



# ***Framework Standard***

**Saudi Telecom Company**

**Field Operations Processes**

**TM Forum Framework 17.0 Certification**

**Business Process Framework (eTOM) Release 17.0**

**Self-Assessment Process Mapping Report**

**1.5.8 – Resource Trouble Management**

**Version 1.0**

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## 1.5.8 Resource Trouble Management

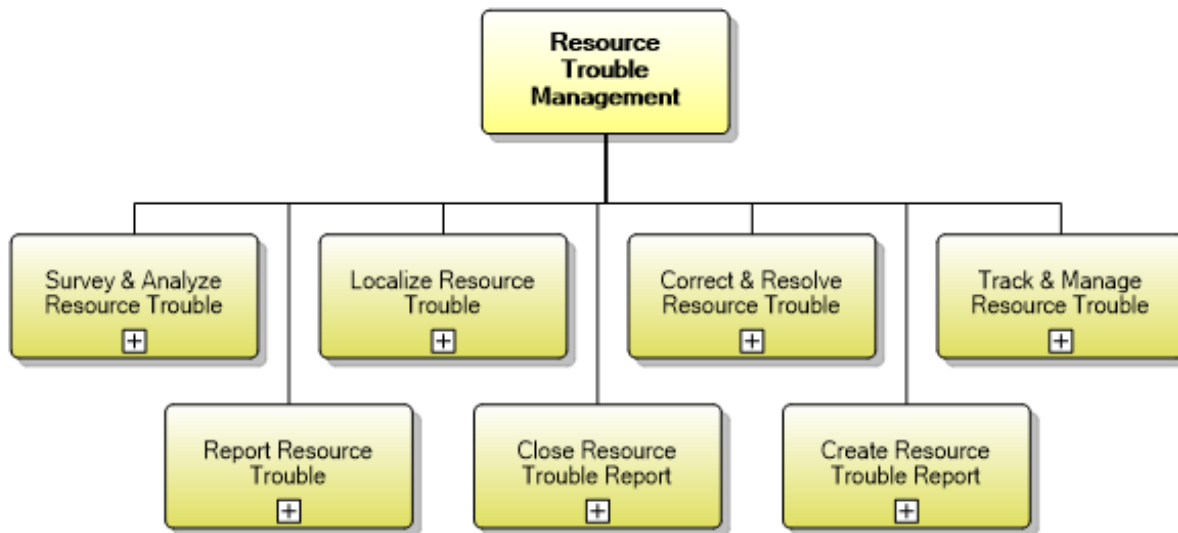


Figure 1: 1.5.8 Resource Trouble Management decomposition

### Resource Trouble Management

**Process Identifier:** 1.5.8

#### Brief Description

Responsible for the management of troubles with specific resources.

#### Extended Description

Resource Trouble Management processes are responsible for the management of troubles, including security events, associated with specific resources. The objectives of these processes are to efficiently and effectively manage reported resource trouble, isolate the root cause and act to resolve the resource trouble.

Responsibilities of the Resource Trouble Management processes include, but are not limited to:

- Detecting, analyzing, managing and reporting on resource alarm event notifications;
- Initiating and managing resource trouble reports;
- Performing resource trouble localization analysis;
- Correcting and resolving resource trouble;
- Reporting progress on resource trouble reports to other processes;
- Assigning & tracking resource trouble testing and repair activities
- Managing resource trouble jeopardy conditions.

