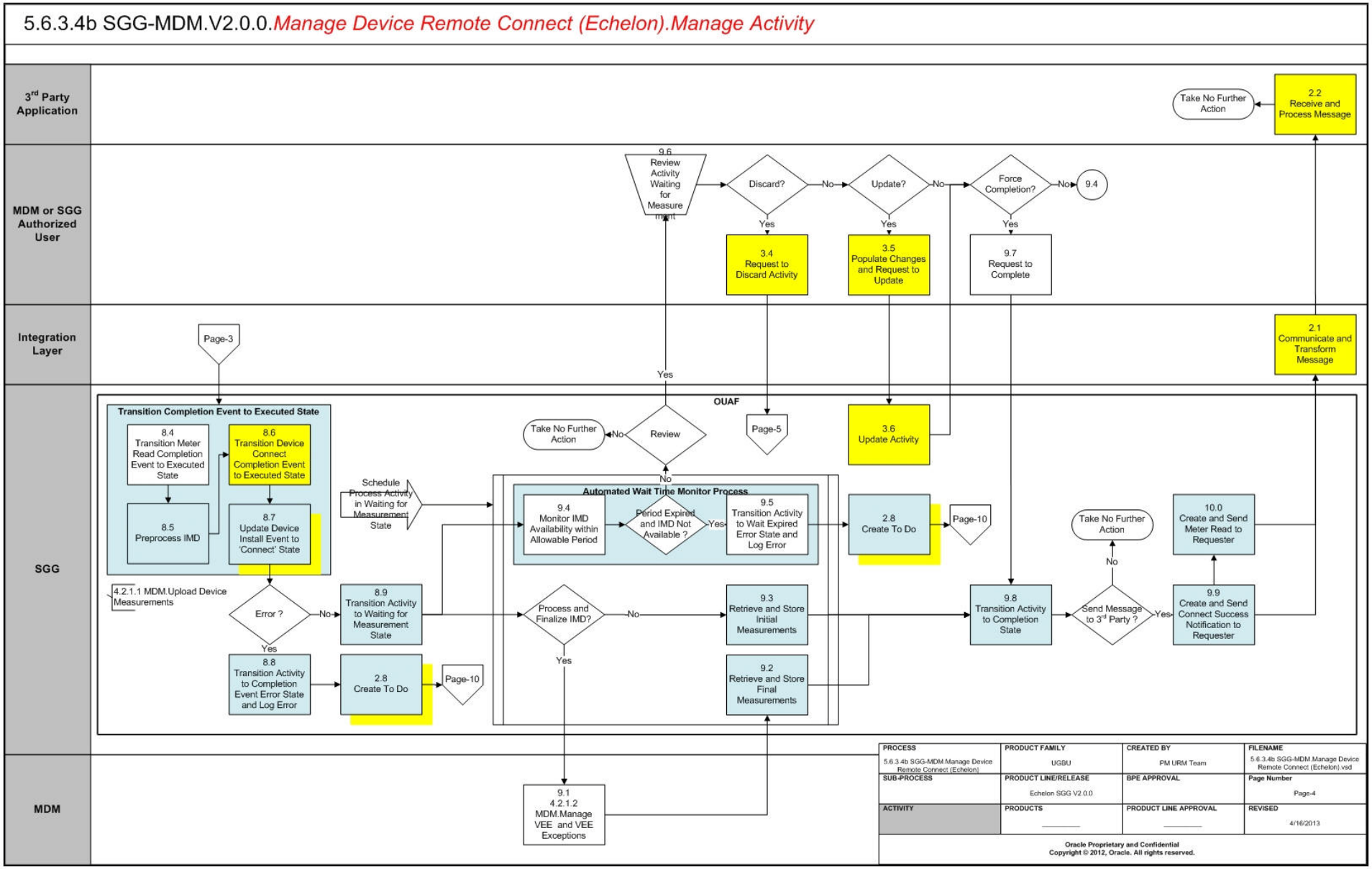
Manage Device Remote Connect (Echelon) Page 3

