

**IBM Tivoli Netcool**

**Mobilink Impact Policies**

**Innovise ESM**

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# Document Control

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# Introduction

This document has been produced to Record the process of the development of the Impact Policies that are part of the Mobilink OSS. The aim of the document is to cover the all aspects of the development of the policies including a Schedule/Plan, Testing including Test Scripts, Data Loading and the Impact Policy Requirement Questions. The design requirements are help in the High Level Design Document

# General Policies

## Standard Enrichment : (HIGH)

**StdEnrich**

**Data Loading**

**From CMDB**

Fields required for enrichment including

Domain

Region

ManCity

CovCity

Site

OMC

ManagedObject

NE Priority

**Questions**

Many of these policies require Enrichment of events from CMDB.

What fields are enriched?

Not clear you already mentioned some fields to be enriched, what else you need. All fields to be enriched are mentioned in Device Table shared by Sehrish with Mansoor

What is the Key field from the event to the enrichment – NE?

Yes based on Site Code which is a 7 digit field you can find all other fields

Where is the information for this coming from?

From dataloading and some offline tables shared by Sehrish with Mansoor

## Maintenance Policies

**Maintanence**

**Data Loading**

**From CMDB**

Parent Child

**Questions**

**MaintainenceEnd**

**Data Loading**

None

**Questions**

## Incident Record Policies (HIGH)

**CreateTT**

This policy Creates a TT within TSRM when the MaximoStatus flag is set to 1,2 or 3

**Data Loading**

None

**Questions**

**ParentTT**

This Policy updates the child event with TT details from the Parent Event. This is required as the TT Details are not available on creation of the parent (may take up to 30 seconds)

**Data Loading**

None

**Questions**

**UpdateTT**

**Data Loading**

None

**Questions**

**ClearTT**

This policy closes a TT when MaximoStatus is set to

**Data Loading**

None

**Questions**

When an event with an associated TT clears should this Resolve/Clear the TT

Yes AS PER AGREEMENT THIS SHOULD Resolve the TT, and the operator would enter the reason and then close the TT. (More explain)

**ClearEventFromTT**

This Policy will set an event to clear when certain TT are closed within CMDB

**Data Loading**

**Questions**

## Synthetic Events (HIGH)

**ClearSyntheticEvents**

**Data Loading**

**Questions**

What clears the Synthetic Events?

In our understanding a synthetic event is produced in response to two three events, so that a single correlated TT is created for all of them rather than 2-3 separate TT’s. So the synthetic event should clear when all the underlying events resulting in that synthetic events clears.

# Correlation Policies

## DRI out of service alarms (LOW)

**Data Loading**

**From CMDB**

**DRI Density**

**Questions**

We need to check DRI Density from CMDB,

Where will this data be?

The data would be in CMDB as you said after dataloading. How this data can be obtained from EMS is via simple scripts/output files/ direct connection to DB etc. (Being discussed with Mansoor ) already

What will its key field in the event be?

Combination of DRI Number, BTS Name, BSC Name and Cell name

Where is the information coming from including details of where to run the command and credentials?

This should be covered in detail in data loading.

How can we Check DRI Status?

By logging into the relevant EMS and issuing simple commands. Commands is already shared.

For.e.g

Establish a ssh session with Motorola OMC enter username/password, rlogin into the NE in question and issue command

state <site id> dri <dri id>

How can we reset a DRI?

By logging into the relevant EMS and issuing simple commands. Commands is already shared.

For.e.g

Establish a ssh session with Motorola OMC enter username/password, rlogin into the NE in question and issue command

reset\_device <site id> dri <dri id>

After resetting DRI(s) how long should we wait before checking DRI Status?

5 Mins

How can Lock/Unlock a DRI

By logging into the relevant EMS and issuing simple commands. Commands is already shared.

For.e.g

Establish a ssh session with Motorola OMC enter username/password, rlogin into the NE in question and issue command

lock <site id> dri <dri id>

unlock <site id> dri <dri id>

## BSS Environmental Alarms (HIGH)

**Data Loading**

**From CMDB**

Site Type

Site Priority

Area

Address

SleepTime

**Questions**

We need to look up Sleep time in event table

Where is this table?

We would give you an offline table, having the site code for each site and its Level, then another table called time table, would have alarm text and time for each alarm for different levels, according to the time of the day ( Night/Morning). You can upload excel sheet into a DB table using scriptWhat is the schema of the table?

Excel sheet is as attached



What is the Key field from the event?

The Sleep Time would depend on 7 digit site code of the Object on which Event is occurring. The site code can be obtained from the managed object name itself

Who is supplying this information?