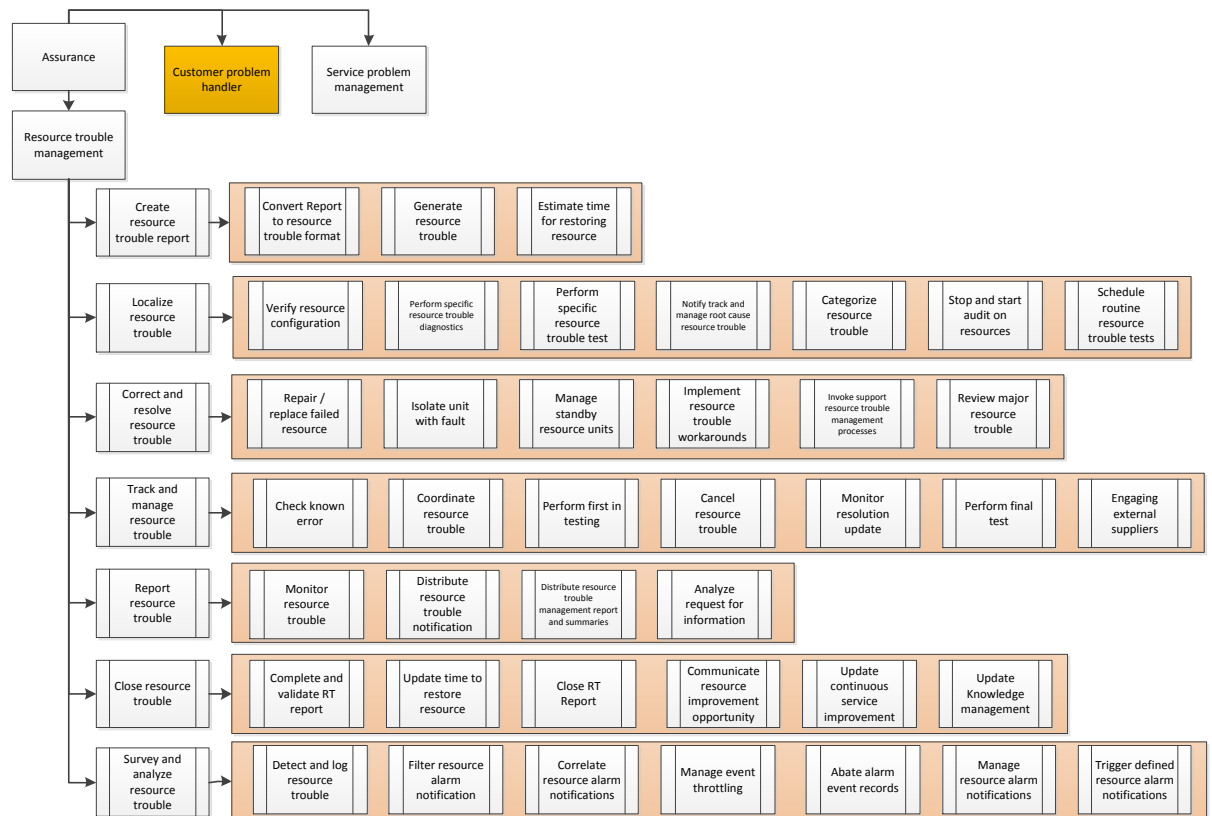
On one hand, resource troubles may relate to Problems in the Service domain and therefore also potentially in the customer domain. On the other hand, they may relate to specific resource failures or performance degradations, which are caused by resource

faults.

As such, the Resource Trouble Management processes work with specific resource alarm event notifications received from Resource Data Collection & Distribution, specific resource performance notifications from Resource Performance Management, and potential specific resource trouble notifications from Service Problem Management processes.

Resource Trouble Management processes perform analysis, decide on the appropriate actions/responses and carry them out with the intent of restoring normal operation on specific resources.

However, these activities need to interact with the Service Problem Management processes, as the latter have a view on service impact. Resource Trouble Management processes are responsible for informing Service Problem Management of any potential service problems. Where the original report arose as a result of service problems, the Resource Trouble Management processes may be coordinated by Service Problem Management processes.



**Explanatory**

Reserved for future use.

**Mandatory**

Reserved for future use.

**Optional**

Reserved for future use.

**Interactions**

Reserved for future use.

## Survey & Analyze Resource Trouble

**Process Identifier:** 1.5.8.1

**Brief Description**

Monitor resource alarm event notifications and manage resource alarm event records in real-time. Resource alarm event notifications include those alarms related to security events.

**Extended Description**

The objective of the Survey & Analyze Resource Trouble processes is to monitor resource alarm event notifications and manage resource alarm event records in real-time.

Responsibilities of the Survey & Analyze Resource Trouble processes include, but are not limited to:

- Detecting and collecting resource alarm event notifications;
- Initiating and managing resource alarm event records;
- Performing resource alarm event notification localization analysis;
- Correlating and filtering resource alarm event records;
- Reporting resource alarm event record status changes to other processes
- Managing resource alarm event record jeopardy conditions.

Resource alarm event notification analysis encompasses the identification of the resource alarm event in terms of reporting entity and nature of the resource alarm event. It will then analyze the resource alarm events based on a number of criteria and then suppress redundant, transient or implied resource alarm events by means of filtering and correlation. It includes the notification of new resource alarm event records, or status changes of previously reported resource alarm event records, as well as abatement messages when resource alarm event records have been cleared.

The analysis will correlate resource alarm event notifications to planned outage notifications to remove false resource alarm event notifications arising as a result of the planned outage activity.

These processes may determine that a resource alarm event notification may represent

a service impacting condition. In these circumstances this process is responsible for indicating a potential service problem to the Service Problem Management processes. As a part of this indication this process is responsible for identifying the impacted service instances associated with the resource instances presenting alarm event notifications and passing this information to the Service Problem Management processes.

