

**Oracle Utilities Smart Grid Gateway
Service Order Management**

Configuration Guide

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Chapter 1

Overview

This chapter provides an overview of this configuration guide and an introduction to the Oracle Utilities Smart Grid Gateway adapter for Itron OpenWay, including the following:

- **What Is This Book?**
- **Other Documentation**
- **Oracle Utilities Application Framework Configuration Tools**

What Is This Book?

This guide describes how to configure the Oracle Utilities Smart Grid Gateway Service Order Management. It is intended for implementers and system administrators responsible for configuration and initial setup of the application.

The Oracle Utilities Smart Grid Gateway Service Order Management is based on the Oracle Utilities Application Framework (OUAF). For information about using and configuring basic Framework functions, see the Oracle Utilities Application Framework documentation. This guide only covers configuration of functions specific to the Oracle Utilities Smart Grid Gateway adapter for Itron OpenWay.

The body of this guide presents conceptual information to help you understand how the system works as well as how the various configuration options affect system functionality. Once you have an understanding of the system's capabilities, you can plan your data setup and design any customizations you want to implement.

This guide includes the following chapters:

- **Chapter 1: Overview** (this chapter) provides an overview of the Oracle Utilities Smart Grid Gateway adapter for Itron OpenWay architecture and of the configuration tools and process used in implementing the product.
- **Chapter 2: Understanding Service Order Management** describes the Service Order Management functionality and provides an overview of the service order-related objects and how they are used in the system, along with technical details concerning related maintenance and business objects.
- **Chapter 3: Service Order Management Process Configuration** provides an overview of configuration data required to support the service order processes available with Service Order Management.

Other Documentation

This section describes other documentation provided with the Oracle Utilities Smart Grid Gateway Service Order Management.

Installation Documentation

Installation documentation describes the steps involved in the installation and initial set up of the system, and includes the following documents:

- Oracle Utilities Smart Grid Gateway Quick Install Guide
- Oracle Utilities Smart Grid Gateway DBA Guide
- Oracle Utilities Smart Grid Gateway Installation Guide

User Documentation

User documentation provides conceptual information and procedures related to working with the various objects used in the system, and includes the following documents:

- Oracle Utilities Application Framework Business Process Guide
- Oracle Utilities Application Framework Administration Guide
- Oracle Utilities Service and Measurement Data Foundation User's Guide

Supplemental Documentation

Supplemental documentation provides technical information related to system administration tasks and include the following documents:

- Oracle Utilities Smart Grid Gateway Server Administration Guide

- Oracle Utilities Smart Grid Gateway Batch Server Administration Guide
- Oracle Utilities Smart Grid Gateway Configuration Guide

The Oracle Utilities Smart Grid Gateway Service Order Management uses Oracle Business Process Execution Language (BPEL) as middleware components. These tools are part of the Oracle SOA Suite. See the Oracle SOA Suite Documentation library (<http://www.oracle.com/technetwork/middleware/soasuite/documentation/index.html>) for more information about using these tools.

Embedded Help

Oracle Utilities Smart Grid Gateway, like all Oracle Utilities Application Framework applications, provides extensive internal documentation. For example, detailed descriptions of system objects are included in the objects' maintenance portals. The lifecycle of each business object is described on the Lifecycle tab and depicted in flow diagrams on the Summary tab. This information is extremely useful for implementers and system administrators.

Embedded help is provided for all non-obvious fields in most portals and zones. If a field has associated help text, a ? icon appears next to the field when the zone is displayed.

Online Help

Oracle Utilities Smart Grid Gateway also includes context-sensitive help for all the user interface screens users will typically work with as they use the system. Online help contains conceptual information and procedures related to working with the various objects used in the system.

The online help is divided into the following three sections:

- Oracle Utilities Application Framework: Describes the features and functions of the application framework (F1)
- Oracle Utilities Service and Measurement Data Foundation: Describes the features and functions provided in the service and measurement data foundation (D1)

Oracle Utilities Application Framework Configuration Tools

Please refer to the general configuration guide for information on the Oracle Utilities Application Framework (OUAF) configuration tools that can be used to create and customize system entities, such as business objects, portals, zones, and UI maps. Refer to the Oracle Utilities Application Framework configuration tools documentation for instructions on using tools such as:

- **Configuration Process Overview**
- **Data Areas**
- **Algorithms**
- **Entity Naming Conventions**

This configuration guide does not duplicate the concepts and procedures presented in the Oracle Utilities Application Framework configuration tools documentation; rather, it will identify the specific objects used by the Oracle Utilities Smart Grid Gateway adapter for Itron OpenWay that can be configured and customized using the configuration tools, as well as application parameters and objects that can be managed within the application components themselves.

This guide assumes that all individuals responsible for system configuration and implementation will be familiar with the Oracle Utilities Application Framework and will have completed training on the Oracle Utilities Application Framework Configuration Tools.

Chapter 2

Understanding Service Order Management

This chapter provides a description of the Oracle Utilities Smart Grid Gateway Service Order Management. This chapter includes:

- **Service Order Management Overview**
- **Understanding Service Order Orchestration Activities**
- **Understanding Field Activities**
- **Service Order Orchestration Activities In Detail**
- **Field Activities In Detail**
- **Service Order Operational Dashboards**
- **Service Order Management Integrations**

Service Order Management Overview

This section provides an overview of Oracle Utilities Service Order Management, including:

- **What is Service Order Management?**
- **How Does Service Order Management Work?**
- **Supported Service Order Processes**

What is Service Order Management?

Service order management provides functionality that orchestrates field activities and smart meter commands necessary to change the state of service at a service point. This can involve complicated business logic due to numerous, often continually-changing variables, such as:

- The type of service order request (i.e. enable service, disable service, cut, reconnect, back-to-back)
- Whether the service point is connected to the source of power
- If there is a device installed, and if so, whether it's a non-smart or a smart meter, OR item
- The state of the device that is installed at the service point (e.g, pre-commissioned, connected, disconnected)
- For smart meters, the head-end system that manages the device at the service point
- For non-smart scalar meters, the proximity of the scheduled read date to the start date

Additionally:

- Every implementation performs field work request differently (e.g, a cut service for non-payment is done differently in every locale)
- Every head-end vendor requires different messages (both in terms of the number and type of messages) and these requirements change over releases of their software
- Field workers may perform different efforts other than those requested by the system. For example, the system might request a simple reading and the worker may decide to do an exchange because the meter is old / broken.
- The source system may cancel the service order request after it is scheduled or even after it has been dispatched

Service order management has been designed to address all of the above concerns, and provides a flexible and configurable solution to the challenge of managing customer service requests.

How Does Service Order Management Work?

At a high level, service order management handles requests for service as follows:

Receive / Create Service Order Request

A service order request is created and/or received. This can be as a result of a customer requesting a change to their service such as enabling or disabling service when moving into or out of a residence, but can also be the result of other business processes, such as a request to cut service due to non-payment.

Regardless of the origin of the request, a service order request is created in a customer information system (CIS) such as Oracle Utilities Customer Care and Billing), which in turn is sent to Service Order Management.

Create Service Order Activity

When Service Order Management receives the service order request, a service order orchestration activity is created. This activity will manage and orchestrate any/all other activities needed to fulfill the original service request.

Evaluate Service Point and/or Meter

The service order orchestration activity then evaluates the current state of the service point, meter, or item, and determines the appropriate action(s) to take to fulfill the service request.

Create Activities as Needed / Appropriate

Based on the evaluation of the service point/meter/item, the orchestration activity creates one or more activities as needed.

- Field Activities involve sending workers into the field to perform service. This can include meter installation, meter replacement, and other activities.
- Command Activities are smart meter commands used to remotely change the state of the meter. This can include connect, disconnect, checking the device status (ping), or requesting an on-demand reading.

Following each of activities, the orchestration activity re-evaluates the state of the service point/meter/item to determine the next appropriate action(s) required to fulfill the original service request.

For example, when enabling service at a service point with a smart scalar meter, a typical scenario might involve the following:

1. Field Activity - Install Meter
2. Command Activity: Commission Device
3. Command Activity: Remote Connect
4. Command Activity: On Demand Read - Scalar

Update Requesting System

When the orchestration activity determines that everything necessary to satisfy the service order request is ready, the orchestration activity will inform the requester and complete the original request.

Send Notification to Subscribing Systems

The orchestration activity can also be configured to send notifications to other subscribing systems regarding the status of the service point/meter/item.

Supported Service Order Processes

Service Order Management supports the following service order processes as part of the base package.

Enable Service

Enable Service is a request to start service for a particular service point. It is typically initiated from a CIS application.

A "Start Service" field activity request from a CIS for a meter will result in the creation of an "Enable Service" orchestration activity in Service Order Management. The "Enable Service" orchestration activity will initiate field activities and smart meter commands necessary to change the state of service at a service point to the enabled state and confirm an initial measurement exists.

For example, a service order request is received to start service for a meter, the following field activities smart meter commands may occur:

- If there is no meter at the service point and the service point is not connected as the source, a field activity will be created to connect the service point to its source and install the meter.
- If a smart meter exists at the service point, but it is in a disconnected state, a smart meter command will be sent to the appropriate head-end system to connect the meter.
- If there is a non-smart (manual) meter at the service point and it's on, a field activity will be created to request the reading on / near the start date (assuming that the next scheduled meter read date is not close to the start date).

Disable Service

Disable Service is a request to stop service for a particular service point. It is typically initiated from a CIS application.

A "Stop Service" field activity request from a CIS for a meter will result in the creation of an "Disable Service" orchestration activity in Service Order Management. The "Disable Service" orchestration activity will initiate field activities and/or smart meter commands necessary to change the state of service at a service point to the disabled state and confirm a final measurement exists.

For example, a service order request is received to stop service for a meter, the following field activities and smart meter commands may occur:

- If there is a non-smart (manual) meter at the service point and it's on, a field activity will be created to turn off the meter
- If a smart meter exists at the service point and its state is connected/commissioned, a smart meter command will be sent to the appropriate head-end system to perform a remote disconnect of the meter

Cut for Non-Payment

Disconnect for non-payment is a type of field work that is most often initiated from a collections process that has been created from within the Credit and Collections module within Oracle Utilities Customer Care and Billing. A collections process is created when it has been determined to be past due, and one of the methods for eliciting payment is to issue a disconnect.

A "Disconnect for Non-Payment" field activity request from Oracle Utilities Customer Care and Billing will result in the creation of a "Cut Service for Non-Payment" orchestration activity in Service Order Management. The "Cut Service for Non-Payment" orchestration activity will initiate field activities and/or smart meter commands necessary to change the state of service at a service point to the disabled state.

For a "Cut for Non-Payment" service order, the orchestrations steps will include determining if a smart meter command can be executed or if a request to a mobile field work application (such as Oracle Utilities Mobile Workforce Management) to dispatch a truck needs to be executed.

Another example might be to determine if a disconnect can be executed against a service point given based on specific criteria of the service point. Such rules might include determining if there is life support equipment at the premise, or if the service point can be disconnected at the current time of year or business hours based on utility defined rules taking into account predominant weather conditions (for instance, the utility cannot disconnect someone in the dead of winter of the service point resides at a certain zip code that is affected by extreme cold weather).

Reconnect for Payment

Reconnect Service for Payment is a request to restart service for a particular service point after customer has paid off their past due balance. It is typically initiated from the Credit and Collection's Severance Process in a CIS application such as Oracle Utilities Customer Care and Billing

A "Reconnect for Payment" field activity request from the CIS will result in the creation of a "Reconnect Service for Payment" orchestrator activity in Service Order Management. The "Reconnect for Payment" orchestration activity will initiate field activities and/or smart meter commands necessary to change the state of service at a service point to the enabled state.

For example, if a service order request to reconnect service is received for a meter service, the following field activities and smart meter commands may ensue:

- If there is a non-smart (manual) meter at the service point and it's turned off, a field activity will be created to turn on the meter
- If a smart meter exists at the service point, but it is in a disconnected state, a smart meter command will be sent to the appropriate head-end system to connect the meter

Meter Exchange

Meter Exchange service is basically an exchange of an old meter with a new meter. A meter exchange request may be initiated as the result of a smart meter rollout, an individual customer's smart meter opt-out, a meter no longer working correctly, a meter reaching the end of its expected life, a customer with a manual meter enrolling in a program that requires a smart meter, or a need to upgrade measurement capabilities etc.

Meter exchanges can be initiated from a variety of applications, including a CIS such as Oracle Utilities Customer Care and Billing, Service Order Management (internally), and an asset management system such as Oracle Utilities Operational Device Management. Meter exchange requests can also be requested as pick-up orders from a field work application such as Oracle Utilities Mobile Workforce Management.

Meter Exchanges involving smart meters will involve smart meter commands in addition to field activities. A requesting system should be able to optionally provide some input as to the type of meter needed, and depending upon the requesting system, this input could be specific (the type of configuration) or general (smart or manual).

Back-to-Back

Back to Back service is basically service disablement and enablement in single step. The main purpose of this service is to minimize the dispatching (and obviously cost) of field work to obtain readings for both start and stop event for correct billing to the customer.

An example of a back-to-back scenario would involve an outgoing tenant calling their utility company for a move-out and an incoming tenant calls for a move-in at the same premise. As long as the gap period during which the premise is vacant is within the utility company's threshold, the change would be considered as a back to back event. In this case, a single field task is dispatched to take the meter reading used for this event and typically initiated from a CIS application.

A "Back to Back Service" field activity request from a CIS for a premise will result in the creation of a "Back to Back Service" orchestration activity in Service Order Management. The "Back to Back Service" orchestration activity will initiate field activities and smart meter commands necessary to change the state of the service of both customers at a service point to the desired state and confirm that the measurements exists for that period.

Canceling Service Order Requests

Cancel service is basically cancels any orchestration and/or specific activities that are in progress. If the cancel is for orchestration activity then that orchestration activity along with corresponding activities will be discarded where as if the cancel is initiated for a specific activity then only that specific activity will be discarded.

Depending on the status of the specific activity, the "Cancel Orchestration" orchestration activity will either discard the activity or an outbound communication will be sent to the field work system to request a cancel of the specific activity. Once the cancel to the field work system is confirmed as successful the "Cancel" will also cancel the parent orchestration activity and/or specific activities.

If the cancel is not successful then the "Cancel" orchestration activity will be discarded. When it is discarded, it will send a response message to the requester indicating the cancel was unsuccessful.

If cancel service is for field work system then "Cancel" orchestration activity will be initiated and a Cancel Command will be initiated in case of smart meter commands.

Cancellation of service can be initiated from a variety of applications, including a CIS such as Oracle Utilities Customer Care and Billing, Service Order Management (internally), and an asset management system such as Oracle Utilities Operational Device Management. Cancellation of service can also be requested as pick-up orders from a field work application such as Oracle Utilities Mobile Workforce Management.

Updating Service Order Requests

Update service is basically handles requests for updates to an existing enablement, disablement, cut for nonpayment, and reconnect for payment orchestration activity and their related specific field activities.

The types of data available for update include the following:

- Instructions
- Comments
- Start Date/Time
- Contact Name
- Main Phone.

Additionally, an update service request can check to see if appointment information is different between the specific activity and the update orchestration activity.

Depending on the status of the specific activity both direct updates will be made to the activities and communications within Service Order Management or an outbound communication will be sent to the field work system to request an update of the specific activity fields that have been changed.

Once that update to the field work system is confirmed as successful the "Update" orchestration activity service will also update the "Enable Service" or "Disable Service" orchestration activities as well. If the updates are not successful the "Update Service" orchestration activity will be discarded. When it is discarded, it will send a response message to the requester indicating the update was unsuccessful.

Update service requests can be initiated from a CIS such as Oracle Utilities Customer Care and Billing or Service Order Management (internally).

Understanding Service Order Orchestration Activities

This section describes service order orchestration activities and how they manage the service order process.

Understanding Service Order Processing

To understand how service order orchestration activities manage the service order process, it's important understand the lifecycle of orchestration activity business objects.

Service Order Orchestration Activity Lifecycle

All service order orchestration activity business objects share a common parent business object that defines their lifecycles. This is the Service Point Activity Orchestration business object (D1-SPActivityOrchestration). The table below outlines the lifecycle for this business object.

State	Description
Pending	<p>The initial state for orchestration activities.</p> <p>An Enter algorithm sends an acknowledgement to the requesting system.</p> <p>The activity is transitioned to the next state via a monitor process.</p>
Validate	<p>Enter algorithms perform the following:</p> <ul style="list-style-type: none"> • Validate Activity Type • Validate Service Point • Check for a non-final duplicate service order request activity for the same service point.
Validation Error	<p>If the business object fails any of the validations in the Pending state, it enters this state.</p> <p>Activities in this state can be corrected and retried.</p>
Discarded	<p>Activities discarded in other states enter this state.</p> <p>Enter algorithms perform the following:</p> <ul style="list-style-type: none"> • Validate that non-final child activities can be discarded without the need for a cancel activity • Cancel non-final child activities • Send a failure notification to the requesting system
Waiting for Effective Date	<p>If an orchestration activity has a future effective date, it remains in this state until the effective date is reached.</p> <p>A Monitor algorithm transitions the activity to the next state when the activity's effective date time is reached (process date time \geq effective date time).</p>

State	Description
Are SP and Device Ready?	<p>Each type of orchestration activity business object has a unique set of Enter algorithms that perform operations as appropriate for the type of service order request.</p> <p>See Are SP and Device Ready? - Algorithm Types on page 2-9 for more information about these algorithms.</p>
Activity in Progress	<p>Orchestration activities remain in this state while their child activities are processed.</p> <p>A Monitor algorithm transitions the activity to the "Are the SP and Device Ready?" state if there are no non-final child activities related to the current activity.</p> <p>A Monitor algorithm validates that the orchestration activity has not been in its current state for too long, based on the Expiration Days parameter on the orchestration activity's type and the Expiration Date/Time on the orchestration activity.</p> <p>An Exit algorithm resets the Expiration Date/Time on the orchestration activity such that each time the activity exits this state its Expiration Date/Time is updated.</p>
Activity Error	<p>If one or more child activities enters an Error state, the orchestration activity enters this state.</p> <p>Activities in this state can be corrected and retried.</p>
Retry	<p>When an orchestration activity is retried after correction of an error condition, it enters this state.</p> <p>Enter algorithms perform the following:</p> <ul style="list-style-type: none"> • Check to determine if there are child field activities in progress that have outbound communications awaiting a response. • Transition any non-final child activity to the "Reject" state (the state defined as "Reject" on the child activity business object lifecycle. This is most often the "Discarded" state).
Completed	<p>Orchestration activities enter this state when all child activities have successfully completed.</p> <p>An Enter algorithm send a success notification to the requesting system.</p>

Use the Business Object and Algorithm portals to view additional details about this business object and its lifecycle algorithms.

Cancel / Update Orchestration Lifecycle

The Cancel Orchestration (D1-CancelOrchestration) and Update Orchestration (D1-UpdateOrchestration) business objects have a similar lifecycle, with the following exceptions:

- There is no "Waiting for Effective Date" state.

- In place of the "Are SP and Device Ready?" state, they have "Cancel Specific Activity" / "Update Specific Activity" states. Enter algorithms on these states attempt to cancel or update a specific child activity.
- In the place of "Activity In Progress" and "Activity Error" states, they have "Communication in Progress" and "Communication in Error" states.

Use the Business Object and Algorithm portals to view additional details about this business object and its lifecycle algorithms.

Are SP and Device Ready? - Algorithm Types

When an orchestration activity enters the "Are SP and Device Ready?" state, a set of Enter algorithms are used to evaluate the state of the service point / meter / item to determine which actions are required to complete the service request. These algorithms are based on the following algorithm types.

Customer-Device Compatibility Check (D1-DVCOMCHK)

Algorithms of this type execute the "Customer-Device Compatibility Algorithm" defined on the orchestration activity's activity type. Algorithms of this type uses the following parameters:

- **Activity BO To Create If Compatibility Detected:** Specifies the activity business object to instantiate if the algorithm detects an in compatibility between the customer/service point and device.

Note: The base package does not include algorithm types for the "Activity Type - Customer Device Compatibility" algorithm entity.

Connect Only If Previously Connected (D1-CONPRECON)

Algorithms of this type check if the "Connect New Device" flag has a value. If the flag is not populated, the algorithm sets the value of the flag based on the connection status of the device prior to the meter exchange (used only with Meter Exchange requests).

Create Meter Exchange Field Activity (D1-CREMTREXC)

Algorithms of this type create a field activity based on details provided in the algorithm's parameters. Algorithms of this type uses the following parameters:

- **Activity and Specific Field Task to Create:** Specifies the type of activity business object and field task type to create for meter exchange field activities, as defined by the following mnemonics:

Mnemonic	Description
activityBOToCreate	Specifies the activity business object to create.
specificFieldTask	Specifies the Field Task Type when creating a field activity. This value comes from the Field Task Type extendable lookup.

For example, to create a field activity based on the D1-FieldActivity business object and the Exchange Meter field task type, these mnemonics would be configured as follows:

```
activityBOToCreate=D1-FieldActivity specificFieldTask=D1-ExchangeMeter
```

Decommission Removed Meter (D1-DCRMMTR)

Algorithms of this type create a decommissioning command for a removed meter (used only with Meter Exchange requests). Algorithms of this type uses the following parameters:

- **Decommission Activity BO to be created:** Specifies the type of activity business object to create when decommissioning a meter. The specific activity is created, as defined by the following mnemonics:

Mnemonic	Description
activityBOToCreate	Specifies the activity business object to create.