We would tell you how to extract this information from Object name

Is there a default value should we be unable to find the sleep time in the table

YES a default value will be used, and if we do not need to create a TT for a site we would indicate that by putting a negative value in Sleep Time.

Please list the subsets of alarms

Please define the required severity for alarms for each site type/ site priority

## Site down Alarm - Cell Alarms (MEDIUM)

**Data Loading**

**From CMDB**

Number of cells at Site

**Questions**

How would we know if all cells are down?

For Motorola and Huawei you get a specific alarm indicating all cells are down, string is already shared.

For alacatel you need to count the number of cells on which this alarm comes and compre it with total no of cells for that BTS from CCMDB

When a partial site down goes to a full site down should we generate an additional event or Update the existing Partial Event down to be a Full Site down Event

Update the existing one, and follow the same path while events clear that is degrade from full to partial site down if some events clear

If we have to generate a additional Full site down event what should we do with the Partial Site down

Update the existing one

We need to look up Sleep time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

We would give you an offline table, having the site code for each site and its Level, then another table called time table, would have alarm text and time for each alarm for different levels. You can upload excel sheet into a DB table using script

## Site Down Alarm – Site Down (HIGH)

**Data Loading**

**Questions**

We need to look up Sleep time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

We would give you an offline table, having the site code for each site and its Level, then another table called time table, would have alarm text and time for each alarm for different levels. You can upload excel sheet into a DB table using script

## Multiple BTS down alarms (HIGH)

**Data Loading**

**From CMDB**

Connectivity Information

**Questions**

We need to look up wait time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

We would give you an offline table, having the site code for each site and its Level, then another table called time table, would have alarm text and time for each alarm for different levels. You can upload excel sheet into a DB table using script

## RSL/GSL/MSL alarms (LOW)

**Data Loading**

**Questions**

What command do we need to issue to Motorola EMS to gather number of associated links and how do we issue this onto the EMS

Already shared

How do we know if all the links on a GPROC are down?

From Commands you will get info of all links running on a GPROC and alarms on all of them means all links on GPROC are down.

If this goes to the state of this goes from some links down to all links down what should we do?

Update the same TT to all links down or GRPOC is down

## X25 failures caused by TxN problems (MEDIUM)

**Data Loading**

Cross-connect info from a Mobilink external DB

**Questions**

How can we tell that all OMLs down for a given BSC

From the alarm string which is already shared for all vendors

## Cell performance related alarms

**Data Loading**

**Questions**

We need to look up Wait time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the wait time in the table

If the alarms are coming in from the same BSC, this should also be mentioned in the TT. Does this mean that we should count the number of these alerts and that we should mention it in the TT if it is greater than a threshold? If so what should this threshold be?

Timing fixed to 5 Mins for X25 failures

## RSL link disconnect alarms

**Data Loading**

**From CMDB**

Site data

**Questions**

**Please note that RSL link is specific for Motorola , for Alcatel you will get a BTS Audit O&M alarm when a slave DCS cabinet goes down you need to treat that alarm with the same policy, for Huawei also you will get an alarm whose string would be shared and it needs to be treated in same policy**

## Lack of events detection for each OMC (MEDIUM)

**Data Loading**

**Questions**

Please list all OMC’s to be checked

All BSS OMCR’s need to be checked, details of all EMS to be monitored is already shared.

Please List the wait time associated with each OMC

5 Mins-2 Hours depending on the OMC in question

Is the period between checks the same for all OMC’s?

YES

What should this period be?

Continous Check, if no event is received from any OMC for 3 mins an alarm should be generated. For some OMC you might get a clear alarm showing OMC disconnection

## TxN environmental Events

**Data Loading**

**From CMDB**

Site information

Site co-ordinates

**Questions**

Just to clarify, these events ‘share’ the same parent events as the BSC Power Events

What Co-ordinate information should be enriched into this?

## TxN Input power low/high/abnormal

**Data Loading**

**Questions**

## TxN External Customer Alarms

**Data Loading**

**From CMDB**

Customer

**Questions**

How do we associate given alarms to given external Customers

## R-LOS Fibre break alarm

**Data Loading**

From CMDB

Details of the NEs and DWDM elements positions on the fibre rings

Wait Time

**Questions**

We need to look up Wait time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

## APS Alarm

**Data Loading**

**From CMDB**

List of potential traffic that may have lost redundancy

**Questions**

We check ‘list of potential traffic that has lost redundancy’

Where is this list held?

How do we check for lost redundancy?

## Cable break policy

**Data Loading**

**Questions**

How will an event be marked as requiring Processing through this policy?

How can we determine the ends of the break?

Where will the information for the internal impact table to locate the location of the break be coming from and when?