Resource alarm event record correlation and filtering encompasses the correlation of redundant, transient or implied resource alarm event notifications with a specific “root cause” resource alarm event notification and associated resource alarm event record.

The Survey & Analyze Resource Trouble processes might trigger a well-defined action based on specific resource alarm event notification information as well as the non-arrival of resource alarm event notification information after a specific time interval has elapsed.

These processes are also responsible for monitoring and triggering the appropriate action when a resource alarm event record is not cleared within a pre-defined period of time.

**Explanatory**

Reserved for future use.

**Mandatory**

Reserved for future use.

**Optional**

Reserved for future use.

**Interactions**

Reserved for future use.

## Localize Resource Trouble

**Process Identifier:** 1.5.8.2

**Brief Description**

Perform analysis to identify the root cause of the specific resource trouble including those resource troubles related to security events.

**Extended Description**

The objective of the Localize Resource Trouble processes is to identify the root cause of the specific resource trouble. These processes are invoked by the Track & Manage Resource Trouble processes.

The responsibilities of these processes include, but are not limited to:



- Verifying whether the resource configuration matches the appropriate service features;
- Performing diagnostics against the specific resources;
- Running tests against the specific resources;
- Starting and stopping audits against specific resources
- Scheduling routine testing of the specific resources.

The Localize Resource Trouble processes will make the results of the root cause analysis available to other processes. The Localize Resource Trouble processes will update the open resource trouble report, as required during the assessment, and when the root cause has been identified.

When the process is complete the Localize Resource Trouble processes will notify the Track & Manage Resource Trouble processes.

#### **Explanatory**

Reserved for future use.

#### **Mandatory**

Reserved for future use.

#### **Optional**

Reserved for future use.

#### **Interactions**

Reserved for future use.

## **Correct & Resolve Resource Trouble**

**Process Identifier:** 1.5.8.3

#### **Brief Description**

Restore or replace resources that have failed as efficiently as possible

#### **Extended Description**

The objective of the Correct & Resolve Resource Trouble processes is to restore or replace resources that have failed as efficiently as possible.

Based on the nature of the resource failure leading to the associated resource alarm event notification, automatic restoration procedures might be triggered. Manual restoration activity is assigned to the Correct & Resolve Resource Trouble processes from the Track & Manage Resource Trouble processes.

Depending on the nature of the specific resource failure, these processes may possibly repair or replace the failed unit or specific resource. These processes are also responsible for

- to isolate a unit with a fault
- to manage the redundant resource units (e.g. hot standby)
- to (auto) heal a resource

- to identify the root cause of failure
  - to repair failed specific resource (including hardware failure and software failure)
- For large resource failures requiring extensive repair and/or replacement activity to restore normal operation, these processes will attempt to implement work-arounds to recover the specific resource operation. In these circumstances, recover of normal operation may require invocation of the Support Resource Trouble Management processes.
- They will also report successful restoration of normal operation, restoration through temporary work-arounds or an unsuccessful attempt at restoration to Track & Manage Resource Trouble through updates to the associated resource trouble report.

#### **Explanatory**

Reserved for future use.

#### **Mandatory**

Reserved for future use.

#### **Optional**

Reserved for future use.

#### **Interactions**

Reserved for future use.

## **Track & Manage Resource Trouble**

**Process Identifier:** 1.5.8.4

#### **Brief Description**

Ensure testing, repair and restoration activities are assigned, coordinated and tracked efficiently, and that escalation is invoked as required for any open resource trouble reports in jeopardy

#### **Extended Description**

The objective of the Track & Manage Resource Trouble is to ensure testing, repair and restoration activities are assigned, coordinated and tracked efficiently, and that escalation is invoked as required for any open resource trouble reports in jeopardy.

Responsibilities of these processes include, but are not limited to:

- Initiating first-in testing using automated remote testing capabilities;
- Adding additional information to an open resource trouble report based on the first-in testing;
- Scheduling, assigning and coordinating repair and restoration activities;
- Initiate any final testing to confirm clearance of the service problem;
- Undertake necessary tracking of the execution progress;
- Modifying information in an existing resource trouble report based on assignments;
- Modifying the resource trouble report status;
- Canceling a resource trouble report when the specific trouble was related to a false

alarm event

- Monitoring the jeopardy status of open resource trouble reports, and escalating resource trouble reports as necessary.

These processes will co-ordinate all the actions necessary in order to guarantee that all tasks are finished at the appropriate time and in the appropriate sequence.