For example, to create a smart meter command activity based on the D1-DeviceDecommission business object, this parameter would be configured as follows:

```
activityBOToCreate=D1-DeviceDecommission
```

Create Specific Activity (D1-CRSPACT)

Algorithms of this type determine if a specific activity needs to be created based on the state of the service point. Algorithms of this type use the following parameters to specify the conditions and activity to be created:

- **Field Activity BO:** Specifies the field activity business object to instantiate if the algorithm creates a field task type (see next parameter).
- **SP State and Activity BO to Create:** Specifies the type of activity business object to create based on the state of the service point. This parameter can be repeated up to 20 times. Instances of the parameter are evaluated one at a time and the first condition matching the state of the service point is used. Parameters should be ordered from the most restrictive condition to the least restrictive. This parameters uses the following mnemonics to indicate the state (any combination of the following) of the service point:

Mnemonic	Description
servicePointConnected	Specifies if the service point is currently connected Valid values are "true" and "false".
disconnectLocation	Specifies the "Disconnect Location" for the service point. Valid values are "D1SR" (source) and "D1DV" (device).
deviceInstalledAtSP	Specifies if there is a device currently installed at the service point. Valid values are "true" and "false".
installationEventStatusOverride	Specifies the value of the "Installation Status" option type of the Install Event's Status ("Pending", "Conn-PreComm", "ManualOff", etc.)

Based on the unique combination of these mnemonics, a specific activity is created, as defined by the following mnemonics:

Mnemonic	Description
activityBOToCreate	Specifies the activity business object to create (used most often to specify a command business object)

Mnemonic	Description
specificFieldTask	<p>Specifies the field task type when creating a field activity. This value comes from the Field Task Type extendable lookup.</p> <p>Note: If this mnemonic is specified, the "Field Activity BO" parameter should specify the field activity business object to create.</p>
spTypeCategory	<p>Specifies a service point type category. Valid values include "D1MT" (meter), "D1IT" (item), "D1MI" (multi-item), from the SP_CATEGORY_FLG lookup.</p> <p>Specifying this mnemonic indicates that a field activity should be created only if the service point's category match the one specified by this mnemonic.</p>
executeOverrideAlgorithm	<p>Specifies whether or not to execute the algorithm specified for the Override Device/Task Algorithm on the service order orchestration activity type.</p> <p>This allows the activity business object to create to be dynamically determined based on an algorithm instead of the "activityBOToCreate" or "specificFieldTask" mnemonics.</p> <p>Valid values are "true" and "false".</p>

For example, the following parameter configuration would create a "Connect Service Point and Install Meter" field activity given the following conditions:

- Service Point Connected: False
- Disconnect Location: Source
- Device Installed at Service Point: False
- Service Point Category: Meter

```
servicePointConnected=false disconnectLocation=D1SR
deviceInstalledAtSP=false specificFieldTask=D1-ConnSPAtSrceAndInstMtr
spTypeCategory=D1MT
```

Update Device (D1-UPDDVC)

Algorithms of this type determine if an activity needs to be created to update the device based on the state of the service point and device installed at the service point. Algorithms of this type use the following parameters to specify the conditions and activity to be created.

- **Error if SP Not Connected or no Device Installed (Default is Yes):** Indicates if the algorithm should return an error if the service point is not connected or if a device is not currently installed. Valid values are "Yes" and "Con" (continue)
- **SP State and Activity BO to Create:** Specifies the type of activity business object to create based on the state of the service point. This parameter can be repeated up to 20 times. Instances of the parameter are evaluated one at a time and the first condition matching the state of the service point is used. Parameters should be ordered from the most restrictive

condition to the least restrictive. This parameters uses the following mnemonic to indicate the state (any combination of the following) of the service point:

Mnemonic	Description
installationEventStatusOverride	Specifies the value of the "Installation Status" option type of the Install Event's Status ("Pending", "Conn-PreComm", "ManualOff", etc.)

Based on the value of this mnemonic, a specific activity is created, as defined by the following mnemonics:

Mnemonic	Description
activityBOToCreate	Specifies the activity business object to create (used most often to specify a command business object)
specificFieldTask	Specifies the Field Task Type when creating a field activity. This value comes from the Field Task Type extendable lookup. Note: If this mnemonic is specified, the "Field Activity BO" parameter should specify the field activity business object to create.
spTypeCategory	Specifies a service point type category. Valid values include "D1MT" (meter), "D1IT" (item), "D1MI" (multi-item), from the SP_CATEGORY_FLG lookup. Specifying this mnemonic indicates that a field activity should be created only if the service point's category match the one specified by this mnemonic.
alternativeFieldTask	Specifies an alternative Field Task Type to use when creating a field activity in the event that the device does not support the command indicated by the "activityBOToCreate" mnemonic. Note: If this mnemonic is specified, the "Field Activity BO" parameter should specify the field activity business object to create. A value of 'skip' will continue the evaluation of the algorithm's next parameter

For example, the following parameter configuration would create a "Turn On Meter" field activity given the following conditions:

- Installation Status: Manual Off
- Service Point Category: Meter

```
installEventStatusOverride=ManualOff specificFieldTask=D1-TurnOnMeter
spTypeCategory=D1MT
```

Other parameters used by algorithms of this type include:

- **Field Activity BO:** Specifies the field activity business object to instantiate if the algorithm creates a field task type (see above parameter).

- **XPath of Activity Element controlling Activity creation:** Defines an element within the activity business object schema that can be used to control whether or not this algorithm should create an activity. For example, to specify that the value of the "Connect New Device" flag be used to determine whether or not the algorithm should create an activity, this parameter could be set to "connectNewDevice".
- **Element value indication that Activity creation should not proceed:** Specifies a value for the element defined in the "XPath of Activity Element controlling Activity creation" parameter that would indicate that the algorithm should not create an activity. Valid values are based on the element defined for the "XPath of Activity Element controlling Activity creation" parameter. For example, to specify that an activity should not be created if the "Connect New Device" flag is set to "Do Not Connect / Turn On", this parameter should be set to "D1NC" (from the D1_CONNECT_NEW_DEVICE_FLG lookup).

Remote Turn Off Turn On (D1-REMONOFF)

Algorithms of this type remotely turn a device off and on for a Back to Back service request. Algorithms of this type use the following parameters:

- **Device Incompatibility Detected Activity BO:** Specifies the activity business object the algorithm will look for. If the algorithm finds an activity of this business object, the algorithm terminates.
- **Remote Connect BO:** Specifies the activity business object to instantiate when creating a remote connect command.
- **Remote Disconnect BO:** Specifies the activity business object to instantiate when creating a remote disconnect command.
- **Installation Event Status Override for Connect:** The override status to which the Installation Event Status is set after performing a remote connect command.
- **Installation Event Status Override for Disconnect:** The override status to which the Installation Event Status is set after performing a remote disconnect command.

Check for Measurement (D1-CHKMSMT)

Algorithms of this type determine if measurements exist on activity's service point as of the service date/time. If no measurement is found, algorithms of this type create an activity to either obtain or wait for a measurement. The specific type of activity is based on the type and configuration of the device and service point. Algorithms of this type use the following parameters:

- **Activity BO To Wait For Measurement:** Specifies the activity business object to instantiate when the algorithm logic indicates it should wait for a measurement for the service point.
- **Activity BO For Field Read:** Specifies the field activity business object to instantiate when the algorithm logic indicates it should request a meter reading from the field.
- **Specific Field Task:** Specifies the field task type when creating a field activity for a meter reading from the field.
- **Activity BO To Wait For Scheduled Read:** Specifies the activity business object to instantiate when the algorithm logic indicates it should wait for a scheduled read for the service point.
- **Activity BO For On Demand Read - Scalar:** Specifies the activity business object to instantiate when the algorithm logic indicates it should issue an on-demand read (scalar) smart meter command.
- **Start Range for Normal Measurement Condition:** The start of the range of conditions that indicate "normal" measurements when the algorithm is searching for measurements for the service point.

- **End Range for Normal Measurement Condition:** The end of the range of conditions that indicate "normal" measurements when the algorithm is searching for measurements for the service point.
- **Minimum Range for bottom Measurement condition:** The minimum measurement condition used when searching for measurements for the service point. Used only when no measurements are found in the "normal" range defined by the "Start/End Range Normal Measurement Condition" parameters.

The following parameters on the orchestration activity type are also used by algorithms of this type when searching for measurements for the service point:

- **Look for Measurement within the Day:** Limits the search to the reference date (the service date).
- **Minimum and Maximum Offset Number of Days:** Numbers of days added to / subtracted from the reference date to expand the search period.

Algorithm Types and Orchestration Activity Business Objects

Each of the orchestration activity business objects uses a different set of these algorithm types. The tables below lists which of these algorithm types are defined for each of the service order orchestration activity business objects, and the specific algorithms used by each.

	Enable Service	Disable Service	Cut for Non-Payment	Reconnect for Payment	Meter Exchange	Back-to-Back
Customer-Device Compatibility Check	X					X
Connect Only If Previously Connected					X	
Create Specific Activity	X					
Create Meter Exchange Field Activity					X	
Update Device	X	X	X	X	X	X
Remote Turn Off Turn On						X
Decommission Removed Meter					X	
Check For Measurement:	X	X	X			X

Enable Service Algorithm Types and Algorithms

Algorithm Type	Algorithm(s)
Customer-Device Compatibility Check (D1-DVCOMCHK)	Customer-Device Compatibility Check (D1-DVCOMCHK)
Create Specific Activity (D1-CRSPACT)	Connect SP and/or Install Device (D1-CNSPINSDV)

Algorithm Type	Algorithm(s)
Update Device (D1-UPDDVC)	Connect Device (D1-CONNDVC)
Check for Measurement (D1-CHKMSMT)	Check for Measurement (D1-CHKMSMT)

Disable Service Algorithm Types and Algorithms

Algorithm Type	Algorithm(s)
Update Device (D1-UPDDVC)	Disconnect Device (D1-DSCNDVC)
Check for Measurement (D1-CHKMSMT)	Check for Measurement (D1-CHKMSMT)

Cut for Non-Payment Algorithm Types and Algorithms

Algorithm Type	Algorithm(s)
Update Device (D1-UPDDVC)	Disconnect Device for Non Payment (D1-DDVCFNPY)
Check for Measurement (D1-CHKMSMT)	Check for Measurement (D1-CHKMSMT)

Reconnect for Payment Algorithm Types and Algorithms

Algorithm Type	Algorithm(s)
Update Device (D1-UPDDVC)	Reconnect Device for Non Payment (D1-RDPAY)

Meter Exchange Algorithm Types and Algorithms

Algorithm Type	Algorithm(s)
Connect Only If Previously Connected (D1-CONPRECON)	Connect Only If Previously Connected (D1-CONPRECON)
Create Meter Exchange Field Activity (D1-CREMTREXC)	Create Meter Exchange Field Activity (D1-CREMTREXC)
Update Device (D1-UPDDVC)	Connect Device (D1-CONNDVC)
Decommission Removed Meter (D1-DCRMMTR)	Decommission Removed Meter (D1-DCRMMTR)

Back-to-Back Algorithm Types and Algorithms

Algorithm Type	Algorithm(s)
Customer-Device Compatibility Check (D1-DVCOMCHK)	Customer-Device Compatibility Check (D1-DVCOMCHK)
Update Device (D1-UPDDVC)	Connect Device (D1-CONNDVC)
Remote Turn Off Turn On (D1-REMONOFF)	Remote Turn Off Turn On (D1-REMONOFF)
Check for Measurement (D1-CHKMSMT)	Check for Measurement (D1-CHKMSMT)

Use the Algorithm Type and Algorithm portals to view additional details about these algorithms.

Cancel / Update Orchestration - Algorithm Types

Enter algorithms on the "Cancel Specific Activity" and "Update Specific Activity" states attempt to cancel or update a specific child activity. These algorithms are based on the following algorithm types.

- **Cancel Specific Activity:** Algorithms of this type cancel the specific activity (either a field activity or a smart meter command) that is associated to the Cancel or Update orchestration activity, based on the current status of the specific activity.
- **Update Specific Activity:** Algorithms of this type update the specific activity (either a field activity or a smart meter command) that is associated to the Cancel or Update orchestration activity, based on the current status of the specific activity.

Algorithm Type	Algorithm(s)
Cancel Specific Activity (D1-CANSPACT)	Cancel Specific Activity (D1-CANSPACT)
Update Specific Activity (D1-UPDSPAC)	Update Specific Activity (D1-UPDSPAC)

Use the Algorithm Type and Algorithm portals to view additional details about these algorithms.

Service Order Management Service Providers

The external systems used with Service Order Management must be defined as service providers using the "External System" (D1-ExternalSystem) service provider business object. Examples of external systems can include:

- A customer information system (such as Oracle Utilities Customer Care and Billing)
- A field work system (such as Oracle Utilities Mobile Workforce Management)
- An asset management system (such as Oracle Utilities Operational Device Management or Oracle Utilities Work and Asset Management)

Information defined for external system service providers used by Service Order Management include:

- **Our Name/ID in Their System:** This is the value that the field work system uses to identify our system.

- **Utility Device ID Type:** This is the Device ID Type that will be used when communicating with the external application and it will be the assumed Device ID Type for any device identifiers sent from the external application.
- **Utility Service Point ID Type:** This is the Service Point ID Type that will be used when communicating with the external application and it will be the assumed Service Point ID Type for any service point identifiers sent from the external application.

Processing Roles

The service provider's processing roles define how data relevant to the field work system is sent and/or created.

Field work service providers can use the following processing roles:

- **Activity Notification:** Used to send notifications to subscribing and/or requesting systems about the status of orchestration and/or field activities.
- **Appointment Request:** Used to send a request for an appointment to the field work system.
- **Cancellation Activity:** Used to send notifications to requesting systems when canceling orchestration and/or field activities.
- **Collection Details:** Used to retrieve details about collections processing (used with "Cut Service for Non-Payment" and "Restore Service for Payment" orchestration activities).
- **Customer Contact:** Used to send a contact to a customer regarding a service request
- **Field Activity:** Used to send a field activity to the field work system.
- **Field Activity Completion:** Used to send a notification regarding completion of a field activity.
- **Interim Status Update:** Used to send updates regarding the status of orchestration and field activities to requesting systems.
- **Meter Exchange Mapping:** Used to define how to define different types of meter exchanges based specific roles and device configurations. This can provide context to field crews to help ensure they install the correct type of device and device configuration when exchanging a meter.
- **Response - Appointment:** Used to send a request for an appointment to the field work system.
- **Response - Fail:** Used to send a response to an external system when Service Order Management fails to respond.
- **Response - Missed Appointment:** Used to send a response to the field work system when notification of a missed appointment is received.
- **Response - Negative Acknowledgement:** Used to send a negative acknowledgement response to an external system in the event that a request is rejected.
- **Response - Received:** Used to send a response to an external system to acknowledge receipt of a request.
- **Response - Success:** Used to send a response to an external system when Service Order Management successfully processes a request.
- **Send Field Activity Remark:** Used to send a field activity remark to a subscribing system
- **Update Activity:** Used to send notifications to requesting systems when updating orchestration and/or field activities.

Understanding Field Activities

This section describes field activities and how they communicate with field work management systems such as Oracle Utilities Mobile Workforce Management.

What are Field Activities?

Field activities are activities that involve sending workers into the field to perform service. This can include meter installation, meter replacement, and other activities.

Field activities send messages to a field work system, which in turn assigns them to crews to be completed in the field. Service Order Management is integrated with Oracle Utilities Mobile Workforce Management to support field activities, but can also integrate with other field work systems if needed.

Field Activity Information

All field activities are based on the Field Activity (D1-FieldActivity) business object, and include the following user-accessible information:

- **Status:** The current status of the field activity.
- **Service Date/Time:** The date and time the field activity was created.
- **Service Point:** The service point associated with the field activity.
- **Field Task Type:** The field task type for the field activity. This defines the type of task and other processing details regarding how Service Order Management processes the field activity. See **Field Task Types** on page 2-19 for more details about field task types.
- **Recipient:** The field work system service provider to which the field activity is sent for scheduling and assignment.
- **Device ID:** The device related to the field activity (if applicable).
- **Request Information:** Details of the service order request, including requester and external system information.
- **Contact Details (or Customer Information):** Contact details for the customer associated with the service order request.
- **Address Information:** The address of the service point associated with the field activity.

The field activity business object also contains other information that is populated by algorithms and scripts as the field activity is processed by the system.

How Do Field Activities Work?

At a high level, field activities work as follows:

Create Field Activity

A service order orchestration activity creates a field activity based on the current state of the service point/meter/item.

Retrieve Required Data

The field activity uses a set of pre-processing algorithms to derive and populate field activity data, such as the device, service point, address, effective date, and others.

Request Appointment (Optional)

If the field activity task type specifies that field tasks of this type require an appointment, the field activity checks for available appointment slots in the field work system and sends a notification to the appointment handling system.

Create Outbound Communication

The field activity creates an outbound communication to send the field activity to the field work system. The outbound communication gathers the information required by the field work system before being sent. This information is retrieved by a set of processing scripts defined on the field task type.

Receive Inbound Communication

When the field activity has been completed, the field work system sends an inbound communication back to Service Order Management.

Inbound communications can contain Field Activity Remarks (entered by field resources when they perform and complete their field work. If the Field Activity Remarks reference completion events, they are executed.

The inbound communications create completion events as defined on the field task type. If the field activity was successfully completed, it creates the "Completion Events When Successful" completion events. If the field activity was canceled, it creates the "Completion Events When Canceled" completion events.

Execute Completion Events

After receiving the inbound communication, a field activity algorithm transitions any active completion events into their executed state.

Complete Processing

The field activity completes its processing by doing the following:

- Updating the parent orchestration activity
- Sending a success response to the requester
- Transitioning the parent orchestration activity to the next state in its lifecycle
- Sending a field activity completion outbound communication to subscribing systems.

Field Task Types

A field activity's field task type defines details about the type of task to be performed and how the system will process the activity.

Field Task Type Information

Field task types are values for the Field Task Type (D1-FieldTaskTypeLookup) extendable lookup. Each field task type value includes the following information:

- **Routing:** Indicates if field tasks of this type can only be performed at a service point. Valid values are "SP Required" and "Pass-Through".
- **Appointment Option:** Indicates if an appointment (via a mobile workforce application) is required or applicable to field tasks of this type. Valid values are "Not Applicable", "Optional", and "Required".
- **Completion Events When Successful:** One or more completion events that are executed upon successful completion of field tasks of this type.
- **Completion Events When Canceled:** One or more completion events that are executed upon cancellation of field tasks of this type.
- **Duplicate Task Type Information:** Defines processing rules for handling potential duplicate field tasks, including:
 - **Allow Duplicates:** Specifies whether or not duplicate field tasks are allowed

- **Duplicate Threshold:** A number of hours used to determine if a newly instantiated field task type should be considered a duplicate.
- **Field Task Types:** A list of one or more field task types that are considered to be duplicates of the field task type
- **Conflict Task Type Information:** Defines processing rules for handling potentially conflicting field tasks, including:
 - **Allow Conflicts:** Specifies whether or not conflicting field tasks are allowed
 - **Conflict Threshold:** A number of hours used to determine if a newly instantiated field task type should be considered a conflict.
 - **Field Task Types:** A list of one or more field task types that are considered to conflict with the field task type
- **Processing Scripts:** Defines one or more processing scripts to extract supplemental information needed by the mobile workforce application to schedule field tasks of this

Field Activity Processing and Communication

This section outlines how field activities are processed, and how communication with field work systems are performed.

Pre-Processing, Validation, and Post-Processing Algorithms

When field activities are first instantiated, a set of pre-processing algorithms populate and derive information needed for the field activity, such as the activity type, service point, device, address, effective date, and other information.

Validation algorithms validate this information when first retrieved and when updated.

When field activities are completed, a post-processing algorithm populates the field activity end date/time:

Field Activity Lifecycle

As a field activity moves through its lifecycle, it triggers various business processes based on the type of field activity. The table below outlines the lifecycle for the Field Activity (D1-FieldActivity) business object.