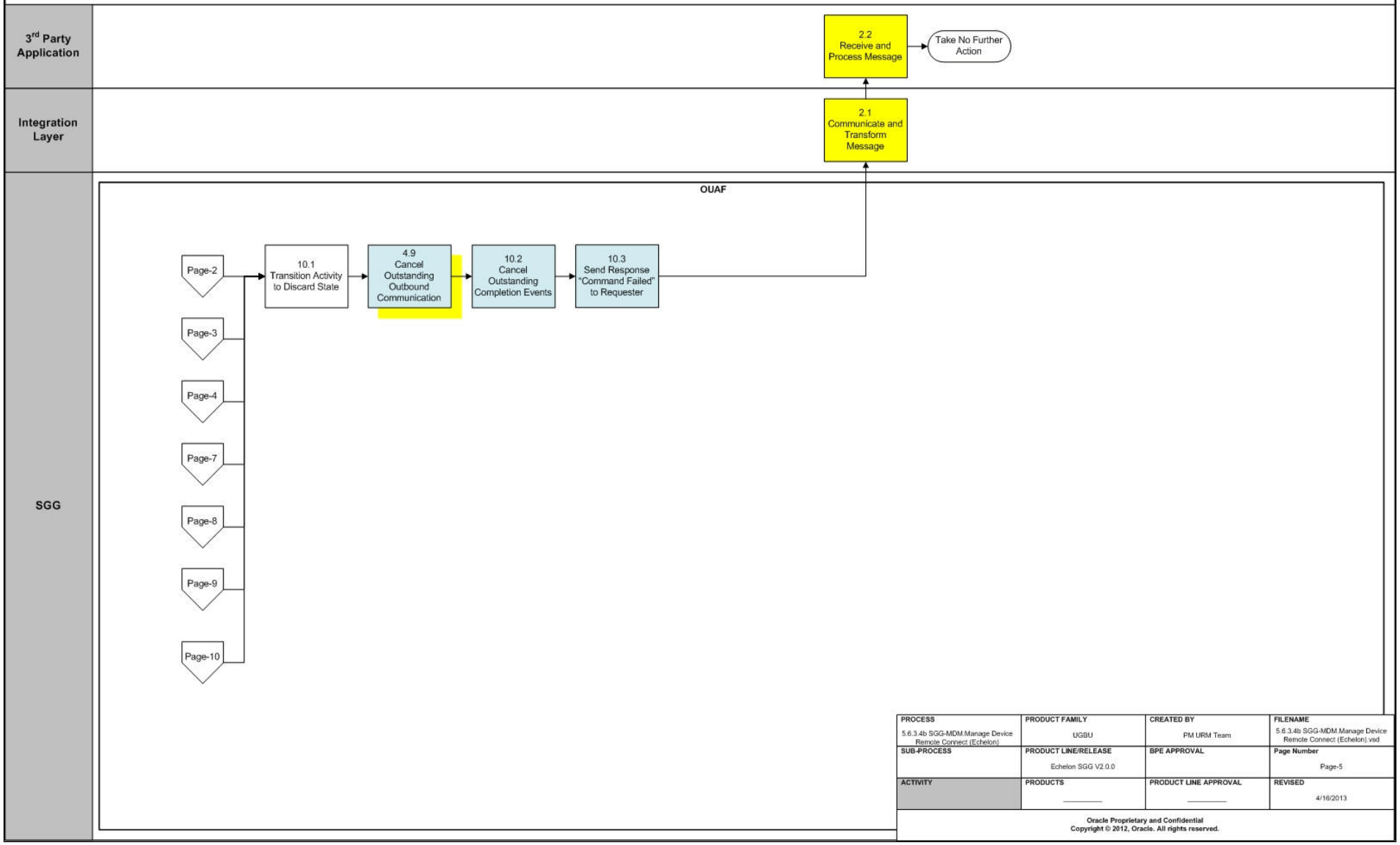


Manage Device Remote Connect (Echelon) Page 4

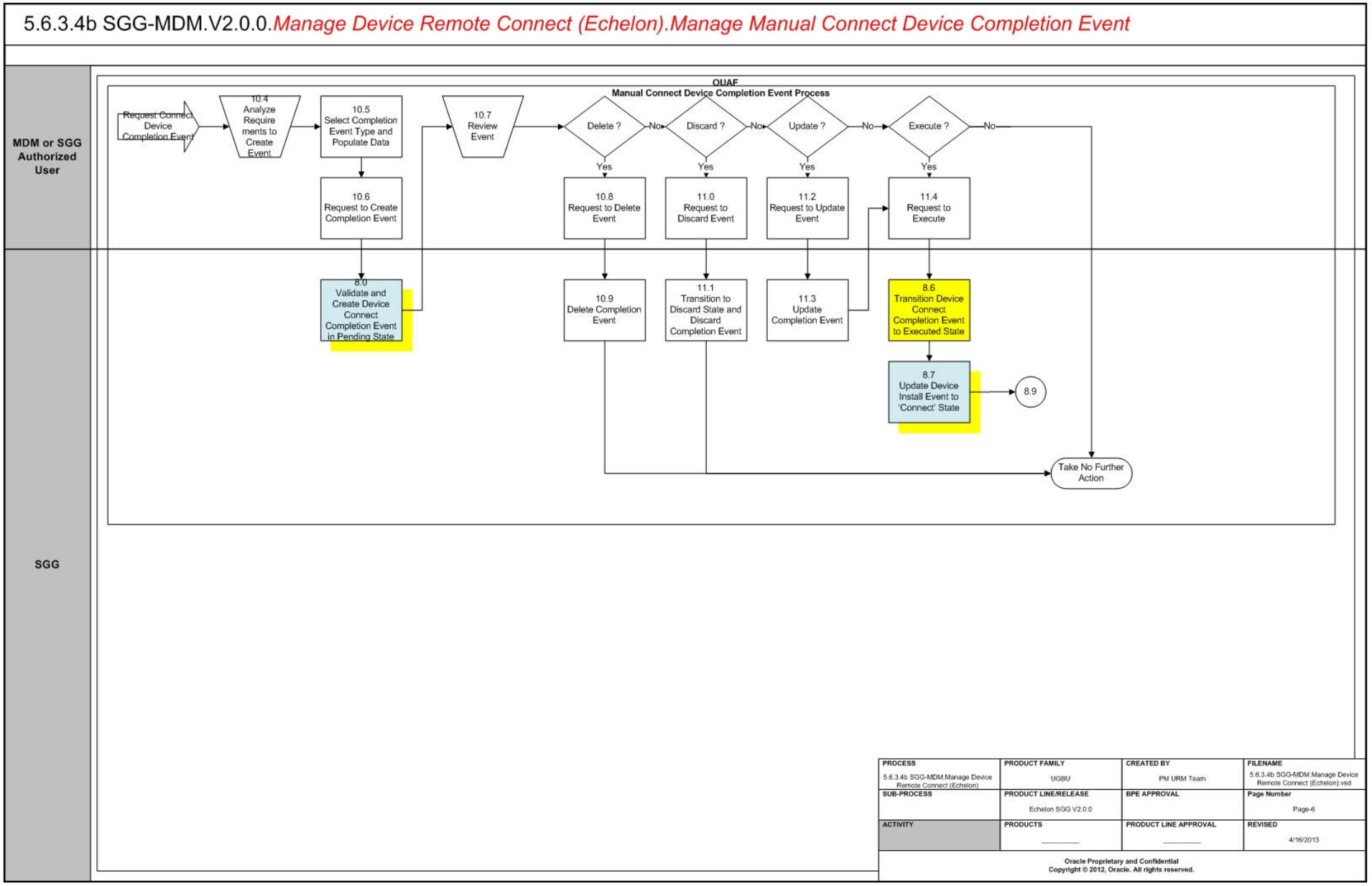


Manage Device Remote Connect (Echelon) Page 5

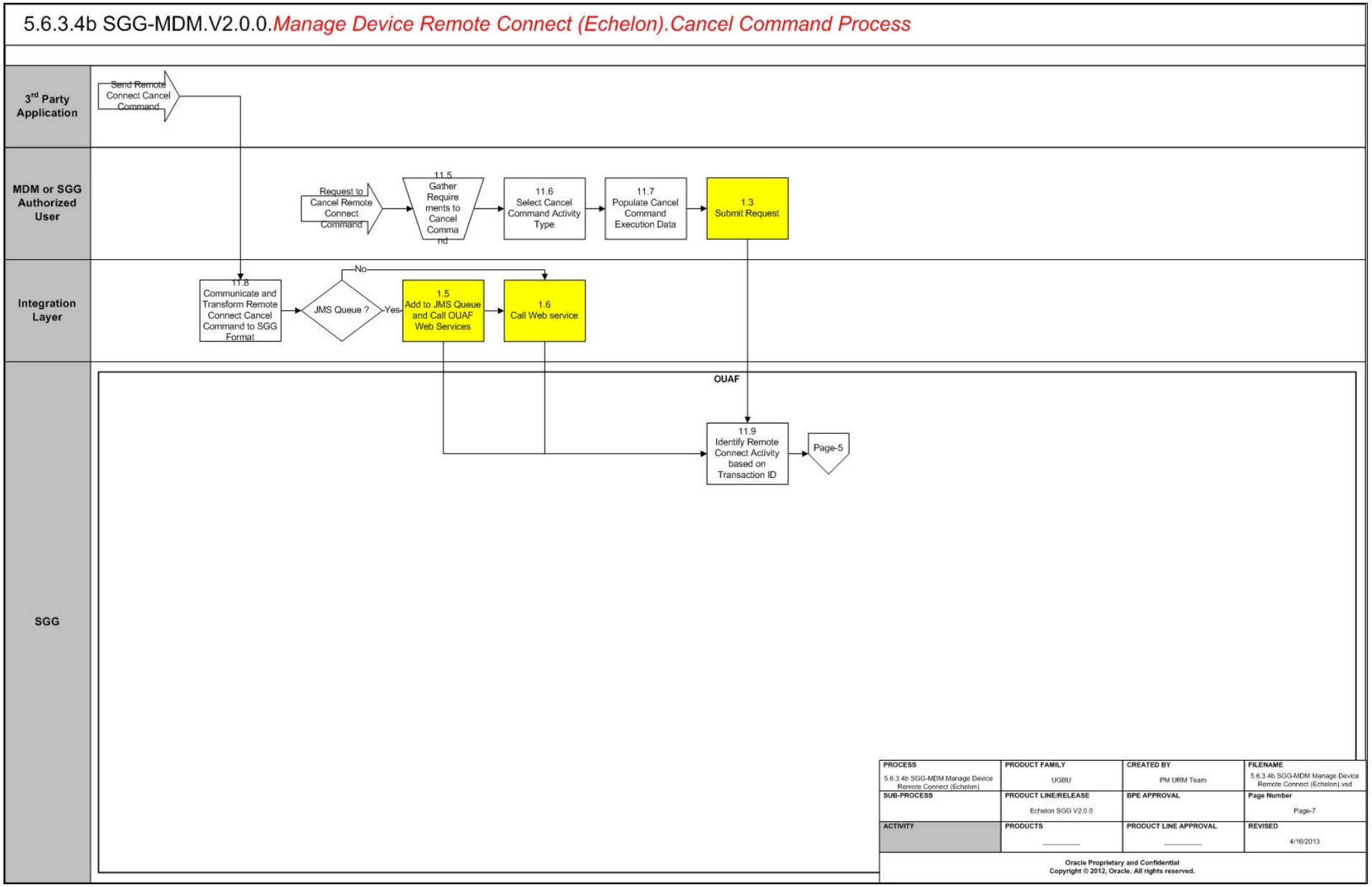
5.6.3.4b SGG-MDM.V2.0.0.*Manage Device Remote Connect (Echelon).Manage Discard Process*



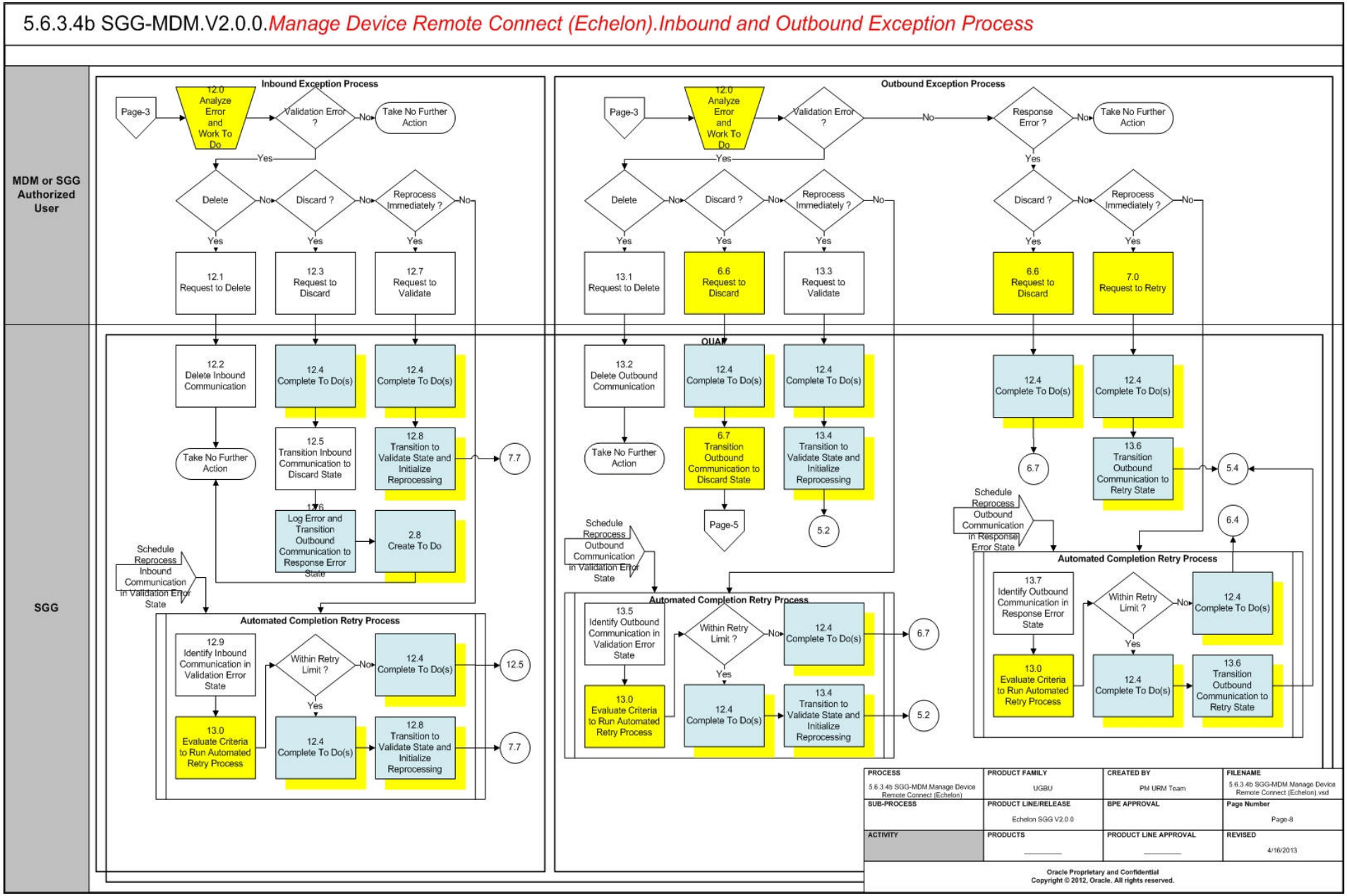
Manage Device Remote Connect (Echelon) Page 6



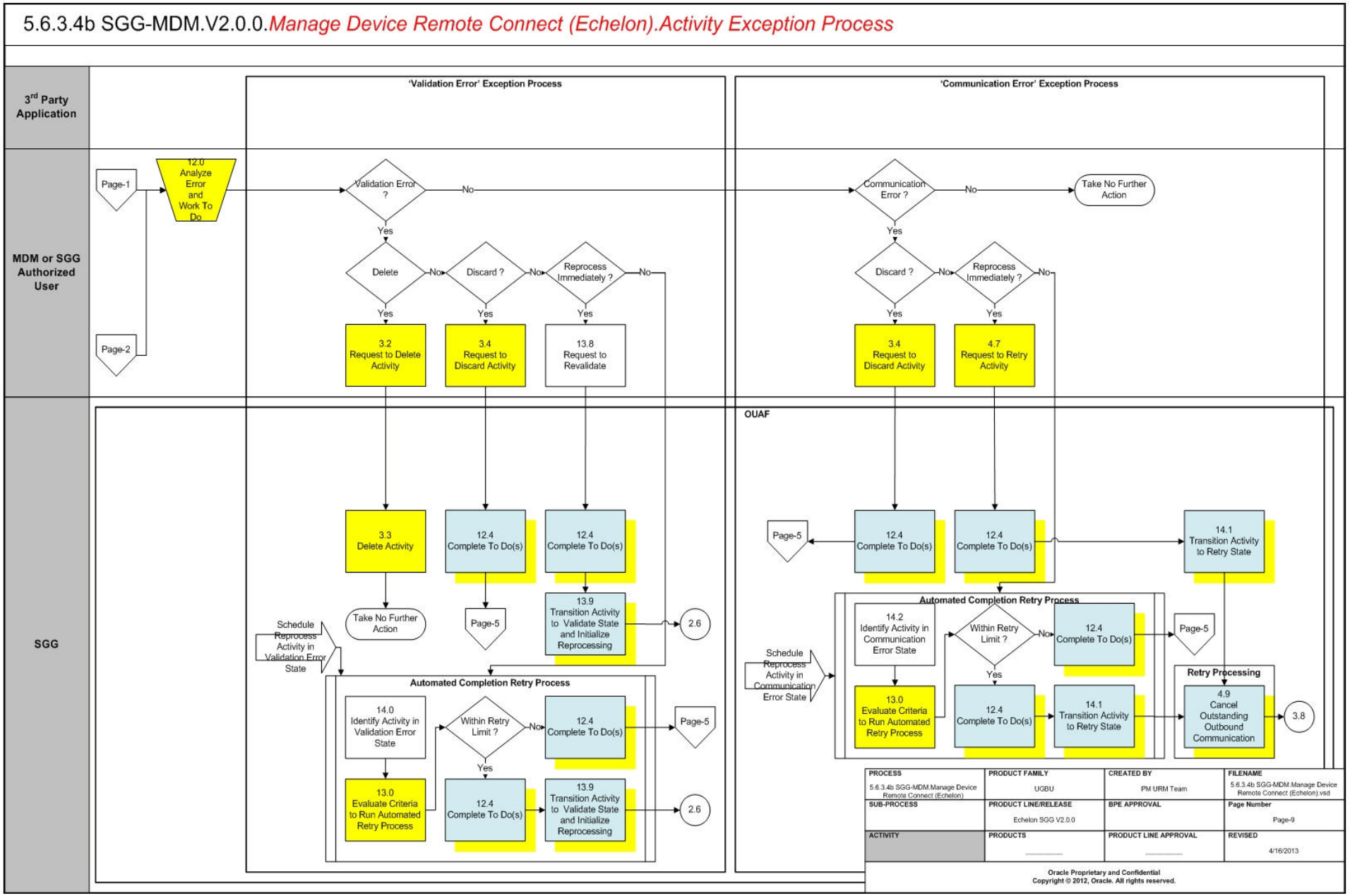
Manage Device Remote Connect (Echelon) Page 7



