VIVO CAFM – DIO Integration Document

Project Vivo CAFM



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| --- | --- |
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| Date | : 20/09/21 |
| Document | : VIVO – DIO Integration Document |
| Version | : 0.01 |

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Introduction

Document Purpose

This document is an integration design document which describes the requested behaviour of the VIVO CAFM and DIO integration system. Dependant on the quantity of the functional business requirements, this will drive whether this document contains all of the functional design or part of the overall functional design.

Document History

|  |  |  |  |
| --- | --- | --- | --- |
| Author | Date | Revision | Comments |
| Guru Bolisetty | 13/09/21 | 0.01 | Draft |
|  |  |  |  |

Sign-Offs

Requirements and Approach

Specification contains all necessary business requirements and approval starts detailed design and build phase.

|  |  |  |
| --- | --- | --- |
| Name | Function | Date |
|  |  |  |
|  |  |  |

Design Acceptance

Specification is complete, screens and customization; approval starts Go Live phase.

|  |  |  |
| --- | --- | --- |
| Name | Function | Date |
|  |  |  |
|  |  |  |

As Built Design

Specification is complete to as-built standards; approval required for handover.

|  |  |  |
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| Name | Function | Date |
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Distribution

|  |  |  |  |
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| Version | Date | Name | Remark(s) |
|  |  |  |  |
|  |  |  |  |

# Functional Overview

Below illustrates the integration between VIVO CAFM and DIO and vice versa.

The following diagram shows integration process overview:

Table

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Figure 1 - Functional Overview

VIVO CAFM is the master system for the following objects:

* Create SoN
* Submit Options
* Submit Firm Price
* Start Work
* Monthly Update
* Complete Work
* Work Variation
* Asset Insert/Update
* Location Insert/Update
* Asset Move
* Industry Standards applied to Assets
* Forward schedule of Planned Maintenance
* Submit Work Order - Quote Type
* Submit Work Order - Planned Maintenance Type
* Submit Work Order - Reactive Type
* Submit Work Order - Non-Core Type
* Update Work Order - Reactive Type
* Update Work Order - Quote Type
* Update Work Order - Planned Maintenance Type
* Update Work Order - Non-Core Type

DIO is the master system for the following objects:

* Reject SON
* Callback notification 01
* Request Options
* Request Firm Price
* Instruct Work
* Request Invoice
* Work Complete
* Reject Options
* Reject Firm Price
* On Hold
* Resume
* Retire Work
* ScheduleSync
* AssetSync
* Callback notification 02

## Key Interface Design Decisions

The following key decisions were identified during the interface design phase.

|  |  |
| --- | --- |
| Identifier | Decision Description |
| 1 | VIVO ACE to DIO secure connection with OAuth |

## Billable Work Task Lifecycle

The main flow is illustrated below with the steps outlined in the table below.

Graphical user interface, application, table

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**Diagram

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Figure 2 – VIVO CAFM - DIO Lifecycle Diagram

## Create SoN

### Sequence diagram

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#### Create SON Sequence Steps

1. VIVO CAFM sends SON to ACE endpoint: /statementOfNeed
2. ACE transforms message from Maximo format into JSON format
3. ACE sends statementofneed to DIO endpoint: /dio/v1/statementofneed

## Submit Options

### Sequence diagram

Diagram

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Figure 5 – Submit Options sequence diagram

#### Submit Options Sequence Steps

1. VIVO CAFM sends Submit Options to ACE endpoint: /task/options
2. ACE transforms message from Maximo format into JSON format
3. ACE sends Task Options to DIO endpoint: /dio/v1/task/options

## Submit Firm Price

### Sequence diagram

When a workorder, that is already in DISPATCH status and has been sent to Mobilise, needs to be unassigned from the existing engineer the following rules will be applied and a new message sent to Mobilise

* Laborcode field on assignment is removed. This deallocation will occur in Maximo.
* Workorder is in DISPATCH status

**IMPORTANT:** There is a Maximo escalation that finds workorders in DISPATCH status and no labor on the assignment, which will change the workorder status to WSCH.

This is an example screenshot of the dellocation (or cancellation) message

Graphical user interface, text, application

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Description automatically generated

Sequence diagram shows the message flow between Maximo-ACE-Mobilise

Diagram

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Figure 6 - Deallocation workorder sequence diagram

#### Deallocate Workorder Sequence Steps

1. Maximo dispatches workorder reassignment to ACE
2. ACE transforms message from Maximo format into Mobilise format
3. ACE sends visit reallocation message to Mobilise
4. Mobilise processes message and sends one message to old labor to remove visit

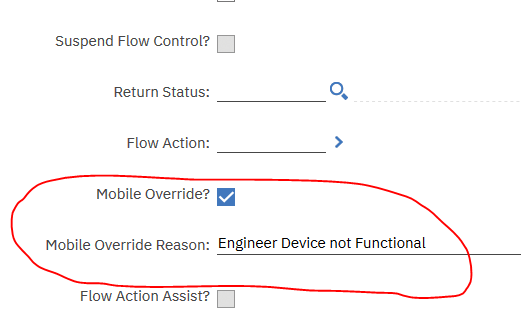
## Start Work

### Sequence diagram

The following is the process that should be followed on Maximo to override the work on the mobile.

**IMPORTANT:** This process is only for major problems when the work cannot be completed on the Mobilise device. This process should only be done as a last resort.

1. Go to Work Order Tracking (SP) and look for the work order or task that has to be overridden
2. Locate the mobile override flag and select it
3. Enter a reason for override



1. Save the Workorder (a DeleteJob message will be sent to Mobilise)
2. Use the workflow to get the next options available

Sequence diagram shows the message flow between Maximo-ACE-Mobilise

Diagram

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Figure 7 - Mobile Override Workorder Sequence Diagram

#### Mobile Override Workorder Sequence Steps

1. Maximo dispatches workorder to ACE
2. ACE transforms message from Maximo format into Mobilise format
3. ACE sends visit cancellation message to Mobilise

## Complete Work

### Sequence diagram

When the engineer starts the shift on the Mobilise device a message will be sent to Maximo and will update the following

* Mobilise Shift Token field on the Labor record. This is a unique key that is assigned by Mobilise for every shift.

Graphical user interface, application

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Diagram shows the message flow between Mobilise-ACE-Maximo.

Diagram

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Figure 8 - Start Shift Sequence Diagram

#### Mobilise Start Shift Sequence Steps

1. ACE polls Mobilise and retrieves Start shift message
2. ACE transforms message from Mobilise format into Maximo format
3. ACE sends message to update Mobilise Shift Token field on Labor record

## Work Variation

### Sequence diagram

When the engineer clicks **Start Travel** on a Mobilise visit, the following actions will occur in Maximo

1. Maximo workorder status will be updated to **TRAVEL**

Diagram shows the message flow between Mobilise-ACE-Maximo.

A screenshot of a computer

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Figure 9 - Start Travel Sequence Diagram

#### Mobilise Start Travel Sequence Steps

1. Mobilise sends a Start TRAVEL message to ACE
2. ACE transforms message from Mobilise format into Maximo format
3. ACE sends message to update workorder status to **TRAVEL**

## Asset Insert/Update

### Sequence diagram

When the engineer clicks **Finish Travel** on a Mobilise visit, Mobilise mobile automatically proceeds to Start Transition. This will update the workorder status to ONSITE.

**NOTE:** Although Mobilise produces a Finish Travel message this is not processed by ACE.

Diagram shows the message flow between Mobilise-ACE-Maximo.

A screenshot of a computer

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Figure 10 - Start Transition Sequence Diagram

#### Mobilise Start Transition Sequence Steps

1. Mobilise sends a Start TRANSITION message to ACE
2. ACE transforms message from Mobilise format into Maximo format
3. ACE sends message to update workorder status to ONSITE

## Location Insert/Update

### Sequence diagram

A screenshot of a computer

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Figure 11 - Start Work Sequence Diagram

## Asset Move

### Sequence diagram

Figure 12 – Pause/Suspend Work Sequence Stepss

## Industry Standards applied to Assets

### Sequence diagram

Figure 16 - Abort Travel and Transition Sequence Diagram

## Forward schedule of Planned Maintenance

### Functional Process

During the Work activity there are a number of Mobilise actions that the engineer can complete. The following table shows the Mobilise screen with the action and the corresponding result in Maximo.

|  |  |
| --- | --- |
|  | **Visit-Level Forms:** Here the engineer can complete any activities/tasks that were send with the workorder. The result of this task list will be sent to the WOACTIVITY observation field. This includes any URLs that engineer should click.  **Assets:** Engineer can manually add Assets found and these will be created as a new worklog of NEWASSET log type and will be made viewable |
| **Parts Used:** Engineer can record any parts used and these will be created as a new worklog of PARTUSED log type and will be made viewable |
| **Customer Notes:** These will be created as a new worklog of CUSTNTE log type and will be made viewable |
| **Internal Notes:** These will be created as a new worklog of TECHCOMM log type and will not be made viewable |
| **Capture Photo:** Any photos will be retrieved from Mobilise and created as attachments on the workorder |
| **Sales Lead:** These will be created as a new worklog of MNGATT log type and will not be made viewable.  **Location Based Meters:** If the location has any meters these will be displayed here and any meter readings added |

When the engineer click **Close Work**, this records the date and time the work is completed. Mobilise mobile workflow automatically progresses to the customer administration process of the visit.