State	Description
Pending	<p>The initial state for field activities.</p> <p>An Enter algorithm sends an acknowledgement to the requesting system.</p> <p>The activity is transitioned to the next state via a monitor process.</p>

State	Description
Validate	<p>Enter algorithms perform the following:</p> <ul style="list-style-type: none"> • Validate Activity Type (and transition to error if invalid) • Derive and validate field activity recipient • Validate duplicate and conflict field activities • Derive and validate field activity service point • Derive and validate field activity device • Validate address constituents • Check for any existing cut service restrictions <p>The activity is transitioned to the next state via a monitor process.</p>
Validation Error	<p>If the business object fails any of the validations in the Pending state, it enters this state.</p> <p>Enter algorithms perform the following:</p> <ul style="list-style-type: none"> • Create a To Do based on specified To Do Type and To Do Role • Set the "Allow Child to Transition Parent Activity" flag to yes. This allows the field activity to transition the parent orchestration activity if needed. <p>Activities in this state can be corrected and retried.</p>
Waiting to Request	<p>If a field activity has a future effective date, it remains in this state until the effective date is reached.</p> <p>A Monitor algorithm transitions the activity to the next state when the activity's effective date time is reached (process date time \geq effective date time).</p> <p>An Enter algorithm sets the "Allow Child to Transition Parent Activity Based On Effective Date" flag to yes. This allows the field activity to transition the parent orchestration activity if needed.</p>

State	Description
Waiting for Appointment	<p>If the field activity passes its validations and the effective date has been reached, the activity enters this state.</p> <p>Enter algorithms perform the following:</p> <ul style="list-style-type: none"> • Evaluate if an appointment is required for field tasks of this type. If not, the activity transitions to the "Communication in Progress" state. • Create a To Do if an appointment is necessary but the system is not able to send an appointment request • Set the "Allow Child to Transition Parent Activity" flag to yes. This allows the field activity to transition the parent orchestration activity if needed. • Send a notification to the appointment handling system <p>Monitor algorithms perform the following:</p> <ul style="list-style-type: none"> • Verify if an appointment has been supplied • Send a notification to the appointment handling system <p>The activity is transitioned to the next state via a monitor process.</p> <p>See Waiting for Appointment on page 2-24 for more information about this state.</p>
Communication in Progress	<p>Field activities enter this state following the "Waiting for Appointment" or "Retry" states.</p> <p>Enter algorithms perform the following:</p> <ul style="list-style-type: none"> • Create an outbound communication for the field activity (see Communication in Progress on page 2-25 for more information) • Set the "Allow Child to Transition Parent Activity" flag to yes. This allows the field activity to transition the parent orchestration activity if needed. <p>Monitor algorithms perform the following:</p> <ul style="list-style-type: none"> • Check for existing child communications • Check that the activity hasn't timed out
Discarded	<p>Activities discarded in other states enter this state.</p> <p>Enter algorithms perform the following:</p> <ul style="list-style-type: none"> • Cancel outstanding outbound communications • Cancel outstanding completion events • Populate the cancel reason • Send a failure notification to the requesting system • Transition the parent activity to the "Activity Error" state (Service Order Orchestration Activity Lifecycle on page 2-7 for more information) • Check if a Cancel Orchestration activity is required

State	Description
Communication Error	<p>If an outbound or inbound communication an Error state, the field activity enters this state.</p> <p>Monitor algorithms perform the following:</p> <ul style="list-style-type: none"> • Check that the activity hasn't timed out <p>Enter algorithms perform the following:</p> <ul style="list-style-type: none"> • Create a To Do based on specified To Do Type and To Do Role • Set the "Allow Child to Transition Parent Activity" flag to yes. This allows the field activity to transition the parent orchestration activity if needed. <p>Activities in this state can be corrected and retried.</p>
Retry	<p>When an field activity is retried after correction of an error condition, it enters this state.</p> <p>Enter algorithms perform the following:</p> <ul style="list-style-type: none"> • Check to determine if there are associated outbound communications in progress. • Cancel any outstanding outbound communications
Execute Completion Events	<p>After an inbound communication is received, it enters this state.</p> <p>Enter algorithms perform the following:</p> <ul style="list-style-type: none"> • Executes completion events defined on the field task type (these completion events were initially created by the inbound communication). • Evaluates the "Field Activity Completed" flag on the field activity. If this is set to "No", the field activity is transitioned to the "Canceled In Field" state. <p>The activity is transitioned to the next state via a monitor process.</p> <p>See Execute Completion Events on page 2-29 for more information about this state.</p>
Completion Event Error	<p>If an error occurs during completion event processing, the field activity enters this state.</p> <p>Monitor algorithms perform the following:</p> <ul style="list-style-type: none"> • Check that the activity hasn't timed out <p>Enter algorithms perform the following:</p> <ul style="list-style-type: none"> • Create a To Do based on specified To Do Type and To Do Role • Set the "Allow Child to Transition Parent Activity" flag to yes. This allows the field activity to transition the parent orchestration activity if needed. <p>Activities in this state can be corrected and retried.</p>

State	Description
Completed	<p>Field activities enter this state when all completion events have successfully completed.</p> <p>Enter algorithms perform the following:</p> <ul style="list-style-type: none"> • Update the parent orchestration activity • Send a success response to the requester • Transition the parent orchestration activity to the next state in its lifecycle • Send a field activity completion outbound communication to subscribing systems.
Canceled in Field	<p>If the "Field Activity Completed" flag on the field activity is set to "No", the field activity enter this state.</p> <p>Enter algorithms perform the following:</p> <ul style="list-style-type: none"> • Send a failed response to the requester • Transition the parent orchestration activity to the "Activity Error" state. • Create a To Do to notify users that the field activity has been canceled.

Waiting for Appointment

When a field activity enters the "Wait for Appointment" state, it first determines if an appointment is necessary for the field activity. If not, the activity moves on to the "Communication in Progress" state (see below).

If an appointment request cannot be sent for some reason, the field activity creates a To Do item to alert a user to attempt to manually request an appointment. Otherwise, the field activity sends an outbound message to the field work system requesting an appointment. based on the appropriate processing role defined on the "Send Notification to Appointment Handling System - Enter" algorithm.

Processing Role	Outbound Communication Business Object
<p>Appointment Response (default)</p> <p>Used if:</p> <ul style="list-style-type: none"> • An appointment is required and needs to be scheduled • Appointment has been set 	<p>Send Appointment Response Outbound Message (D1-SendApptRespOutboundMsg)</p> <p>Note: An outbound message must be created based on this business object.</p>

The response from the field work system can be received by creating an Inbound Web Service that references the "Book selected appointment to Field Activity" (D1-BookAppt) service script.

While in this state, monitor algorithms verify if an appointment has been supplied and send notifications to the field work system.

Communication in Progress

Field Activity communications are records of messages sent between Service Order Management and an external field work system, such as Oracle Utilities Mobile Workforce Management. Communications can flow both outbound and inbound.

When a field activity enters the "Communication in Progress" state, it sends an outbound communication to the field work system, and waits for an inbound communication response.

See **Understanding the Field Activity Communication Process** below for more information about the role of communications in the field activity communication process.

Outbound Communications

Outbound Communications represent messages sent from Service Order Management to an external field work system. Outbound communications use the following types of objects:

- **Outbound Communication Business Objects**
- **Outbound Message Types**
- **External Systems**

Outbound Communication Business Objects

An outbound communication business object exists for each type of message to be sent to an external system. For field activities, the following base package outbound communication objects can be used.

Type of Outbound Communication	Outbound Communication Business Object
Initial field activity outbound communication	Field Activity Outbound Communication (D1-FieldActivityOBComm)
Modify outbound communication Used to send an update to a field activity previously sent to the field work system.	Field Activity Outbound Communication (D1-ActivityModifyOBComm)

Outbound Message Types

A outbound message type must also be created for each type of message to be sent to an external system. Again, this is based on the types of messages the system is designed to accept. For field activities, the following outbound message types are needed:

Type of Outbound Communication	Outbound Message Type
Initial Field Activity Message	Field Activity Outbound Message
Modify Existing Field Activity	Modify Field Activity Outbound Message

Refer to the Oracle Utilities Application Framework documentation for more information about outbound message types.

External Systems

You must also create an External System for each external system to which Service Order Management will send messages. Each external system defines a set of outbound message types

that will be sent to that system. Each external system outbound message type also specifies the following:

- The processing method used to send the message (Batch, XAI, or Real-time)
- XAI Sender (if Processing Method is set to Real-time or XAI)
- Batch Control (if Processing Method is set to Batch)
- Message XSL, W3C Schema, and Response XSL (as applicable)

To continue the example above, you might create the following external system:

External Application		
Outbound Message Type	Processing Method	Batch Control
Field Activity Outbound Message	Batch	Sync Request Monitor (F1-SYNRQ)
Modify Field Activity Outbound Message	Batch	Sync Request Monitor (F1-SYNRQ)

Refer to the Oracle Utilities Application Framework documentation for more information about external systems.

Inbound Communications

Inbound Communications represent messages sent from an external field work system such as Oracle Utilities Mobile Workforce to Service Order Management. Inbound communications are typically sent in response to a field activity. Inbound communications use the following types of objects:

- **Inbound Communication Business Objects**
- **XAI Inbound Service**
- **Field Activity Remarks**

Inbound Communication Business Objects

An inbound communication business object must be created for each type of message to be received from an external system. For field activities, the following base package inbound communication object can be used.

Inbound Communication Business Object
Field Activity Inbound Communication (D1-FieldActivityIBComm)

XAI Inbound Service

You must also create an XAI Inbound Service for each type of message to be received from an external system. XAI inbound services define the details of how messages are received from an external system, including the inbound communication business object (or business service or service script) to be invoked when the response message is received. As in the case of inbound communication business objects, the set of XAI inbound services you need to create is based on

the types of messages the system is designed to send. To continue the example above, you might create the following XAI inbound services:

XAI Inbound Service	Schema (Inbound Communication Business Object)
Field Activity Inbound Communication	Field Activity Inbound Communication D1-FieldActivityIBComm

Refer to the Oracle Utilities Application Framework documentation for more information about XAI Inbound Services.

Field Activity Remarks

Inbound communications can contain activity remarks, which represent notes entered by the field worker as they perform and complete their field work. These can be solely informational, or can reference completion events via the "Remark Processing" section of the Field Activity Remark Type extendable lookup. This allows information sent with the inbound communication to initiate business processing if necessary.

Completion events specified on this extendable lookup are created by the inbound communication, and then executed when the field activity enters the "Execute Completion Events" state.

Understanding the Field Activity Communication Process

This section provides an overview of the communication process that takes place when a field activity is initiated. For each step in the process, the table below provides a brief description of the processing that takes place, and lists the specific base package objects used by Service Order Management

Note that the process outlined below has been simplified for illustrative purposes, and does not reference every step performed in this process.

Step	Process	Base Package Objects
1.	An orchestration activity creates a field activity as part of its processing. A field activity business object is instantiated for the command.	Field Activity Business Object: Field Activity (D1-FieldActivity)
2.	When the field activity enters the Communication in Progress state, it creates an outbound communication.	Outbound Communication Business Object: Field Activity Outbound Communication (D1-FieldActivityOBComm)
3.	A Enter algorithm on the "Awaiting Response" state of the outbound communication retrieves information needed by the outbound message to be sent to the field work system based on processing scripts specified on the field task type.	Enter Algorithm: Populate Send Detail for Field Activity (D1-POPSNDDTL)
4.	A Enter algorithm on the "Awaiting Response" state of the outbound communication creates an outbound message.	Enter Algorithm: Create Outbound Message (D1-COUTMSG) Note: An outbound message type for this message is not included in the base package.

Step	Process	Base Package Objects
5.	<p>The outbound message is sent to middleware components via an External System and Batch Control.</p> <p>Middleware components utilize Business Process Execution Language (BPEL).</p>	<p>External System: MWM</p> <p>Batch Control: Sync Request Monitor (F1-SYNRQ)</p>
6.	<p>The middleware converts the outbound message from SOM format into the format used by the field work system, and sends the message to the field work system.</p>	
7.	<p>When the field work system sends a response, the middleware receives the response message from the field work system, and converts it from the format used by the field work system to SOM format and invokes an XAI Inbound Service.</p>	<p>XAI Inbound Service: D1-FieldActivityIBComm (D134794183)</p>
8.	<p>The XAI Inbound Service picks up the message, and creates a corresponding inbound communication.</p> <p>The specific type of inbound communication business object created is determined by the XAI Inbound Service.</p>	<p>XAI Inbound Service: D1-FieldActivityIBComm (D134794183)</p> <p>Inbound Communication Business Object: Field Activity Inbound Communication (D1-FieldActivityIBComm)</p>
9.	<p>The inbound communication identifies the parent outbound communication.</p>	<p>Outbound Communication Business Object: Field Activity Outbound Communication (D1-FieldActivityOBComm)</p>
10.	<p>The inbound communication creates the completion events defined on the field activity field task type (Successful or Canceled, as appropriate) in the "Pending" state.</p> <p>If the inbound communication contains field activity remarks, it also executes any field activity remark completion events.</p>	<p>Inbound Communication Business Object: Field Activity Inbound Communication D1-FieldActivityIBComm</p>
11.	<p>The inbound communication updates the outbound communication.</p> <p>This update is performed by an Enter algorithm on the "Completed" Status of the inbound communication business object's lifecycle.</p>	<p>Inbound Communication Business Object: Field Activity Inbound Communication D1-FieldActivityIBComm</p> <p>Outbound Communication Business Object: Field Activity Outbound Communication (D1-FieldActivityOBComm)</p>
12.	<p>The outbound communication updates the "Completion Flag" and the original field activity business object.</p> <p>This update is performed by an Enter algorithm on the "Completed" Status of the outbound communication business object's lifecycle.</p>	<p>Outbound Communication BO: Initiate Connect Disconnect (D3-InitiateConnectDisconnect)</p> <p>Field Activity Business Object: Field Activity (D1-FieldActivity)</p>

Execute Completion Events

After receiving the inbound communication, the field activity enters the "Execute Completion Events" state.

The inbound communication will have previously created completion events for the field activity, based on those defined on the field task type or those referenced by field activity remarks. These creation events begin in the "Pending" state.

An Enter algorithm transitions completion events associated with the field activity into their "Executed" state.

Unrelated Pickup Orders

When field work crews are out performing field work, it's possible that they will encounter other work unrelated to their current task that needs to be done. This type of work can be as simple as trimming a tree whose branches are too close to power lines, or the replacement of a meter for a different customer or service point. These types of task are referred to as "unrelated pickup activities." Crews can either work the field activity or leave it to be assigned to another crew at a later date.

When the crew creates an unrelated pickup activity in the field work system, it is sent to Service Order Management, and a corresponding field activity is created in the system.

Unrelated pickup activities can be created via one of the following XAI Inbound Services:

- Field Activity Asynchronous Req Inbound (D1-FARequestAsynchronous)
- Field Activity Synchronous Req Inbound (D1-FARequestSynchronous)

Once created, they are processed like any other field activity. If the pickup activity was completed in the field before being sent to Service Order Management, it will quickly move through its lifecycle (as no further action is needed) until it reaches the "Completed" state.

Retrieving Service Point Information

If the unrelated pickup activity is customer-related it will require service point information to be created. This information can be queried by the field work crew via the "Field Work Service Point Query" (D1-FieldWorkSPQuery) XAI Inbound Service

This service uses set of service point criteria to allow the field crew to search for a service based upon either service point or device information. The service returns a list of service points that is configurable in length. If the number of results is larger than the configured maximum length the service indicates that additional records exist and the crew can request another set of results allowing them to identify the proper service point to associate to the activity.

There are times when an unrelated pick-up activity is identified but the field crew is out-of-coverage (i.e. no network connection) and they will not be able to immediately verify service point information. In this type of situation, the crew can input the service point criteria fields and create the activity, which, when imported into Service Order Management, will attempt to identify the service point based upon the information provided. If the service point can be uniquely identified everything should operate as normal. If the service point cannot be uniquely identified then the field activity is set to the error state.

Understanding Smart Meter Commands

Smart meter commands issued by service order orchestration are the same as smart meter commands provided by the base Oracle Utilities Smart Grid Gateway functionality.

See **Chapter 7: Device Communication and Device Events** in the *Oracle Utilities Smart Grid Gateway Configuration Guide* for more information about how smart meter commands are processed.

Service Order Orchestration Activities In Detail

This section provides details concerning the service order orchestration activity objects supplied as part of the base package. This information illustrates how the base package objects were designed, and can serve as the basis for any custom service order orchestration activity objects you create as part of your implementation. This section includes:

- Lists of the base package service order orchestration activity business objects
- A sample service order orchestration activity business object (D1-EnableService)

Smart Grid Gateway Base Package Service Order Orchestration Activity Business Objects

The Oracle Utilities Smart Grid Gateway base package includes the following service order orchestration activity business objects.

Business Object Name	Description
D1-SPActivityOrchestration	Service Point Activity Orchestration (used as a parent business object for all other service order orchestration activity business objects)
D1-BackToBackService	Back to Back Service Instances of this business object represent individual back-to-back service requests in the system.
D1-CutServiceForNonPayment	Cut Service for Non-Payment Instances of this business object represent individual cut service requests in the system.
D1-DisableService	Disable Service Instances of this business object represent individual disable service requests in the system.
D1-EnableService	Enable Service Instances of this business object represent individual enable service requests in the system.
D1-ExchangeMeter	Exchange Meter Instances of this business object represent individual exchange meter requests in the system.
D1-ReconnectForPayment	Reconnect Service for Payment Instances of this business object represent individual restore service requests in the system.

Business Object Name	Description
D1-ResolutionMonitor	Service Order Resolution Monitor Instances of this business object represent instances when another activity, such as an orchestration activity, requires manual intervention to proceed.
D1-CancelOrchestration	Cancel Orchestration Instances of this business object represent individual cancel orchestration activities in the system.
D1-UpdateOrchestration	Update Orchestration Instances of this business object represent individual update orchestration activities in the system.

Use the Business Object portal to view additional details concerning these business objects.

Example Service Order Orchestration Activity - D1-EnableService

The table below lists the details of the D1-EnableService service order orchestration activity business object.

Option	Description
Business Object	D1-EnableService
Description	Enable Service
Maintenance Object	D1-ACTIVITY (Activity)
Parent Business Object	D1-SPActivityOrchestration
Application Service	D1-SPORCHACTBOAS (SP Activity Orchestration BO)
Instance Control	Allow New Instances
Options	<ul style="list-style-type: none"> Related Administration BO: D1-EnableServiceType (Enable Service Type)
Algorithms *Inherited from parent business object	<ul style="list-style-type: none"> Information: D1-SPACTINFO (SP Orchestration Activity Information)* Pre-Processing: D1-DEFACTTYP (Determine Activity Type)* Pre-Processing: D1-DRVSPEXID (Derive SP from External SP ID)* Post-Processing: D1ENDDTTM (Populate End Date/ Time)* Pre-Processing: D1-DRVCNTID (Derive Contact Id from Person Id in Activity)

Option	Description
Lifecycle (Inherited from parent business object)	<ul style="list-style-type: none"><li data-bbox="824 218 1036 245">• Pending (Initial)<li data-bbox="824 264 1170 291">• Validate (Interim, Transitory)<li data-bbox="824 310 1138 338">• Validation Error (Interim)<li data-bbox="824 357 1052 384">• Discarded (Final)<li data-bbox="824 403 1243 430">• Waiting for Effective Date (Interim)<li data-bbox="824 449 1365 476">• Are SP and Device Ready? (Interim, Transitory)<li data-bbox="824 495 1170 522">• Activity in Progress (Interim)<li data-bbox="824 541 1138 569">• Activity in Error (Interim)<li data-bbox="824 588 1138 615">• Retry (Interim, Transitory)<li data-bbox="824 634 1057 661">• Completed (Final)

Use the Business Object portal to view additional details concerning this business object.

Field Activities In Detail

This section provides details concerning the field activity objects supplied as part of the base package. This information illustrates how the base package objects were designed, and can serve as the basis for any custom field activity objects you create as part of your implementation. This section includes:

- A list of the base package field activity business objects
- A sample field activity business object (D1-FieldActivity)
- A list of base package field task type
- A list of base package processing scripts used by Field Task Types
- A list of base package completion events used by Field Task Types
- A sample field task type (D1-ConnectSPAtMeter)

Service and Measurement Data Foundation Base Package Field Activity Business Objects

The Service and Measurement Data Foundation base package includes the following “lite” inbound communication business objects:

Business Object Name	Description
D1-FieldActivity	Field Activity Instances of this business object represent individual field activities in the system.

Example Field Activity - D1-FieldActivity

The table below lists the details of the D1-FieldActivity field activity business object.

Option	Description
Business Object	D1-FieldActivity
Description	Field Activity
Maintenance Object	D1-ACTIVITY (Activity)
Application Service	D1-FAOAS (Field Activity BO)
Instance Control	Allow New Instances

Option	Description
Options	<ul style="list-style-type: none"> • Cancel Orchestration BO: D1-CancelOrchestration (Cancel Orchestration) • Final Status Required for Archive (Y/N): Y • Summary Service Script: D1-FASUM • Update Orchestration BO: D1-UpdateOrchestration (Update Orchestration) • Related Administration BO: D1-FieldActivityType (Field Activity Type) • Portal Navigation Option: d1-ActivityNavOpt (Activity Navigation Option) • Display Map Service Script: D1-CKFATYSOM (Check if Field Activity Type exists in SOM Config)
Algorithms	<ul style="list-style-type: none"> • Information: D1-FAINFO (Field Activity Information) • Post-Processing: D1-ENDDDTTM (Populate End Date/Time) • Pre-Processing: D1-DEACTTYP (Determine Activity Type) • Pre-Processing: D1-DRVACTSP (Derive Field Activity Service Point) • Pre-Processing: D1-DSPDDC (Derive Field Activity Device) • Pre-Processing: D1-DRVADRCNS (Derive Field Activity Address Constituents) • Pre-Processing: D1-INTEFDAT (Initialize Effective Date) • Pre-Processing: D1-ACSDT (Adjust Cut Service Date Time) • Pre-Processing: D1-DRVCNTID (Derive Contact Id from Person Id in Activity) • Validation: D1-VALFTDATE (Validate Field Activity Expiration and Effective Dates) • Validation: D1-VALFTTUPD (Validate Duplicate and Conflicting Field Activities on Update) • Validation: D1-VALADRCNS (Validate Field Activity Site Address) • Validation: D1-VALSPUPD (Validate Field Activity Service Point on Update) • Validation: D1-VALDVCUPD (Validate Field Activity Device on Update) • Validation: D1-VALCPRADR (Validate Field Activity Address Constituents on Update) • Validation: D1-CHKUPDORC (Check if Update Orchestrator is Required) • Validation: D1-VALRCPUPD (Validate Field Activity Recipient on Update) • Validation: D1-VCUTSR (Validate Cut Service Restrictions)

Option	Description
Lifecycle (Inherited from parent business object)	<ul style="list-style-type: none"> • Pending (Initial) • Validate (Interim, Transitory) • Validation Error (Interim) • Waiting for Request (Interim) • Waiting for Appointment (Interim) • Communication in Progress (Interim) • Discarded (Final) • Communication Error (Interim) • Retry (Interim, Transitory) • Execute Completion Events (Interim) • Completion Event Error (Interim) • Completed (Final) • Canceled in Field (Final)

Use the Business Object portal to view additional details concerning this business object.