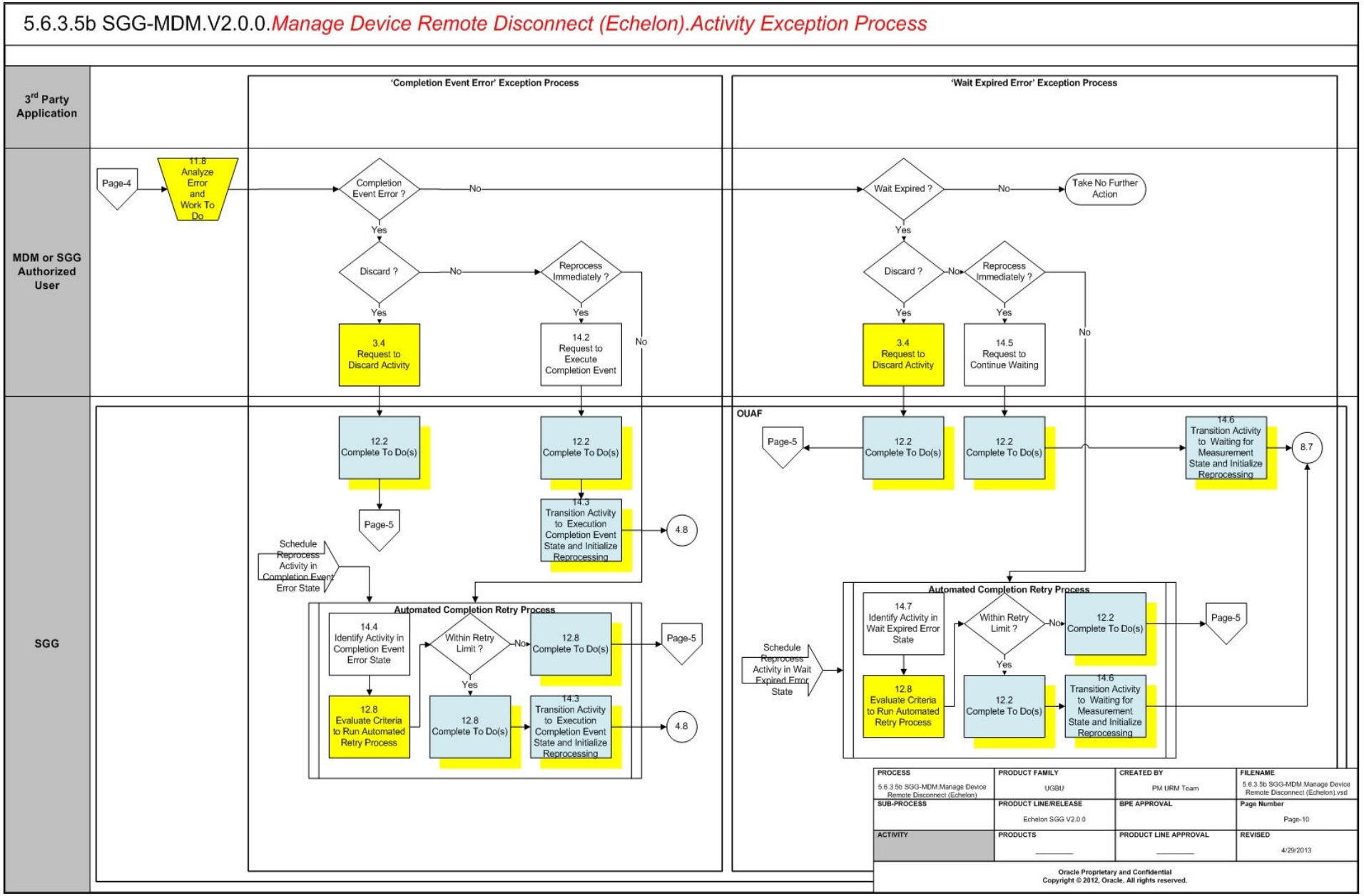
Manage Device Remote Connect (Echelon) Page 8



Manage Device Remote Connect (Echelon) Page 9



Manage Device Remote Connect (Echelon) Page 10



Manage Device Remote Connect (Echelon) Description

This section includes detailed descriptions of the steps involved in the SGG-MDM.Manage Device Remote Connect (Echelon) business process, including:

- **1.0 Gather Requirements to Create Command**
- **1.1 Select Command Activity Type**
- **1.2 Select Device and Populate Command Execution Data**
- **1.3 Submit Request**
- **1.4 Communicate and Transform Remote Connect Command to SGG Format**
- **1.5 Add to JMS Queue**
- **1.6 Call Web service**
- **1.7 Identify Device and Head-End (Service Provider)**
- **1.8 Determine if Device is Smart Device**
- **1.9 Determine Method to Create Remote Connect Activity**
- **2.0 Determine Send Method and Send Error Message**
- **2.1 Communicate and Transform Message**
- **2.2 Receive and Process Message**
- **2.3 Determine Activity Type**
- **2.4 Validate Required Data**
- **2.5 Create Remote Connect Activity in Pending State**
- **2.6 Validate Ability to Process Command and Transition Activity to Validate State**
- **2.7 Transition Activity to Validation Error State and Log Error**
- **2.9 Send Response "Command Received" and Transition to Wait for Eff. Date State**
- **3.0 Evaluate Availability of Command Execution Date and Time**
- **3.1 Review Activity in Eff. Date State**
- **3.2 Request to Delete Activity**
- **3.3 Delete Activity**
- **3.4 Request to Discard Activity**
- **3.5 Populate Changes and Request to Update**
- **3.6 Update Activity**
- **3.7 Request to Connect Device**
- **3.8 Transition Activity to Connection Ready State**
- **3.9 5.6.3.6b SGG-MDM.Manage Device Device Status Check (Echelon)**
- **4.0 Transition Activity to Connection Ready State**
- **4.0.1 Evaluate Request if Meter Read is Required**
- **4.1 5.6.3.1b SGG-MDM.Manage On-Demand Read (Echelon)**
- **4.2 Transition Activity to Connection Ready State**
- **4.3 Transition Activity to Communication in Progress State**

- **4.4 Evaluate Wait Period for Response**
- **4.4 Evaluate Wait Period for Response**
- **4.5 Transition Activity to Communication Error State and Log Error**
- **4.6 Review Activity in Comm. In Progress State**
- **4.7 Request to Retry Activity**
- **4.8 Transition Activity to Retry State**
- **4.9 Cancel Outstanding Outbound Communication**
- **5.0 Initiate Remote Connect Outbound Communication**
- **5.1 Create Outbound Communication in Pending State**
- **5.2 Validate Ability to Process Outbound Communication and Transition to Validate State**
- **5.3 Transition Outbound Communication to Validation Error State and Log Error**
- **5.4 Populate Connect Request Details and Transition to Awaiting Response State**
- **5.5 Create and Send Outbound Communication Message to Echelon Head-End System**
- **5.6 Communicate and Transform Message to Echelon Format**
- **5.7 Receive and Process Request Message**
- **5.8 Receive and Process Device Connect Request**
- **5.9 Analyze Message and Send Acknowledgement**
- **6.0 Communicate and Transform Acknowledgement to SGG Format**
- **6.1 Evaluate Acknowledgement**
- **6.2 Log Error and Transition to Response Error State**
- **6.3 Evaluate Wait Period for Response**
- **6.4 Log Error and Transition to Response Error State**
- **6.5 Review Outbound Communication**
- **6.6 Request to Discard**
- **6.7 Transition Outbound Communication to Discard State**
- **6.8 Populate Changes and Request to Update**
- **6.9 Update Outbound Communication**
- **7.0 Request to Retry**
- **7.1 Transition Outbound Communication to Retry State**
- **7.2 Send Remote Connect Response to Echelon Head End System**
- **7.3 Receive and Process Remote Connect Response to Echelon SGG**
- **7.4.1 Identify Response Message and Processing Method**
- **7.5 Pre-process Inbound Message**
- **7.6 Create Inbound Communication in Pending State**
- **7.7 Validate Ability to Process Inbound Communication and Transition to Validate State**
- **7.8 Transition Inbound Communication to Validation Error State and Log Error**

- **7.9 Transition to Create Completion Event State**
- **8.0 Validate and Create Device Connect Completion Event in Pending State**
- **8.1 Transition Inbound to Completed State**
- **8.2 Transition Outbound Communication to Completed State**
- **8.3 Transition Activity to Execution Completion Event State**
- **8.4 Transition Meter Read Completion Event to Executed State**
- **8.5 Preprocess IMD**
- **8.6 Transition Device Connect Completion Event to Executed State**
- **8.7 Update Device Install Event to 'Connect' State**
- **8.8 Transition Activity to Completion Event Error State and Log Error**
- **8.9 Transition Activity to Waiting for Measurement State**
- **9.1 4.2.1.2 MDM.Manage VEE and VEE Exceptions**
- **9.2 Retrieve and Store Final Measurements**
- **9.3 Retrieve and Store Initial Measurements**
- **9.4 Monitor IMD Availability within Allowable Period**
- **9.5 Transition Activity to Wait Expired Error State and Log Error**
- **9.6 Review Activity Waiting for Measurement**
- **9.7 Request to Complete**
- **9.8 Transition Activity to Completion State**
- **9.9 Create and Send Connect Success Notification to Requester**
- **10.0 Create and Send Meter Read to Requester**
- **10.1 Transition Activity to Discard State**
- **10.2 Cancel Outstanding Completion Events**
- **10.3 Send Response "Command Failed" to Requester**
- **10.4 Analyze Requirements to Create Event**
- **10.5 Select Completion Event Type and Populate Data**
- **10.6 Request to Create Completion Event**
- **10.7 Review Event**
- **10.8 Request to Delete Event**
- **10.9 Delete Completion Event**
- **11.0 Request to Discard Event**
- **11.1 Transition to Discard State and Discard Completion Event**
- **11.2 Request to Update Event**
- **11.3 Update Completion Event**
- **11.4 Request to Execute**
- **11.5 Gather Requirements to Cancel Command**
- **11.6 Select Cancel Command Activity Type**
- **11.7 Populate Cancel Command Execution Data**