**IMPORTANT:** No physical message is sent to Maximo at this point in the process.

## Submit Work Order - Quote Type

### Functional Process

When the engineer completes the customer administration process a message is sent to Maximo with the Work complete details and the Visit complete visit details. In addition to those messages define in the Work complete table, the following can also be sent

|  |  |
| --- | --- |
| Mobilise Action | Maximo Result |
| Customer Notes | Maximo CUSTNTE Worklog |
| ~~Internal Notes~~ | ~~Maximo TECHCOMM Worklog~~ |
| Customer Signature | Attached Document |
| ~~Technician Signature~~ | ~~Attached Document~~ |
| Meter Readings | Update Meter reading on Asset and/or Location |
| Entered Timecard dates and times | Actual Labor transactions   * TRAVEL * ONSITE * WORK * COMP * ~~NON-WORK~~ |
| Complete WORK | Workorder Status update – WOCOMP |
| Complete VISIT | Workorder Status update – COMP |
| Cause and Remedy | Update Workorder Failure reporting structure with Cause and Remedy |

Diagram shows the message flow between Mobilise-ACE-Maximo.

Diagram

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Figure 17 - Visit Complete Sequence Diagram

#### Mobilise Visit Complete Sequence Steps

1. Mobilise sends a Visit Complete message to ACE
2. ACE transforms message from Mobilise format to Maximo format
3. ACE sends a message to update workorder status to WOCOMP
4. ACE sends a message(s) to create worklogs
5. ACE sends a message to create attached documents for photos and signatures
6. ACE sends a message to set the Actual Finish
7. ACE sends a message to create labor transactions
8. ACE sends a message to add asset meter readings
9. ACE sends a message to add location meter readings
10. ACE sends a message to update the WOACTIVITY observation field
11. ACE sends a message to update workorder status to COMP

## Submit Work Order - Planned Maintenance Type

### Functional Process

Any notes captured by the engineer will be sent to Maximo and created as a worklog.

* New asset is discovered
* Manual Parts added
* Customer notes
* Technician comments
* Note to be reviewed by the Manager
  + Sales Leads
  + Requires Management Attention
* Temporary Fix
* More work Required – Related to [FURTHER\_WORK](#_Further_Work_Required) in finish work message

Graphical user interface, text, application, email

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The following details will be shown on the Work Log

1. **Summary:** Short note defining the nature of the log
2. **Type:** Log type from a predefined list
3. **Details:** The log long description. Usually a complied list from the notes entered by the customer and/or engineer
4. **Actioned by Engineer:** ACE sends the Mobilise resourceRef which Maximo then maps the laborcode to the person name

## Submit Work Order - Reactive Type

### Functional Process

If an engineer takes a photo or captures signatures these will be created as attached documents in Maximo.

Diagram shows the message flow between Mobilise-ACE-Maximo.

Diagram

Description automatically generated with low confidence

Figure 18 - Mobilise Visit Maximo Worklogs

#### Attached Documents Sequence Steps

1. Mobilise sends a Visit Complete message which includes attachments to Mobilise
2. ACE retrieves requests the file from Mobilise
3. Mobilise response with the file details
4. ACE transforms message from Mobilise format to Maximo format
5. ACE sends message to Maximo to add attachment to Workorder

## Submit Work Order - Non-Core Type

### Functional Process

If the visit contains the failure code/ problem analysis, the engineer can record the cause and solution, and this will be added to the Failure Reporting tab on the Workorder. The lookup list is mastered in Maximo. When changes are made these will be exported from Maximo and imported into Mobilise.

A picture containing icon

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Figure 19 - Failure Reporting Sequence Diagram

## Update Work Order - Reactive Type

### Functional process.

During the Work activity an engineer can mark the Visit as Incomplete. A visit can be marked as incomplete for one of the following reasons

RISKFAIL Risk Assessment Failed

WKPERMIT Permit to Work Required

ACCESSEQ Return with Access Equipment

APPROVAL Return Once Approval Granted

ASSISTANT Return with Assisting Engineer

CRAFT Re-Allocate Work To Another Craft

CUSTREQ Return when Convenient for Customer

F-GAS Return for Secondary Leak Test

MORETIME More Time Required

PARTS Return Once Parts Available

QUOTEREQ Quotation to be Submitted

REMEDIAL Remedial Works Order to be Raised

SUBCON Assign to Subcontractor

TECHSUPP Technical Support

This will update the Maximo workorder status to RETURN and add the selected reason to the Return Status Code field on the Workorder. A worklog of MWR will also be added.

Diagram

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Figure 20 - More Work Required Sequence Diagram

#### Further Work Required Sequence Steps

1. Engineer sends **further work required** message to Mobilise Portal
2. Mobilise sends a **further work required** message to ACE
3. ACE transforms the message from Mobilise format to Maximo format
4. ACE sends message to Maximo to create a MWR worklog
5. ACE sends message to Maximo to update workorder status – RETURN
6. ACE sends message to Maximo to add reason to Return Status Code field

## Update Work Order - Quote Type

### Functional process

When the engineer completes the visit, they can select that a Temporary Fix was applied. This will complete the workorder and update the workorder to COMP, however a worklog will be created and the Temp Fix field selected to indicate a temporary fix was applied

Diagram

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Figure 21 - Temporary Fix Sequence Diagram

#### Temporary Fix Sequence Steps

1. Engineer sends temp fix message to Mobilise Portal
2. Mobilise sends **Temp Fix** message to ACE
3. ACE transforms the message from Mobilise format to Maximo format
4. ACE sends message to Maximo to create a TEMPFIX worklog
5. ACE sends message to Maximo to select the Temp Fix checkbox

## Update Work Order - Planned Maintenance Type

### Maximo Functional Process

When the engineer ends their shift all non-work transactions are sent to Maximo. Additionally, a daily attendance record is created and the secure token is removed from the engineers labor record.

Graphical user interface, application

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Diagram shows the message flow between Mobilise-ACE-Maximo

A picture containing chart

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Figure 22 - End Shift Sequence Diagram

#### End Shift Sequence Steps

1. Mobilise sends End Shift message to ACE
2. ACE retrieves End Shift message
3. ACE transforms the message from Mobilise format to Maximo format
4. ACE sends message to Maximo to add non-work labor transactions. These are activities that were performed outside any specific workorder
5. ACE sends message to Maximo to add daily attendance record
6. ACE sends message to Maximo to remove secure token
7. ACE sends message to Maximo to create a labor transaction on the last workorder for the travel home activity.

## Update Work Order - Non-Core Type

### Functional process

When the engineer completes the visit, they can select that a Temporary Fix was applied. This will complete the workorder and update the workorder to COMP, however a worklog will be created and the Temp Fix field selected to indicate a temporary fix was applied

Diagram

Description automatically generated with medium confidence

Figure 21 - Temporary Fix Sequence Diagram

#### Temporary Fix Sequence Steps

1. Engineer sends temp fix message to Mobilise Portal
2. Mobilise sends **Temp Fix** message to ACE
3. ACE transforms the message from Mobilise format to Maximo format
4. ACE sends message to Maximo to create a TEMPFIX worklog
5. ACE sends message to Maximo to select the Temp Fix checkbox

## Reject SON

### Functional process

## Callback notification 01

### Functional process

## Request Options

### Functional process

## Request Firm Price

### Functional process

## Instruct Work

### Functional process

## Request Invoice

### Functional process

## Work Complete

### Functional process

## Reject Options

### Functional process

## Reject Firm Price

### Functional process

## On Hold

### Functional process

## Resume

### Functional process

## Retire Work

### Functional process

## ScheduleSync

### Functional process

## AssetSync

### Functional process

## Callback notification 02

### Functional process

# Integration Overview

## Integration Architecture

The following diagram provides the overall scope of the system interfaces.

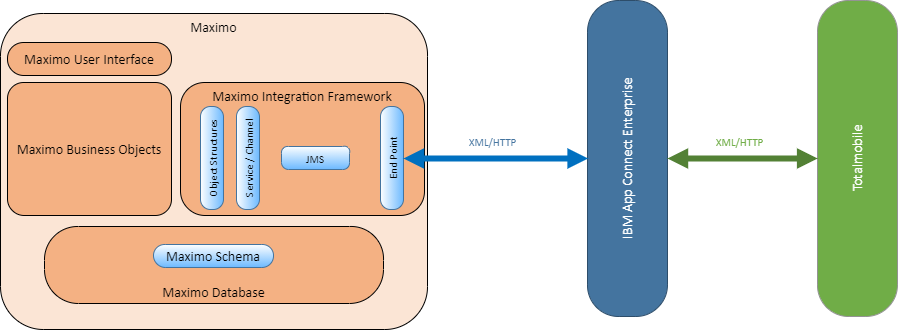


Figure 23 - Mobilise Integration Scope

### Integration Architecture Principles

The architecture as described above is based upon the following key principles.

* Allow loose coupling between components and back.
* Foreign Ref. Queue based model is being suggested to avoid direct changes in the application.
* Routing and transformation rules and metadata will be centralised in the integration layer.
* Integration should enable data and message delivery from providers to multiple consumers.
* When available, leverage existing interfaces instead of creating new interfaces but avoid any modification to existing interfaces.
* The integration solution should consider platform and language neutrality considerations to create a flexible and extensible solution.

### Maximo Integration Framework (MIF)

The Maximo Integration Framework is an essential component of Maximo service-oriented architecture (SOA).

* Provides an XML interface for all Maximo business objects.
* Provides support for bi-directional integration with external applications and middleware products.
* Supports standard protocols such as HTTP/HTTPS, Web services, JMS, flat files, and database tables.
* Supports message exchange in a synchronous and asynchronous model.