The Track & Manage Resource Trouble processes are responsible for engaging external suppliers in correction and recovery activities when higher level expertise and/or higher level support is required to resolve the resource trouble. This engagement can be linked to the priority of the resource trouble report, and could occur automatically for highest priority resource trouble reports.

The Track & Manage Resource Trouble processes will also inform the Close Resource Trouble processes by modifying the resource trouble report status to cleared when the resource trouble has been resolved.

#### **Explanatory**

Reserved for future use.

#### **Mandatory**

Reserved for future use.

#### **Optional**

Reserved for future use.

#### **Interactions**

Reserved for future use.

## **Report Resource Trouble**

**Process Identifier:** 1.5.8.5

#### **Brief Description**

Monitor the status of resource trouble reports provide notifications of any changes and provide management reports. This includes resource trouble caused by security events.

#### **Extended Description**

The objective of the Report Resource Trouble processes is to monitor the status of resource trouble reports, provide notifications of any changes and provide management reports.

These processes are responsible for continuously monitoring the status of resource trouble reports and managing notifications to processes and other parties registered to receive notifications of any status changes, for example, Resource Performance Management and Service Quality Management. Notification lists are managed and maintained by the Support Resource Trouble Management processes.

These processes record, analyze and assess the resource trouble report status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Resource Trouble Management process. These specialized

summaries could be specific reports required by specific audiences.  
These processes will make the necessary reports about the resource trouble that occurred, the root cause and the activities carried out for restoration.

**Explanatory**

Reserved for future use.

**Mandatory**

Reserved for future use.

**Optional**

Reserved for future use.

**Interactions**

Reserved for future use.

## Close Resource Trouble Report

**Process Identifier:** 1.5.8.6

**Brief Description**

Close a resource trouble report when the resource problem has been resolved

**Extended Description**

The objective of the Close Service Trouble Report processes is to close a service trouble report when the service problem has been resolved.

These processes monitor the status of all open service trouble reports, and recognize that a service trouble report is ready to be closed when the status is changed to cleared.

**Explanatory**

Reserved for future use.

**Mandatory**

Reserved for future use.

**Optional**

Reserved for future use.

**Interactions**

Reserved for future use.

## Create Resource Trouble Report

**Process Identifier:** 1.5.8.7

**Brief Description**

Create a new resource trouble report

### **Extended Description**

The objective of the Create Resource Trouble Report process is to create a new resource trouble report.

A new resource trouble report may be created as a result of resource alarm event notification analysis, and subsequent creation of new resource alarm event records, undertaken by the Survey & Analyze Resource Trouble processes, or at the request of analysis undertaken by other processes in the Service-Ops or Resource-Ops (in particular a Service Trouble Report can generate one or more Resource Trouble Reports) or Engaged Party-Ops and Resource-Ops layers which detect that some form of failure has occurred for which resource restoration activity is required to restore normal operation. If the resource trouble report is created as a result of a notification or request from processes other than the Survey & Analyze Resource Trouble processes, the Create Resource Trouble Report processes are responsible for converting the received information into a form suitable for the Resource Trouble Management processes, and for requesting additional information if required.

These processes will make estimates of the time to restore resource which will be included in the new resource trouble report so that other processes can gain access to this information.

### **Explanatory**

Reserved for future use.

### **Mandatory**

Reserved for future use.

### **Optional**

Reserved for future use.

### **Interactions**

Reserved for future use.