## ETH\_LOS alarm

**Data Loading**

Lost traffic

Domain

Region

Lost connectivity

**Questions**

How do we know what traffic is being carried on the alerting ethernet

## Microwave error alarm

**Data Loading**

Effected channels

Capacity of Trunk

Type of Trunk

**Questions**

## Microwave environmental alarm

**Data Loading**

**From CMDB**

Site Type

Site Priority

SleepTime

**Questions**

We need to look up Sleep time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

Please define the required severity for alarms for each site type/ site priority

## Microwave Equipment power supply alarm

**Data Loading**

**Questions**

We need to look up Sleep time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

## Cross domain GPRS alarm (Defer to Phase-2)

**Data Loading**

**From CMDB**

GPRS

BSC Name

BSC Rack

BSC Shelf

DLCI

**Questions**

## Cell GPRS failure alarm

**Data Loading**

**Questions**

## Core signalling down C7 alarm

**Data Loading**

**Questions**

We need to look up Sleep time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

How do we find out the Alt end of the link?

Where do we find

SLC numbers

A&Z Nodes

Percentage of effected links

## CORE Media outage alarm

**Data Loading**

**Questions**

We need to look up Sleep time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

How do we find ‘Signal Percentage Down’?

## CORE hardware alarm

**Data Loading**

**Questions**

We need to look up Sleep time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

## CORE STP Linkset down alarm

**Data Loading**

**Questions**

How do we find ‘Percentage of effected links’?

How do we know if it’s a high speed link?

## CORE STP card isolation alarm

**Data Loading**

**Questions**

## CORE STP DIU down alarm

**Data Loading**

**Data Loading**

**Questions**

Where do we lookup MSC Equip?

## Communication alarm

**Data Loading**

**Questions**

Where do we find Point code?

## In node down alarm

## IN processing error alarm

**Data Loading**

**Questions**

TT should be generated within 10 – 15 minutes after alarm – We will raise the TT after 10 minutes

## IN call gaping alarm

**Data Loading**

**Questions**

Alarm should generate a TT within 3-5 minutes – We will raise a TT after 3 minutes

## QoS alarm

**Data Loading**

**Questions**

## Equipment alarm

**Data Loading**

**Questions**

We need to look up Sleep time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

## IN DPC alarm

**Data Loading**

**Questions**

We need to look up Sleep time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

How do we find out the Alt end of the link?

Where do we find

SLC numbers

A&Z Nodes

Percentage of effected links

## IN environmental alarm

**Data Loading**

**Questions**

We need to look up Sleep time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

## IN valista issue on IN alarm

**Data Loading**

**Questions**

We are required to check for historical events for last ‘x’ minutes –

What is ‘x’

We are required to generate a synthetic event if a threshold is breached,

What is this threshold?

We need to look up Sleep time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

## IN VOMS alarm

**Data Loading**

**Questions**

We need to look up Sleep time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

## SMSC Service impacting alarms

**Data Loading**

**Questions**

We need to look up Sleep time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

## SGSN hardware alarm (Defered to Phase-2)

**Data Loading**

**Questions**

We need to look up Sleep time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

## SGSN multiple C7 link down (Defered to Phase-2)

**Data Loading**

**Questions**

We need to look up Sleep time in event table

Where is this table?

What is the schema of the table?

What is the Key field from the event?

Who is supplying this information?

Is there a default value should we be unable to find the sleep time in the table

How do we find out the Alt end of the link?

Where do we find

SLC numbers

A&Z Nodes

Percentage of effected links

## APS impact correlation

**Data Loading**

**Questions**

Topology Table

Where is it?

What is its schema?

What is the key field from the event?

What field should be enriched?

How do we know which trails are associated with which customer?

## C7 signaling correlation and multi fails in city

**Data Loading**

**Questions**

What is the schema of this table?

## XBL down alarm

**Data Loading**

**Questions**

## DPC/multiple C7 link alarm

**Data Loading**

**Questions**

## Call Gapping alarm

**Data Loading**

**Questions**

## Critical hardware alarm

**Data Loading**

**Questions**

Which are the critical hardware alarms?