#### MIF Components and Integration Methods

MIF includes predefined integration components and applications to configure integration. The main components are described in the following table.

|  |  |
| --- | --- |
| **Component** | **Description** |
| Object structures | An object structure is the common data layer that the integration framework components use for sending and receiving data in Maximo. An object structure consists of one or more related business objects that define the content of an integration message.  An object structure provides the message content for publish channels and enterprise services. In an addition, an object structure, on its own, can be called as a service, supporting the Create, Update, Delete, Sync, and Query operations. |
| Business objects | Application business objects are available as Representational State Transfer (REST) resources for queries and updates by using the REST API component of the integration framework. |
| Enterprise Services (Inbound) | An enterprise service is a pipeline for querying and importing data from an external system. An enterprise service can process data synchronously (without a JMS queue) or asynchronously (with a JMS queue). Enterprise services can use multiple protocols, such as web services and HTTP. |
| Publish channels (Outbound) | A publish channel is used for sending asynchronous messages, through a JMS queue, to an external system. |
| External systems | An external system is defined for the external application that you plan to integrate with. The external system identifies the communication protocol to use and which enterprise services, publish channels, and JMS queues to implement for that external system. |
| Content | The integration framework provides predefined content that includes object structures, corresponding enterprise services and publish channels, an external system, and predefined handlers that support different communication protocols. |

## End to End Mobile Interface Flow

The following figure shows schematic view of integration:

A picture containing diagram

Description automatically generated

Figure 24 – Interface flow between Maximo and ACE

## Security

### Maximo Authentication

Maximo authentication will be enabled by setting the mxe.useAppServerSecurity system property to 0 (false). When Maximo authentication is used, all HTTP-based inbound transactions must specify an HTTP header with the following attributes:

|  |  |
| --- | --- |
| Field | Value |
| Name | MAXAUTH |
| Value | <User credentials encoded to base64 format> |

**IMPORTANT:** The user credentials must be encoded to base64 in the following format: <username>:<password>

### Secure Token

When an engineer starts a shift on Mobilise, Mobilise creates a unique session SecureToken and sends this to Maximo/ACE in the START SHIFT message. This token will be stored in Maximo for the duration of the shift – removed during the END SHIFT process. The primary use of this SecureToken will be used to identify the attached documents for the engineer when they try to retrieve a document from within Mobilise.

# Outbound Mobilise Interfaces

This is a list of the outbound messages from Maximo to Mobilise

|  |  |  |
| --- | --- | --- |
| Interface | Description | Format |
| MAX\_MOB\_001\_Dispatched Work Order | Full details of the Workorder | XML/HTTP |
| MAX\_MOB\_002\_Reallocate Task | Updates to the WO assignment | XML/HTTP |
| MAX\_MOB\_003\_Cancel Task | Completely removing the Mobilise Visit because the WO has been cancelled in Maximo | XML/HTTP |
| MAX\_MOB\_004\_Mobile Override | Completely removing the Mobilise Visit because the Mobilise device which has the WO cannot be used, but the work still needs to be completed by the mobile process | XML/HTTP |
| MAX\_MOB\_005\_ShiftResponse | Send shift details for engineer | XML/HTTP |

## MAX\_MOB\_001\_Dispatched Work Order

### Overview

In this interface, a dispatched work order will be created in Maximo, the WO is sent to ACE when its Status is set to dispatch (DISPATCH). The output message from Maximo will contain:

* WO information
* ASSET information
* ASSET Meters information
* LOCATION information
* LOCATION METER information
* WOSERVICEADDRESS
* ASSIGNMENT information
* LOG information
* MATERIAL Planned information
* PREVIOUS five visits
* Attached Documents - DOCLINKS

### Maximo to Mobilise Data Mapping

In the work order messages, there will be 17 objects in Maximo Object Structure:

* WORKORDER – WO Header Information
* ASSET – Asset information
* ASSETMETER – Meters related with the asset
* LOCATIONS – Locations information
* LOCATIONMETER – Meters related with the location
* LOCATIONUSERCUSTWOSERVICEADDRESS – Information about the address
* FAILURELIST – List of the possible causes for the problem given
* PLUSPCUSTOMER – Information about the customer
* ASSIGNMENT – Information about the assignation
* PERSON – Information about the person assigned and person details
* PERSONCAL - Information about the person calendar
* PHONE – Information about the phone number of each person on the WO
* MEUWOPREVVISITSV – Information about the last 10 previous visits
* WORKLOG – Information about the logs records that are client viewable
* WPMATERIAL – Information about the planned materials
* WOACTIVITY – Information about the unassigned tasks (usually work instructions)
* DOCLINKS – Document attachments
* WORKPERIOD - Location opening hours
* MEUMOBSHIFTV – View of shift information

### Views

Create the following new view within Maximo

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | MEUWOPREVVISITSV | | | | | | | | | | |
| Description | Mobilise Previous Visits View | | | | | | | | | | |
| Service | CUSTAPP | | Description | | | Custom Application Service | | | | | |
| Entity | MEUWOPREVVISITSV | | Class | | |  | | | | | |
| Extends Object | MEUWOPREVVISITS | | Level | | | SITE | | | | | |
| Main Object? | - | | Persistent? | Y | User Defined? | | Y | Imported? | - | Internal? | - |
| View? | Yes | | Automatically Select? | | | - | | | | | |
| View Where | where ww.istask = 1 and exists (select value from synonymdomain where domainid = 'WOSTATUS'  and value = ww.status and maxvalue in ('COMP','CLOSE')) and actstart is not null and actfinish is not null | | | | | | | | | |
| View Select | select 0 as meuwoprevvisitsid,  ww.wonum as refwo,  ww.siteid as siteid,  ww.orgid as orgid,  ww.workorderid as workorderid,  ww.description as description,  ww.location as location,  (select description from locations where siteid = ww.siteid and location = ww.location) as locdes,  aa.laborcode as laborcode,  (select displayname from person where personid = (select personid from labor where labor.laborcode = aa.laborcode)) as name,  (select phonenum from phone where isprimary = 1 and personid = (select personid from labor where labor.laborcode = aa.laborcode)) as phone,  ww.failurecode as failurecode,  (select failurecode from failurereport where failurereport.siteid = ww.siteid and failurereport.wonum = ww.wonum and type = 'PROBLEM') as problem,  (select failurecode from failurereport where failurereport.siteid = ww.siteid and failurereport.wonum = ww.wonum and type = 'CAUSE') as cause,  (select failurecode from failurereport where failurereport.siteid = ww.siteid and failurereport.wonum = ww.wonum and type = 'REMEDY') as remedy,  ww.actstart as actstart,  ww.actfinish as actfinish,  ww.classstructureid as classstructureid | | | | | | | | | |
| View From | from workorder ww left join assignment aa on ww.wonum = aa.wonum and ww.orgid = aa.orgid | | | | | | | | | |
| Attributes |  | | | | | | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attribute | Description | Type | Length | Scale | Column | Req |
| ACTFINISH | Actual Finish | DATETIME | 10 | 0 |  | N |
| ACTSTART | Actual Start | DATETIME | 10 | 0 |  | N |
| CAUSE | Cause Code | UPPER | 8 | 0 |  | N |
| CLASSSTRUCTUREID | Class Structure Identifier | UPPER | 20 | 0 |  | N |
| DESCRIPTION | Description | ALN | 100 | 0 |  | N |
| FAILURECODE | Failure Code | UPPER | 8 | 0 |  | N |
| MEUWOPREVVISITSID | Unique Identifier | BIGINT | 19 | 0 | 1 | Y |
| LABORCODE | Labor Code | UPPER | 8 | 0 |  | N |
| LOCATION | Location | UPPER | 12 | 0 |  | N |
| LOCDES | Location Description | ALN | 250 | 0 |  | N |
| NAME | Name | ALN | 62 | 0 |  | N |
| ORGID | Organization | UPPER | 8 | 0 |  | N |
| PHONE | Phone | ALN | 20 | 0 |  | N |
| PROBLEM | Problem Code | UPPER | 8 | 0 |  | N |
| REFWO | Work Order Number | UPPER | 10 | 0 |  | N |
| REMEDY | Remedy Code | UPPER | 8 | 0 |  | N |
| SITEID | Site Identifier | UPPER | 8 | 0 |  | N |
| WORKORDERID | Workorder Unique Identifier | BIGINT | 19 | 0 |  | N |

### Tables

The following new attributes will be added to the existing Maximo objects

|  |  |
| --- | --- |
| Maximo Object | WORKORDER |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attribute | Description | Type | Length | Scale | Column | Req |
| MEUPROPERTYACCESS | Special property access instructions | ALN | 1000 | 0 | - | N |
| MEURISKASSESSMENT | Risk Assessment | UPPER | 8 | 0 | - | N |
| MEUONBEHALFOFPHONE | Identifies the phone number for whom this work order has been created. | ALN | 20 | 0 | - | N |
| MEUONBEHALFOFEMAIL | Identifies the email for whom this work order has been created. | ALN | 100 | 0 | - | N |
| MEUMOBVERSION | Incremented integer value for all task requests | INTEGER | 12 | 0 | - | N |
|  | | | | | | |
| Maximo Object | LOCATIONS | | | | | |
| Attribute | Description | Type | Length | Scale | Column | Req |
| MEULOCLEVEL | Location Level | UPPER | 10 | 0 | - | N |
| MEULOCTYPE | Location Type | UPPER | 20 | 0 | - | N |
|  | | | | | | |
| Maximo Object | WOSERVICEADDRESS | | | | | |
| Attribute | Description | Type | Length | Scale | Column | Req |
| MEUAPPTREQUIRED | Indicates whether an appointment is required for this address for PM or Reactive work | YORN | 1 | 0 | - | N |
| MEUUPRN | Unique Property Reference Number | INTEGER | 12 | 0 | - | N |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Maximo Object | ASSIGNMENT | | | | | |
| Attribute | Description | Type | Length | Scale | Column | Req |
| MEUMOBALLOCVER | Incremented integer value for all allocations | INTEGER | 12 | 0 | - | N |