- **11.8 Communicate and Transform Remote Connect Cancel Command to SGG Format**
- **11.9 Identify Remote Connect Activity based on Transaction ID**
- **12.0 Analyze Error and Work To Do**
- **12.1 Request to Delete**
- **12.2 Delete Inbound Communication**
- **12.3 Request to Discard**
- **12.4 Complete To Do(s)**
- **12.5 Transition Inbound Communication to Discard State**
- **12.6 Log Error and Transition Outbound Communication to Response Error State**
- **12.7 Request to Validate**
- **12.8 Transition to Validate State and Initialize Reprocessing**
- **12.9 Identify Inbound Communication in Validation Error State**
- **13.0 Evaluate Criteria to Run Automated Retry Process**
- **13.1 Request to Delete**
- **13.2 Delete Outbound Communication**
- **13.3 Request to Validate**
- **13.4 Transition to Validate State and Initialize Reprocessing**
- **13.5 Identify Outbound Communication in Validation Error State**
- **13.6 Transition Outbound Communication to Retry State**
- **13.7 Identify Outbound Communication in Response Error State**
- **13.8 Request to Revalidate**
- **13.9 Transition Activity to Validate State and Initialize Reprocessing**
- **14.0 Identify Activity in Validation Error State**
- **14.1 Transition Activity to Retry State**
- **14.2 Identify Activity in Communication Error State**
- **14.3 Request to Execute Completion Event**
- **14.4 Transition Activity to Execution Completion Event State and Initialize Reprocessing**
- **14.5 Identify Activity in Completion Event Error State**
- **14.6 Request to Continue Waiting**
- **14.7 Transition Activity to Waiting for Measurement State and Initialize Reprocessing**
- **14.8 Identify Activity in Wait Expired Error State**

1.0 Gather Requirements to Create Command

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User analyzes requirements and gathers information required to create Remote Connect command.

1.1 Select Command Activity Type

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User selects Activity Type to create a Remote Connect command request.

Entities to Configure
Activity Type

1.2 Select Device and Populate Command Execution Data

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User selects the device and populates required data such as request effective date, request expiration date, etc. User also indicates if the command is optional, if future disconnect command is present, and can even indicate if start measurement is to be retrieved as part of connect process.

1.3 Submit Request

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User submits request using manual request screen.

Business Object(s)
D1-RemoteConnect

1.4 Communicate and Transform Remote Connect Command to SGG Format

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Actor/Role: Integration Layer

Description: Integration Layer facilitates the communication between the 3rd Party application and the SGG application. It receives the Remote Connect request, transforms, and converts the request into format compatible with SGG Application.

1.5 Add to JMS Queue

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Actor/Role: Integration Layer

Description: Integration Layer adds the Remote Connect request to JMS queue.

1.6 Call Web service

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Actor/Role: Integration Layer

Description: Integration Layer calls web services to process further the Remote Connect request.

1.7 Identify Device and Head-End (Service Provider)

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Generic Device Connect Processing

Actor/Role: SGG

Description: SGG initiates pre-processing of the Remote Connect request that came from 3rd Party Application. It attempts to read the request message and determines the Device for which the connect request is made, and the Head-End system that communicates with the device.

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

Business Objects	Available Algorithms
D1-GenericConnect	D1-DDR (Determine Device and Recipient)

1.8 Determine if Device is Smart Device

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Generic Device Connect Processing

Actor/Role: SGG

Description: The application determines whether the request for Remote Connect is for Smart Device or not.

Note: Currently application processes requests for Smart Devices only. Service Requests functionality will be included in later releases.

Entities to Configure
Device
Device Configuration

Business Objects	Available Algorithms
D1-GenericConnect	D1-CDCCSRTBO (Transform to Connect Command Request or Connect Service Request Transaction BO)

1.9 Determine Method to Create Remote Connect Activity

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Generic Device Connect Processing

Actor/Role: SGG

Description: SGG determines the method to create Activity if the device is found to be a Smart Device.

Entities to Configure
Device Configuration
Service Provider

Business Objects	Available Algorithms
D1-GenericConnect	D1-CDCCSRTBO (Transform to Connect Command Request or Connect Service Request Transaction BO)

2.0 Determine Send Method and Send Error Message

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG determines the method to send the error message to 3rd Party application and sends it.

Note: Sending mechanism could be different and depends on application landscape. Currently it is determined based on customer requirements.

2.1 Communicate and Transform Message

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Actor/Role: Integration Layer

Description: Integration Layer receives the outbound message from SGG, transforms, and converts it into format compatible with 3rd Party Application.

2.2 Receive and Process Message

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Actor/Role: 3rd Party application

Description: 3rd Party Application receives message from SGG and processes it.

2.3 Determine Activity Type

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Pre-process Activity

Actor/Role: SGG

Description: SGG identifies the Activity Type to be assigned to the Activity to be created.

Note: Typically system has different Activity types configured to reflect different business scenarios, and currently the system will select the Activity type related to Connect command action.

Entities to Configure
Activity Type
To Do Type
To Do Role

Business Objects	Available Algorithms
D1-RemoteConnect	D1-DETACTTYP (Determine Activity Type)

2.4 Validate Required Data

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Pre-process Activity

Actor/Role: SGG

Description: SGG validates the availability and correctness of required information. Usually, system checks for Requester information, Device information, Effective Date/Time and Expiration Date/Time, etc.

Entities to Configure
Device
Edge Application Details

Business Objects	Available Algorithms
D1-RemoteConnect	D1-GINPVAL (Common Input Validation) D1-VALMDEST (Validate Measurement Destination) D1-VALMREQO (Validate Measurement Requested) D1-MFRSMVAL (Measurement Fields for Retrieve Start Measurement Validation)

2.5 Create Remote Connect Activity in Pending State

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG creates Remote Connect Activity in 'Pending' state.

Business Objects
D1-RemoteConnect
D1-RemoteConnectType

2.6 Validate Ability to Process Command and Transition Activity to Validate State

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Validate Ability to Process Command

Actor/Role: SGG

Description: SGG validates ability to process Remote Connect request. Typically, system validates current Device connection status, Presence of at least one Scalar MC, Ability of Head-End to support On-demand Read, Ability of Head-End to perform Connect, and also checks if already any Connect command or Disconnect command is issued, etc.

Entities to Configure
Device
Measuring Components
Processing Method for On-Demand Read
Processing Method for Connect

Business Objects	Available Algorithms
D1-RemoteConnect	D1-VALACTTDI (Validate Activity Type and Transition to Error State if Invalid) D1-VALDVCNCD (Validate Device is not already Connected) D1-VALDEVMCS (Validate that Device has appropriate Measuring Component) D1-VHCPODR (Validate Head-End's Capability to perform On-Demand Read) D1-VHCPCD (Validate Head-End's Capability to perform Connect Disconnect D1-CACTCONN (Check for Existing Active Connect Command Request) D1-CHKDISCON (Check for Concurrent Disconnect Command Request) F1-AT-RQJ (Transition to Default Next Status)

2.7 Transition Activity to Validation Error State and Log Error

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Group: Validate Ability to Process Command

Actor/Role: SGG

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

Business Object
D1-RemoteConnect

2.8 Create To Do

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: Once an error is logged, SGG creates a 'To Do' entry for the Authorized User.

Entities to Configure
To Do Type
To Do Role

Business Objects	Available Algorithms
D1-RemoteConnect D1-RemoteConnectType	D1-CTDEBOE (Create To Do Entry for BO in Error)

2.9 Send Response "Command Received" and Transition to Wait for Eff. Date State

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG sends command received acknowledgement to the 3rd party requester.

Entities to Configure
Processing Role

Business Objects	Available Algorithms
D1-RemoteConnect	D1-RRER (Send Received Response to External Requester)

3.0 Evaluate Availability of Command Execution Date and Time

See **Manage Device Remote Connect (Echelon) Page 1** on page 2-2 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: If command's effective date and time is available, SGG uses it to determine execution date and time. If the effective Date and Time is not available, SGG processes the Outbound Communication immediately. If effective Date and Time is in the future System it waits in 'Wait for Effective Date' state, else, it processes the Outbound Communication.

Customizable Processes
D1-CRWT (Command Request Wait - Monitor)

Entities to Configure
Effective Date and Time

Business Objects	Available Algorithms
D1-RemoteConnect	D1-WAITEFFDT (Wait for Effective Date) F1-AT-RQJ (Transition to Default Next Status (Java))

3.1 Review Activity in Eff. Date State

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User reviews and analyzes the Activity.

Business Object
D1-RemoteConnect

3.2 Request to Delete Activity

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: If MDM or SGG Authorized User determines that the Activity is not required, Authorized User requests to delete Activity record.

Business Object
D1-RemoteConnect

3.3 Delete Activity

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG deletes the Activity.

Note: Once an Activity record is deleted it is permanently removed from the system and cannot be recovered. This option is not recommended for common business practice.

Business Object
D1-RemoteConnect

3.4 Request to Discard Activity

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User if determines that the Activity is not required, Authorized User requests to discard it.

Business Object
D1-RemoteConnect

3.5 Populate Changes and Request to Update

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User modifies Activity data and requests to perform appropriate updates.

Business Object
D1-RemoteConnect

3.6 Update Activity

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG updates the Activity with data populated by Authorized User.

Business Object
D1-RemoteConnect

3.7 Request to Connect Device

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: If command's effective date and time is in the future and MDM or SGG Authorized User identifies the need to execute command immediately, Authorized User requests to initiate the command processing.

Business Object
D1-RemoteConnect

3.8 Transition Activity to Connection Ready State

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG transitions the Activity to 'Connection Ready' state to initiate outbound communication when command effective date and time has reached. The other possible option of transition and initiation is when the Authorized User manually makes a request.

Customizable Processes
D1-CRWT (Command Request Wait - Monitor)

Entities to Configure
Effective Date and Time

Business Objects	Available Algorithms
D1-RemoteConnect	D1-WAITEFFDT (Wait for Effective Date)

3.9 5.6.3.6b SGG-MDM.Manage Device Device Status Check (Echelon)

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG determines the processing method for Device Status Check Outbound Communication and initiates status check. Please refer to process 5.6.3.6b SGG-MDM.Manage Device Device Status Check (Echelon) Command for further details.

Business Objects	Available Algorithms
D1-RemoteConnect	D1-CLCOC (Create Load Check Outbound Communication)

4.0 Transition Activity to Connection Ready State

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG transitions the Activity to 'Connection Ready' state.

Business Object
D1-RemoteConnect

4.0.1 Evaluate Request if Meter Read is Required

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG evaluates and checks if there exists any request to retrieve measurement.