## 1.5.8.1 Survey & Analyze Resource Trouble

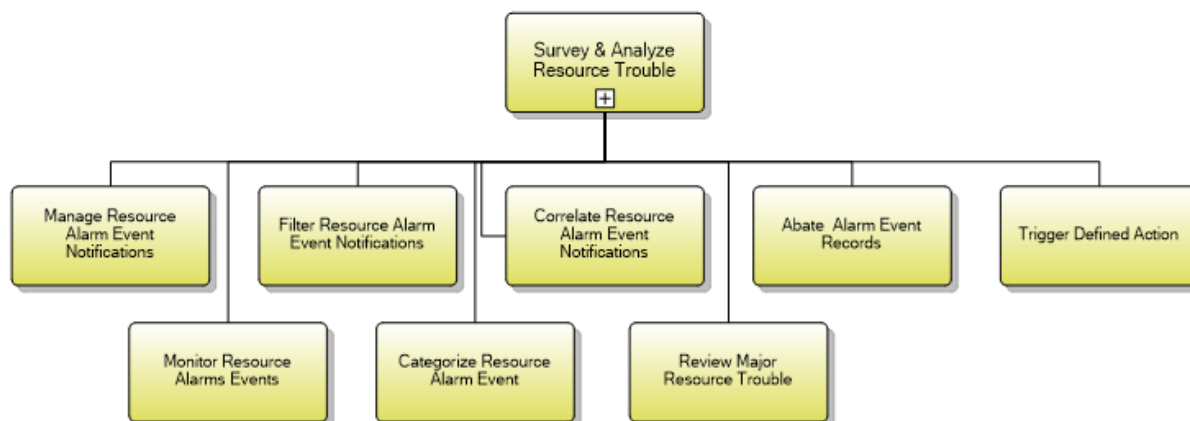


Figure 2: 1.5.8.1 Survey & Analyze Resource Trouble decomposition

### Survey & Analyze Resource Trouble

**Process Identifier:** 1.5.8.1

#### Brief Description

Monitor resource alarm event notifications and manage resource alarm event records in real-time. Resource alarm event notifications include those alarms related to security events. AM

#### Comment for the compliance:

AM (Please refer to the document ASS-FUL ETE Design V1 r1 and BR-CC.TT.01 “Trouble Ticket to Solution”)  
See Level4s in scope below for details of support

#### Extended Description

The objective of the Survey & Analyze Resource Trouble processes is to monitor resource alarm event notifications and manage resource alarm event records in real-time.

Responsibilities of the Survey & Analyze Resource Trouble processes include, but are not limited to:

- Detecting and collecting resource alarm event notifications;
- Initiating and managing resource alarm event records;
- Performing resource alarm event notification localization analysis;
- Correlating and filtering resource alarm event records;
- Reporting resource alarm event record status changes to other processes
- Managing resource alarm event record jeopardy conditions.

Resource alarm event notification analysis encompasses the identification of the resource alarm event in terms of reporting entity and nature of the resource alarm event. It will then analyze the resource alarm events based on a number of criteria and then suppress redundant, transient or implied resource alarm events by means of filtering and correlation. It includes the notification of new resource alarm event records, or status changes of previously reported resource alarm event records, as well as abatement messages when resource alarm event records have been cleared.

The analysis will correlate resource alarm event notifications to planned outage notifications to remove false resource alarm event notifications arising as a result of the planned outage activity.

These processes may determine that a resource alarm event notification may represent a service impacting condition. In these circumstances this process is responsible for indicating a potential service problem to the Service Problem Management processes. As a part of this indication this process is responsible for identifying the impacted service instances associated with the resource instances presenting alarm event notifications and passing this information to the Service Problem Management processes.

Resource alarm event record correlation and filtering encompasses the correlation of redundant, transient or implied resource alarm event notifications with a specific “root cause” resource alarm event notification and associated resource alarm event record.

The Survey & Analyze Resource Trouble processes might trigger a well-defined action based on specific resource alarm event notification information as well as the non-arrival of resource alarm event notification information after a specific time interval has elapsed.

These processes are also responsible for monitoring and triggering the appropriate action when a resource alarm event record is not cleared within a pre-defined period of time.

**Explanatory**

Reserved for future use.

**Mandatory**

Reserved for future use.

**Optional**

Reserved for future use.

**Interactions**

Reserved for future use.

## Manage Resource Alarm Event Notifications

**Process Identifier:** 1.5.8.1.1

### **Brief Description**

This process may determine that a resource alarm event notification may represent a service impacting condition. In these circumstances this process is responsible for indicating a potential service problem to the Service Problem Management processes. As a part of this indication this process is responsible for identifying the impacted service instances associated with the resource instances presenting alarm event notifications and passing this information to the Service Problem Management processes.

### **Extended Description**

Not used for this process element

### **Explanatory**

This process may determine that a resource alarm event notification may represent a service impacting condition.

### **Mandatory**

This process is responsible for indicating a potential service problem to the Service Problem Management processes. As a part of this indication this process is responsible for identifying the impacted service instances associated with the resource instances presenting alarm event notifications and passing this information to the Service Problem Management processes. **AM**

All (Up/Up) or (Up/Down) or (Down/up) are referred to T1.5

Tier 2 will be the head of any notification for any general outages observation after getting the Change manager approval as well as using the IVR reflection to minimize the opening faults for any planned activity and general outage

The network team performs Survey & Analyze resource Problem to monitor resource alarm event notifications and manage resource alarm event records in real-time through Surveillance tools

All the tickets which are passed on to the corporate network team are recorded in network ticketing system, tracked and managed in the same system.

Once the resolution is done, network team informs Tier 2 team and status is updated in CRM system.