The following new Maximo Objects (Tables) will be created

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | MEUAGREEDDELAYS | | | | | | | | | | | | | | |
| Description | Service Request Agreed Delays | | | | | | | | | | | | | | |
| Service | CUSTAPP | | Description | | | Custom Application Service | | | | | | | | | |
| Entity | MEUAGREEDDELAYS | | Class | | | psdi.mbo.custapp.CustomMboSet | | | | | | | | | |
| Extends Object | - | | Level | | | System | | | | | | | | | |
| Main Object? | Yes | | Persistent? | | Yes | | User Defined? | | Yes | Imported? | | - | | Internal? | - |
| Storage Partition | MAXDATA | Unique Column | | MEUAGREEDDELAYSID | | | | Trigger Root | MEUAGREEDDELAYS | | Add Rowstamp | | Yes | | |
| Attributes | - | | | | | | | | | | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attribute | Description | Type | Length | Scale | Primary Column | Required |
| CLASS | Class | UPPER | 16 | 0 |  | Y |
| DELAYDATE | The date for the agreed delay. | DATETIME | 10 | 0 |  | N |
| DESCRIPTION | Description | ALN | 100 | 0 |  | N |
| DESCRIPTION\_LONGDESCRIPTION | Description\_longdescription | LONGALN | 32000 | 0 |  | N |
| HASLD | Boolean flag to indicate if there is any long description for this record | YORN | 1 | 0 |  | Y |
| MEUAGREEDDELAYSID | Unique Identifier | BIGINT | 19 | 0 | 1 | Y |
| STATUS | Status of the delay | UPPER | 16 | 0 |  | N |
| TICKETID | Ticket Identifier | UPPER | 10 | 0 |  | Y |
| TYPE | Delay Type | UPPER | 16 | 0 |  | N |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | MEUWOPREVVISITS | | | | | | | | | | |
| Description | Mobilise Previous Visits Table | | | | | | | | | | |
| Service | CUSTAPP | | | Description | | | Custom Application Service | | | | |
| Entity | MEUWOPREVVISITS | | | Class | | | psdi.mbo.custapp.CustomMboSet | | | | |
| Extends Object | - | | | Level | | | SITE | | | | |
| Main Object? | Yes | Persistent? | | Yes | User Defined? | | Y | Imported? | - | Internal? | - |
| Storage Partition | MAXDATA | Unique Column | MEUWOPREVVISITSID | | | Trigger Root | | MEUWOPREVVISITS | | Add Rowstamp? | N |
| Attributes | - | | | | | | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attribute | Description | Type | Length | Scale | Primary Column | Required |
| ACTFINISH | Actual Finish | DATETIME | 10 | 0 |  | N |
| ACTSTART | Actual Start | DATETIME | 10 | 0 |  | N |
| CAUSE | Cause Code | UPPER | 8 | 0 |  | N |
| CLASSSTRUCTUREID | Class Structure Identifier | UPPER | 20 | 0 |  | N |
| DESCRIPTION | Description | ALN | 100 | 0 |  | N |
| FAILURECODE | Failure Code | UPPER | 8 | 0 |  | N |
| MEUWOPREVVISITSID | Unique Identifier | BIGINT | 19 | 0 | 1 | Y |
| LABORCODE | Labor Code | UPPER | 8 | 0 |  | N |
| LOCATION | Location | UPPER | 12 | 0 |  | N |
| LOCDES | Location Description | ALN | 250 | 0 |  | N |
| NAME | Name | ALN | 62 | 0 |  | N |
| ORGID | Organization | UPPER | 8 | 0 |  | N |
| PHONE | Phone | ALN | 20 | 0 |  | N |
| PROBLEM | Problem Code | UPPER | 8 | 0 |  | N |
| REFWO | Work Order Number | UPPER | 10 | 0 |  | N |
| REMEDY | Remedy | UPPER | 8 | 0 |  | N |
| SITEID | Site Identifier | UPPER | 8 | 0 |  | N |
| WORKORDERID | Workorder Unique Identifier | BIGINT | 19 | 0 |  | N |

### Relationships

Create the following new relationships

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Object | Relationship | Child Object | Where Clause | Remarks |
| WORKORDER | MEUWOCAUSELIST | FAILURELIST | parent = (select linenum from failurereport where siteid = :siteid and wonum = :wonum and type = 'PROBLEM') | Relationship from WORKORDER to FAILURELIST to show the possible causes of the wo problem |
| WORKORDER | MEUAGREEDDELAYSSRWO | MEUAGREEDDELAYS | class=:parent.origrecordclass and ticketid=:parent.origrecordid | Relationship used for Mobilise interface to send the agreed delays to the mobile device |
| WORKORDER | MEUWOPREVVISIT | MEUWOPREVVISISV | siteid=:siteid and classstructureid=:classstructureid and location=:location and rownum <=10 order by actstart desc | Relationship from WORKORDER to MEUWOPREVVISITSV to get the last 5 visits for Mobilise |
| WORKORDER | MEUMOBASSIGNMENT | ASSIGNMENT | wonum = :wonum and siteid=:siteid and exists (select PERSONID from PERSON where PERSONID = (select personid from labor where laborcode=assignment.laborcode) and USERNOTIFTYPE='MOBILE') | Relationship to find only mobile assigments |
| ASSIGNMENT | MEUPERSON | PERSON | personid in (select personid from labor where laborcode = :laborcode) | Relationship from ASSIGNMENT to PERSON |
| PERSONCAL | MEUPERSONCALPATTERN | MEUMOBSHIFTV | shiftnum=:shiftnum and orgid=:orgid | Relationship to the Shift table. Used to find the shift in Mobilise format |
| WORKORDER | MEULOGCLIENTVIEWABLE | WORKLOG | (recordkey=:wonum or recordkey=:parent) and siteid=:siteid and clientviewable=1 | Relationship to the worklog records that are client viewable |
| WORKORDER | MEUWOMOBNONASGNTASK | WOACTIVITY | parent=:parent and siteid=:siteid and istask = :yes and not exists (select wonum from assignment where assignment.wonum=woactivity.wonum and assignment.siteid=woactivity.siteid) | Relation used by mobile to get the unassigned tasks |
| WORKORDER | MEULOCOPENHOURS | WORKPERIOD | calnum=:LOCATION.CALNUM and shiftnum = :LOCATION.SHIFTNUM AND ORGID=:ORGID AND convert(varchar,workdate,103) = convert(varchar,isnull(:SCHEDSTART,:TARGSTARTDATE),103) | Relationship to the workperiod object for location opening hours |
| WORKPERIOD | MEUWKPERPAT | MEUMOBSHIFTV | orgid=:orgid and shiftnum=:shiftnum | Relationship to get the shift pattern in Mobilise format |

### Object Structure

The following new object structure will be configured in object structure application.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | | MEUIFWOMOBOS | | | |
| Description | | Workorder Object Structure (Mobilise Integration) | | | |
| Consumed By | | Integration | | | |
| Outbound Processing Class | | - | | | |
| Inbound Processing Class | | - | | | |
| Source Objects | |  | | | |
| Object | Parent Object | | Object Location Path | Relationship | Order |
| WORKORDER |  | | WORKORDER |  | 1 |
| ASSET | WORKORDER | | WORKORDER/ASSET | WO\_ASSET | 2 |
| ASSETMETER | ASSET | | WORKORDER/ASSET/ASSETMETER | ACTIVEASSETMETER | 1 |
| LOCATIONS | WORKORDER | | WORKORDER/LOCATIONS | WO\_LOCATION | 3 |
| LOCATIONMETER | LOCATIONS | | WORKORDER/LOCATIONS/LOCATIONMETER | ACTIVELOCATIONMETER | 1 |
| LOCATIONUSERCUST | LOCATIONS | | WORKORDER/LOCATIONS/LOCATIONUSERCUST | PRIMARYLOCATIONUSERCUST | 2 |
| PERSON | LOCATIONUSERCUST | | WORKORDER/LOCATIONS/LOCATIONUSERCUST/PERSON | PERSON | 1 |
| WOSERVICEADDRESS | WORKORDER | | WORKORDER/WOSERVICEADDRESS | SERVICEADDRESS | 4 |
| FAILURELIST | WORKORDER | | WORKORDER/FAILURELIST | MEUWOCAUSELIST | 5 |
| PLUSPCUSTOMER | WORKORDER | | WORKORDER/PLUSPCUSTOMER | PLUSPCUSTOMER | 7 |
| ASSIGNMENT | WORKORDER | | WORKORDER/ASSIGNMENT | MEUMOBASSIGNMENT | 8 |
| PERSON | ASSIGNMENT | | WORKORDER/ASSIGNMENT/PERSON | MEUPERSON | 1 |
| PERSONCAL | PERSON | | WORKORDER/ASSIGNMENT/PERSON/PERSONCAL | PRIMARYPERSONCAL | 1 |
| PHONE | PERSON | | WORKORDER/ASSIGNMENT/PERSON/PHONE | PHONE | 2 |
| MEUWOPREVVISITSV | WORKORDER | | WORKORDER/MEUWOPREVVISITSV | MEUWOPREVVISIT | 9 |
| WORKLOG | WORKORDER | | WORKORDER/WORKLOG | MEULOGCLIENTVIEWABLE | 10 |
| WPMATERIAL | WORKORDER | | WORKORDER/WPMATERIAL | SHOWPLANMATERIAL | 11 |
| WOACTIVITY | WORKORDER | | WORKORDER/WOACTIVITY | MEUWOMOBNONASGNTASK | 12 |
| WORKPERIOD | WORKORDER | | WORKORDER/WORKPERIOD | MEULOCOPENHOURS | 13 |
| MEUAGREEDDELAYS | WORKORDER | | WORKORDER/MEUAGREEDDELAYS | MEUAGREEDDELAYSSRWO | 14 |
| DOCLINKS | WORKORDER | | WORKORDER/DOCLINKS | DOCLINKS | 1 |
|  | | | | | |
| Query Only | | | - | | |
| Self-Reference | | | - | | |
| Support Flat Structure | | | - | | |
| User Defined | | | Yes | | |
| Configurable | | | Yes | | |
| Alias Conflict | | | - | | |