Business Objects	Available Algorithms
D1-RemoteConnect	D1-CODROC (Create On-Demand Read for Start Measurement)

4.1 5.6.3.1b SGG-MDM.Manage On-Demand Read (Echelon)

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG determines the processing method for Meter Read Outbound Communication and initiates Meter Read. Please refer to process 5.6.3.1b SGG-MDM.V2.0.0.Manage On-Demand Read (Echelon).Manage Outbound and Inbound Communication for further details.

Business Objects	Available Algorithms
D1-RemoteConnect	D1-CODROC (Create On-Demand Read for Start Measurement)

4.2 Transition Activity to Connection Ready State

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG transitions the Activity to 'Connection Ready' state.

Business Object
D1-RemoteConnect

4.3 Transition Activity to Communication in Progress State

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG transitions Activity to 'Communication in Progress' state to monitor response for the outbound communication..

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

4.4 Evaluate Wait Period for Response

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG periodically checks if the Activity expiration wait time configured for monitoring the response has expired or not.

Customizable Processes
D1-CRWT (Command Request Wait - Monitor)

Entities to Configure
Activity Type

Business Objects	Available Algorithms
D1-RemoteConnect	D1-WTTMOUTEX (Wait Time Out - Transition to Exception)

4.5 Transition Activity to Communication Error State and Log Error

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: If the wait time for outbound communication response has expired, SGG transitions the Activity to 'Communication Error' state and logs an error.

Business Object
D1-RemoteConnect

4.6 Review Activity in Comm. In Progress State

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User reviews and analyzes the Activity.

Business Object
D1-RemoteConnect

4.7 Request to Retry Activity

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User requests to recreate the Outbound Communication process.

Business Object
D1-RemoteConnect

4.8 Transition Activity to Retry State

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG transitions Activity to 'Retry' state.

Business Object
D1-RemoteConnect

4.9 Cancel Outstanding Outbound Communication

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG cancels any existing outstanding Outbound Communications.

Business Objects	Available Algorithms
D1-RemoteConnect	D1-COOC (Cancel Outstanding Outbound Communication)

5.0 Initiate Remote Connect Outbound Communication

See **Manage Device Remote Connect (Echelon) Page 2** on page 2-3 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG determines the processing method for Remote Connect Outbound Communication and initiates the Outbound Communication process.

Entities to Configure
Outbound Communication Processing Method

Business Objects	Available Algorithms
D1-RemoteConnect	D1-CRCOC (Create Remote Connect Outbound Communication)

5.1 Create Outbound Communication in Pending State

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: SGG

Description: SGG creates Remote Connect Outbound Communication in 'Pending' state.

Entities to Configure
Outbound Communication Processing Method
Outbound Communication Type

Business Objects	Available Algorithms
D4-ConnectLoad	D1-CRCOC (Create Remote Connect Outbound Communication) D1-GDRFFPA (Default required fields from Parent Activity)

5.2 Validate Ability to Process Outbound Communication and Transition to Validate State

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: SGG

Description: SGG validates ability to process Outbound Communication. Typically, system checks for communication type.

Entities to Configure
Outbound Communication Type

Business Objects	Available Algorithms
D4-ConnectLoad	D1-VALCOMTP (Validate Communication Type) F1-AT-RQJ (Transition to Default Next Status)

5.3 Transition Outbound Communication to Validation Error State and Log Error

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: SGG

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

Business Object
D4-ConnectLoad

5.4 Populate Connect Request Details and Transition to Awaiting Response State

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: SGG

Description: SGG transitions Outbound Communication to 'Awaiting Response' state and populates Remote Connect Outbound Communication message details.

Entities to Configure
Inbound Communication Processing Method

Business Objects	Available Algorithms
D4-ConnectLoad	D4-PCLRSD (Populate Connect Load Request Send Detail)

5.5 Create and Send Outbound Communication Message to Echelon Head-End System

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: SGG

Description: SGG creates Outbound Communication and sends it to Head-End System.

Business Objects	Available Algorithms
D4-ConnectLoad	D4-COUTMSGC (Create Outbound Message For Connect Load)

5.6 Communicate and Transform Message to Echelon Format

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Group: Integration Layer (SGG BPEL)

Actor/Role: SGG

Description: Integration layer of SGG facilitates the communication between the SGG and Echelon Head-End System. It receives the Outbound Communication request, transforms, and converts the request into format compatible with Head-End System.

5.7 Receive and Process Request Message

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: Head-End System

Description: Head-End System receives the Remote Connect request and processes it.

Note: This is external and outside the Oracle SGG environment.

5.8 Receive and Process Device Connect Request

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: Smart Meter

Description: Smart Meter Device receives request from Head-End System for Remote Connect and processes it.

Note: This is external and outside the Oracle SGG environment.

5.9 Analyze Message and Send Acknowledgement

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: Head-End System

Description: Head-End System on receipt of Remote Connect request from SGG, analyzes, and sends a real-time acknowledgement back to SGG.

6.0 Communicate and Transform Acknowledgement to SGG Format

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Group: Integration Layer (SGG BPEL)

Actor/Role: SGG

Description: Integration layer of SGG facilitates the communication between the Head-End System and SGG. It receives the synchronous acknowledge, transforms, and converts the acknowledgement into format compatible with SGG.

6.1 Evaluate Acknowledgement

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: SGG

Description: SGG evaluates acknowledge and checks the success of sending Outbound Communication.

Business Objects	Available Algorithms
D4-ConnectLoad	D4-EVALRESP (Evaluate Response)

6.2 Log Error and Transition to Response Error State

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: SGG

Description: SGG logs error and transitions Outbound Communication to Response Error state.

Business Objects	Available Algorithms
D4-ConnectLoad	D4-EVALRESP (Evaluate Response)

6.3 Evaluate Wait Period for Response

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: SGG

Description: SGG periodically checks if the Outbound Communication expiration wait time configured for monitoring the response has expired or not.

Customizable Processes
D1-COMM (Batch Control for Communications)

Entities to Configure
Outbound Communication Type

Business Objects	Available Algorithms
D4-ConnectLoad	D1-TIMEOUT (Time Out)

6.4 Log Error and Transition to Response Error State

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: SGG

Description: SGG logs error and transitions Outbound Communication to Response Error state.

Business Objects	Available Algorithms
D4-ConnectLoad	D1-TIMEOUT (Time Out)

6.5 Review Outbound Communication

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User reviews and analyzes the Outbound Communication.

Business Object
D4-ConnectLoad

6.6 Request to Discard

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User if determines that the Outbound Communication is not required, Authorized User requests to discard it.

Business Object
D4-ConnectLoad

6.7 Transition Outbound Communication to Discard State

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: SGG

Description: SGG transitions Outbound Communication to 'Discard' state.

Note: When an Outbound Communication is 'Discarded' it still remains in the system database and is not removed, hence, this is the preferred business practice to perform.

Business Object
D4-ConnectLoad

6.8 Populate Changes and Request to Update

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User modifies Outbound Communication data and requests to perform appropriate updates.

Business Object
D4-ConnectLoad

6.9 Update Outbound Communication

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: SGG

Description: SGG updates the Outbound Communication with data populated by Authorized User.

Business Object
D4-ConnectLoad

7.0 Request to Retry

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User requests to recreate the Outbound Communication.

Business Object
D4-ConnectLoad

7.1 Transition Outbound Communication to Retry State

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: SGG

Description: SGG transitions Outbound Communication to 'Retry' state.

o

Business Object
D4-ConnectLoad

7.2 Send Remote Connect Response to Echelon Head End System

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Group: Inbound Communication Process

Actor/Role: Smart Meter

Description: Smart Meter Device sends response for the remote connect request received.

Note: This is external and outside the Oracle SGG environment.

7.3 Receive and Process Remote Connect Response to Echelon SGG

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Group: Inbound Communication Process

Actor/Role: Head-End System

Description: Head-End System receives the response from Smart Meter and processes a response for SGG.

Note: This is external and outside the Oracle SGG environment.

7.4 Communicate and Transform Remote Connect Response to Echelon SGG Format

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Group: Inbound Communication Process

Group: Integration Layer (SGG BPEL)

Actor/Role: SGG

Description: Integration layer of SGG facilitates the communication between the Head-End System and SGG. It receives the response, transforms, and converts the response into format compatible with SGG.

7.4.1 Identify Response Message and Processing Method

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Group: Inbound Communication Process

Actor/Role: SGG

Description: SGG identifies the inbound command completion event message and determines appropriate processing method.

Note: The SGG uses device event seeder to perform this action.

Business Objects	Available Algorithms
D1-DeviceEventSeeder	D1-DVEVTINFO (Device Event Info) D1-SETERRFLG (Set Error Flag) D1-SPRID (Service Provider Identification) D1-DEVICEID (Device Identification) D1-SHEVTDTTM (Shift Event Date/Times to Standard) D1-DETBOID (Device Event Type and Business Object Identification) D1-SETBO (Set BO)

7.5 Pre-process Inbound Message

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Group: Inbound Communication Process

Actor/Role: SGG

Description: SGG retrieves details from inbound communication and performs pre-processing.

Business Objects	Available Algorithms
D4-ConnectLoadNtf	D1-COMMINFO (Communication Information) D4-SETDFBOEL (Set default BO elements)

7.6 Create Inbound Communication in Pending State

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Group: Inbound Communication Process

Actor/Role: SGG

Description: SGG creates Inbound Communication in 'Pending' state.

Business Object
D4-ConnectLoadNtf

7.7 Validate Ability to Process Inbound Communication and Transition to Validate State

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Group: Inbound Communication Process

Actor/Role: SGG

Description: SGG validates ability to process Inbound Communication. Typically, it checks for Communication Type, determines the outbound communication that initiated it and links to it and also evaluates the status of Remote Connect event success status.

Entities to Configure
Inbound Communication Type

Business Objects	Available Algorithms
D4-ConnectLoadNtf	D1-VALCOMTP (Validate Communication Type) D4-FPCOMMBO (Find Initiating Outbound Communication) D4-EVNSTAT (Evaluate Notification Status) F1-AT-RQJ (Transition to Default Next Status)

7.8 Transition Inbound Communication to Validation Error State and Log Error

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Group: Inbound Communication Process

Actor/Role: SGG

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

Business Object
D4-ConnectLoadNtf

7.9 Transition to Create Completion Event State

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Group: Inbound Communication Process

Actor/Role: SGG

Description: SGG transitions Inbound Communication to 'Create Completion Event' state.

Business Objects	Available Algorithms
D4-ConnectLoadNtf	F1-AT-RQJ (Transition to Default Next Status (Java))

8.0 Validate and Create Device Connect Completion Event in Pending State

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Group: Inbound Communication Process

Actor/Role: SGG

Description: SGG creates Connect Device Completion Event in 'Pending' state. SGG validates ability to process Connect Device Completion Event. Typically, it checks for Completion Event and its related Activity Type, Sequence number for Completion Events, etc.