### **Optional**

Not used for this process element

### **Interactions**

Not used for this process element



## Filter Resource Alarm Event Notifications

**Process Identifier:** 1.5.8.1.2

### Brief Description

This process encompasses the identification of the resource alarm event in terms of reporting entity and nature of the resource alarm event. It then analyzes the resource alarm events based on a number of criteria and then suppresses redundant, transient or implied resource alarm events by means of filtering and correlation

### Extended Description

Not used for this process element

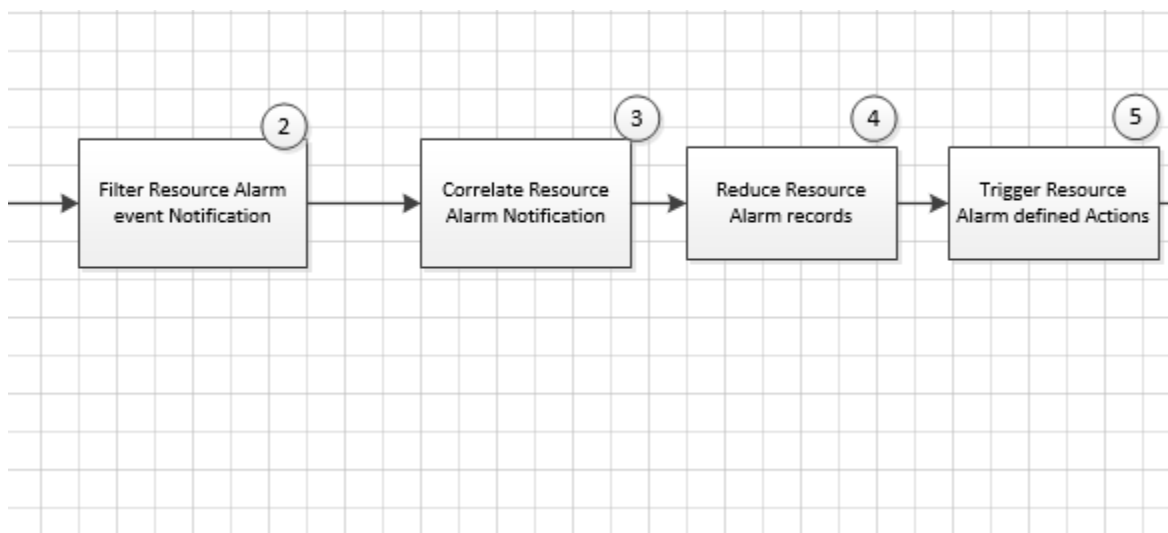
### Explanatory

Not used for this process element

### Mandatory

This process encompasses the identification of the resource alarm event in terms of reporting entity and nature of the resource alarm event. It then analyzes the resource alarm events based on a number of criteria and then suppresses redundant, transient or implied resource alarm events by means of filtering and correlation **AM**

STC Network team filters resource alarm event notifications to analyze the root cause for any repeated resource failures.



### Optional

Not used for this process element

### Interactions

Not used for this process element

## Correlate Resource Alarm Event Notifications

**Process Identifier:** 1.5.8.1.3

### **Brief Description**

Resource alarm event record correlation and filtering encompasses the correlation of redundant, transient or implied resource alarm event notifications with a specific “root cause” resource alarm event notification and associated resource alarm event record. This process correlates resource alarm event notifications to planned outage notifications to remove false resource alarm event notifications arising as a result of the planned outage activity.

### **Extended Description**

Not used for this process element

### **Explanatory**

Resource alarm event record correlation and filtering encompasses the correlation of redundant, transient or implied resource alarm event notifications with a specific “root cause” resource alarm event notification and associated resource alarm event record.

### **Mandatory**

This process correlates resource alarm event notifications to planned outage notifications to remove false resource alarm event notifications arising as a result of the planned outage activity. **AM**

This process is carried out by STC Network. The Network team correlates resource alarm event notifications to planned outages, to eliminate any false resource alarm notifications.

### **Optional**

Not used for this process element

### **Interactions**

Not used for this process element

## Abate Alarm Event Records

**Process Identifier:** 1.5.8.1.4

### **Brief Description**

This process includes the notification of new resource alarm event records, or status changes of previously reported resource alarm event records, as well as abatement messages when resource alarm event records have been cleared.