### End Points

The following endpoints will be created

|  |  |  |  |
| --- | --- | --- | --- |
| Name | MEUACEMOBILISEWO | | |
| Description | Maximo-Mobilise via ACE Workorders Outbound | | |
| Handler | HTTP | | |
| Consumed By | Integration | | |
| Properties | Property | Value | Encrypted Value Allow Override? |
| HTTPMETHOD | POST |  |
| URL |  |  |

### Publish Channel

The following publish channel will be created

|  |  |
| --- | --- |
| Maximo Publish Channel | MEUIFWOMOBPC |
| Operation | Publish |
| Object Structure | MEUIFWOMOBOS |
| Processing Rules | WORKORDER |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Rule | Description | Condition | Evaluations | | Action |
| NODISPATCH | Skips transaction if the status is not equals to DISPATCH or CAN | XML Field | Field | STATUS | SKIP |
| Type | NOTEQUALS |
| When | ALWAYS |
| MOBILE | Send only mobile assignments | Object Set | Object | PERSON | SKIP |
| Relationship | MEUWOMOBILEASSIGNMT |
| Type | NOTEXISTS |
| NOUPDATES | Skip updates | XML Field | Field | STATUS | SKIP |
| Type | NONE |
| When | NOTCHANGED |
| TASK | Only sends tasks | XML Field | Field | ISTASK | SKIP |
| Type | EQUALS |
| When | ALWAYS |
| RISKASSESMENTSDFT | Risk Assessment to ‘NO’ if empty |  |  |  | SET |
|  |  |
|  |  |
| COGVERSION | Increments the MEUMOBVERSION field by 1 |  |  |  | SET |
|  |  |
|  |  |

## MAX\_MOB\_002\_Reallocate Visit

### Overview

In this integration, a DISPATCHED work order is reassigned to new engineer. Maximo sends a message to ACE. ACE will be map the message and send a ALLOC message to Mobilise to update the ResourceRef on the visit.

## MAX\_MOB\_003\_Cancel Visit

### Overview

In this integration, a dispatched work order to a mobile assignment is cancelled and the work is no longer required. This case, Maximo sends a message to ACE. ACE will be mapping the message to create the cancellation request on Mobilise.

## MAX\_MOB\_004\_Mobile Override

### Overview

In this integration, a dispatched work order to a mobile assignment is override for a major reason (device broke, stolen...) and the work have to be progressed on Maximo. This case, Maximo is sending a message to ACE. ACE will be mapping the message to delete the assignment in Mobilise.

### Tables

Create the following new attributes to the following existing Objects

|  |  |
| --- | --- |
| Maximo Object | WORKORDER |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attribute | Description | Type | Length | Scale | Primary Column | Required |
| MEUMOBILEOVERRIDE | Mobile Override | YORN | 1 | 0 | - | Y |
| MEUMOBILEREASON | Mobile Override Reason | ALN | 100 | 0 | - | N |

### Object Structure

The following new object structure will be configured in object structure application.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | | MEUIFWOMOBOVERRIDEOS | | |
| Description | | Workorder Object Structure Override mobile (Mobilise Integration) | | |
| Consumed By | | Integration | | |
| Outbound Processing Class | | - | | |
| Inbound Processing Class | | - | | |
| Source Objects | |  | | |
| Object | Parent Object | Object Location Path | Relationship | Order |
| WORKORDER |  | WORKORDER |  | 1 |
| PLUSPCUSTOMER | WORKORDER | WORKORDER\PLUSPCUSTOMER | PLUSPCUSTOMER | 2 |

### End Points

The following endpoints will be created

|  |  |  |  |
| --- | --- | --- | --- |
| Name | MEUACEMOBILISEWO | | |
| Description | Maximo-Mobilise via ACE Workorders Outbound | | |
| Handler | HTTP | | |
| Consumed By | Integration | | |
| Properties | Property | Value | Encrypted Value Allow Override? |
| CONNECTTIMEOUT |  |  |
| COOKIES |  |  |
| HEADERS |  |  |
| HTTPEXIT |  |  |
| HTTPMETHOD | POST |  |
| PASSWORD |  |  |
| READTIMEOUT |  |  |
| URL | <URL> |  |
| USERNAME |  |  |

### Publish Channel

The following publish channel will be created

|  |  |  |
| --- | --- | --- |
| Maximo Publish Channel | | MEUIFWOMOBOVERRIDEPC |
| Operation | | Publish |
| Object Structure | | MEUIFWOMOBOVERRIDEOS |
| Processing Rules | WORKORDER | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Rule | Description | Condition | Evaluations | | Action |
| ONLYOVERRIDE | Only send if the override flag is changed | XML Field | Field | MEUMOBILEOVERRIDE | SKIP |
| Type | NONE |
| When | NOTCHANGED |
| OVERRIDETRUE | Only send if the override mark is true | XML Field | Field | MEUMOBILEOVERRIDE | SKIP |
| Type | EQUALS |
| When | ALWAYS |

### External System

This interfaces publish channel will be included in the following external system

|  |  |
| --- | --- |
| External System | MEUMOBILISE |

## MAX\_MOB\_005\_Shift Response

### Overview

In this interface, a query will be made to Maximo when an engineer starts their shift to retrieve the start and end date and time of the shift.

### Tables

Create the following new table(s)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | MEUMOBSHIFT | | | | | | | | | |
| Description | Mobilise Shift Pattern Dummy Table | | | | | | | | | |
| Service | CUSTAPP | | | Description | | Custom Application Service | | | | |
| Entity | MEUMOBSHIFTV | | | Class | | psdi.mbo.custapp.CustomMboSet | | | | |
| Extends Object | - | | | Level | | ORG | | | | |
| Main Object? | Y | Persistent? | Y | User Defined? | Y | | Imported? | - | Internal? | - |
| Storage Partition | MAXDATA | Unique Column | MEUMOBSHIFTID | | Trigger Root | | MEUMOBSHIFT | | Add Rowstamp | - |
| Attributes | - | | | | | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attribute | Description | Type | Length | Scale | Primary Column | Required |
| BEGINTIME | Start Time | ALN | 10 | 0 |  | N |
| DAYS | Days | ALN | 20 | 0 |  | N |
| ENDTIME | Finish Time | ALN | 10 | 0 |  | N |
| MEUMOBSHIFTID | Unique Identifier | BIGINT | 19 | 0 | 1 | Y |
| ORGID | Organization | UPPER | 8 | 0 |  | N |
| SHIFTNUM | Shift Number | UPPER | 8 | 0 |  | N |

### Relationships

Create the following new relationships

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Object | Relationship | Child Object | Where Clause | Remarks |
| ASSIGNMENT | MEUPERSON | PERSON | personid in (select personid from labor where laborcode = :laborcode) | Relationship from ASSIGNMENT to PERSON |
| PERSONCAL | MEUPERSONCALPATTERN | MEUMOBSHIFTV | shiftnum=:shiftnum and orgid=:orgid | Relationship to the Shift table. Used to find the shift in Mobilise format |
| WORKPERIOD | MEUWKPERPAT | MEUMOBSHIFTV | orgid=:orgid and shiftnum=:shiftnum | Relationship to get the shift pattern in Mobilise format |
| WORKORDER | MEULOCOPENHOURS | WORKPERIOD | calnum=:LOCATION.CALNUM and shiftnum = :LOCATION.SHIFTNUM AND ORGID=:ORGID AND convert(varchar,workdate,103) = convert(varchar,isnull(:SCHEDSTART,:TARGSTARTDATE),103) | Relationship to the workperiod object for location opening hours |