Business Objects	Available Algorithms
D4-ConnectLoadNtf **D1-Completion Event** D1-ConnectDevice	D4-CCCE (Create Connect Completion Event) D1-CEVTINFO (Completion Event - Information) D1-VALCEVT (Validate Completion Event) D1-VALOUTCOM (Validate Outbound Communication) D1-VALTRCEVT (Validate Transition Completion Events)

8.1 Transition Inbound to Completed State

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Group: Inbound Communication Process

Actor/Role: SGG

Description: SGG transitions Inbound Communication to 'Completed' state.

Business Objects	Available Algorithms
D4-ConnectLoadNtf	F1-AT-RQJ (Transition to Default Next Status (Java))

8.2 Transition Outbound Communication to Completed State

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Group: Inbound Communication Process

Actor/Role: SGG

Description: SGG transitions Outbound Communication to 'Completed' state and updates Event Date/Time.

Business Objects	Available Algorithms
D4-ConnectLoadNtf	D1-UPCMEVDTR (Update Parent Communication's Event Date Time Connect) D1-TRANPRBO (Transition Parent Outbound Communication BO)

8.3 Transition Activity to Execution Completion Event State

See **Manage Device Remote Connect (Echelon) Page 3** on page 2-4 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: SGG

Description: SGG Activity to 'Execution Completion Event' state. In this state, SGG transitions its Completion Events to 'Executed' state.

Business Objects	Available Algorithms
D4-ConnectLoad D1-CompletionEvent	D1-UCCDFTPA (Update Connect Disconnect Completion Flag and Transition Parent Activity) D1-EXCMPEVTS (Execute Completion Events)

8.4 Transition Meter Read Completion Event to Executed State

See **Manage Device Remote Connect (Echelon) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: SGG

Description: SGG transitions Create IMD Completion Event to 'Executed' state.

Business Objects	Available Algorithms
D1-RemoteConnect **D1-Completion Event** D1-CreateIMD	D1-EXCMPEVTS (Execute Completion Events)

8.5 Preprocess IMD

See **Manage Device Remote Connect (Echelon) Page 4** on page 2-5 for the business process diagram associated with this activity.

Group: Outbound Communication Process

Actor/Role: SGG

Description: SGG invokes to preprocess the IMD by invoking seeder preprocessing. Please refer to process 4.2.1.1 MDM.Upload Device Measurements for further details.

Business Objects	Available Algorithms
D1-RemoteConnect **D1-Completion Event** D1-CreateIMD	D1-CREIMD (Create IMD)

8.6 Transition Device Connect Completion Event to Executed State

See **Manage Device Remote Connect (Echelon) Page 4** on page 2-5 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG transitions Connect Device Completion Event to 'Executed' state.

Business Objects	Available Algorithms
D1-RemoteConnect **D1-Completion Event** D1-Connect Device	D1-EXCMPEVTS (Execute Completion Events)

8.7 Update Device Install Event to 'Connect' State

See **Manage Device Remote Connect (Echelon) Page 4** on page 2-5 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG updates the install event state to Connect.

Business Objects	Available Algorithms
D1-RemoteConnect **D1-Completion Event** D1-Connect Device	D1-CONNDEV (Connect Device)

8.8 Transition Activity to Completion Event Error State and Log Error

See **Manage Device Remote Connect (Echelon) Page 4** on page 2-5 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: If any errors are encountered while transitioning Completion Events to 'Executed' state, SGG transitions Activity to 'Completion Event Error' state and logs an error.

Business Objects
D1-RemoteConnect **D1-Completion Event** D1-CreateIMD D1-Connect Device

8.9 Transition Activity to Waiting for Measurement State

See **Manage Device Remote Connect (Echelon) Page 4** on page 2-5 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG transitions Activity to 'Waiting for Measurement' state.

Business Objects	Available Algorithms
D1-RemoteConnect	F1-AT-RQJ (Transition to Default Next Status (Java))

9.1 4.2.1.2 MDM.Manage VEE and VEE Exceptions

See **Manage Device Remote Connect (Echelon) Page 4** on page 2-5 for the business process diagram associated with this activity.

Actor/Role: MDM

Description: MDM performs the VEE processing of IMD created. Please refer to process 4.2.1.2 MDM.Manage VEE and VEE Exceptions for further details.

9.2 Retrieve and Store Final Measurements

See **Manage Device Remote Connect (Echelon) Page 4** on page 2-5 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG retrieves final measurements and stores as Meter Read on Activity.

Customizable process
D1-CRWT (Command Request Wait - Monitor)

Business Objects	Available Algorithms
D1-RemoteConnect	D1-RFINSC (Retrieve Scalar Final Measurements)

9.3 Retrieve and Store Initial Measurements

See **Manage Device Remote Connect (Echelon) Page 4** on page 2-5 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG retrieves IMD measurement and stores as Meter Read on Activity. Depending on the state of IMD measurement availability in the system, SGG has various options of retrieving IMD**.**

Customizable process
D1-CRWT (Command Request Wait - Monitor)

Business Objects	Available Algorithms
D1-RemoteConnect	D1-RMVCE (Retrieve Measurements via Completion Events) D1-RSINIMS (Retrieve Scalar Initial Measurements)

9.4 Monitor IMD Availability within Allowable Period

See **Manage Device Remote Connect (Echelon) Page 4** on page 2-5 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG monitors if the IMD measurement becomes available in allowable window period.

Customizable process
D1-CRWT (Command Request Wait - Monitor)

Entities to Configure
Activity Type

Business Objects	Available Algorithms
D1-RemoteConnect D1-RemoteConnectType	D1-WFMTO (Wait for Measurement Time Out)

9.5 Transition Activity to Wait Expired Error State and Log Error

See **Manage Device Remote Connect (Echelon) Page 4** on page 2-5 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: If IMD is not available within the Wait time and it expires, SGG transitions Activity to 'Wait Expired' state and logs an error.

Entities to Configure
Activity Type

Business Objects	Available Algorithms
D1-RemoteConnect D1-RemoteConnectType	D1-WFMTO (Wait for Measurement Time Out)

9.6 Review Activity Waiting for Measurement

See **Manage Device Remote Connect (Echelon) Page 4** on page 2-5 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User can review and analyze the Activity.

Business Object
D1-RemoteConnect

9.7 Request to Complete

See **Manage Device Remote Connect (Echelon) Page 4** on page 2-5 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: While the Activity is in 'Waiting for Measurement' state, MDM or SGG Authorized User can process the Activity immediately by making a manual 'Request to Complete' to SGG.

Business Object
D1-RemoteConnect

9.8 Transition Activity to Completion State

See **Manage Device Remote Connect (Echelon) Page 4** on page 2-5 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG transitions Activity to 'Completed' state.

Business Objects	Available Algorithms
D1-RemoteConnect	F1-AT-RQJ (Transition to Default Next Status (Java))

9.9 Create and Send Connect Success Notification to Requester

See **Manage Device Remote Connect (Echelon) Page 4** on page 2-5 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG creates the message and sends Connect Device success notification to Requester based on the processing method.

Business Objects	Available Algorithms
D1-RemoteConnect	D1-SRCNTEA (Send Remote Connect Notification to Edge Application)

10.0 Create and Send Meter Read to Requester

See **Manage Device Remote Connect (Echelon) Page 4** on page 2-5 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG creates the message and sends Meter Read message to Requester based on the processing method.

Business Objects	Available Algorithms
D1-RemoteConnect	D1-SODRTEA (Send Start Measurement to Edge Application)

10.1 Transition Activity to Discard State

See **Manage Device Remote Connect (Echelon) Page 5** on page 2-6 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG transitions Activity to 'Discard' state indicating that it cannot be further used. However, it remains in the system.

Business Objects	Available Algorithms
D1-RemoteConnect	D1-TPATOF (Transition Parent Activity To Failed)

10.2 Cancel Outstanding Completion Events

See **Manage Device Remote Connect (Echelon) Page 5** on page 2-6 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: When Activity is discarded, SGG cancels any existing outstanding Completion Events.

Business Objects	Available Algorithms
D1-RemoteConnect	D1-COCE (Cancel Outstanding Completion Events)

10.3 Send Response “Command Failed” to Requester

See **Manage Device Remote Connect (Echelon) Page 5** on page 2-6 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG creates the message and sends Meter Read message to Requester based on the processing method.

Business Objects	Available Algorithms
D1-RemoteConnect	D1-FRER (Send Fail Response to External Requester)

10.4 Analyze Requirements to Create Event

See **Manage Device Remote Connect (Echelon) Page 6** on page 2-7 for the business process diagram associated with this activity.

Group: Manual Connect Device Completion Event Process

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User analyzes requirements and gathers information required to create Connect Device Completion Event.

Note: In general, creating Connect Device Completion Event manually is not the practical business practice.

10.5 Select Completion Event Type and Populate Data

See **Manage Device Remote Connect (Echelon) Page 6** on page 2-7 for the business process diagram associated with this activity.

Group: Manual Connect Device Completion Event Process

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User selects the event type as Connect Device Completion Event and populates the required data.

10.6 Request to Create Completion Event

See **Manage Device Remote Connect (Echelon) Page 6** on page 2-7 for the business process diagram associated with this activity.

Group: Manual Connect Device Completion Event Process

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User makes a request to SGG to create Connect Device Completion Event.

10.7 Review Event

See **Manage Device Remote Connect (Echelon) Page 6** on page 2-7 for the business process diagram associated with this activity.

Group: Manual Connect Device Completion Event Process

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User can review and analyze the Connect Device Completion Event created.

Business Object
D1-Completion Event D1-Connect Device

10.8 Request to Delete Event

See **Manage Device Remote Connect (Echelon) Page 6** on page 2-7 for the business process diagram associated with this activity.

Group: Manual Connect Device Completion Event Process

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User if determines that the Connect Device Completion Event is not required, Authorized User requests to delete it.

Business Object
D1-Completion Event D1-Connect Device

10.9 Delete Completion Event

See **Manage Device Remote Connect (Echelon) Page 6** on page 2-7 for the business process diagram associated with this activity.

Group: Manual Connect Device Completion Event Process

Actor/Role: SGG

Description: SGG deletes the Connect Device Completion Event.

Business Object
D1-Completion Event D1-Connect Device

11.0 Request to Discard Event

See **Manage Device Remote Connect (Echelon) Page 6** on page 2-7 for the business process diagram associated with this activity.

Group: Manual Connect Device Completion Event Process

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User if determines that the Connect Device Completion Event is not required, Authorized User requests to discard it.

Business Object
D1-Completion Event D1-Connect Device

11.1 Transition to Discard State and Discard Completion Event

See **Manage Device Remote Connect (Echelon) Page 6** on page 2-7 for the business process diagram associated with this activity.

Group: Manual Connect Device Completion Event Process

Actor/Role: SGG

Description: SGG transitions Connect Device Completion Event to 'Discard' state.

Business Object
D1-Completion Event D1-Connect Device

11.2 Request to Update Event

See **Manage Device Remote Connect (Echelon) Page 6** on page 2-7 for the business process diagram associated with this activity.

Group: Manual Connect Device Completion Event Process

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User modifies Connect Device Completion Event data and requests to perform appropriate updates.

Business Object
D1-Completion Event D1-Connect Device

11.3 Update Completion Event

See **Manage Device Remote Connect (Echelon) Page 6** on page 2-7 for the business process diagram associated with this activity.