## IN node down alarm

**Data Loading**

**Questions**

## Valista issue alarm (Deferred)

**Data Loading**

**Questions**

## Critical Threshold crossed alarm

**Data Loading**

**Questions**

# Appendix 1 – Test Plans.

## Alarm suppression during maintenance windows

### Requirement:

The requirement requires that all new events are checked against a table held in CMDB. If it or its parent is found to be in a maintenance period then the event should be flagged to show that it is in Maintenance, the reason for this and the time that this maintenance period ends

Tool is required to insert emergency change windows into CMDB

Tool to take the event out of its maintenance period early

### Policy(s)

Maintenance

This policy checks all new Events and if the Node or the parent Node are within a maintenance window sets the OS field MaintFlag to show the reason and OS field MaintEnd to show the end of the maintenance window. If the Event is not in a maintenance window then MaintFlag is set to 1, allowing further policies to run against this event

Maintenance End

This policy runs every 15 seconds checking events that have MaintFlag set to show that it is in a maintenance window and checks if it is has reached the end of the maintenance window. If it has reached the end of the maintenance window it resets the MaintFlag to 0 causing it to be checked again by the Maintenance Policy in case there are any further maintenance windows affecting this event.

### Test Event source:

Any Event can be used to check these policies

### Test 1 – check basic operation of the maintenance policies

1. Enter an record into the maintenance table for the Node of the test event for a 5 minute period
2. Insert the test event
3. Using an AEL that shows suppressed events see the event arrives and that it is placed in maintenance, checking the correct value is displayed for MaintFlag and that the end of the maintenance window appears in MaintEnd
4. After 5 minutes check that the event comes out of maintenance (MaintFlag = 1) and that any further required policies run

### Test 2 – check sequential maintenance windows

1. Enter a record into the maintenance table for the Node of the test event for a 5 minute period
2. Enter a record into the maintenance table for the Node of the test event for a 5 minute period that starts just before the first window ends.
3. Insert a test event
4. Check the correct values are displayed for MaintFlag and MaintEnd(End of first maintenance window)
5. After 5 minutes check that the correct values are displayed for MaintFlag and MaintEnd(End of second maintenance window)
6. After a further 5 minutes check that the event comes out of maintenance (MaintFlag = 1) and that any further required policies run

### Test 3 – Test use of tool to take event out of maintenance

1. Enter an record into the maintenance table for the Node of the test event for a 5 minute period
2. Insert the test event
3. Check the correct values are displayed for MaintFlag and MaintEnd
4. Right Click the event and select the end maintenance tool
5. Check that the event comes out of maintenance (MaintFlag = 2) and that any further required policies run

## TxN Input Power Low/High/Abnormal

### Requirement:

Input power alarms should have TTs raised for them after a specific, 5 minute, wait period, to allow the events to clear automatically. If a power abnormal alarm is received it should be treated as a parent event for the low and high power alarms.

### Policy(s)

TxnInputPower

This policy checks all TxN power events. If the event has not cleared after 5 minutes generates a new TT if there isn’t already one raised for a TxN power event from the same node. If there is a TT for a TxN power event it will use the same TT

### Test Event source:

TxN Power High Event

TxN Power Abnormal event

Note: if these events cannot be generated by ML then it may be necessary to use synthetic events. If this is the case the ML should certify that the synthetic events are suitable for this testing

### Test 1 – Check Basic operation

1. Insert TxN Power High Event
2. Check Event appears in a suitable AEL
3. After 5 minutes check that a TT is raise

Following this test clear the alert and it’s associated TT

### Test 2 – Check that no TT is raised if the event is cleared within the 5 minute window

1. Insert TxN Power High Event
2. Check Event appears in a suitable AEL
3. Clear the Event
4. After 5 minutes check that no TT has been raised

### Test 3 - check that multiple power events for a given Node only generate 1 TT

1. Insert TxN Power Abnormal Event
2. Check Event appears in a suitable AEL
3. After 5 minutes check that a TT is raised – make a note of its reference
4. Insert TxN Power High Event
5. Check Event appears in a suitable AEL
6. Check the event has the same TT reference as the TxN Power Abnormal Event
7. Check the TT has been updated to show the additional event

## Core Hardware

### Requirement:

Multiple environmental alarms associated with the same CORE NE, for example GenSet alarms and Low Voltage alarms, should be handled in as a single incident, and not raise individual TTs.

The severity of the alarm should be associated with the site type and priority which is to be provided by Mobilink for environmental alarms.

When all environmental alarms have cleared for the site, the incident is deemed to be closed.

Wapda and GenSet failure alarms should be correlated to create a single TT in TSRM.

Power alarms appear in the category of Trunk System alarms and Msoft alarms for Suth NEs.

### Policy(s)

CoreHardware

This policy initially identifies the sub group of core hardware alerting before enriching the event. I then checks to see if there is an existing TT for that sub group, if there is it, it update the TT.

If event has not cleared after a delay then a synthetic event with an associated TT is raised with details of the parent event and of the TT being put in the child events

CoreHardwareClear

This policy checks any Core Hardware events when they are set to clear. If they are last child event of a sub group it sets the parent event to clear

### Test Event source:

### Test 1 – Test description