### Views

Create the following new view within Maximo

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | MEUMOBSHIFTV | | | | | | | | | | | |
| Description | Mobilise Shift Pattern View | | | | | | | | | | | |
| Service | CUSTAPP | | | Description | | | Custom Application Service | | | | | |
| Entity | MEUMOBSHIFTV | | | Class | | |  | | | | | |
| Extends Object | MEUMOBSHIFT | | | Level | | | ORG | | | | | |
| Main Object? | - | Persistent? | | Y | User Defined? | | | Y | Imported? | - | Internal? | - |
| View? | Yes | Automatically Select? | | | | - | | | | | | |
| View Where | |  | | | | | | | | | |
| View Select | | distinct t1.orgid as orgid,  t1.shiftnum as shiftnum,  substring((replace( (select case when workhours > 0 then 'Y' else 'N' end as [data()]  from shiftpatternday t2  where t2.shiftnum = t1.shiftnum  order by patterndayseq  for xml path('')  ), ' ', ',')),0,14) as days,  (select convert(varchar,min(starttime),108) from shiftpatternday s where s.shiftnum = t1.shiftnum and s.orgid = t1.orgid) as begintime,  (select convert(varchar,max(endtime),108) from shiftpatternday ss where ss.shiftnum = t1.shiftnum and ss.orgid = t1.orgid) as endtime,  0 as meumobshiftid | | | | | | | | | |
| View From | | from shiftpatternday t1 | | | | | | | | | |
| Attributes | - | | | | | | | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attribute | Description | Type | Length | Scale | Primary Column | Required |
| BEGINTIME | Start Time | ALN | 10 | 0 |  | N |
| DAYS | Days | ALN | 20 | 0 |  | N |
| ENDTIME | Finish Time | ALN | 10 | 0 |  | N |
| MEUMOBSHIFTID | Unique Identifier | BIGINT | 19 | 0 | 1 | Y |
| ORGID | Organization | UPPER | 8 | 0 |  | N |
| SHIFTNUM | Shift Number | UPPER | 8 | 0 |  | N |

### Object Structure

The following new object structure will be configured in object structure application.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | | MEUIFLABSHIFTOS | | |
| Description | | Mobilise Shift Object Structure | | |
| Consumed By | | Integration | | |
| Outbound Processing Class | | - | | |
| Inbound Processing Class | | - | | |
| Source Objects | |  | | |
| Object | Parent Object | Object Location Path | Relationship | Order |
| PERSON | ASSIGNMENT | WORKORDER/ASSIGNMENT/PERSON | MEUPERSON | 1 |
| PERSONCAL | PERSON | WORKORDER/ASSIGNMENT/PERSON/PERSONCAL | PRIMARYPERSONCAL | 1 |
| MEUMOBSHIFTV | PERSONCAL | WORKORDER/ASSIGNMENT/PERSON/PERSONCAL/MEUMOBSHIFTV | MEUPERSONCALPATTERN | 20 |
| WORKPERIOD | WORKORDER | WORKORDER/WORKPERIOD | MEULOCOPENHOURS | 13 |
| MEUMOBSHIFTV | WORKPERIOD | WORKORDER/WORKPERIOD/MEUMOBSHIFTV | MEUWKPERPAT | 1 |

# Inbound Mobilise Interfaces

This is a list of the inbound messages from Mobilise to Maximo

|  |  |
| --- | --- |
| Interface | Format |
| MOB\_MAX\_001\_StartShift | XML/HTTP |
| MOB\_MAX\_003\_Start Travel | XML/HTTP |
| MOB\_MAX\_004\_Onsite | XML/HTTP |
| MOB\_MAX\_005\_Start Work | XML/HTTP |
| MOB\_MAX\_006\_On Hold | XML/HTTP |
| MOB\_MAX\_007\_Return | XML/HTTP |
| MOB\_MAX\_008\_Finish Work | XML/HTTP |
| MOB\_MAX\_009\_Complete Visit | XML/HTTP |
| MOB\_MAX\_010\_Create Log Notes | XML/HTTP |
| MOB\_MAX\_011\_Attach Documents | XML/HTTP |
| MOB\_MAX\_012\_Meter Readings | XML/HTTP |
| MOB\_MAX\_013\_Report Cause and Remedy | XML/HTTP |
| MOB\_MAX\_014\_View Attachments | XML/HTTP |
| MOB\_MAX\_015\_Finish Shift | XML/HTTP |

## MOB\_MAX\_001\_Start Shift

The following new attributes will be added to the existing Maximo objects

|  |  |
| --- | --- |
| Maximo Object | LABOR |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attribute | Description | Type | Length | Scale | Column | Req |
| MEUMOBSHIFTPROF | Mobilise Shift Profile Token | ALN | 50 | 0 | - | - |

### Object Structure

The following new object structure will be configured in object structure application.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | | MEUMOBDAILYATTOS | | |
| Description | | Daily Attendance Enterprise service (Mobilise Integration - Start Shift) | | |
| Consumed By | | Integration | | |
| Outbound Definition Class | | N/A | | |
| Inbound Processing Class | | N/A | | |
| Source Objects | |  | | |
| Object | Parent Object | Object Location Path | Relationship | Order |
| LABOR |  | LABOR |  | 1 |
| ATTENDANCE | LABOR | LABOR\ATTENDANCE | ATTENDANCE | 1 |

### Enterprise Service

The following enterprise service will be created

|  |  |  |
| --- | --- | --- |
| Maximo Enterprise Service | | MEUMOBDAILYATTES |
| Description | | Daily Attendance Enterprise service (Mobilise Integration - Start Shift) |
| Operation | | Sync |
| Object Structure | | MEUMOBDAILYATTOS |
| Processing Rules | N/A | |

### External System

This interfaces enterprise service will be included in the following external system

|  |  |
| --- | --- |
| External System | MEUMOBILISE |

## MOB\_MAX\_003\_Start Travel

### Relationships

Create the following new relationships

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Object | Relationship | Child Object | Where Clause | Remarks |
| WORKORDER | MEUWOMOBCLOSCOMP | WORKORDER | wonum = :wonum and siteid = :siteid and exists (select value from synonymdomain where domainid='WOSTATUS' and value=WORKORDER.STATUS and maxvalue in ('CAN','CLOSE','COMP')) | Relationship used for mobile integration to avoid processing messages for work orders with one of the following statuses: CLOSE, COMP and CAN |

### Object Structure

The following new object structure will be configured in object structure application.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | | MEUMOBWOSTATUSOS | | |
| Description | | Workorder Status change Structure (Mobilise Integration) | | |
| Consumed By | | Integration | | |
| Outbound Definition Class | | N/A | | |
| Inbound Processing Class | | N/A | | |
| Source Objects | |  | | |
| Object | Parent Object | Object Location Path | Relationship | Order |
| WORKORDER |  | WORKORDER |  | 1 |
| WOSTATUS | WORKORDER | WORKORDER/WOSTATUS | WOSTATUS | 2 |

### Enterprise Service

The following enterprise service will be created

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Enterprise Service | MEUMOBWOSTATUSES | | | | | | | | | | |
| Description | Enterprise Service for WO Status change (Mobilise Interface) | | | | | | | | | | |
| Operation | Sync | | | | | | | | | | |
| Object Structure | MEUMOBWOSTATUSOS | | | | | | | | | | |
| Object Structure Processing Rules | Rule | Description | | | Condition | | Evaluations | | | Action | |
| VALIDSTATUS | Skips non valid status | | | XML Field | | Field | | STATUS | SKIP | |
| Type | | NOTEQUALS |
| When | | ALWAYS |
| Object Processing Rules | Rule | | Description | Condition | | Evaluations | | | | | Action |
| NOMSGAFTERCOMP | | Avoids messages after the comp status | Object Set | | Object | | WORKORDER | | | SKIP |
| R/Ship | | MEUWOMOBCLOSCOMP | | |
| Type | | EXISTS | | |

### External System

This interfaces enterprise service will be included in the following external system

|  |  |
| --- | --- |
| External System | MEUMOBILISE |

## MOB\_MAX\_004\_Onsite

### Maximo Interface

All Maximo configuration is the same as MOB\_MAX\_003\_Start Travel

## MOB\_MAX\_005\_Start Work

### Maximo Interface

All Maximo configuration is the same as MOB\_MAX\_003\_Start Travel with one addition – Add the new attribute to the WORKORDER object

### Maximo Interface

All Maximo configuration is the same as MOB\_MAX\_003\_Start Travel

## MOB\_MAX\_006\_On Hold

### Maximo Interface

All Maximo configuration is the same as MOB\_MAX\_003\_Start Travel

## MOB\_MAX\_007\_Return

### Domain MEURETSTATUSCODE

* Lookups NoPerformWorkReason (NO\_ACCESS) – (TRANSITION\_ABORT)
* Lookup AbortFromTravelReason (TRAVEL\_ABORT)
* Lookup FollowUpActions (FOLLOWUP – Visit Incomplete)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Maximo | | | ACE | Mobilise | | |
| Domain | Value | Description | Middleware Rule | Object | Attribute | Type |
| MEURETSTATUSCODE | ASSMISS | Asset Is Missing | No Mobilise code at present | N/A | N/A | N/A |
| MEURETSTATUSCODE | ASSREQ | Assistance Required | No Mobilise code at present | N/A | N/A | N/A |
| MEURETSTATUSCODE | HANDS | Health and Safety | No Mobilise code at present | N/A | N/A | N/A |
| MEURETSTATUSCODE | INCSKILL | Wrong Craft or Skill | No Mobilise code at present | N/A | N/A | N/A |
| MEURETSTATUSCODE | LLORD | Landlord | No Mobilise code at present | N/A | N/A | N/A |
| MEURETSTATUSCODE | NOACCESS | No Access | Where value = NOACCESSTOSITE | ACTIVITY/FEEDBACK | NoVisitCode | String |
| MEURETSTATUSCODE | OOH | Out of Hours | No Mobilise code at present | N/A | N/A | N/A |
| MEURETSTATUSCODE | OOT | Out of Time | No Mobilise code at present | N/A | N/A | N/A |
| MEURETSTATUSCODE | QUOUREQ | Quote Required | No Mobilise code at present | N/A | N/A | N/A |
| MEURETSTATUSCODE | REASS | Reassign to Me | No Mobilise code at present | N/A | N/A | N/A |
| MEURETSTATUSCODE | RECALL | Recall | Where value = ABORT | ACTIVITY/FEEDBACK | NoVisitCode | String |
| MEURETSTATUSCODE | SUBREQ | Subcontractor Required | No Mobilise code at present | N/A | N/A | N/A |
| MEURETSTATUSCODE | TEMPFIX | Temporary Fix Initiated | No Mobilise code at present | N/A | N/A | N/A |
| MEURETSTATUSCODE | WAITMAT | Waiting For Materials | No Mobilise code at present | N/A | N/A | N/A |