Base Package Field Task Types

The table below lists the base package field task types.

Field Task Type	Description
D1-ConnectSPAtDevice	Item - Connect SP at Device
D1-ConnectSPAtDvcAndTurnOn	Item - Connect SP at Device and Turn On
D1-ConnectSPAtMeter	Connect SP at Meter
D1-ConnectSPAtMeterAndTurnOn	Connect SP at Meter and Turn On
D1-ConnectSPAtSource	Connect SP at Source
D1-ConnectSPAtSourceAndTurnOn	Connect SP at Source and Turn On
D1-ConnSPAtDvcAndInstDvc	Connect SP at Device and Install Device
D1-ConnSPAtMtrAndInstMtr	Connect SP at Meter and Install Meter
D1-ConnSPAtSrceAndInstDvc	Connect SP at Source and Install Device
D1-ConnSPAtSrceAndInstMtr	Connect SP at Source and Install Meter
D1-ConnSPAtSrceAndTurnOnDvc	Item - Connect SP at Source and Turn On
D1-CutForNonPayment	Cut for Non Payment
D1-CutItemForNonPayment	Item - Cut for Non Payment
D1-DisconnectItemSPAtSource	Item - Disconnect SP at Source
D1-DisconnectSPAtDevice	Disconnect SP at Device
D1-DisconnectSPAtMeter	Disconnect SP at Meter

Field Task Type	Description
D1-DisconnectSPAtSource	Disconnect SP at Source
D1-DisconnectWarning	Disconnect Warning
D1-DisConnSPAtDvcAndRmveDvc	Disconnect SP at Device and Remove Device
D1-DisConnSPAtMtrAndRmveMtr	Disconnect SP at Meter and Remove Meter
D1-DisConnSPAtSrceAndRmveMtr	Disconnect SP at Source and Remove Meter
D1-ExchangeDevice	Item - Exchange Device
D1-ExchangeMeter	Exchange Meter
D1-InstallDevice	Item - Install Device
D1-InstallMeter	Install Meter
D1-ReadMeter	Read Meter
D1-ReconnectForPayment	Reconnect for Payment
D1-ReconnectItemforPayment	Item - Reconnect for Payment
D1-RemoveDevice	Item - Remove Device
D1-RemoveMeter	Remove Meter
D1-ServiceInvestigation	Service Investigation
D1-TrimTree	Trim Tree
D1-TurnOffItem	Turn Off Item
D1-TurnOffMeter	Turn Off Meter
D1-TurnOnItem	Turn On Item
D1-TurnOnMeter	Turn On Meter
D1-TurnOnPilotLight	Turn On Pilot Light

Use the Extendable Lookup portal to view additional details for these field task types.

Field Activity Task Types - Base Package Processing Scripts

The processing scripts defined on the field task type are invoked by the "Populate Send Detail for Field Activity" (D1-POPSNDDTL) algorithm on the outbound communication sent by the field activity. The table below lists the base package field task type processing scripts.

Processing Script	Base Package Script Description
CIS Data Retriever	Service Order - Retrieve CIS Data (D1-RetCisDat)
Asset System Data Retriever	No base package script provided.
Internal Data Retriever	Service Order - Retrieve Internal Data (D1-RetIntDat)
Criteria Script	Service Order - Retrieve Criteria Value (D1-RetCriVal)

Processing Script	Base Package Script Description
External System Identifier Retriever	Service Order - Populate External System and Identifiers (D1-RetExtIdf)
MDM Data Retriever	Service Order- Retrieve Meter Data Details (D1-RetMtrDtl) Service Order - Retrieve Item Data Details (D1-RetItmDtl)

Field Activity Task Types - Base Package Field Activity Completion Events

The completion events defined on the field task type are created by the "Create Completion Event for Field Activity" (D1-COMPEVSA) algorithm on the inbound communication sent by the field work system. These completion events are then executed by the "Execute Completion Events" (D1-EXCMPEVTS) algorithm on the field activity. The table below lists the base package field task type completion events.

Completion Event	Description
D1-ConnectItemFA	Connect Item - Field Work Completion
D1-ConnectDeviceFA	Connect Meter - Field Work Completion
D1-ConnectNewDeviceFA	Connect New Meter-Field Work Completion
D1-ConnectSPCE	Connect SP - Field Work Completion
D1-CreateFAIMD	Create FA IMD Completion Event
D1-CustomerContact	Notify Requester of Customer Contact
D1-DisconnectDeviceFA	Disconnect Device - Field Work Completion
D1-DisconnectItemFA	Disconnect Item - Field Work Completion
D1-InstallDevice	Install Device - Field Work Completion
D1-InstallItem	Install Item - Field Work Completion
D1-RemoveDevice	Remove Device - Field Work Completion
D1-RemoveItem	Remove Item - Field Work Completion
D1-RequestToDo	Create To Do with Crew Message
D1-UpdateDevice	Update Device - Field Work Completion
D1-UpdateItem	Update Item - Field Work Completion
D1-UpdateSP	Update SP - Field Work Completion

Example Field Task Type - D1-ConnectSPAtMeter

The table below lists the details of the D1-ConnectSPAtMeter field task type.

Option	Description
Field Task Type	D1-ConnectSPAtMeter
Status	Active
Description	Connect SP at Meter
Routing	SP Required
Appointment Option	Not Applicable
Duplicate Task Type Information	Allow Duplicates: Yes
Conflicting Task Type Information	Allow Conflicts: Yes
Processing Scripts	<ul style="list-style-type: none"> • CIS Data Retriever: Service Order - Retrieve CIS Data • Asset System Data Retriever • Internal Data Retriever: Service Order - Retrieve Internal Data • Criteria Script: Service Order - Retrieve Criteria Value • External System Identifier Retriever: Service Order - Populate External System and Identifiers • MDM Data Retriever: Service Order- Retrieve Meter Data Details
Completion Events When Successful	<ul style="list-style-type: none"> • 10 - Connect SP - Field Work Completion - Yes • 20 - Update SP - Field Work Completion - No • 30 - Update Device - Field Work Completion - No • 40 - Create To Do with Crew Message - No • 50 - Notify Requester of Customer Contact - No
Completion Events When Canceled	N/A

Service Order Operational Dashboards

The Service Order Management dashboards are used to view the current status of service order activities in the system. Refer to the *Oracle Utilities Service and Measurement Data Foundation User's Guide* for information about working with these dashboards.

This section outlines how the data presented on these dashboards is generated and updated.

Service Order Activity Aggregation

Aggregation processing is used to derive the service order activity data presented via the Service Order Management dashboards. This section will focus only on how aggregation for activity statistics are calculated for use in the dashboards. Refer to **Chapter 13: Aggregations** in the Oracle Utilities Meter Data Management Configuration Guide for a description of the aggregation process.

Accumulation-Based Aggregation

Some of the data accessed on the dashboards is aggregated using a traditional "accumulation"-style aggregation of activity data. With accumulations, data is refreshed when changes occur, and when a request to refresh the data is submitted (either via scheduled batch process or via the Activity Statistics dashboard zone).

For example, assume that 400 activities were created on June 15, and 300 were "In Progress" as of the last time the data was updated. Then on June 16 if an update was requested, while there would still 400 activities that had been created on June 15, if at this time only 200 were "In Progress", the data would be updated to reflect 200 "In Progress".

SnapShot Aggregation

Some data on the dashboards is generated using a "snapshot"-style aggregation of activity data. Snapshots are typically used whenever there is a need to look at trends over time. For example, to view trends of in-flight activities, the system can take periodic snapshots to hold capture data. Note that snapshot data is preserved, but not updated. This means that snapshot data becomes stale as soon as the snapshot is taken.

Aggregator Business Objects

The dashboard activity statistics aggregation process uses the following aggregator measuring component business objects.

Aggregator Business Object	Description
D1-ActivityProcsAggregator Activity Processing Accumulation Aggregator	This aggregator retrieves all activities created during the aggregation horizon for the activity type, service type (via the service point to which the activity is linked), and requesting system.
D1-ActivityProcSnapAggtor Activity Processing Snapshot Aggregator	This aggregator takes a snapshot of activities based on its dimensional values, including the requesting system, activity type, and service type (as determined via the service point linked to the activity). The period of time over which it retrieves activities is controlled via the "Number of Days to Consider for Snapshot" parameter on the Service Order Management master configuration.

Aggregator Business Object	Description
D1-ActivityProcDerivedSnapAgg Activity Processing Derived Snapshot Aggregator	This aggregator takes a snapshot of another aggregator's measurement data. It assumes that the current aggregator is configured as a related measuring component on the appropriate aggregator. The aggregator used as the basis for calculation should be the "Activity Processing Accumulation Aggregator" (D1-ActivityProcsAggregator).
D1-ActivityAgingSnapAggtor Activity Aging Snapshot Aggregator	This aggregator takes a snapshot of activity statistics pertaining to aging for activities created over a configurable period of time, based on the aggregator's activity type, requesting system, and service type (determined via the service point associated with the activity). It considers activities that have been completed within the snapshot period (typically a day).

Aggregator Type Business Objects

The dashboard activity statistics aggregation process uses the following aggregator measuring component type business objects.

Aggregator Type Business Object	Description
D1-ActStatsSubAggregatorType Activity Statistics Sub-Aggregator Type	This measuring component type defines sub-aggregator types for activity statistics calculation.
D1-ActStatsMasterAggType Activity Statistics Master Aggregator Type	This measuring component type defines master aggregation information for its measuring component and its sub-aggregator measuring components, and controls the aggregation parameters, its sub-aggregator measuring component types, and the valid measuring component types to aggregate.
D1-ActStatsSubAggregatorType Activity Statistics Sub-Aggregator Type	This measuring component type defines the sub-aggregation information for its measuring component, and controls the aggregation parameters.

Use the Business Object portal to view additional details for these business objects.

Activity and Activity Type Business Objects

The dashboard activity statistics aggregation process uses the following activity and activity type business objects.

Aggregator Type Business Object	Description
D1-ActivityStatsAggtorCreator Activity Statistics Aggregator Creator	<p>This activity business object creates aggregators for active activity types for orchestrators, field activities, and smart meter commands.</p> <p>To use the aggregator creator to facilitate statistics calculations for all of the available types, an activity should be created for each combination of the master aggregator MC type (processing statistics) and a service type.</p> <p>For example:</p> <ul style="list-style-type: none"> • Aggregator Creator 1: Processing Statistics Accumulation MC Type / Electric • Aggregator Creator 2: Aging Statistics Accumulation MC Type / Electric
D1-ActivityStatsAggtorCreatorType Activity Statistics Aggregator Creator Type	This activity type business object defines configuration options used by the activity statistics aggregator creator.

Use the Business Object portal to view additional details for this business objects.

Batch Processing

The activity statistics processing uses the following batch controls.

Aggregator Type Business Object	Description
D1-ACTAG Activity Statistics Aggregation Monitor	<p>This batch control initiates automatic/scheduled transition for aggregator measuring components and is used to update aggregated statistics.</p> <p>This batch control can be triggered from the Activity Statistics dashboard zone, or can be scheduled to run at regular intervals to update activity processing statistics.</p>
D1-ADS Aggregation Dimension Scanner Monitor	This batch control scans for new dimension combinations and creates new activity aggregators as needed.

Service Order Management Master Configuration

The Service Order Management master configuration can be used to define how data is processed and displayed on the Service Order Management dashboards. This section outlines these options.

Management Dashboard Configuration

The Management Dashboard Configuration options are used to define how dashboard statistics are calculated.

Basic options include the following:

- **Number of Days to Consider for Snapshot:** The number of days to consider when creating data snapshots.
- **Weekends/Holidays Inclusion in Activity Duration:** A flag that indicates if weekends and holidays should be included when calculating activity durations. Valid options (defined by the HOLIDAYS_INCL_FLG lookup) include
 - Including in Activity Duration
 - Exclude from Activity Duration
- **Work Calendar:** The work calendar used to determine weekdays, weekends, and holidays.
- **Default Expected Activity Completion Time (Hours):** The default number of hours in which activities are expected to be completed.

Override Expected Completion Time Configuration

This section allows an implementation to override the default expected activity completion time (see above) for specific types of activities and field task types. This is used for types of activities that take longer (or shorter) than the default expected completion time. For example, if the default completion time is set to 3 hours, but reading a meter takes only 1 hour, you might create an override for the "Read Meter" field task type. Each override is defined by the following:

- **Activity Type:** The activity type to which the override applies.
- **Task Type:** The Field Task Type to which the override applies. Applicable only if the Activity Type is a field activity type.
- **Expected Completion Time (Hours):** The number of hours in which activities of the specified are expected to be completed.

Summary To Do Types

This section defines To Do Roles for Summary To Do entries. For each To Do Type specified, you can specify a To Do Role.

Hours Beyond Expected Activity Completion Time

This section defines numbers of hours used to define thresholds for activity completion and progress.

Completion tolerance options include the following:

- **On Time Completion Tolerance:** The number of hours in which an activity's completion is considered to be "on time".
- **Late Completion Tolerance:** The number of hours in which an activity's completion is considered to be "late".
- **Very Late Completion Tolerance:** The number of hours in which an activity's completion is considered to be "very late".

For example, if the "On Time Completion Tolerance" is 8, an activity that takes up to 8 hours to complete is considered "on time". If the "Late Completion Tolerance" is 16, an activity that takes

between 8 and 16 hours to complete is considered "late". If the "Very Late Completion Tolerance" is 24, an activity that takes between 16 and 24 hours to complete is considered "very late".

In progress time options include the following:

- **Normal In Progress Time:** The number of hours in which an activity's progress is considered to be "normal".
- **Long In Progress Time:** The number of hours in which an activity's progress is considered to be "long".
- **Very Long In Progress Time:** The number of hours in which an activity's progress is considered to be "very long".

For example, if the "Normal In Progress Time" is 8, an activity that takes up to 8 hours to complete is considered "normal". If the "Long In Progress Time" is 16, an activity that takes between 8 and 16 hours to complete is considered "long". If the "Very Long In Progress Time" is 24, an activity that takes between 16 and 24 hours to complete is considered "very long".

Update Statistics

This section specifies the batch control used to update statistics for the Service Order Management dashboards.

The Service Order Management Master Configuration can be used to configure details concerning how data is displayed on these dashboards.

Chart Options

The Chart Options section is used to define specifics for how data is displayed on the dashboard.

The **Number of Historical Days to Include in Summary Charts** options specifies the number of days of historical data to display in summary charts.

Colors used in the dashboard charts are defined by values for the "Colors" (D1-COLOR) characteristic type. Colors are defined by HTML color codes.

Processing Statistics

This section defines the color to use when displaying processing statistics on dashboard charts and graphs.

Available processing statistic types are based on Value Identifiers defined on a measuring component type that references the "Activity Process Accumulation Aggregator" (D1-ActivityProcsAggregator) measuring component business object. The business object for this measuring component type must be "Activity Statistic Master Aggregator Type".

Aging Statistics

This section defines the color to use when displaying aging statistics on dashboard charts and graphs.

Available aging statistic types are based on Value Identifiers defined on a measuring component type that references the "Activity Aging Snapshot Aggregator" (D1-ActivityAgingSnapAggtor) measuring component business object. The business object for this measuring component type must be "Activity Statistic Master Aggregator Type".

Activity Types

This section defines the color to use when displaying activity types on dashboard charts and graphs.

Available activity types are based on values defined for the "External Activity Type Identifier" (D1-ExternalActTypeIdentifier) extendable lookup.

Field Task Types

This section defines the color to use when displaying field task types on dashboard charts and graphs.

Available field task types are based on values defined for the "Field Task Type" (D1-FieldTaskTypeLookup) extendable lookup.

Service Order Management Integrations

This section provides a high-level overview of integrations used with Service Order Management. These include:

- **Oracle Utilities Customer Care and Billing to Service Order Management**
- **Service Order Management to Oracle Utilities Mobile Workforce Management**

Oracle Utilities Customer Care and Billing to Service Order Management

This integration enables service request business processing between Oracle Utilities Customer Care and Billing and Service Order Management, including the following:

Process	Description
Field Activity Creation	Field activities can be sent from Oracle Utilities Customer Care and Billing to Service Order Management.
Field Activity Completion	For activities that are handled in Service Order Management, Service Order Management sends a success/failure response to Oracle Utilities Customer Care and Billing.
Service Request Update / Field Activity Customer Contact	Customer contacts can be created as part of completion for activities handled in Service Order Management. Oracle Utilities Service Order Management will send a message to Oracle Utilities Customer Care and Billing to create a customer contact.
Appointment Notifications	Service Order Management can communicate to Oracle Utilities Customer Care and Billing if an appointment was booked.
Missed Appointment	Service Order Management can communicate to Oracle Utilities Customer Care and Billing if an appointment was missed.
Collection Information	Service Order Management requests collection information from Oracle Utilities Customer Care and Billing and passes it to Oracle Utilities Mobile Workforce Management.
Cancel Field Activity	Before attempting to cancel field activity in Oracle Utilities Customer Care and Billing, a real time service call to Service Order Management is made to determine if the field activity is cancellable.

Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for details about configuring this integration.

Service Order Management to Oracle Utilities Mobile Workforce Management

This integration enables service request business processing between Service Order Management and Oracle Utilities Mobile Workforce Management, including the following:

Business Process	Description
Process Field Activities	Service Order Management sends the details of field activities that need to be created/updated/cancelled to Oracle Utilities Mobile Workforce Management.
Appointment Window Request	Service Order Management requests Oracle Utilities Mobile Workforce Management for available appointment slots. Oracle Utilities Mobile Workforce Management provides a list of available appointments.
Interim Activity Status Request	Service Order Management requests interim activity status from Oracle Utilities Mobile Workforce Management. Oracle Utilities Mobile Workforce Management provides the status of interim activities such as work in progress or en route.
Device Verification	Oracle Utilities Mobile Workforce Management requests device verification from Service Order Management.
Create Pickup Order /Create Activity	Oracle Utilities Mobile Workforce Management requests Service Order Management to create unrelated pickup orders.
Activity Completion / Cancellation	Oracle Utilities Mobile Workforce Management sends activity completion/cancellation information to Service Order Management.
Query Service Point / Unrelated Pickup Order	Oracle Utilities Mobile Workforce Management supplies criteria to identify a service point in Service Order Management when creating unrelated pickup activities.

Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for details about configuring this integration.

Chapter 3

Service Order Management Process Configuration

This chapter provides an overview of the data configuration required for each of the service order processes supported by Service Order Management, including:

- **Data Setup for All Processes**
- **Enable Service for Items**
- **Disable Service for Meters**
- **Disable Service for Items**
- **Cut Service for Non-Payment for Meters**
- **Cut Service for Non-Payment for Items**
- **Reconnect Service for Payment for Meters**
- **Reconnect Service for Payment for Items**
- **Meter Exchange**
- **Item Exchange**
- **Back-to-Back for Meters**
- **Cancel Orchestration for Meters**
- **Update Orchestration for Meters**

To view additional details about the objects referenced in this guide, use the appropriate application portal.

Data Setup for All Processes

This section outlines the data setup required to support the all Service Order Management processes.

Customer Care and Billing

This section describes the setup required in Oracle Utilities Customer Care and Billing to support Service Order Management processes. Refer to the *Oracle Utilities Customer Care and Billing Administration Guide* for more information about creating the following types of data.

Service Point Types (SP Type)

The "Fieldwork Orchestration" field on SP Type records is used to define how the field work is managed for service points of this type. Valid values are defined in the EXT_SRV_REQ_FLG lookup, and include:

- **Customer Care and Billing** indicates that Oracle Utilities Customer Care and Billing will be used to orchestrate field work based on FA Type Profile, customer event and service point condition.
- **Service Order Management** indicates that Oracle Utilities Customer Care and Billing will create generic field activities that are routed to an external service request system. Orchestration of the actual field work request is managed by the external system.

Set the "Fieldwork Orchestration" field to "Service Order Management" for each SP Type where the field work request will be managed by Service Order Management.

Example: **SP Type:** E-RES

Main Tab:

- **Service Type:** Electric Service
- **Description:** Electric - Residential
- **Sub Type:** Meter
- **Allow Service Rule:** [enabled]
- **Multiple Route Usage:** Not Allowed
- **Trend Class:** Residential Customers
- **Fieldwork Orchestration:** Service Order Management
- **Field Activity Type Profile:** METERED (see below)

Note: The example above does not capture the complete list of fields and their corresponding values.