Group: Manual Connect Device Completion Event Process

Actor/Role: SGG

Description: SGG updates the Connect Device Completion Event with data populated by Authorized User.

Business Object
D1-Completion Event D1-Connect Device

11.4 Request to Execute

See **Manage Device Remote Connect (Echelon) Page 6** on page 2-7 for the business process diagram associated with this activity.

Group: Manual Connect Device Completion Event Process

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User requests to transition Connect Device Completion Event to 'Executed' state.

Business Object
D1-Completion Event D1-Connect Device

11.5 Gather Requirements to Cancel Command

See **Manage Device Remote Connect (Echelon) Page 7** on page 2-8 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User analyzes requirements and gathers information required to cancel Remote Connect command.

11.6 Select Cancel Command Activity Type

See **Manage Device Remote Connect (Echelon) Page 7** on page 2-8 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User selects Activity Type as 'Cancel Command' to cancel Connect command request.

11.7 Populate Cancel Command Execution Data

See **Manage Device Remote Connect (Echelon) Page 7** on page 2-8 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User populates the required data such as request expiration date, recipient information, etc.

11.8 Communicate and Transform Remote Connect Cancel Command to SGG Format

See **Manage Device Remote Connect (Echelon) Page 7** on page 2-8 for the business process diagram associated with this activity.

Actor/Role: Integration Layer

Description: Integration layer facilitates the communication between the 3rd Party application and the SGG application. It receives the Cancel Command request, transforms, and converts the request into format compatible with SGG application.

11.9 Identify Remote Connect Activity based on Transaction ID

See **Manage Device Remote Connect (Echelon) Page 7** on page 2-8 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG identifies the Remote Connect Activity to cancel based on the transaction ID, which was created in SGG when the request originally came from 3rd party application and sent later to 3rd party application. However, in case of manual request from Authorized User, the Activity is identified based on manual selection while populating the required data for cancel command request.

12.0 Analyze Error and Work To Do

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User analyzes the error logged and respective To Do created to determine the corrective action and to perform work.

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Business Object
D1-RemoteConnect
D4-ConnectLoad
D4-ConnectLoadNtf

12.1 Request to Delete

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Group: Inbound Exception Process

Actor/Role: MDM or SGG Authorized User

Description: If MDM or SGG Authorized User determines that the Inbound Communication is not required, Authorized User can request to delete it.

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Business Object
D4-ConnectLoadNtf

12.2 Delete Inbound Communication

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Group: Inbound Exception Process

Actor/Role: SGG

Description: SGG deletes Inbound Communication.

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Business Object
D4-ConnectLoadNtf

12.3 Request to Discard

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Group: Inbound Exception Process

Actor/Role: MDM or SGG Authorized User

Description: MDM or SGG Authorized User, if determines that the Inbound Communication is not required, Authorized User can request to discard it.

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Business Object
D4-ConnectLoadNtf

12.4 Complete To Do(s)

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Actor/Role: SGG

Description: SGG finds all non-completed To Do entries and completes them.

Business Objects	Available Algorithms
D1-RemoteConnect **D4-ConnectLoad** **D4-ConnectLoadNtf**	D1-GTDCBO (Generic To Do Completion for BOs)

12.5 Transition Inbound Communication to Discard State

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Group: Inbound Exception Process

Actor/Role: SGG

Description: SGG transitions Inbound Communication to 'Discard' state

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Business Object
D4-ConnectLoadNtf

12.6 Log Error and Transition Outbound Communication to Response Error State

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Group: Inbound Exception Process

Actor/Role: SGG

Description: SGG logs error and transitions Outbound Communication to Response Error state.

Business Objects	Available Algorithms
D4-ConnectLoadNtf	D1-FAILPCOUT (Fail Parent Outbound Activity)

12.7 Request to Validate

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Group: Inbound Exception Process

Actor/Role: MDM or SGG Authorized User

Description: If Authorized User wants to reprocess the inbound communication, can request to validate it.

Business Object
D4-ConnectLoadNtf

12.8 Transition to Validate State and Initialize Reprocessing

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Group: Inbound Exception Process

Actor/Role: SGG

Description: SGG transitions Inbound Communication to 'Validate' state and initializes reprocessing.

Business Objects	Available Algorithms
D4-ConnectLoadNtf	D1-RBOE (Retry BO in Error)

12.9 Identify Inbound Communication in Validation Error State

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Group: Inbound Exception Process

Actor/Role: SGG

Description: SGG identifies Inbound Communication in 'Validation Error' state.

Customizable Process
D1-ICERR (Inbound Communication Error - Retry)

Business Object
D4-ConnectLoadNtf

13.0 Evaluate Criteria to Run Automated Retry Process

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Group: Inbound Exception Process

Actor/Role: SGG

Description: SGG evaluates criteria to run automated retry process. A Batch process is configured for this.

Note: If Business requires different criteria to retry the process, those criteria could be configured in parameter section of batch process.

Customizable Process
D1-ICERR (Inbound Communication Error - Retry) D1-OCERR (Outbound Communication Error - Retry) D1-CRERR (Command Request Error - Retry)

Business Object
D1-RemoteConnect **D4-ConnectLoad** **D4-ConnectLoadNtf**

13.1 Request to Delete

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Group: Outbound Exception Process

Actor/Role: MDM or SGG Authorized User

Description: If MDM or SGG Authorized User determines that the Outbound Communication is not required, Authorized User can request to delete it.

Business Object
D4-ConnectLoad

13.2 Delete Outbound Communication

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Group: Outbound Exception Process

Actor/Role: SGG

Description: SGG deletes Outbound Communication from the system.

Business Object
D4-ConnectLoad

13.3 Request to Validate

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Group: Outbound Exception Process

Actor/Role: MDM or SGG Authorized User

Description: If Authorized User wants to reprocess the Outbound Communication, can request to validate it.

Business Object
D4-ConnectLoad

13.4 Transition to Validate State and Initialize Reprocessing

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Group: Outbound Exception Process

Actor/Role: SGG

Description: SGG transitions Outbound Communication to 'Validate' state and initializes reprocessing.

Business Objects	Available Algorithms
D4-ConnectLoadNtf	D1-RBOE (Retry BO in Error)

13.5 Identify Outbound Communication in Validation Error State

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Group: Outbound Exception Process

Actor/Role: SGG

Description: SGG identifies Outbound Communication in 'Validation Error' state.

Customizable Process
D1-OCERR (Outbound Communication Error - Retry)

Business Object
D4-ConnectLoad

13.6 Transition Outbound Communication to Retry State

See **Manage Device Remote Connect (Echelon) Page 8** on page 2-9 for the business process diagram associated with this activity.

Group: Outbound Exception Process

Actor/Role: SGG

Description: SGG transitions Outbound Communication to 'Retry' state and initializes reprocessing.

Business Objects	Available Algorithms
D4-ConnectLoadNtf	D1-RBOE (Retry BO in Error)

13.7 Identify Outbound Communication in Response Error State

See **Manage Device Remote Connect (Echelon) Page 9** on page 2-10 for the business process diagram associated with this activity.

Group: Outbound Exception Process

Actor/Role: SGG

Description: SGG identifies Outbound Communication in 'Response Error' state.

Customizable Process
D1-OCERR (Outbound Communication Error - Retry)

Business Object
D4-ConnectLoad

13.8 Request to Revalidate

See **Manage Device Remote Connect (Echelon) Page 9** on page 2-10 for the business process diagram associated with this activity.

Group: 'Validation Error' Exception Process

Actor/Role: MDM or SGG Authorized User

Description: If Authorized User wants to reprocess the Activity, can request to validate it.

Business Object
D1-RemoteConnect

13.9 Transition Activity to Validate State and Initialize Reprocessing

See **Manage Device Remote Connect (Echelon) Page 9** on page 2-10 for the business process diagram associated with this activity.

Group: 'Validation Error' Exception Process

Actor/Role: SGG

Description: SGG transitions Activity to 'Validate' state and initializes reprocessing.

Business Objects	Available Algorithms
D4-ConnectLoadNtf	D1-RBOE (Retry BO in Error)

14.0 Identify Activity in Validation Error State

See **Manage Device Remote Connect (Echelon) Page 9** on page 2-10 for the business process diagram associated with this activity.

Group: 'Validation Error' Exception Process

Actor/Role: SGG

Description: SGG identifies Activity in 'Validation Error' state.

Customizable Process
D1-CRERR (Command Request Error - Retry)

Business Object
D1-RemoteConnect

14.1 Transition Activity to Retry State

See **Manage Device Remote Connect (Echelon) Page 9** on page 2-10 for the business process diagram associated with this activity.

Group: "Communication Error' Exception Process

Actor/Role: SGG

Description: SGG transitions Activity to 'Retry' state.

Business Objects	Available Algorithms
D1-RemoteConnect	D1-RBOE (Retry BO in Error)

14.2 Identify Activity in Communication Error State

See **Manage Device Remote Connect (Echelon) Page 9** on page 2-10 for the business process diagram associated with this activity.

Group: "Communication Error' Exception Process

Actor/Role: SGG

Description: SGG identifies Activity in 'Communication Error' state.

Customizable Process
D1-CRERR (Command Request Error - Retry)

Business Object
D1-RemoteConnect

14.3 Request to Execute Completion Event

See **Manage Device Remote Connect (Echelon) Page 10** on page 2-11 for the business process diagram associated with this activity.

Group: "Communication Error' Exception Process

Actor/Role: MDM or SGG Authorized User

Description: If Authorized User wants to reprocess the Activity, can request to execute Completion Event.

Business Object
D1-RemoteConnect

14.4 Transition Activity to Execution Completion Event State and Initialize Reprocessing

See **Manage Device Remote Connect (Echelon) Page 10** on page 2-11 for the business process diagram associated with this activity.

Group: "Completion Event Error' Exception Process

Actor/Role: SGG

Description: SGG transitions Activity to 'Execution Completion Event' state and initializes reprocessing.

Business Objects	Available Algorithms
D1-RemoteConnect	D1-RBOE (Retry BO in Error)

14.5 Identify Activity in Completion Event Error State

See **Manage Device Remote Connect (Echelon) Page 10** on page 2-11 for the business process diagram associated with this activity.

Group: "Completion Event Error' Exception Process

Actor/Role: SGG

Description: SGG identifies Activity in 'Completion Event Error' state.

Customizable Process
D1-CRERR (Command Request Error - Retry)

Business Object
D1-RemoteConnect

14.6 Request to Continue Waiting

See **Manage Device Remote Connect (Echelon) Page 10** on page 2-11 for the business process diagram associated with this activity.

Group: 'Wait Expired Error' Exception Process

Actor/Role: MDM or SGG Authorized User

Description: If Authorized User wants to reprocess the Activity, can request to continue waiting.

Business Object
D1-RemoteConnect

14.7 Transition Activity to Waiting for Measurement State and Initialize Reprocessing

See **Manage Device Remote Connect (Echelon) Page 10** on page 2-11 for the business process diagram associated with this activity.