### Tables

Create the following new attributes to the following existing Objects

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Maximo Object | WORKORDER | | | | | |
| Attribute | Description | Type | Length | Scale | Primary Column | Domain |
| MEURETURNSTATUSCODE | Return Status Code | ALN | 25 |  |  | MEURETSTATUSCODE |

## MOB\_MAX\_008\_Finish Work

### Maximo Interface

All Maximo configuration is the same as MOB\_MAX\_003\_Start Travel with one addition – Add the new attribute to the WORKORDER object

### Tables

Create the following new attributes to the following existing Objects

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Maximo Object | WORKORDER | | | | | |
| Attribute | Description | Type | Length | Scale | Primary Column | Domain |
| MEUNOSIGNATURECODE | No Signature Code | ALN | 25 |  |  | MEUNOSIGCODE |

## MOB\_MAX\_009\_Complete Visit

### Maximo Interface

All Maximo configuration is the same as MOB\_MAX\_003\_Start Travel

## MOB\_MAX\_010\_Create log notes

The following values/rules apply to the LOGTYPE:

|  |  |
| --- | --- |
| Action | Required Values |
| New asset is discovered | <max:LOGTYPE>NEWASSET</max:LOGTYPE>  <max:DESCRIPTION>New Asset found</max:DESCRIPTION> |
| Customer notes | <max:LOGTYPE>CLIENTNOTE</max:LOGTYPE>  <max:DESCRIPTION>Customer note</max:DESCRIPTION> |
| Technician comments | <max:LOGTYPE>WORK</max:LOGTYPE> |
| Note to be reviewed by the Manager | <max:LOGTYPE>MNGRATT</max:LOGTYPE>  <max:DESCRIPTION>Notice to the manager</max:DESCRIPTION> |
| Temporary Fix | <max:LOGTYPE>TEMPFIX</max:LOGTYPE> |
| More work Required | <max:LOGTYPE>MWR</max:LOGTYPE> |
| Remote Fix | <max:LOGTYPE>REMOTEFIX</max:LOGTYPE> |

### Tables

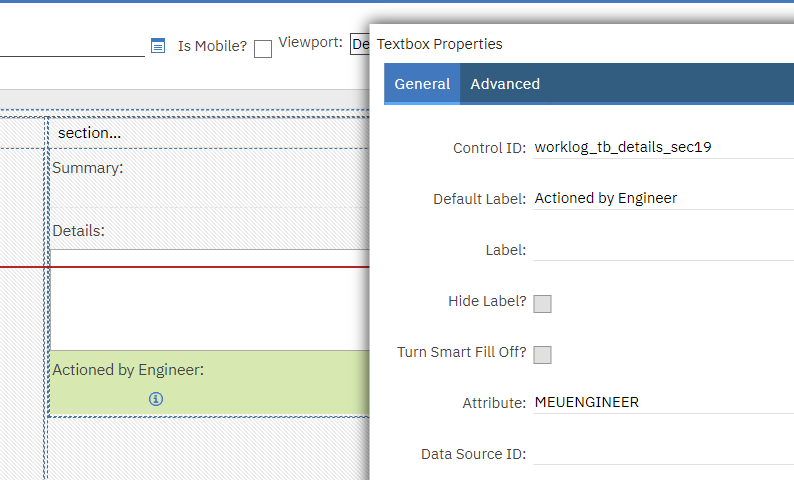
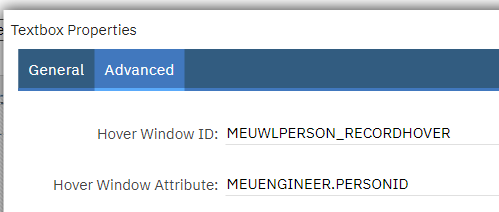
Create the following new attributes to the following existing Objects

|  |  |
| --- | --- |
| Maximo Object | WORKLOG |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Attribute | Description | Type | Length | Scale | Primary Column | Required |
| MEUENGINEER | The engineer that created the work log (via Mobilise) | UPPER | 30 | 0 | - | Y |

### Application Designer

Add the MEUENGINEER field to the Work Log details section on the log tab on the PLUSPWO application

### Object Structure

The following new object structure will be configured in object structure application.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | | MEUIFWOMOBLOGOS | | | |
| Description | | Workorder Worklog Structure (Mobilise Integration) | | | |
| Consumed By | | Integration | | | |
| Outbound Definition Class | | N/A | | | |
| Inbound Processing Class | | N/A | | | |
| Source Objects | |  | | | |
| Object | Parent Object | | Object Location Path | Relationship | Order |
| WORKORDER |  | | WORKORDER |  | 1 |
| WORKLOG | WORKORDER | | WORKORDER/WORKLOG | WORKLOG | 2 |

### Enterprise Service

The following enterprise service will be created

|  |  |  |
| --- | --- | --- |
| Maximo Enterprise Service | | MEUIFWOMOBLOGES |
| Description | |  |
| Operation | | Sync |
| Object Structure | |  |
| Processing Rules | N/A | |

### External System

This interfaces enterprise service will be included in the following external system

|  |  |
| --- | --- |
| External System | MEUMOBILISE |

## MOB\_MAX\_011\_Attach documents (INBOUND)

### Object Structure

The following new object structure will be configured in object structure application.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | | MEUIFWOMOBDOCSOS | | |
| Description | | Workorder Worklog Structure (Mobilise Integration) | | |
| Consumed By | | Integration | | |
| Outbound Definition Class | | N/A | | |
| Inbound Processing Class | | N/A | | |
| Source Objects | |  | | |
| Object | Parent Object | Object Location Path | Relationship | Order |
| WORKORDER |  | WORKORDER |  | 1 |
| DOCLINKS | WORKORDER | WORKORDER/DOCLINKS | PLUSCDOCLINKS | 1 |

### Enterprise Service

The following enterprise service will be created

|  |  |  |
| --- | --- | --- |
| Maximo Enterprise Service | | MEUIFWOMOBDOCSES |
| Description | | Workorder Documents Enterprise service (Mobilise Integration) |
| Operation | | Sync |
| Object Structure | |  |
| Processing Rules | N/A | |

### External System

This interfaces enterprise service will be included in the following external system

|  |  |
| --- | --- |
| External System | MEUMOBILISE |

## MOB\_MAX\_012\_Meter Readings

### Object Structure

The following new object structure will be configured in object structure application.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | | MEUIFWOMOBMETEROS | | |
| Description | | METER READING DATA (Mobilise Integration) | | |
| Consumed By | | Integration | | |
| Outbound Definition Class | | N/A | | |
| Inbound Processing Class | | N/A | | |
| Source Objects | |  | | |
| Object | Parent Object | Object Location Path | Relationship | Order |
| METERDATA |  | METERDATA |  | 1 |

### Enterprise Service

The following enterprise service will be created

|  |  |  |
| --- | --- | --- |
| Maximo Enterprise Service | | MEUIFWOMOBMETERES |
| Description | | METER READING DATA (Mobilise Integration) |
| Operation | | Sync |
| Object Structure | |  |
| Processing Rules | N/A | |

### External System

This interfaces enterprise service will be included in the following external system

|  |  |
| --- | --- |
| External System | MEUMOBILISE |

## MOB\_MAX\_013\_Report Cause - Remedy

### Object Structure

The following new object structure will be configured in object structure application.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | | MEUIFWOMOBFAILREPOS | | |
| Description | | Workorder Failure Reporting Object Structure (Mobilise Integration) | | |
| Consumed By | | Integration | | |
| Outbound Definition Class | | N/A | | |
| Inbound Processing Class | | N/A | | |
| Source Objects | |  | | |
| Object | Parent Object | Object Location Path | Relationship | Order |
| WORKORDER |  | WORKORDER |  | 1 |

### Enterprise Service

The following enterprise service will be created

|  |  |  |
| --- | --- | --- |
| Maximo Enterprise Service | | MEUIFWOMOBFAILREPES |
| Description | | Workorder Failure Reporting Enterprise service (Mobilise Integration) |
| Operation | | Sync |
| Object Structure | |  |
| Processing Rules | N/A | |

### External System

This interfaces enterprise service will be included in the following external system

|  |  |
| --- | --- |
| External System | MEUMOBILISE |

## MOB\_MAX\_014\_View Attachments Process

This process is initiated from the Mobilise device. ACE will process the request and query Maximo for and verify the docklinkID and LaborCode.

**IMPORTANT:** This process is already in place at Integral and will be reused in order to preserve the current infrastructure.