Outbound Message Types and XAI Components

Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for details regarding outbound message types and XAI Senders used by Oracle Utilities Customer Care and Billing to communicate with Service Order Management.

Service Order Management

This section describes the setup required in Service Order Management to support Service Order Management processes. Refer to the *Oracle Utilities Application Framework Administration Guide* and *Oracle Utilities Service and Measurement Data User's Guide* for more information about creating the following types of data.

External Systems

You must create External Systems for both Oracle Utilities Customer Care and Billing and Oracle Utilities Mobile Workforce Management in order to Service Order Management to communicate with them. The minimum information that must be defined for each of these external systems is outlined below.

Oracle Utilities Customer Care and Billing:

- **Description:** Oracle Utilities Customer Care and Billing
- **Our Name In Their System:** SOM

Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for details regarding outbound message and XAI Senders associated with this external system.

Oracle Utilities Mobile Workforce Management.:

- **Description:** Oracle Utilities Mobile Workforce Management
- **Our Name In Their System:** SOM

Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for details regarding outbound message and XAI Senders associated with this external system.

Service Providers

You must create Service Providers for both Oracle Utilities Customer Care and Billing and Oracle Utilities Mobile Workforce Management. The minimum information that must be defined for each of these is outlined below.

Oracle Utilities Customer Care and Billing:

- **Description:** Oracle Utilities Customer Care and Billing
- **External System:** Oracle Utilities Customer Care and Billing
- **Utility Device ID Type:** Badge Number
- **Utility Measuring Component ID Type:** Channel ID
- **Utility Service Point ID Type:** External ID
- **Processing Methods:** Define the following processing methods for each of the service providers defined in Service Order Management.

Processing Method (Role)	Description
Response - Negative Acknowledgement	SR - Response - Negative Acknowledgement
Response - Fail	SOM - Response - Fail
Response - Received	SOM - Response - Positive Acknowledgement
Response - Success	SOM - Response - Success

Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for details regarding outbound message types used by these processing methods.

Oracle Utilities Mobile Workforce Management.:

- **Description:** Oracle Utilities Mobile Workforce Management
- **External Reference ID:** SOM
- **External System:** Oracle Utilities Mobile Workforce Management
- **Utility Device ID Type:** Badge Number
- **Utility Measuring Component ID Type:** External ID
- **Utility Service Point ID Type:** External ID
- **Processing Methods:** Define the following processing methods for each of the service providers defined in Service Order Management.

Processing Method (Role)	Description
Field Activity	MWM Create Outbound Communication Default Business Object: D1-FieldActivityOBComm

Master Configuration

Define the following options on the Service Order Management master configuration.

Master Configuration: Service Order Management Master Configuration

- **Business Object:** Service Order Management Master Configuration
- **Field Work System:** Oracle Utilities Mobile Workforce Management
- **CIS External Requestor:** Oracle Utilities Customer Care and Billing

Note: The example above does not capture the complete list of fields and their corresponding values.

Mobile Workforce Management

This section describes the setup required in Oracle Utilities Mobile Workforce Management to support Service Order Management processes.

Refer to the *Oracle Utilities Mobile Workforce Management User's Guide* for more information about creating the following types of data.

External System

You need to create an External System for Service Order Management in order for Oracle Utilities Mobile Workforce Management to communicate with it. The minimum information that must be defined for each of these external systems is outlined below.

Service Management.:

- **Description:** Oracle Utilities Service Order Management
- **Our Name In Their System:** MWM

Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for details regarding outbound message and XAI Senders associated with this external system.

Enable Service for Meters

This section outlines the data setup required to support the Enable Service process for meters. See **Data Setup for All Processes** on page 3-2 for information about data setup used by all services.

Customer Care and Billing

This section describes the setup required in Oracle Utilities Customer Care and Billing to support the Enable Service process for meters.

Refer to the *Oracle Utilities Customer Care and Billing Administration Guide* for more information about creating the following types of data.

Field Activity Type

The "Fieldwork Orchestration" field on Field Activity Type records is used to define how the field work is managed for field activities of this type. Valid values are defined in the EXT_SRV_REQ_FLG lookup, and include:

- **Customer Care and Billing** indicates that Oracle Utilities Customer Care and Billing will be used to orchestrate field work based on FA Type Profile, customer event and service point condition.
- **Service Order Management** indicates that Oracle Utilities Customer Care and Billing will create generic field activities that are routed to an external service request system. Orchestration of the actual field work request is managed by the external system.

Set the "Fieldwork Orchestration" field to "Service Order Management" for each Field Activity Type where the field work request will be managed by Service Order Management.

Example: **Activity Type:** SOM-START

Main Tab:

- **Description:** SOM - Start Activity
- **Field Activity Priority:** Priority 50
- **Field Service Class:** Meter Shop
- **Fieldwork Orchestration:** Service Order Management
- **Eligible for Dispatch:**
- **Appointment Booking:** Not Applicable
- **Display as Alert:**
- **Nbr Days Alert Active:** 0

Note: The example above does not capture the complete list of fields and their corresponding values.

Field Activity Type Profile

Field Activity Type Profiles should reference applicable Service Order Management-enabled Field Activity Types (see above).

Example - **Field Activity Type Profile:** METERED

Main Tab:

- **Description:** Metered Service
- **FA Profile Template:** Start Service

Template Tab:

- **Customer Event:** Start Service
 - **SP Field Condition:** External Fieldwork Orchestration
 - **Sequence:** 10
 - **Not Activity:**
 - **Disconnect Location:**
 - **Activity Type:** SOM-START

Type Tab:

- **Field Activity Type:** SOM-START

Note: The example above does not capture the complete list of fields and their corresponding values.

Service Order Management

This section describes the setup required in Service Order Management to support the Enable Service process for meters.

Refer to the *Oracle Utilities Service and Measurement Data User's Guide* for more information about creating the following types of data.

Field Task Type

The Enable Service process for meter uses the following Field Task Types (defined as values for the D1-FieldTaskTypeLookup extendable lookup).

- Connect SP at Source: D1-ConnectSPAtSource
- Connect SP at Meter: D1-ConnectSPAtMeter
- Connect SP at Source and Turn On: D1-ConnectSPAtSourceAndTurnOn
- Connect SP at Meter and Turn On: D1-ConnectSPAtMeterAndTurnOn
- Connect SP at Source and Install Meter: D1-ConnSPAtSrceAndInstMtr
- Connect SP at Meter and Install Meter: D1-ConnSPAtMtrAndInstMtr
- Install Meter: D1-InstallMeter
- Turn On Meter: D1-TurnOnMeter

Example: **Field Task Type:** D1-ConnectSPAtSource

- **Field Task Type:** D1-ConnectSPAtSource
- **Status:** Active
- **Description:** Connect SP at Source
- **Routing:** SP Required
- **Appointment Option:** Not Applicable
- **Duplicate Task Type Information:**
 - **Allow Duplicates:** Yes
- **Conflicting Task Type Information:**
 - **Allow Conflicts:** Yes
- **Processing Scripts:**
 - **CIS Data Retriever:** Service Order - Retrieve CIS Data

- **Internal Retriever:** Service Order - Retrieve Internal Data
- **Criteria Script:** Service Order - Retrieve Criteria Value
- **External System Identifier Retriever:** Service Order - Populate External System and Identifiers
- **Completion Events When Successful:**

Field	Business Object	Required
10	Connect SP - Field Work Completion	Yes
20	Update SP - Field work Completion	No
30	Update Device - Field Work Completion	No
40	Create To Do with Crew Message	No
50	Notify Requestor of Customer Contact	No

- **Completion Events When Canceled:**
N/A

Activity Type

You must create an Activity Type for the Enable Service process.

Example: **Activity Type:** Enable Service

- **Activity Type:** ENABLESERVICE
- **Description:** Enable Service Activity Type
- **Activity Type Status:** Active
- **Activity Expiration Days:** 10
- **Override Device/Task Algorithm:**
- **Customer Device Compatibility Algorithm:**
- **Exception Handling:**
 - **To Do Type:** Activity To Do Type
 - **To Do Role:** System Default Role
 - **Retry Frequency:** 00:10:00
 - **Maximum Retries:** 2
 - **Discard Reason:**
- **Find Measurement Criteria:**
 - **Field Read Option:** Use on Service Date
 - **Prorate Fail Action:** Use Field Read
 - **To Do Type:**
 - **To Do Role:**
 - **Search Within the Day:** No
 - **Minimum Offset Days:** 2
 - **Maximum Offset Days:** 2

Mobile Workforce Management

This section describes the setup required in Service Order Management to support the Enable Service process for meters.

Refer to the *Oracle Utilities Mobile Workforce Management User's Guide* for more information about creating the following types of data.

Task Type

You must create task types that correspond to the field task types defined in Service Order Management.

For example, the "Turn On Meter" field task type in Service Order Management could be mapped to an "Electric Turn On Meter" task type in Oracle Utilities Mobile Workforce Management.

Mappings between Service Order Management field task types and Oracle Utilities Mobile Workforce Management task types are defined using the SOM_MWM_TaskType domain value map (DVM). Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for more information about this DVM.

Example: **Task Type:** E-ON

- **Activity Type:** E-ON
- **Description:** Electric Turn On Meter
- **Status:** Active
- **Average Duration:** 00:10:00
- **Auto Dispatch:** Yes
- **Acknowledgement Required:** No
- **Work Calendar:** Default
- **Eligible for Contracting:** No
- **Eligible for Assist:** No
- **Allow Breaks:** No
- **Allow Crew Time:** No
- **Activity Business Object:** Activity
- **Priority:**
 - **Queue:** Normal
 - **Preferred Time Factor:** 1
 - **Ignore Sequence Locking:** No
 - **Priority Profile:** High
 - **Scheduling Priority:** 1.00
- **Procedures:**
 - **Procedure Clearance Required:** Yes
 - **Procedure Type:** Meter Work Procedure
- **Activities Creation:**
 - **Create by Crew:** Allowed
- **Activity Expiration:**
 - **Auto Extension:** No

- **Auto Cancel:** No
- **Capabilities:**
 - **Crew Size:** 1
 - **Worker Capability:** Electric Meter Reading, Usage: Required, Count: 1
 - **Equipment:** Basic Service Tools, Usage: Required
- **Valid Remark Types:**
 - **Remark Type:** Mark for Review, Sort Sequence: 1

Note: The example above does not capture the complete list of fields and their corresponding values.

Enable Service for Items

This section outlines the data setup required to support the Enable Service process for items. See **Data Setup for All Processes** on page 3-2 for information about data setup used by all services.

Customer Care and Billing

This section describes the setup required in Oracle Utilities Customer Care and Billing to support the Enable Service process for items.

Refer to the *Oracle Utilities Customer Care and Billing Administration Guide* for more information about creating the following types of data.

Field Activity Type

The "Fieldwork Orchestration" field on Field Activity Type records is used to define how the field work is managed for field activities of this type. Valid values are defined in the EXT_SRV_REQ_FLG lookup, and include:

- **Customer Care and Billing** indicates that Oracle Utilities Customer Care and Billing will be used to orchestrate field work based on FA Type Profile, customer event and service point condition.
- **Service Order Management** indicates that Oracle Utilities Customer Care and Billing will create generic field activities that are routed to an external service request system. Orchestration of the actual field work request is managed by the external system.

Set the "Fieldwork Orchestration" field to "Service Order Management" for each Field Activity Type where the field work request will be managed by Service Order Management.

Example: **Activity Type:** SOM-STRIT

Main Tab:

- **Description:** SOM - Start Item Activity
- **Field Activity Priority:** Priority 50
- **Field Service Class:** Meter Shop
- **Fieldwork Orchestration:** Service Order Management
- **Eligible for Dispatch:**
- **Appointment Booking:** Not Applicable
- **Display as Alert:**
- **Nbr Days Alert Active:** 0

Note: The example above does not capture the complete list of fields and their corresponding values.

Field Activity Type Profile

Field Activity Type Profiles should reference applicable Service Order Management-enabled Field Activity Types (see above).

Example - **Field Activity Type Profile:** ITEM

Main Tab:

- **Description:** Badged Item Service
- **FA Profile Template:** Start Service

Template Tab:

- **Customer Event:** Start Service
 - **SP Field Condition:** External Fieldwork Orchestration
 - **Sequence:** 10
 - **Not Activity:**
 - **Disconnect Location:**
 - **Activity Type:** SOM-STRIT

Type Tab:

- **Field Activity Type:** SOM-STRIT

Note: The example above does not capture the complete list of fields and their corresponding values.

Service Order Management

This section describes the setup required in Service Order Management to support the Enable Service process for items

Refer to the *Oracle Utilities Service and Measurement Data User's Guide* for more information about creating the following types of data.

Field Task Type

The Enable Service process for items uses the following Field Task Types (defined as values for the D1-FieldTaskTypeLookup extendable lookup).

- Connect SP at Source: D1-ConnectSPAtSource
- Item - Connect SP at Device: D1-ConnectSPAtDevice
- Item - Connect SP at Source and Turn On: D1-ConnSPAtSrceAndTurnOnDvc
- Item - Connect SP at Device and Turn On: D1-ConnectSPAtDvcAndTurnOn
- Connect SP at Source and Install Device: D1-ConnSPAtSrceAndInstDvc
- Connect SP at Device and Install Device: D1-ConnSPAtDvcAndInstDvc
- Item - Install Device: D1-InstallDevice
- Turn On Item: D1-TurnOnItem

Example: **Field Task Type:** D1-ConnectSPAtDevice

- **Field Task Type:** D1-ConnectSPAtDevice
- **Status:** Active
- **Description:** Item - Connect SP at Device
- **Routing:** SP Required
- **Appointment Option:** Not Applicable
- **Duplicate Task Type Information:**
 - **Allow Duplicates:** Yes
- **Conflicting Task Type Information:**
 - **Allow Conflicts:** Yes
- **Processing Scripts:**
 - **CIS Data Retriever:** Service Order - Retrieve CIS Data

- **Internal Retriever:** Service Order - Retrieve Internal Data
- **Criteria Script:** Service Order - Retrieve Criteria Value
- **External System Identifier Retriever:** Service Order - Populate External System and Identifiers
- **MDM Data Retriever:** Service Order - Retrieve Meter Data Details

- **Completion Events When Successful:**

Field	Business Object	Required
10	Connect SP - Field Work Completion	Yes
20	Update SP - Field work Completion	No
30	Update Item - Field Work Completion	No
40	Create To Do with Crew Message	No
50	Notify Requestor of Customer Contact	No

- **Completion Events When Canceled:**

N/A

Activity Type

You must create an Activity Type for the Enable Service process.

Example: **Activity Type:** Enable Service

- **Activity Type:** ENABLESERVICE
- **Description:** Enable Service Activity Type
- **Activity Type Status:** Active
- **Activity Expiration Days:** 10
- **Override Device/Task Algorithm:**
- **Customer Device Compatibility Algorithm:**
- **Exception Handling:**
 - **To Do Type:** Activity To Do Type
 - **To Do Role:** System Default Role
 - **Retry Frequency:** 00:10:00
 - **Maximum Retries:** 2
 - **Discard Reason:**
- **Find Measurement Criteria:**
 - **Field Read Option:** Use on Service Date
 - **Prorate Fail Action:** Use Field Read
 - **To Do Type:**
 - **To Do Role:**
 - **Search Within the Day:** No
 - **Minimum Offset Days:** 2
 - **Maximum Offset Days:** 2

Mobile Workforce Management

This section describes the setup required in Service Order Management to support the Enable Service process for items.

Refer to the *Oracle Utilities Mobile Workforce Management User's Guide* for more information about creating the following types of data.

Task Type

You must create task types that correspond to the field task types defined in Service Order Management.

For example, the "Turn On Item" field task type in Service Order Management could be mapped to an "Electric Turn On Item" task type in Oracle Utilities Mobile Workforce Management.

Mappings between Service Order Management field task types and Oracle Utilities Mobile Workforce Management task types are defined using the SOM_MWM_TaskType domain value map (DVM). Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for more information about this DVM.

Example: **Task Type:** E-ONITEM

- **Activity Type:** E-ONITEM
- **Description:** Electric Turn On Item
- **Status:** Active
- **Average Duration:** 00:10:00
- **Auto Dispatch:** Yes
- **Acknowledgement Required:** No
- **Work Calendar:** Default
- **Eligible for Contracting:** No
- **Eligible for Assist:** No
- **Allow Breaks:** No
- **Allow Crew Time:** No
- **Activity Business Object:** Activity
- **Priority:**
 - **Queue:** Normal
 - **Preferred Time Factor:** 1
 - **Ignore Sequence Locking:** No
 - **Priority Profile:** High
 - **Scheduling Priority:** 1.00
- **Procedures:**
 - **Procedure Clearance Required:** Yes
 - **Procedure Type:** Meter Work Procedure
- **Activities Creation:**
 - **Create by Crew:** Allowed
- **Activity Expiration:**
 - **Auto Extension:** No

- **Auto Cancel:** No
- **Capabilities:**
 - **Crew Size:** 1
 - **Worker Capability:** Electric Meter Reading, Usage: Required, Count: 1
 - **Equipment:** Basic Service Tools, Usage: Required
- **Valid Remark Types:**
 - **Remark Type:** Mark for Review, Sort Sequence: 1

Note: The example above does not capture the complete list of fields and their corresponding values.

Disable Service for Meters

This section outlines the data setup required to support the Disable Service process for meters. See **Data Setup for All Processes** on page 3-2 for information about data setup used by all services.

Customer Care and Billing

This section describes the setup required in Oracle Utilities Customer Care and Billing to support the Disable Service process for meters.

Refer to the *Oracle Utilities Customer Care and Billing Administration Guide* for more information about creating the following types of data.

Field Activity Type

The "Fieldwork Orchestration" field on Field Activity Type records is used to define how the field work is managed for field activities of this type. Valid values are defined in the EXT_SRV_REQ_FLG lookup, and include:

- **Customer Care and Billing** indicates that Oracle Utilities Customer Care and Billing will be used to orchestrate field work based on FA Type Profile, customer event and service point condition.
- **Service Order Management** indicates that Oracle Utilities Customer Care and Billing will create generic field activities that are routed to an external service request system. Orchestration of the actual field work request is managed by the external system.

Set the "Fieldwork Orchestration" field to "Service Order Management" for each Field Activity Type where the field work request will be managed by Service Order Management.

Example: **Activity Type:** SOM-STOP

Main Tab:

- **Description:** SOM - Stop Activity
- **Field Activity Priority:** Priority 50
- **Field Service Class:** Meter Shop
- **Fieldwork Orchestration:** Service Order Management
- **Eligible for Dispatch:**
- **Appointment Booking:** Not Applicable
- **Display as Alert:**
- **Nbr Days Alert Active:** 0

Note: The example above does not capture the complete list of fields and their corresponding values.

Field Activity Type Profile

Field Activity Type Profiles should reference applicable Service Order Management-enabled Field Activity Types (see above).

Example - **Field Activity Type Profile:** METERED

Main Tab:

- **Description:** Metered Service
- **FA Profile Template:** Stop Service

Template Tab:

- **Customer Event:** Start Service
 - **SP Field Condition:** External Fieldwork Orchestration
 - **Sequence:** 10
 - **Not Activity:**
 - **Disconnect Location:**
 - **Activity Type:** SOM-STOP

Type Tab:

- **Field Activity Type:** SOM-STOP

Note: The example above does not capture the complete list of fields and their corresponding values.

Service Order Management

This section describes the setup required in Service Order Management to support the Disable Service process.

Refer to the *Oracle Utilities Service and Measurement Data User's Guide* for more information about creating the following types of data.

Field Task Type

The Disable Service process for meter uses the following Field Task Types (defined as values for the D1-FieldTaskTypeLookup extendable lookup).

- Turn Off Meter: D1-TurnOffMeter

Example: **Field Task Type:** D1-TurnOffMeter

- **Field Task Type:** D1-TurnOffMeter
- **Status:** Active
- **Description:** Turn Off Meter
- **Routing:** SP Required
- **Appointment Option:** Not Applicable
- **Duplicate Task Type Information:**
 - **Allow Duplicates:** Yes
- **Conflicting Task Type Information:**
 - **Allow Conflicts:** Yes
- **Processing Scripts:**
 - **Criteria Script:** Service Order - Retrieve Criteria Value
- **Completion Events When Successful:**

Field	Business Object	Required
10	Disconnect Device - Field Work Completion	Yes
20	Create Field Work IMD Completion Event	Yes
30	Update SP - Field Work Completion	No
40	Update Device - Field Work Completion	No

Field	Business Object	Required
50	Create To Do with Crew Message	No
60	Notify Requestor of Customer Contact	No

- **Completion Events When Canceled:**

N/A

Activity Type

You must create an Activity Type for the Disable Service process.

Example: **Activity Type:** Disable Service

- **Activity Type:** DISABLESERVICE
- **Description:** Disable Service Activity Type
- **Activity Type Status:** Active
- **Activity Expiration Days:** 10
- **Override Device/Task Algorithm:**
- **Customer Device Compatibility Algorithm:**
- **Exception Handling:**
 - **To Do Type:** Activity To Do Type
 - **To Do Role:** System Default Role
 - **Retry Frequency:** 00:10:00
 - **Maximum Retries:** 2
 - **Discard Reason:**
- **Find Measurement Criteria:**
 - **Field Read Option:** Use on Service Date
 - **Prorate Fail Action:** Use Field Read
 - **To Do Type:**
 - **To Do Role:**
 - **Search Within the Day:** No
 - **Minimum Offset Days:** 2
 - **Maximum Offset Days:** 2

Mobile Workforce Management

This section describes the setup required in Service Order Management to support the Enable Service process for meters.