### **Extended Description**

Not used for this process element

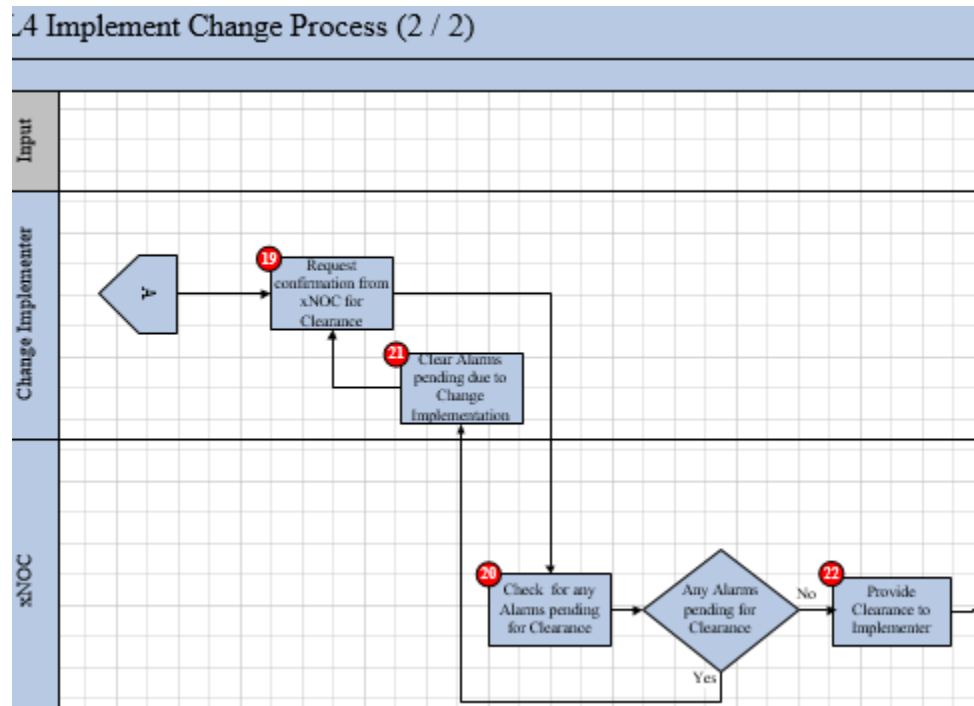
**Explanatory**

Not used for this process element

**Mandatory**

This process includes the notification of new resource alarm event records, or status changes of previously reported resource alarm event records, as well as abatement messages when resource alarm event records have been cleared. **AM**

STC Network manages any notification of new resource alarm event records or status changes of previously reported resource alarm event records. And may happens during Maintenance down time MDT activities.



**Optional**

Not used for this process element

**Interactions**

Not used for this process element

**Trigger Defined Action**

**Process Identifier:** 1.5.8.1.5

**Brief Description**

This process triggers a well-defined action based on specific resource alarm event notification information as well as the non-arrival of resource alarm event notification information after a specific time interval has elapsed. This process is also responsible

for monitoring and triggering the appropriate action when a resource alarm event record is not cleared within a pre-defined period of time.

**Extended Description**

Not used for this process element

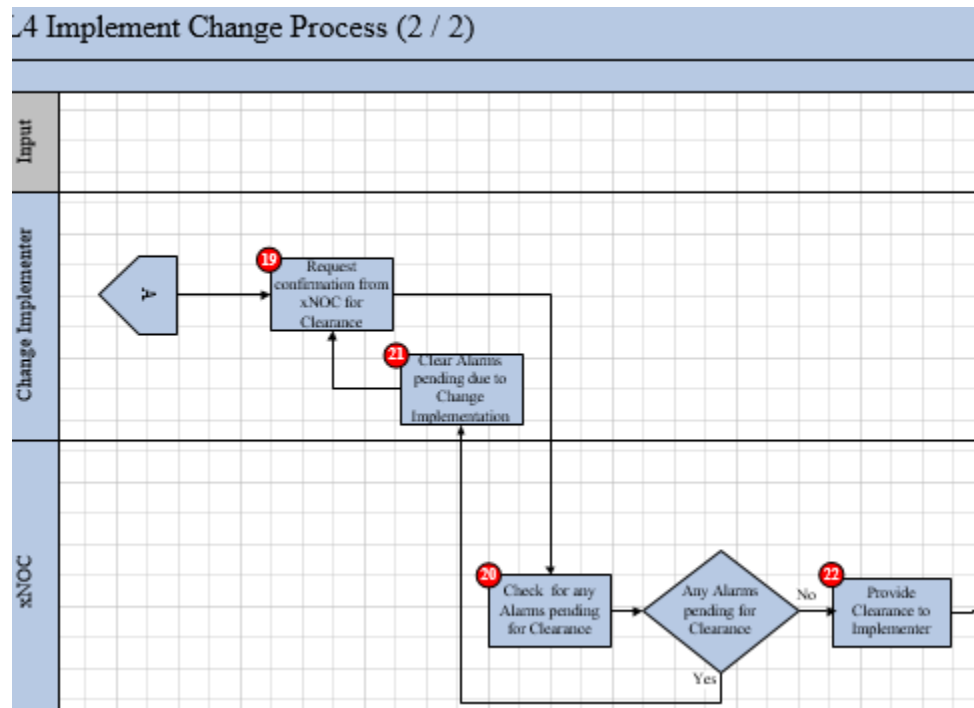
**Explanatory**

Not used for this process element

**Mandatory**

This process triggers a well-defined action based on specific resource alarm event notification information as well as the non-arrival of resource alarm event notification information after a specific time interval has elapsed. This process is also responsible for monitoring and triggering the appropriate action when a resource alarm event record is not cleared within a pre-defined period of time. **AM**