### Object Structure

The following new object structure will be configured in object structure application.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | | MEUMOBLABOROS | | |
| Description | | Congito Labor Object Structure | | |
| Consumed By | | Integration | | |
| Outbound Definition Class | | N/A | | |
| Inbound Processing Class | | N/A | | |
| Source Objects | |  | | |
| Object | Parent Object | Object Location Path | Relationship | Order |
| LABOR |  | LABOR |  | 1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | | MEUMOBDOCSOS | | |
| Description | | Congito Doclinks Object Structure | | |
| Consumed By | | Integration | | |
| Outbound Definition Class | | N/A | | |
| Inbound Processing Class | | N/A | | |
| Source Objects | |  | | |
| Object | Parent Object | Object Location Path | Relationship | Order |
| DOCLINKS |  | DOCLINKS |  | 1 |

### Enterprise Service

The following enterprise service will be created

|  |  |
| --- | --- |
| Maximo Enterprise Service | MEUMOBLABORES |
| Description | Mobilise SecureToken Labour Query |
| Operation | Query |
| Object Structure |  |
| Processing Rules | N/A |

|  |  |
| --- | --- |
| Maximo Enterprise Service | MEUMOBDOCSES |
| Description | Mobilise Doclinks Query |
| Operation | Query |
| Object Structure |  |
| Processing Rules | N/A |

### External System

This interfaces enterprise service will be included in the following external system

|  |  |
| --- | --- |
| External System | MEUMOBILISE |

## MOB\_MAX\_015\_Time Card

### Object Structure

The following new object structure will be configured in object structure application.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | MEUIFCOGTIMECARDOS | | | |
| Description | Labour Reporting Object Structure (Mobilise Integration) | | | |
| Consumed By | Integration | | | |
| Outbound Definition Class | N/A | | | |
| Inbound Processing Class | N/A | | | |
| Source Objects |  | | | |
| Object | Parent Object | Object Location Path | Relationship | Order |
| LABTRANS |  | LABTRANS |  | 1 |

### Enterprise Service

The following enterprise service will be created

|  |  |
| --- | --- |
| Maximo Enterprise Service | MEUIFCOGTIMECARDES |
| Description | Labour Reporting Enterprise service (Mobilise Integration) |
| Operation | Sync |
| Object Structure |  |
| Processing Rules | N/A |

### External System

This interfaces enterprise service will be included in the following external system

|  |  |
| --- | --- |
| External System | MEUMOBILISE |

## MOB\_MAX\_016\_End Shift

### Maximo Interface

All Maximo configuration is the same as MOB\_MAX\_001\_Start Shift

Appendix A – Maximo Mobilise Message Mapping

This is the Maximo-Mobilise mapping spreadsheet

The spreadsheet to be added following the Mobilise Mapping Workshops

Appendix B –Activity Status Mappings

|  |  |  |
| --- | --- | --- |
| CiQ Status | Maximo WO Status | Comment |
| COMMS-Success | DISPATCHED | The mobile has successfully received the WO Visit |
| TRAVEL\_TASK (Start) | TRAVEL | Engineer starts travel to the work site on the WO Visit |
| TRAVEL\_TASK (Finish w/o feedback) | ONHOLD | Engineer stops travel on the WO Visit by Pausing or Suspending the current activity |
| TRAVEL\_TASK|ABORT (Finish) | RETURN | Engineer has started travel on the WO Visit but has Aborted before arriving at the work site |
| TRANSITION (Start) | ONSITE | Engineer has confirmed arrival at the work site |
| TRANSITION (Finish w/o feedback) | ONHOLD | Engineer stops work on the WO Visit by Pausing or Suspending the current activity |
| TRANSITION|NO\_ACCESS (Finish with feedback) | RETURN | Engineer has arrived at the work site but failed to gain access to start work |
| START\_WORK | START | Engineer has confirm access to the Asset(s) to commence work |
| FINISH\_WORK (Finish w/o feedback) | ONHOLD | Engineer stops work on the WO Visit by Pausing or Suspending the current activity |
| FINISH\_WORK|FURTHER\_VISIT\_REQUIRED  (Finish with feedback) | RETURN | Engineer has closed the WO Visit on the mobile as not completed (e.g. more time required, no parts etc.) |
| FINISH\_WORK|FIXED  (Finish with feedback) | WOCOMP | The engineer has completed the work at site and is now closing out the visit (e.g. customer admin) |
| FINISH\_WORK|FIXED  (Finish with feedback inc Admin) | COMP | Engineer has closed the WO Visit on the mobile as completed |

Appendix C – Lookup Lists

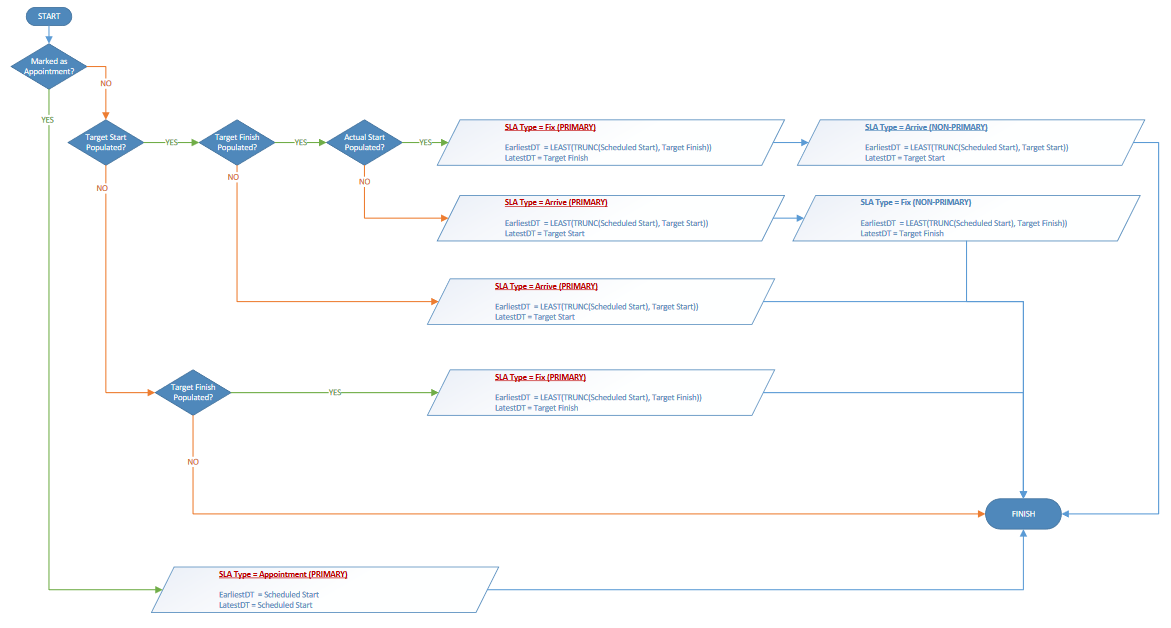
The following lookup lists will be made available to the engineer on the mobile device

* Failure List Reporting
* NoWorkCodes

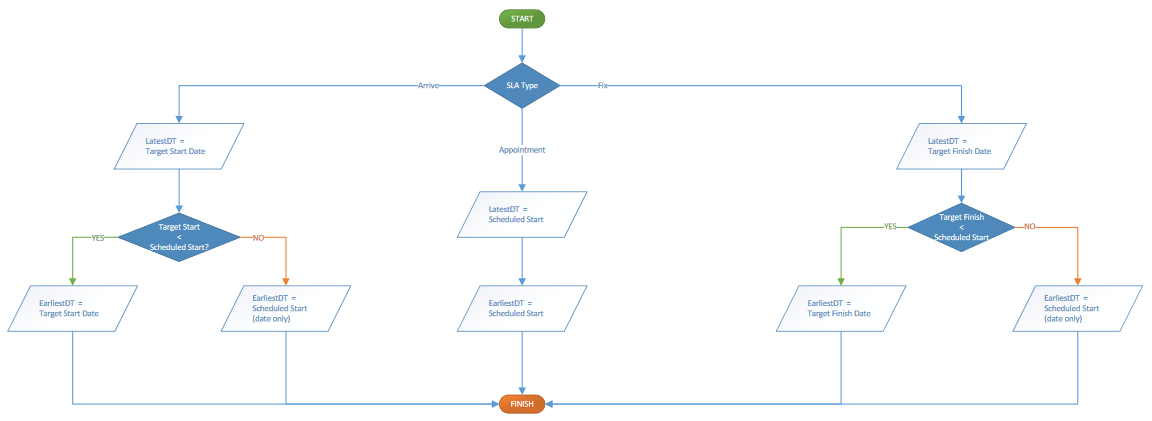
All lists will be managed in Maximo and if required any changes exported from Maximo and imported into Mobilise portal application for Phase 1.

Appendix D – SLA Mappings in ACE

This diagram shows process to calculate SLA Type



Once the SLA Type is known, the appropriate dates/times can be mapped to Mobilise fields



Appendix E – Glossary

| Term | Description |
| --- | --- |
| MX | IBM MAXIMO application |
| ACE | IBM App Connect Enterprise |
| MIF | IBM MAXIMO integration framework |
| TM Mobilise | Totalmobile Mobilise |
| WO | IBM MAXIMO Work order |

Appendix F – Commercial Assumptions

All the information, representations and statements in this document are correct and accurate to the best of our present knowledge based upon any requirements information available, our experience of performing similar services for other clients, and any assumptions stated herein, but they are not intended (and should not be taken) to be contractually binding unless and until they become the subject of a separate agreement between the parties. They are subject to contract and as such this proposal should not be construed as an offer capable of acceptance.

The information contained herein has been prepared on the basis that the agreement entered into between the parties will be the MACS terms of business.

If not otherwise expressly governed by the terms of a written confidentiality agreement executed by the parties, this proposal / document contains information which is confidential to MACS and is submitted to Vivo on the basis that it **must not be used in any way nor disclosed to any other party**, either whole or in part except that the information may be disclosed to employees or professional advisors of Vivo where such disclosure is on a need to know basis, and is for the purpose of considering this recommendation. Otherwise disclosures may not take place without the prior written consent of MACS.

The recommendations made in this document are valid for a period of 30 days, after which they will be subject to revision.