Refer to the *Oracle Utilities Mobile Workforce Management User's Guide* for more information about creating the following types of data.

Task Type

You must create task types that correspond to the field task types defined in Service Order Management.

For example, the "Turn Off Meter" field task type in Service Order Management could be mapped to an "Electric Turn Off Meter" task type in Oracle Utilities Mobile Workforce Management.

Mappings between Service Order Management field task types and Oracle Utilities Mobile Workforce Management task types are defined using the SOM_MWM_TaskType domain value map (DVM). Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for more information about this DVM.

Example: **Task Type:** E-OFF

- **Activity Type:** E-OFF
- **Description:** Electric Turn Off Meter
- **Status:** Active
- **Average Duration:** 00:10:00
- **Auto Dispatch:** Yes
- **Acknowledgement Required:** No
- **Work Calendar:** Default
- **Eligible for Contracting:** No
- **Eligible for Assist:** No
- **Allow Breaks:** No
- **Allow Crew Time:** No
- **Activity Business Object:** Activity
- **Priority:**
 - **Queue:** Normal
 - **Preferred Time Factor:** 1
 - **Ignore Sequence Locking:** No
 - **Priority Profile:** High
 - **Scheduling Priority:** 1.00
- **Procedures:**
 - **Procedure Clearance Required:** Yes
 - **Procedure Type:** Meter Work Procedure
- **Activities Creation:**
 - **Create by Crew:** Allowed
- **Activity Expiration:**
 - **Auto Extension:** No

- **Auto Cancel:** No
- **Capabilities:**
 - **Crew Size:** 1
 - **Worker Capability:** Electric Meter Reading, Usage: Required, Count: 1
 - **Equipment:** Basic Service Tools, Usage: Required
- **Valid Remark Types:**
 - **Remark Type:** Mark for Review, Sort Sequence: 1

Note: The example above does not capture the complete list of fields and their corresponding values.

Disable Service for Items

This section outlines the data setup required to support the Disable Service process for items. See **Data Setup for All Processes** on page 3-2 for information about data setup used by all services.

Customer Care and Billing

This section describes the setup required in Oracle Utilities Customer Care and Billing to support the Disable Service process for items.

Refer to the *Oracle Utilities Customer Care and Billing Administration Guide* for more information about creating the following types of data.

Field Activity Type

The "Fieldwork Orchestration" field on Field Activity Type records is used to define how the field work is managed for field activities of this type. Valid values are defined in the EXT_SRV_REQ_FLG lookup, and include:

- **Customer Care and Billing** indicates that Oracle Utilities Customer Care and Billing will be used to orchestrate field work based on FA Type Profile, customer event and service point condition.
- **Service Order Management** indicates that Oracle Utilities Customer Care and Billing will create generic field activities that are routed to an external service request system. Orchestration of the actual field work request is managed by the external system.

Set the "Fieldwork Orchestration" field to "Service Order Management" for each Field Activity Type where the field work request will be managed by Service Order Management.

Example: **Activity Type:** SOM-STPIT

Main Tab:

- **Description:** SOM - Stop Item Activity
- **Field Activity Priority:** Priority 50
- **Field Service Class:** Meter Shop
- **Fieldwork Orchestration:** Service Order Management
- **Eligible for Dispatch:**
- **Appointment Booking:** Not Applicable
- **Display as Alert:**
- **Nbr Days Alert Active:** 0

Note: The example above does not capture the complete list of fields and their corresponding values.

Field Activity Type Profile

Field Activity Type Profiles should reference applicable Service Order Management-enabled Field Activity Types (see above).

Example - **Field Activity Type Profile:** ITEM

Main Tab:

- **Description:** Badged Item Service
- **FA Profile Template:** Stop Service

Template Tab:

- **Customer Event:** Start Service
 - **SP Field Condition:** External Fieldwork Orchestration
 - **Sequence:** 10
 - **Not Activity:**
 - **Disconnect Location:**
 - **Activity Type:** SOM-STPIT

Type Tab:

- **Field Activity Type:** SOM-STPIT

Note: The example above does not capture the complete list of fields and their corresponding values.

Service Order Management

This section describes the setup required in Service Order Management to support the Disable Service process for items.

Refer to the *Oracle Utilities Service and Measurement Data User's Guide* for more information about creating the following types of data.

Field Task Type

The Disable Service process for items uses the following Field Task Types (defined as values for the D1-FieldTaskTypeLookup extendable lookup).

- Turn Off Item: D1-TurnOffItem

Example: **Field Task Type:** D1-TurnOffItem

- **Field Task Type:** D1-TurnOffItem
- **Status:** Active
- **Description:** Turn Off Item
- **Routing:** SP Required
- **Appointment Option:** Not Applicable
- **Duplicate Task Type Information:**
 - **Allow Duplicates:** Yes
- **Conflicting Task Type Information:**
 - **Allow Conflicts:** Yes
- **Processing Scripts:**
 - **Criteria Script:** Service Order - Retrieve Criteria Value
- **Completion Events When Successful:**

Field	Business Object	Required
10	Disconnect Item - Field Work Completion	Yes
20	Update Item - Field Work Completion	No
30	Create To Do with Crew Message	No
40	Notify Requestor of Customer Contact	No

- **Completion Events When Canceled:**

N/A

Activity Type

You must create an Activity Type for the Disable Service process.

Example: **Activity Type:** Disable Service

- **Activity Type:** DISABLESERVICE
- **Description:** Disable Service Activity Type
- **Activity Type Status:** Active
- **Activity Expiration Days:** 10
- **Override Device/Task Algorithm:**
- **Customer Device Compatibility Algorithm:**
- **Exception Handling:**
 - **To Do Type:** Activity To Do Type
 - **To Do Role:** System Default Role
 - **Retry Frequency:** 00:10:00
 - **Maximum Retries:** 2
 - **Discard Reason:**
- **Find Measurement Criteria:**
 - **Field Read Option:** Use on Service Date
 - **Prorate Fail Action:** Use Field Read
 - **To Do Type:**
 - **To Do Role:**
 - **Search Within the Day:** No
 - **Minimum Offset Days:** 2
 - **Maximum Offset Days:** 2

Mobile Workforce Management

This section describes the setup required in Service Order Management to support the Disable Service process for items.

Refer to the *Oracle Utilities Mobile Workforce Management User's Guide* for more information about creating the following types of data.

Task Type

You must create task types that correspond to the field task types defined in Service Order Management.

For example, the "Turn Off Item" field task type in Service Order Management could be mapped to an "Electric Turn Off Item" task type in Oracle Utilities Mobile Workforce Management.

Mappings between Service Order Management field task types and Oracle Utilities Mobile Workforce Management task types are defined using the SOM_MWM_TaskType domain value map (DVM). Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for more information about this DVM.

Example: **Task Type:** E-OFFITEM

- **Activity Type:** E-OFFITEM
- **Description:** Electric Turn Off Item
- **Status:** Active
- **Average Duration:** 00:10:00
- **Auto Dispatch:** Yes
- **Acknowledgement Required:** No
- **Work Calendar:** Default
- **Eligible for Contracting:** No
- **Eligible for Assist:** No
- **Allow Breaks:** No
- **Allow Crew Time:** No
- **Activity Business Object:** Activity
- **Priority:**
 - **Queue:** Normal
 - **Preferred Time Factor:** 1
 - **Ignore Sequence Locking:** No
 - **Priority Profile:** High
 - **Scheduling Priority:** 1.00
- **Procedures:**
 - **Procedure Clearance Required:** Yes
 - **Procedure Type:** Meter Work Procedure
- **Activities Creation:**
 - **Create by Crew:** Allowed
- **Activity Expiration:**
 - **Auto Extension:** No
 - **Auto Cancel:** No
- **Capabilities:**
 - **Crew Size:** 1
 - **Worker Capability:** Electric Meter Reading, Usage: Required, Count: 1
 - **Equipment:** Basic Service Tools, Usage: Required
- **Valid Remark Types:**
 - **Remark Type:** Mark for Review, Sort Sequence: 1

Note: The example above does not capture the complete list of fields and their corresponding values.

Cut Service for Non-Payment for Meters

This section outlines the data setup required to support the Cut Service for Non-Payment process for meters. See **Data Setup for All Processes** on page 3-2 for information about data setup used by all services.

Customer Care and Billing

This section describes the setup required in Oracle Utilities Customer Care and Billing to support the Cut Service for Non-Payment process for meters.

Refer to the *Oracle Utilities Customer Care and Billing Administration Guide* for more information about creating the following types of data.

Field Activity Type

The "Fieldwork Orchestration" field on Field Activity Type records is used to define how the field work is managed for field activities of this type. Valid values are defined in the EXT_SRV_REQ_FLG lookup, and include:

- **Customer Care and Billing** indicates that Oracle Utilities Customer Care and Billing will be used to orchestrate field work based on FA Type Profile, customer event and service point condition.
- **Service Order Management** indicates that Oracle Utilities Customer Care and Billing will create generic field activities that are routed to an external service request system. Orchestration of the actual field work request is managed by the external system.

Set the "Fieldwork Orchestration" field to "Service Order Management" for each Field Activity Type where the field work request will be managed by Service Order Management.

Example: **Activity Type:** SOM-CUT

Main Tab:

- **Description:** SOM - Cut for Non-Payment Activity
- **Field Activity Priority:** Priority 50
- **Field Service Class:** Meter Shop
- **Fieldwork Orchestration:** Service Order Management
- **Eligible for Dispatch:**
- **Appointment Booking:** Not Applicable
- **Display as Alert:**
- **Nbr Days Alert Active:** 10
- **Alert Information:** Cut for non-payment within 10 days

Note: The example above does not capture the complete list of fields and their corresponding values.

Field Activity Type Profile

Field Activity Type Profiles should reference applicable Service Order Management-enabled Field Activity Types (see above).

Example - **Field Activity Type Profile:** METERED

Main Tab:

- **Description:** Metered Service
- **FA Profile Template:** Cut for Non-Payment

Template Tab:

- **Customer Event:** Cut for Non-Payment
 - **SP Field Condition:** External Fieldwork Orchestration
 - **Sequence:** 10
 - **Not Activity:**
 - **Disconnect Location:**
 - **Activity Type:** SOM-CUT

Type Tab:

- **Field Activity Type:** SOM-CUT

Note: The example above does not capture the complete list of fields and their corresponding values.

Service Order Management

This section describes the setup required in Service Order Management to support the Cut Service for Non-Payment process for meters.

Refer to the *Oracle Utilities Service and Measurement Data User's Guide* for more information about creating the following types of data.

Field Task Type

The Cut Service for Non-Payment process for meter uses the following Field Task Types (defined as values for the D1-FieldTaskTypeLookup extendable lookup).

- Cut for Non-Payment: D1-CutForNonPayment

Example: **Field Task Type:** D1-CutForNonPayment

- **Field Task Type:** D1-CutForNonPayment
- **Status:** Active
- **Description:** Cut for Non-Payment
- **Routing:** SP Required
- **Appointment Option:** Not Applicable
- **Duplicate Task Type Information:**
 - **Allow Duplicates:** Yes
- **Conflicting Task Type Information:**
 - **Allow Conflicts:** Yes
- **Processing Scripts:**
 - **CIS Data Retriever:** Service Order - Retrieve CIS Data
 - **Internal Retriever:** Service Order - Retrieve Internal Data
 - **Criteria Script:** Service Order - Retrieve Criteria Value
 - **External System Identifier Retriever:** Service Order - Populate External System and Identifiers

- **Completion Events When Successful:**

Field	Business Object	Required
10	Disconnect Device - Field Work Completion	Yes
20	Create FA IMD Completion Event	Yes
30	Update SP - Field Work Completion	No
40	Update Device - Field Work Completion	No
50	Create To Do with Crew Message	No
60	Notify Requestor of Customer Contact	No

- **Completion Events When Canceled:**

N/A

Activity Type

You must create an Activity Type for the Cut Service for Non-Payment process.

Example: **Activity Type:** Cut Service for Non-Payment

- **Activity Type:** CUTNOPAY
- **Description:** Cut Service for Non-Payment
- **Activity Type Status:** Active
- **Activity Expiration Days:** 10
- **Always Dispatch Field Activity:** No
- **Ensure Business Hours:** Yes
- **Work Calendar:** US Work Calendar
- **Start Hour:** 10:00AM
- **End Hour:** 06:00PM
- **Exception Handling:**
 - **To Do Type:** Activity To Do Type
 - **To Do Role:** System Default Role
 - **Retry Frequency:** 00:10:00
 - **Maximum Retries:** 4
 - **Discard Reason:**
- **Find Measurement Criteria:**
 - **Field Read Option:** Use on Service Date
 - **Prorate Fail Action:** Use Field Read
 - **To Do Type:**
 - **To Do Role:**
 - **Search Within the Day:** No
 - **Minimum Offset Days:** 0
 - **Maximum Offset Days:** 5

Mobile Workforce Management

This section describes the setup required in Service Order Management to support the Cut Service for Non-Payment process for meters.

Refer to the *Oracle Utilities Mobile Workforce Management User's Guide* for more information about creating the following types of data.

Task Type

You must create task types that correspond to the field task types defined in Service Order Management.

For example, the "Cut Service for Non-Payment" field task type in Service Order Management could be mapped to an "Meter for Non-Payment" task type in Oracle Utilities Mobile Workforce Management.

Mappings between Service Order Management field task types and Oracle Utilities Mobile Workforce Management task types are defined using the SOM_MWM_TaskType domain value map (DVM). Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for more information about this DVM.

Example: **Task Type:** SOM-CUTFORNOPAY

- **Activity Type:** SOM-CUTFORNONPAY
- **Description:** SOM Cut Meter for Non-Payment
- **Status:** Active
- **Average Duration:** 00:40:00
- **Auto Dispatch:** Yes
- **Acknowledgement Required:** No
- **Appointment Booking Group:** Weekday All Day
- **Work Calendar:** US Work Calendar
- **Eligible for Contracting:** No
- **Eligible for Assist:** No
- **Allow Breaks:** No
- **Allow Crew Time:** No
- **Activity Business Object:** Cut For Non-Payment Meter Activity
- **Host Reference:** D1-CutForNonPayment
- **Host System:** Oracle Utilities Service Order Management
- **Priority:**
 - **Queue:** Normal
 - **Preferred Time Factor:** 1
 - **Ignore Sequence Locking:** No
 - **Priority Profile:** Mandatory
 - **Scheduling Priority:** 1.00
- **Procedures:**
 - **Procedure Clearance Required:** No
- **Activity Expiration:**

- **Auto Extension:** No
- **Auto Cancel:** No
- **Capabilities:**
 - **Crew Size:** 1
 - **Worker Capability:** Electric Meter Reading, Usage: Required, Count: 1
 - **Equipment:** Basic Service Tools, Usage: Required
- **Valid Remark Types:**
 - **Remark Type:** Mark for Review, Sort Sequence: 1

Note: The example above does not capture the complete list of fields and their corresponding values.

Cut Service for Non-Payment for Items

This section outlines the data setup required to support the Cut Service for Non-Payment process for items. See **Data Setup for All Processes** on page 3-2 for information about data setup used by all services.

Customer Care and Billing

This section describes the setup required in Oracle Utilities Customer Care and Billing to support the Cut Service for Non-Payment process for items.

Refer to the *Oracle Utilities Customer Care and Billing Administration Guide* for more information about creating the following types of data.

Field Activity Type

The "Fieldwork Orchestration" field on Field Activity Type records is used to define how the field work is managed for field activities of this type. Valid values are defined in the EXT_SRV_REQ_FLG lookup, and include:

- **Customer Care and Billing** indicates that Oracle Utilities Customer Care and Billing will be used to orchestrate field work based on FA Type Profile, customer event and service point condition.
- **Service Order Management** indicates that Oracle Utilities Customer Care and Billing will create generic field activities that are routed to an external service request system. Orchestration of the actual field work request is managed by the external system.

Set the "Fieldwork Orchestration" field to "Service Order Management" for each Field Activity Type where the field work request will be managed by Service Order Management.

Example: **Activity Type:** SOM-CUTTT

Main Tab:

- **Description:** SOM Item - Cut for Non-Payment Activity
- **Field Activity Priority:** Priority 50
- **Field Service Class:** Meter Shop
- **Fieldwork Orchestration:** Service Order Management
- **Eligible for Dispatch:**
- **Appointment Booking:** Not Applicable
- **Display as Alert:**
- **Nbr Days Alert Active:** 10
- **Alert Information:** Cut for non-payment within 10 days

Note: The example above does not capture the complete list of fields and their corresponding values.

Field Activity Type Profile

Field Activity Type Profiles should reference applicable Service Order Management-enabled Field Activity Types (see above).

Example - **Field Activity Type Profile:** METERED

Main Tab:

- **Description:** Badged Item Service
- **FA Profile Template:** Cut for Non-Payment

Template Tab:

- **Customer Event:** Cut for Non-Payment
 - **SP Field Condition:** External Fieldwork Orchestration
 - **Sequence:** 10
 - **Not Activity:**
 - **Disconnect Location:**
 - **Activity Type:** SOM-CUTTT

Type Tab:

- **Field Activity Type:** SOM-CUTTT

Note: The example above does not capture the complete list of fields and their corresponding values.

Service Order Management

This section describes the setup required in Service Order Management to support the Cut Service for Non-Payment process for items.

Refer to the *Oracle Utilities Service and Measurement Data User's Guide* for more information about creating the following types of data.

Field Task Type

The Cut Service for Non-Payment process for meter uses the following Field Task Types (defined as values for the D1-FieldTaskTypeLookup extendable lookup).

- Item - Cut for Non-Payment: D1-CutItemForNonPayment

Example: **Field Task Type:** D1-CutItemForNonPayment

- **Field Task Type:** D1-CutItemForNonPayment
- **Status:** Active
- **Description:** Item - Cut for Non-Payment
- **Routing:** SP Required
- **Appointment Option:** Not Applicable
- **Duplicate Task Type Information:**
 - **Allow Duplicates:** Yes
- **Conflicting Task Type Information:**
 - **Allow Conflicts:** Yes
- **Processing Scripts:**
 - **CIS Data Retriever:** Service Order - Retrieve CIS Data
 - **Internal Retriever:** Service Order - Retrieve Internal Data
 - **Criteria Script:** Service Order - Retrieve Criteria Value
 - **External System Identifier Retriever:** Service Order - Populate External System and Identifiers

- **Completion Events When Successful:**

Field	Business Object	Required
10	Disconnect Item - Field Work Completion	Yes
20	Update SP - Field Work Completion	No
30	Update Item - Field Work Completion	No
40	Create To Do with Crew Message	No
50	Notify Requestor of Customer Contact	No

- **Completion Events When Canceled:**

N/A

Activity Type

You must create an Activity Type for the Cut Service for Non-Payment process.

Example: **Activity Type:** Cut Service for Non-Payment

- **Activity Type:** CUTNOPAY
- **Description:** Cut Service for Non-Payment
- **Activity Type Status:** Active
- **Activity Expiration Days:** 10
- **Always Dispatch Field Activity:** No
- **Ensure Business Hours:** Yes
- **Work Calendar:** US Work Calendar
- **Start Hour:** 10:00AM
- **End Hour:** 06:00PM
- **Exception Handling:**
 - **To Do Type:** Activity To Do Type
 - **To Do Role:** System Default Role
 - **Retry Frequency:** 00:10:00
 - **Maximum Retries:** 4
 - **Discard Reason:**
- **Find Measurement Criteria:**
 - **Field Read Option:** Use on Service Date
 - **Prorate Fail Action:** Use Field Read
 - **To Do Type:**
 - **To Do Role:**
 - **Search Within the Day:** No
 - **Minimum Offset Days:** 0
 - **Maximum Offset Days:** 5

Mobile Workforce Management

This section describes the setup required in Service Order Management to support the Cut Service for Non-Payment process for items.

Refer to the *Oracle Utilities Mobile Workforce Management User's Guide* for more information about creating the following types of data.

Task Type

You must create task types that correspond to the field task types defined in Service Order Management.

For example, the "Item - Cut for Non-Payment" field task type in Service Order Management could be mapped to an "Cut Item for Non-Payment" task type in Oracle Utilities Mobile Workforce Management.

Mappings between Service Order Management field task types and Oracle Utilities Mobile Workforce Management task types are defined using the SOM_MWM_TaskType domain value map (DVM). Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for more information about this DVM.