Group: 'Wait Expired Error' Exception Process

Actor/Role: SGG

Description: SGG transitions Activity to 'Waiting for Measurement' state and initializes reprocessing.

Business Objects	Available Algorithms
D1-RemoteConnect	D1-RBOE (Retry BO in Error)

14.8 Identify Activity in Wait Expired Error State

See **Manage Device Remote Connect (Echelon) Page 10** on page 2-11 for the business process diagram associated with this activity.

Group: 'Wait Expired Error' Exception Process

Actor/Role: SGG

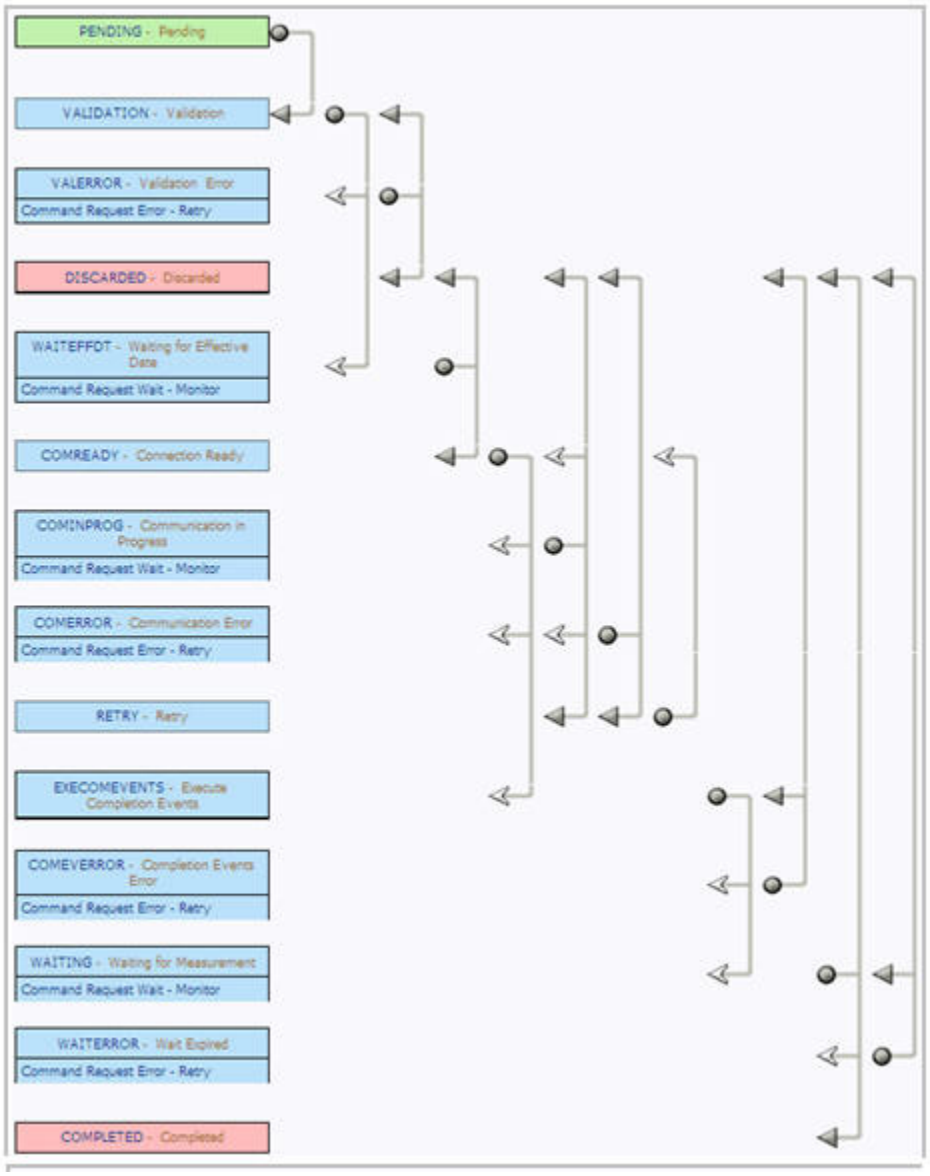
Description: SGG identifies Activity in 'Wait Expired Error' state.

Customizable Process
D1-CRERR (Command Request Error - Retry)

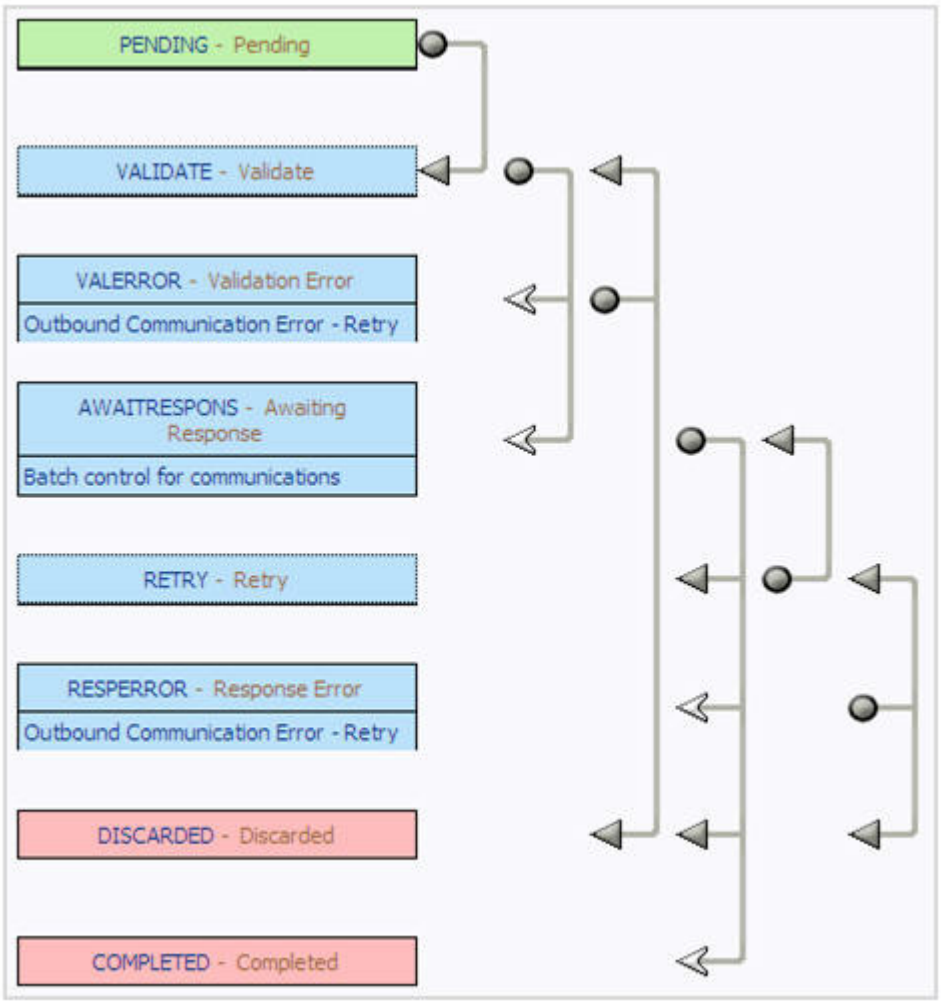
Business Objects	Available Algorithms
D1-RemoteConnect	D1-RBOE (Retry BO in Error)

Business Objects Lifecycle

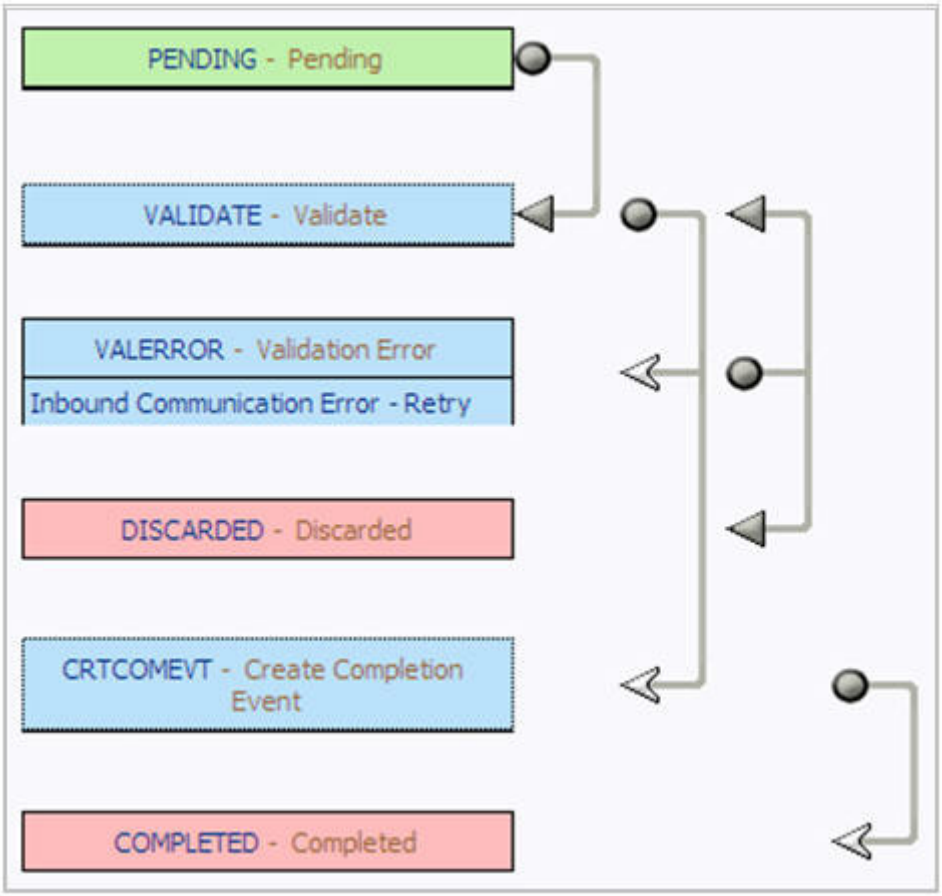
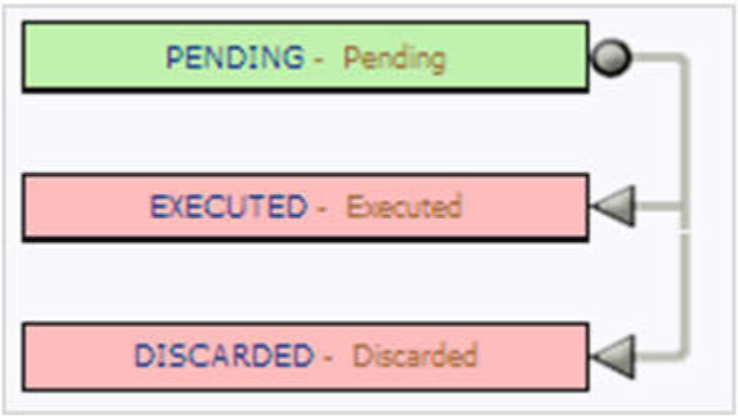
D1-RemoteConnect



D4-ConnectLoad



D4-ConnectLoadNtf



D1-Completion Event