Example: **Task Type:** SOM-CUTTTEMNOPAY

- **Activity Type:** SOM-CUTTTEMNOPAY
- **Description:** SOM Cut Item for Non-Payment
- **Status:** Active
- **Average Duration:** 00:40:00
- **Auto Dispatch:** Yes
- **Acknowledgement Required:** No
- **Appointment Booking Group:** Weekday All Day
- **Work Calendar:** US Work Calendar
- **Eligible for Contracting:** No
- **Eligible for Assist:** No
- **Allow Breaks:** No
- **Allow Crew Time:** No
- **Activity Business Object:** Cut For Non-Payment Item Activity
- **Host Reference:** D1-CutItemForNonPayment
- **Host System:** Oracle Utilities Service Order Management
- **Priority:**
 - **Queue:** Normal
 - **Preferred Time Factor:** 1
 - **Ignore Sequence Locking:** No
 - **Priority Profile:** Mandatory
 - **Scheduling Priority:** 1.00
- **Procedures:**
 - **Procedure Clearance Required:** No
- **Activity Expiration:**

- **Auto Extension:** No
- **Auto Cancel:** No
- **Capabilities:**
 - **Crew Size:** 1
 - **Worker Capability:** Electric Meter Reading, Usage: Required, Count: 1
 - **Equipment:** Basic Service Tools, Usage: Required
- **Valid Remark Types:**
 - **Remark Type:** Mark for Review, Sort Sequence: 1

Note: The example above does not capture the complete list of fields and their corresponding values.

Reconnect Service for Payment for Meters

This section outlines the data setup required to support the Reconnect Service for Payment process for meters. See **Data Setup for All Processes** on page 3-2 for information about data setup used by all services.

Customer Care and Billing

This section describes the setup required in Oracle Utilities Customer Care and Billing to support the Reconnect Service for Payment process for meters.

Refer to the *Oracle Utilities Customer Care and Billing Administration Guide* for more information about creating the following types of data.

Field Activity Type

The "Fieldwork Orchestration" field on Field Activity Type records is used to define how the field work is managed for field activities of this type. Valid values are defined in the EXT_SRV_REQ_FLG lookup, and include:

- **Customer Care and Billing** indicates that Oracle Utilities Customer Care and Billing will be used to orchestrate field work based on FA Type Profile, customer event and service point condition.
- **Service Order Management** indicates that Oracle Utilities Customer Care and Billing will create generic field activities that are routed to an external service request system. Orchestration of the actual field work request is managed by the external system.

Set the "Fieldwork Orchestration" field to "Service Order Management" for each Field Activity Type where the field work request will be managed by Service Order Management.

Example: **Activity Type:** SOM-RECON

Main Tab:

- **Description:** SOM - Reconnect for Payment Activity
- **Field Activity Priority:** Priority 50
- **Field Service Class:** Meter Shop
- **Fieldwork Orchestration:** Service Order Management
- **Eligible for Dispatch:**
- **Appointment Booking:** Not Applicable
- **Display as Alert:**
- **Nbr Days Alert Active:** 10
- **Alert Information:** Cut for non-payment within 10 days

Note: The example above does not capture the complete list of fields and their corresponding values.

Field Activity Type Profile

Field Activity Type Profiles should reference applicable Service Order Management-enabled Field Activity Types (see above).

Example - **Field Activity Type Profile:** METERED

Main Tab:

- **Description:** Metered Service
- **FA Profile Template:** Reconnect for Payment

Template Tab:

- **Customer Event:** Reconnect for Payment
 - **SP Field Condition:** External Fieldwork Orchestration
 - **Sequence:** 10
 - **Not Activity:**
 - **Disconnect Location:**
 - **Activity Type:** SOM-RECON

Type Tab:

- **Field Activity Type:** SOM-RECON

Note: The example above does not capture the complete list of fields and their corresponding values.

Service Order Management

This section describes the setup required in Service Order Management to support the Reconnect Service for Payment process for meters.

Refer to the *Oracle Utilities Service and Measurement Data User's Guide* for more information about creating the following types of data.

Field Task Type

The Reconnect Service for Payment process for meter uses the following Field Task Types (defined as values for the D1-FieldTaskTypeLookup extendable lookup).

- Reconnect for Payment: D1-ReconnectForPayment

Example: **Field Task Type:** D1-ReconnectForPayment

- **Field Task Type:** D1-ReconnectForPayment
- **Status:** Active
- **Description:** Reconnect for Payment
- **Routing:** SP Required
- **Appointment Option:**
- **Duplicate Task Type Information:**
 - **Allow Duplicates:** Yes
- **Conflicting Task Type Information:**
 - **Allow Conflicts:** Yes
- **Processing Scripts:**
 - **CIS Data Retriever:** Service Order - Retrieve CIS Data
 - **Internal Retriever:** Service Order - Retrieve Internal Data
 - **Criteria Script:** Service Order - Retrieve Criteria Value
 - **External System Identifier Retriever:** Service Order - Populate External System and Identifiers

- **Completion Events When Successful:**

Field	Business Object	Required
10	Connect Meter - Field Work Completion	Yes
20	Create FA IMD Completion Event	Yes
30	Update SP - Field Work Completion	No
40	Update Device - Field Work Completion	No
50	Create To Do with Crew Message	No
60	Notify Requestor of Customer Contact	No

- **Completion Events When Canceled:**

N/A

Activity Type

You must create an Activity Type for the Reconnect Service for Payment process.

Example: **Activity Type:** Reconnect Service for Payment

- **Activity Type:** RECONNECTPAY
- **Description:** Reconnect Service for Payment
- **Activity Type Status:** Active
- **Activity Expiration Days:** 2
- **Exception Handling:**
 - **To Do Type:** Activity To Do Type
 - **To Do Role:** System Default Role
 - **Retry Frequency:** 00:10:00
 - **Maximum Retries:** 4
 - **Discard Reason:**
- **Find Measurement Criteria:**
 - **Field Read Option:** Use on Service Date
 - **Prorate Fail Action:** Use Field Read
 - **To Do Type:**
 - **To Do Role:**
 - **Search Within the Day:** No
 - **Minimum Offset Days:** 2
 - **Maximum Offset Days:** 2

Mobile Workforce Management

This section describes the setup required in Service Order Management to support the Reconnect Service for Payment process for meters.

Refer to the *Oracle Utilities Mobile Workforce Management User's Guide* for more information about creating the following types of data.

Task Type

You must create task types that correspond to the field task types defined in Service Order Management.

For example, the "Reconnect for Payment" field task type in Service Order Management could be mapped to an "Reconnect for Payment" task type in Oracle Utilities Mobile Workforce Management.

Mappings between Service Order Management field task types and Oracle Utilities Mobile Workforce Management task types are defined using the SOM_MWM_TaskType domain value map (DVM). Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for more information about this DVM.

Example: **Task Type:** SOM-RECONPAY

- **Activity Type:** SOM-RECONPAY
- **Description:** SOM Reconnect for Payment
- **Status:** Active
- **Average Duration:** 00:40:00
- **Auto Dispatch:** Yes
- **Acknowledgement Required:** No
- **Appointment Booking Group:** Weekday All Day
- **Work Calendar:** US Work Calendar
- **Eligible for Contracting:** No
- **Eligible for Assist:** No
- **Allow Breaks:** No
- **Allow Crew Time:** No
- **Activity Business Object:** Reconnect For Payment Activity
- **Host Reference:** D1-ReconnectForPayment
- **Host System:** Oracle Utilities Service Order Management
- **Priority:**
 - **Queue:** Normal
 - **Preferred Time Factor:** 1
 - **Ignore Sequence Locking:** No
 - **Priority Profile:** Mandatory
 - **Scheduling Priority:** 1.00
- **Procedures:**
 - **Procedure Clearance Required:** No
- **Activity Expiration:**

- **Auto Extension:** No
- **Auto Cancel:** No
- **Capabilities:**
 - **Crew Size:** 1
 - **Worker Capability:** Electric Meter Reading, Usage: Required, Count: 1
 - **Equipment:** Basic Service Tools, Usage: Required
- **Valid Remark Types:**
 - **Remark Type:** Mark for Review, Sort Sequence: 1

Note: The example above does not capture the complete list of fields and their corresponding values.

Reconnect Service for Payment for Items

This section outlines the data setup required to support the Reconnect Service for Payment process for items. See **Data Setup for All Processes** on page 3-2 for information about data setup used by all services.

Customer Care and Billing

This section describes the setup required in Oracle Utilities Customer Care and Billing to support the Reconnect Service for Payment process for items.

Refer to the *Oracle Utilities Customer Care and Billing Administration Guide* for more information about creating the following types of data.

Field Activity Type

The "Fieldwork Orchestration" field on Field Activity Type records is used to define how the field work is managed for field activities of this type. Valid values are defined in the EXT_SRV_REQ_FLG lookup, and include:

- **Customer Care and Billing** indicates that Oracle Utilities Customer Care and Billing will be used to orchestrate field work based on FA Type Profile, customer event and service point condition.
- **Service Order Management** indicates that Oracle Utilities Customer Care and Billing will create generic field activities that are routed to an external service request system. Orchestration of the actual field work request is managed by the external system.

Set the "Fieldwork Orchestration" field to "Service Order Management" for each Field Activity Type where the field work request will be managed by Service Order Management.

Example: **Activity Type:** SOM-RECIT

Main Tab:

- **Description:** SOM - Reconnect Item for Payment Activity
- **Field Activity Priority:** Priority 50
- **Field Service Class:** Meter Shop
- **Fieldwork Orchestration:** Service Order Management
- **Eligible for Dispatch:**
- **Appointment Booking:** Not Applicable
- **Display as Alert:**
- **Nbr Days Alert Active:** 0

Note: The example above does not capture the complete list of fields and their corresponding values.

Field Activity Type Profile

Field Activity Type Profiles should reference applicable Service Order Management-enabled Field Activity Types (see above).

Example - **Field Activity Type Profile:** ITEM

Main Tab:

- **Description:** Badged Item Service
- **FA Profile Template:** Reconnect for Payment

Template Tab:

- **Customer Event:** Reconnect for Payment
 - **SP Field Condition:** External Fieldwork Orchestration
 - **Sequence:** 10
 - **Not Activity:**
 - **Disconnect Location:**
 - **Activity Type:** SOM-RECIT

Type Tab:

- **Field Activity Type:** SOM-RECIT

Note: The example above does not capture the complete list of fields and their corresponding values.

Service Order Management

This section describes the setup required in Service Order Management to support the Reconnect Service for Payment process for items.

Refer to the *Oracle Utilities Service and Measurement Data User's Guide* for more information about creating the following types of data.

Field Task Type

The Reconnect Service for Payment process for items uses the following Field Task Types (defined as values for the D1-FieldTaskTypeLookup extendable lookup).

- Item - Reconnect for Payment: D1-ReconnectItemForPayment

Example: **Field Task Type:** D1-ReconnectItemForPayment

- **Field Task Type:** D1-ReconnectItemForPayment
- **Status:** Active
- **Description:** Reconnect for Payment
- **Routing:** SP Required
- **Appointment Option:**
- **Duplicate Task Type Information:**
 - **Allow Duplicates:** Yes
- **Conflicting Task Type Information:**
 - **Allow Conflicts:** Yes
- **Processing Scripts:**
 - **CIS Data Retriever:** Service Order - Retrieve CIS Data
 - **Internal Retriever:** Service Order - Retrieve Internal Data
 - **Criteria Script:** Service Order - Retrieve Criteria Value
 - **External System Identifier Retriever:** Service Order - Populate External System and Identifiers
- **Completion Events When Successful:**

Field	Business Object	Required
10	Connect Item - Field Work Completion	Yes

Field	Business Object	Required
20	Update SP - Field Work Completion	No
30	Update Item - Field Work Completion	No
40	Create To Do with Crew Message	No
50	Notify Requestor of Customer Contact	No

- **Completion Events When Canceled:**

N/A

Activity Type

You must create an Activity Type for the Reconnect Service for Payment process.

Example: **Activity Type:** Reconnect Service for Payment

- **Activity Type:** RECONNECTPAY
- **Description:** Reconnect Service for Payment
- **Activity Type Status:** Active
- **Activity Expiration Days:** 2
- **Exception Handling:**
 - **To Do Type:** Activity To Do Type
 - **To Do Role:** System Default Role
 - **Retry Frequency:** 00:10:00
 - **Maximum Retries:** 2
 - **Discard Reason:**
- **Find Measurement Criteria:**
 - **Field Read Option:** Use on Service Date
 - **Prorate Fail Action:** Use Field Read
 - **To Do Type:**
 - **To Do Role:**
 - **Search Within the Day:** No
 - **Minimum Offset Days:** 2
 - **Maximum Offset Days:** 2

Mobile Workforce Management

This section describes the setup required in Service Order Management to support the Reconnect Service for Payment process for meters.

Refer to the *Oracle Utilities Mobile Workforce Management User's Guide* for more information about creating the following types of data.

Task Type

You must create task types that correspond to the field task types defined in Service Order Management.

For example, the "Item - Reconnect for Payment" field task type in Service Order Management could be mapped to an "Reconnect Item for Payment" task type in Oracle Utilities Mobile Workforce Management.

Mappings between Service Order Management field task types and Oracle Utilities Mobile Workforce Management task types are defined using the SOM_MWM_TaskType domain value map (DVM). Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for more information about this DVM.

Example: **Task Type:** SOM-RECITPAY

- **Activity Type:** SOM-RECITPAY
- **Description:** SOM Reconnect Item for Payment
- **Status:** Active
- **Average Duration:** 00:40:00
- **Auto Dispatch:** Yes
- **Acknowledgement Required:** No
- **Appointment Booking Group:** Weekday All Day
- **Work Calendar:** US Work Calendar
- **Eligible for Contracting:** No
- **Eligible for Assist:** No
- **Allow Breaks:** No
- **Allow Crew Time:** No
- **Activity Business Object:** Reconnect Item For Payment Activity
- **Host Reference:** D1-ReconnectItemForPayment
- **Host System:** Oracle Utilities Service Order Management
- **Priority:**
 - **Queue:** Normal
 - **Preferred Time Factor:** 1
 - **Ignore Sequence Locking:** No
 - **Priority Profile:** Mandatory
 - **Scheduling Priority:** 1.00
- **Procedures:**
 - **Procedure Clearance Required:** No
- **Activity Expiration:**

- **Auto Extension:** No
- **Auto Cancel:** No
- **Capabilities:**
 - **Crew Size:** 1
 - **Worker Capability:** Electric Meter Reading, Usage: Required, Count: 1
 - **Equipment:** Basic Service Tools, Usage: Required
- **Valid Remark Types:**
 - **Remark Type:** Mark for Review, Sort Sequence: 1

Note: The example above does not capture the complete list of fields and their corresponding values.

Meter Exchange

This section outlines the data setup required to support the Meter Exchange process. See **Data Setup for All Processes** on page 3-2 for information about data setup used by all services.

Customer Care and Billing

This section describes the setup required in Oracle Utilities Customer Care and Billing to support the Meter Exchange process.

Refer to the *Oracle Utilities Customer Care and Billing Administration Guide* for more information about creating the following types of data.

Field Activity Type

The "Fieldwork Orchestration" field on Field Activity Type records is used to define how the field work is managed for field activities of this type. Valid values are defined in the EXT_SRV_REQ_FLG lookup, and include:

- **Customer Care and Billing** indicates that Oracle Utilities Customer Care and Billing will be used to orchestrate field work based on FA Type Profile, customer event and service point condition.
- **Service Order Management** indicates that Oracle Utilities Customer Care and Billing will create generic field activities that are routed to an external service request system. Orchestration of the actual field work request is managed by the external system.

Set the "Fieldwork Orchestration" field to "Service Order Management" for each Field Activity Type where the field work request will be managed by Service Order Management. Meter exchange field activities can include the following:

- SOM - Meter Exchange Program from Manual to Manual (SOM-MXM2M)
- SOM - Meter Exchange Program from Manual to Smart (SOM-MXM2S)
- SOM - Meter Exchange Rollout from Manual to Smart Meter (SOM-MXRMS)
- SOM - Exchange for Faulty Device from Manual to Manual Meter (SOM-XFM2M)
- SOM - Exchange for Faulty Device from Smart to Smart Meter (SOM-XFS2S)
- SOM - Meter Exchange Program from Smart to Smart Meter (SOM-MXS2S)

Example: **Activity Type:** SOM-MXM2S

Main Tab:

- **Description:** SOM - Meter Exchange Program from Manual to Smart
- **Field Activity Priority:** Priority 50
- **Field Service Class:** Meter Shop
- **Fieldwork Orchestration:** Service Order Management
- **Eligible for Dispatch:**
- **Appointment Booking:** Not Applicable
- **Display as Alert:**
- **Nbr Days Alert Active:** 0

Note: The example above does not capture the complete list of fields and their corresponding values.

Field Activity Type Profile

Field Activity Type Profiles should reference applicable Service Order Management-enabled Field Activity Types (see above).

Example - **Field Activity Type Profile:** METERED

Main Tab:

- **Description:** Metered Service
- **FA Profile Template:** Meter Exchange

Template Tab:

- **Customer Event:** Meter Exchange
 - **SP Field Condition:** External Fieldwork Orchestration
 - **Sequence:** 10
 - **Not Activity:**
 - **Disconnect Location:**
 - **Activity Type:** SOM-MXM2S

Type Tab:

- **Field Activity Type:** SOM-MXM2S

Note: The example above does not capture the complete list of fields and their corresponding values.

Service Order Management

This section describes the setup required in Service Order Management to support the Meter Exchange process.

Refer to the *Oracle Utilities Service and Measurement Data User's Guide* for more information about creating the following types of data.

Field Task Type

The Meter Exchange process uses the following Field Task Types (defined as values for the D1-FieldTaskTypeLookup extendable lookup).

- Exchange Meter: D1-ExchangeMeter

Example: **Field Task Type:** D1-ExchangeMeter

- **Field Task Type:** D1-ExchangeMeter
- **Status:** Active
- **Description:** Exchange Meter
- **Routing:** SP Required
- **Appointment Option:** Not Applicable
- **Duplicate Task Type Information:**
 - **Allow Duplicates:** Yes
- **Conflicting Task Type Information:**
 - **Allow Conflicts:** Yes
- **Processing Scripts:**
 - **CIS Data Retriever:** Service Order - Retrieve CIS Data

- **Internal Retriever:** Service Order - Retrieve Internal Data
- **Criteria Script:** Service Order - Retrieve Criteria Value
- **Completion Events When Successful:**

Field	Business Object	Required
10	Remove Device - Field Work Completion	Yes
20	Install Device - Field work Completion	Yes
30	Create FA IMD Completion Event	Yes

- **Completion Events When Canceled:**

N/A

You can also create additional business-role specific meter exchange field task types as needed. Examples include the following:

- SOMFTT_Exchange For Program Change Manual To Manual Meter (FTT_ExchangeProgChangeM2M)
- SOMFTT_Exchange For Program Change Manual To Smart Meter (FTT_ExchangeProgChangeM2S)
- SOMFTT_Exchange For Program Change Smart To Smart Meter (FTT_ExchangeProgChangeS2S)
- SOMFTT_Exchange For Roll Out Manual To Smart Meter (FTT_ExchangeRollOutM2S)
- SOMFTT_Exchange Faulty Device Smart To Smart Meter (FTT_ExchangeS2S)
- SOMFTT_Exchange for Opt Out Smart To Manual meter (FTT_OptoutExchangeS2M)

Device Install Business Roles

The Device Install Business Role extendable lookup (D1-DeviceInstallSpecialRoleLkp) is used to define specific business roles associated with meter exchanges. These roles can indicate specific reasons for a meter exchange. Examples of device install business roles include the following:

- DIBR-Exchange Program Change Manual To Manual
- DIBR-Exchange Program Change Manual To Smart
- DIBR-Exchange Roll Out Manual To Smart
- DIBR-Exchange Program Change Smart To Smart
- DIBR-Exchange Faulty Device Manual To Manual
- DIBR-Exchange Faulty Device Smart To Smart

Meter Exchange Mapping

The Meter Exchange Mapping extendable lookup (D1-CCBMeterExchangeMap) is used to define mappings between meter exchange field activity types in Oracle Utilities Customer Care and Billing and device install business roles. In addition, specific service point / device configuration type pairings can be defined for each mapping. Example mappings include the following:

Meter Exchange Field Activity Type	Description	Usage Flag	Device Install Business Role
SOM-MXM2M	SOM-Exchange Program Change Manual To Manual	Active	DIBR-Exchange Program Change Manual To Manual

Meter Exchange Field Activity Type	Description	Usage Flag	Device Install Business Role
SOM-MXM2S	SOM-Exchange Program Change Manual To Smart	Active	DIBR-Exchange Program Change Manual To Smart
SOM-MXRMS	SOM-Exchange Roll Out Manual To Smart	Active	DIBR-Exchange Roll Out Manual To Smart
SOM-MXS2S	SOM-Exchange Program Change Smart To Smart	Active	DIBR-Exchange Program Change Smart To Smart
SOM- XFM2M	SOM-Exchange Faulty Device Manual To Manual	Active	DIBR-Exchange Faulty Device Manual To Manual
SOM- XFS2S	SOM-Exchange Faulty Device Smart To Smart	Active	DIBR-Exchange Faulty Device Smart To Smart

Activity Type

You must create an Activity Type for the Meter Exchange process.

Example: **Activity Type:** Meter Exchange

- **Activity Type:** METER_EXCHANGE
- **Description:** Meter Exchange
- **Activity Type Status:** Active
- **Decommission Removed Meter?:** Decommission
- **Exception Handling:**
 - **To Do Type:** Activity To Do Type
 - **To Do Role:** System Default Role
 - **Retry Frequency:** 00:10:00
 - **Maximum Retries:** 2
 - **Discard Reason:**
- **Find Measurement Criteria:**
 - **Field Read Option:** Use on Service Date
 - **Prorate Fail Action:** Use Field Read
 - **To Do Type:**
 - **To Do Role:**
 - **Search Within the Day:** No
 - **Minimum Offset Days:** 2
 - **Maximum Offset Days:** 2
- **Meter Exchange Role Configuration:**

Device Install Business Role	Field Task Type	Override Device /Task Algorithm
DIBR - Exchange Item	Item - Exchange Device	
DIBR-Exchange Faulty Device Manual To Manual	SOMFITT_Exchange Faulty Device Manual To Manual Meter	
DIBR-Exchange Faulty Device Smart To Smart	SOMFITT_Exchange Faulty Device Smart To Smart Meter	
DIBR-Exchange Opt Out for Smart To Manual	SOMFITT_Exchange for Opt Out Smart To Manual meter	
DIBR-Exchange Program Change Manual To Manual	SOMFITT_Exchange For Program Change Manual To Manual Meter	
DIBR-Exchange Program Change Manual To Smart	SOMFITT_Exchange For Program Change Manual To Smart Meter	
DIBR-Exchange Program Change Smart To Smart	SOMFITT_Exchange For Program Change Smart To Smart Meter	
DIBR-Exchange Roll Out Manual To Smart	SOMFITT_Exchange For Roll Out Manual To Smart Meter	D2-EVSMOPDV

Mobile Workforce Management

This section describes the setup required in Service Order Management to support the Meter Exchange process.

Refer to the *Oracle Utilities Mobile Workforce Management User's Guide* for more information about creating the following types of data.

Task Type

You must create task types that correspond to the field task types defined in Service Order Management.

For example, the "Meter Exchange" field task type in Service Order Management could be mapped to an "Exchange Meter" task type in Oracle Utilities Mobile Workforce Management.

Mappings between Service Order Management field task types and Oracle Utilities Mobile Workforce Management task types are defined using the SOM_MWM_TaskType domain value map (DVM). Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for more information about this DVM.

Example: **Task Type:** SOM-FD EXCHANGE_MM

- **Activity Type:** SOM-FD EXCHANGE_MM
- **Description:** SOM-FD Exchange MM
- **Status:** Active

- **Average Duration:** 00:40:00
- **Auto Dispatch:** Yes
- **Acknowledgement Required:** No
- **Appointment Booking Group:** Weekday All Day
- **Work Calendar:** Default
- **Eligible for Contracting:** No
- **Eligible for Assist:** No
- **Allow Breaks:** No
- **Allow Crew Time:** No
- **Activity Business Object:** Meter Exchange Activity
- **Host Reference:** FTT_ExchangeM2M
- **Host System:** Oracle Utilities Service Order Management
- **Priority:**
 - **Queue:** Normal
 - **Preferred Time Factor:** 1
 - **Ignore Sequence Locking:** No
 - **Priority Profile:** High
 - **Scheduling Priority:** 1.00
- **Procedures:**
 - **Procedure Clearance Required:** No
- **Activities Creation:**
 - **Create by Crew:** Allowed
- **Activity Expiration:**
 - **Auto Extension:** No
 - **Auto Cancel:** No
- **Capabilities:**
 - **Crew Size:** 1
 - **Worker Capability:** Electric Meter Reading, Usage: Required, Count: 1
 - **Equipment:** Basic Service Tools, Usage: Required
- **Valid Remark Types:**
 - **Remark Type:** Mark for Review, Sort Sequence: 1

Note: The example above does not capture the complete list of fields and their corresponding values.

Other task types can be created for individual role-based meter exchange field task types. Examples include:

Task / Activity Type	Host System
SOM_FD EXCHANGE_SS	FTT_ExchangeS2S
SOM_OPT OUT EXCHANGE_SM	FTT_OptoutExchangeS2M

Task / Activity Type	Host System
SOM_PC EXCHANGE_MM	FTT_ExchangeProgChangeM2M
SOM_PC EXCHANGE_MS	FTT_ExchangeProgChangeM2S
SOM_ROLL OUT EXCHANGE_MS	FTT_ExchangeRollOutM2S

Item Exchange

This section outlines the data setup required to support the Item Exchange process. See **Data Setup for All Processes** on page 3-2 for information about data setup used by all services.

Customer Care and Billing

This section describes the setup required in Oracle Utilities Customer Care and Billing to support the Item Exchange process.

Refer to the *Oracle Utilities Customer Care and Billing Administration Guide* for more information about creating the following types of data.

Field Activity Type

The "Fieldwork Orchestration" field on Field Activity Type records is used to define how the field work is managed for field activities of this type. Valid values are defined in the EXT_SRV_REQ_FLG lookup, and include:

- **Customer Care and Billing** indicates that Oracle Utilities Customer Care and Billing will be used to orchestrate field work based on FA Type Profile, customer event and service point condition.
- **Service Order Management** indicates that Oracle Utilities Customer Care and Billing will create generic field activities that are routed to an external service request system. Orchestration of the actual field work request is managed by the external system.

Set the "Fieldwork Orchestration" field to "Service Order Management" for each Field Activity Type where the field work request will be managed by Service Order Management. Meter exchange field activities can include the following:

Example: **Activity Type:** SOM-XITEM

Main Tab:

- **Description:** SOM - Item Exchange
- **Field Activity Priority:** Priority 50
- **Field Service Class:** Meter Shop
- **Fieldwork Orchestration:** Service Order Management
- **Eligible for Dispatch:**
- **Appointment Booking:** Not Applicable
- **Display as Alert:**
- **Nbr Days Alert Active:** 0

Note: The example above does not capture the complete list of fields and their corresponding values.

Field Activity Type Profile

Field Activity Type Profiles should reference applicable Service Order Management-enabled Field Activity Types (see above).

Example - **Field Activity Type Profile:** ITEM

Main Tab:

- **Description:** Badged Item Service
- **FA Profile Template:** Item Exchange

Template Tab:

- **Customer Event:** Item Exchange
 - **SP Field Condition:** External Fieldwork Orchestration
 - **Sequence:** 10
 - **Not Activity:**
 - **Disconnect Location:**
 - **Activity Type:** SOM-XITEM

Type Tab:

- **Field Activity Type:** SOM-XITEM

Note: The example above does not capture the complete list of fields and their corresponding values.

Service Order Management

This section describes the setup required in Service Order Management to support the Meter Exchange process.

Refer to the *Oracle Utilities Service and Measurement Data User's Guide* for more information about creating the following types of data.

Field Task Type

The Meter Exchange process uses the following Field Task Types (defined as values for the D1-FieldTaskTypeLookup extendable lookup).

- Exchange Device: D1-ExchangeDevice

Example: **Field Task Type:** D1-ExchangeDevice

- **Field Task Type:** D1-ExchangeDevice
- **Status:** Active
- **Description:** Exchange Device
- **Routing:** SP Required
- **Appointment Option:** Not Applicable
- **Duplicate Task Type Information:**
 - **Allow Duplicates:** Yes
- **Conflicting Task Type Information:**
 - **Allow Conflicts:** Yes
- **Processing Scripts:**
 - **CIS Data Retriever:** Service Order - Retrieve CIS Data
 - **Internal Retriever:** Service Order - Retrieve Internal Data
 - **Criteria Script:** Service Order - Retrieve Criteria Value
- **Completion Events When Successful:**

Field	Business Object	Required
10	Remove Device - Field Work Completion	Yes
20	Install Device - Field work Completion	Yes

- **Completion Events When Canceled:**
N/A

Device Install Business Roles

The Device Install Business Role extendable lookup (D1-DeviceInstallSpecialRoleLkp) is used to define specific business roles associated with meter exchanges. These roles can indicate specific reasons for a meter exchange. Examples of device install business roles include the following:

- DIBR-Exchange Item

Meter Exchange Mapping

The Meter Exchange Mapping extendable lookup (D1-CCBMeterExchangeMap) is used to define mappings between meter exchange field activity types in Oracle Utilities Customer Care and Billing and device install business roles. In addition, specific service point / device configuration type pairings can be defined for each mapping. Example mappings include the following:

Meter Exchange Field Activity Type	Description	Usage Flag	Device Install Business Role
SOM-XITEM	Field Activity for Item Exchange	Active	DIBR-Exchange Item

Activity Type

You must create an Activity Type for the Meter Exchange process.

Example: **Activity Type:** Meter Exchange

- **Activity Type:** METER_EXCHANGE
- **Description:** Meter Exchange
- **Activity Type Status:** Active
- **Decommission Removed Meter?:** Decommission
- **Exception Handling:**
 - **To Do Type:** Activity To Do Type
 - **To Do Role:** System Default Role
 - **Retry Frequency:** 00:10:00
 - **Maximum Retries:** 2
 - **Discard Reason:**
- **Meter Exchange Role Configuration:**

Device Install Business Role	Field Task Type	Override Device /Task Algorithm
DIBR - Exchange Item	Item - Exchange Device	
DIBR-Exchange Faulty Device Manual To Manual	SOMFTT_Exchange Faulty Device Manual To Manual Meter	
DIBR-Exchange Faulty Device Smart To Smart	SOMFTT_Exchange Faulty Device Smart To Smart Meter	

Device Install Business Role	Field Task Type	Override Device /Task Algorithm
DIBR-Exchange Opt Out for Smart To Manual	SOMF'TT_Exchange for Opt Out Smart To Manual meter	
DIBR-Exchange Program Change Manual To Manual	SOMF'TT_Exchange For Program Change Manual To Manual Meter	
DIBR-Exchange Program Change Manual To Smart	SOMF'TT_Exchange For Program Change Manual To Smart Meter	
DIBR-Exchange Program Change Smart To Smart	SOMF'TT_Exchange For Program Change Smart To Smart Meter	
DIBR-Exchange Roll Out Manual To Smart	SOMF'TT_Exchange For Roll Out Manual To Smart Meter	D2-EVSMOPDV

Mobile Workforce Management

This section describes the setup required in Service Order Management to support the Meter Exchange process.

Refer to the *Oracle Utilities Mobile Workforce Management User's Guide* for more information about creating the following types of data.

Task Type

You must create task types that correspond to the field task types defined in Service Order Management.

For example, the "Meter Exchange" field task type in Service Order Management could be mapped to an "Exchange Meter" task type in Oracle Utilities Mobile Workforce Management.

Mappings between Service Order Management field task types and Oracle Utilities Mobile Workforce Management task types are defined using the SOM_MWM_TaskType domain value map (DVM). Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for more information about this DVM.

Example: **Task Type:** SOM_EXCHANGE_ITEM

- **Activity Type:** SOM_EXCHANGE_ITEM
- **Description:** SOM-FD Exchange Item
- **Status:** Active
- **Average Duration:** 00:40:00
- **Auto Dispatch:** Yes
- **Acknowledgement Required:** No
- **Appointment Booking Group:** Weekday All Day
- **Work Calendar:** US Work Calendar
- **Eligible for Contracting:** No
- **Eligible for Assist:** No

- **Allow Breaks:** No
- **Allow Crew Time:** No
- **Activity Business Object:** Exchange Item Activity
- **Host Reference:** D1-ExchangeDevice
- **Host System:** Oracle Utilities Service Order Management
- **Priority:**
 - **Queue:** Normal
 - **Preferred Time Factor:** 1
 - **Ignore Sequence Locking:** No
 - **Priority Profile:** High
 - **Scheduling Priority:** 1.00
- **Procedures:**
 - **Procedure Clearance Required:** No
- **Activities Creation:**
 - **Create by Crew:** Allowed
- **Activity Expiration:**
 - **Auto Extension:** No
 - **Auto Cancel:** No
- **Capabilities:**
 - **Crew Size:** 1
 - **Worker Capability:** Electric Meter Reading, Usage: Required, Count: 1
 - **Equipment:** Basic Service Tools, Usage: Required
- **Valid Remark Types:**
 - **Remark Type:** Mark for Review, Sort Sequence: 1

Note: The example above does not capture the complete list of fields and their corresponding values.

Other task types can be created for individual role-based meter exchange field task types. Examples include:

Task / Activity Type	Host System
SOM_FD EXCHANGE_SS	FTT_ExchangeS2S
SOM_OPT OUT EXCHANGE_SM	FTT_OptoutExchangeS2M
SOM_PC EXCHANGE_MM	FTT_ExchangeProgChangeM2M
SOM_PC EXCHANGE_MS	FTT_ExchangeProgChangeM2S
SOM_ROLL OUT EXCHANGE_MS	FTT_ExchangeRollOutM2S

Back-to-Back for Meters

This section outlines the data setup required to support the Back-to-Back process for meters. See **Data Setup for All Processes** on page 3-2 for information about data setup used by all services.

Customer Care and Billing

This section describes the setup required in Oracle Utilities Customer Care and Billing to support the Back-to-Back process for meters.

Refer to the *Oracle Utilities Customer Care and Billing Administration Guide* for more information about creating the following types of data.

Field Activity Type

The "Fieldwork Orchestration" field on Field Activity Type records is used to define how the field work is managed for field activities of this type. Valid values are defined in the EXT_SRV_REQ_FLG lookup, and include:

- **Customer Care and Billing** indicates that Oracle Utilities Customer Care and Billing will be used to orchestrate field work based on FA Type Profile, customer event and service point condition.
- **Service Order Management** indicates that Oracle Utilities Customer Care and Billing will create generic field activities that are routed to an external service request system. Orchestration of the actual field work request is managed by the external system.

Set the "Fieldwork Orchestration" field to "Service Order Management" for each Field Activity Type where the field work request will be managed by Service Order Management.

Example: **Activity Type:** SOM-BTOB

Main Tab:

- **Description:** SOM - Back to Back Activity
- **Field Activity Priority:** Priority 50
- **Field Service Class:** Meter Shop
- **Fieldwork Orchestration:** Service Order Management
- **Eligible for Dispatch:**
- **Appointment Booking:** Not Applicable
- **Display as Alert:**
- **Nbr Days Alert Active:** 0

Note: The example above does not capture the complete list of fields and their corresponding values.

The Back-to-Back process also uses the following field activity types:

- SOM - Stop Activity (SOM-STOP)
- SOM - Start Activity (SOM-START)

Field Activity Type Profile

Field Activity Type Profiles should reference applicable Service Order Management-enabled Field Activity Types (see above).

Example - **Field Activity Type Profile:** METERED

Main Tab:

- **Description:** Metered Service
- **FA Profile Template:** Start Service

Template Tab:

- **Customer Event:** Start/Stop
 - **SP Field Condition:** External Fieldwork Orchestration
 - **Sequence:** 10
 - **Not Activity:**
 - **Disconnect Location:**
 - **Activity Type:** SOM-FTOB

Type Tab:

- **Field Activity Type:** SOM-FTOB

Note: The example above does not capture the complete list of fields and their corresponding values.

Algorithm

The "SA/SP Field Work Creation" (SASP FW CRE) algorithm type can be used to define details for how field activities are created for pending start and pending stop service agreements shortly before the pending start / stop date if field activities do not already exist (i.e., if a CSR hasn't already created the field activities).

Algorithms of this type can be defined for the "Start Stop Field Work" SA Type system event (on the Algorithms tab of the SA Type portal). Parameters (and sample values) used by algorithms of this type include the following:

- **Number of Days Lead Time:** 3
- **Back-to-Back Threshold Days:** 7
- **Wait Time for Meter Read:** 5
- **Field Activity Type for Meter Read:** M-MR CYC
- **SP's desired state for Meter Read:** 30
- **Immediate Field Activity Creation:** Y

Service Order Management

This section describes the setup required in Service Order Management to support the Back-to-Back process for meters.

Refer to the *Oracle Utilities Service and Measurement Data User's Guide* for more information about creating the following types of data.

Field Task Type

The Back-to-Back process for meter uses the following Field Task Types (defined as values for the D1-FieldTaskTypeLookup extendable lookup).

- Read Meter: D1-ReadMeter

Example: **Field Task Type:** D1-ReadMeter

- **Field Task Type:** D1-ReadMeter
- **Status:** Active
- **Description:** Read Meter

- **Routing:** SP Required
- **Appointment Option:** Not Applicable
- **Duplicate Task Type Information:**
 - **Allow Duplicates:** Yes
- **Conflicting Task Type Information:**
 - **Allow Conflicts:** Yes
- **Processing Scripts:**
 - **Criteria Script:** Service Order - Retrieve Criteria Value
- **Completion Events When Successful:**

Field	Business Object	Required
10	Create FA IMD Completion Event	Yes
20	Update SP - Field work Completion	No
30	Update Device - Field Work Completion	No
40	Create To Do with Crew Message	No
50	Notify Requestor of Customer Contact	No

- **Completion Events When Canceled:**

N/A

Activity Type

You must create an Activity Type for the Enable Service process.

Example: **Activity Type:** Back to Back

- **Activity Type:** BACKTOBACK
- **Description:** Back to Back Service
- **Activity Type Status:** Active
- **Activity Expiration Days:** 10
- **Override Device/Task Algorithm:**
- **Customer Device Compatibility Algorithm:**
- **Exception Handling:**
 - **To Do Type:** Activity To Do Type
 - **To Do Role:** System Default Role
 - **Retry Frequency:** 00:10:00
 - **Maximum Retries:** 2
 - **Discard Reason:**
- **Find Measurement Criteria:**
 - **Field Read Option:** Use on Service Date
 - **Prorate Fail Action:** Use Field Read
 - **To Do Type:**
 - **To Do Role:**

- **Search Within the Day:** No
- **Minimum Offset Days:** 2
- **Maximum Offset Days:** 2

Mobile Workforce Management

This section describes the setup required in Service Order Management to support the Back-to-Back process for meters.

Refer to the *Oracle Utilities Mobile Workforce Management User's Guide* for more information about creating the following types of data.

Task Type

You must create task types that correspond to the field task types defined in Service Order Management.

For example, the "Read Meter" field task type in Service Order Management could be mapped to an "Electric Meter Read" task type in Oracle Utilities Mobile Workforce Management.

Mappings between Service Order Management field task types and Oracle Utilities Mobile Workforce Management task types are defined using the SOM_MWM_TaskType domain value map (DVM). Refer to the *Oracle Utilities Service Order Management Integration to Oracle Utilities Mobile Workforce Management Implementation Guide* for more information about this DVM.

Example: **Task Type:** E-MREAD

- **Activity Type:** E-MREAD
- **Description:** Electric Meter Read
- **Status:** Active
- **Average Duration:** 00:40:00
- **Auto Dispatch:** Yes
- **Acknowledgement Required:** No
- **Appointment Booking Group:** Weekday All Day
- **Work Calendar:** US Work Calendar
- **Complete Within Option:** Days
- **Complete Within Days:** 2
- **Eligible for Contracting:** No
- **Eligible for Assist:** No
- **Allow Breaks:** No
- **Allow Crew Time:** No
- **Activity Business Object:** Meter Read Activity
- **Host System:** Oracle Utilities Service Order Management
- **Priority:**
 - **Queue:** Normal
 - **Preferred Time Factor:** 1
 - **Ignore Sequence Locking:** No
 - **Priority Profile:** High

- **Scheduling Priority:** 1.00
- **Procedures:**
 - **Procedure Clearance Required:** No
- **Activities Creation:**
 - **Create by Crew:** Allowed
- **Activity Expiration:**
 - **Auto Extension:** By Days
 - **Extension Days:** 5
 - **Extension Limits:** 3
 - **Auto Cancel:** No
- **Capabilities:**
 - **Crew Size:** 1
 - **Worker Capability:** Electric Meter Reading, Usage: Required, Count: 1
 - **Equipment:** Basic Service Tools, Usage: Required
- **Valid Remark Types:**
 - **Remark Type:** Mark for Review, Sort Sequence: 1; Seal Broken, Sort Sequence: 2; Customer Inquiry, Sort Sequence: 3

Note: The example above does not capture the complete list of fields and their corresponding values.

Cancel Orchestration for Meters

This section outlines the data setup required to support cancellation of orchestration activities. See **Data Setup for All Processes** on page 3-2 for information about data setup used by all services.

Service Order Management

This section describes the setup required in Service Order Management to support the canceling orchestration activities.

Refer to the *Oracle Utilities Service and Measurement Data User's Guide* for more information about creating the following types of data.

Activity Type

You must create an Activity Type for canceling orchestration activities.

Example: **Activity Type:** Cancel Orchestration

- **Activity Type:** CANCELORCHESTRATION
- **Description:** Cancel Orchestration
- **Activity Type Status:** Active
- **Activity Expiration Days:** 2
- **Exception Handling:**
 - **To Do Type:** Activity To Do Type
 - **To Do Role:** System Default Role
 - **Retry Frequency:** 00:10:00
 - **Maximum Retries:** 2
 - **Discard Reason:**

Update Orchestration for Meters

This section outlines the data setup required to support updating of orchestration activities. See **Data Setup for All Processes** on page 3-2 for information about data setup used by all services.

Service Order Management

This section describes the setup required in Service Order Management to support the updating orchestration activities.

Refer to the *Oracle Utilities Service and Measurement Data User's Guide* for more information about creating the following types of data.

Activity Type

You must create an Activity Type for updating orchestration activities.

Example: **Activity Type:** Update Activity Orchestration

- **Activity Type:** UPDATEACTIVITY
- **Description:** Update Activity Orchestration
- **Activity Type Status:** Active
- **Activity Expiration Days:** 0
- **Exception Handling:**
 - **To Do Type:** Activity To Do Type
 - **To Do Role:** System Default Role
 - **Retry Frequency:** 00:10:00
 - **Maximum Retries:** 2
 - **Discard Reason:**