STC Network team carries out an action plan based on specific service alarm event notification information. The team also monitors any appropriate action if a resource alarm event record is not cleared



**Optional**

Not used for this process element

**Interactions**

Not used for this process element

**Monitor Resource Alarms Events**

**Process Identifier:** 1.5.8.1.6

**Brief Description**

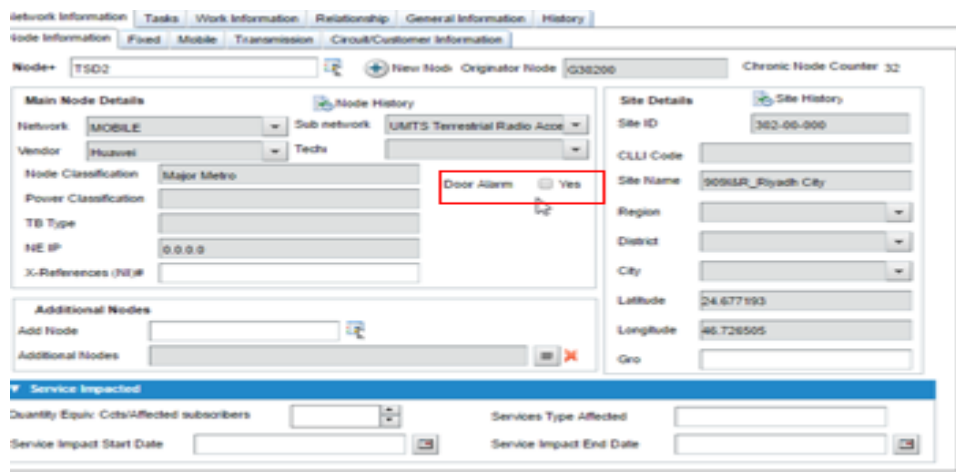
This process is responsible for collecting and monitoring events and alarms provided by resources through systems and monitoring tools.

**Extended Description**

This process is responsible for collecting and monitoring events and alarms provided by resources through systems and monitoring tools. **AM**

Network team accessing the network management system for continuous observation of real time resource alarms of network

Network team Apply formulas and rules to assess the state of network performance through various attributes such as network and service availability, capacity, traffic congestion such as Identifying performance threatening data/events or data/events affecting performance and Analyze service affecting events



**Explanatory**

Reserved for future use.

**Mandatory**

Reserved for future use.

**Optional**

Reserved for future use.

**Interactions**

Reserved for future use.

**Categorize Resource Alarm Event**

**Process Identifier:** 1.5.8.1.7

#### **Brief Description**

This process is responsible for categorizing the resource alarm events in order to support the management, filtering and correlation of events at Resource-Ops level.

#### **Extended Description**

This process is responsible for categorizing the resource alarm events in order to support the management, filtering and correlation of events at Resource-Ops level. AM

Alarms are categorized to single customer, Half PON , Full PON , major outage or MDT  
Each category has its own handling process.

#### **Explanatory**

Reserved for future use.

#### **Mandatory**

Reserved for future use.

#### **Optional**

Reserved for future use.

#### **Interactions**

Reserved for future use.

## **Review Major Resource Trouble**

**Process Identifier:** 1.5.8.3.6

#### **Brief Description**

To review the resolution of resource troubles that have been categorized as major impact, in order to prevent recurrence and learn lessons for the future.

#### **Extended Description**

To review the resolution of resource troubles that have been categorized as major impact, in order to prevent recurrence and learn lessons for the future. AM

Service review committee meeting is held to ensure all resource Outages and Major resource troubles are reviewed periodically and necessary time-bound Corrective Actions are initiated to Prevent the re-occurrence of those resource troubles in order to maintain a healthy Network & high Customer Satisfaction.

#### **Explanatory**

Reserved for future use.

#### **Mandatory**

Reserved for future use.

#### **Optional**

Reserved for future use.

## Interactions

Reserved for future use.

### 1.5.8.2 Localize Resource Trouble

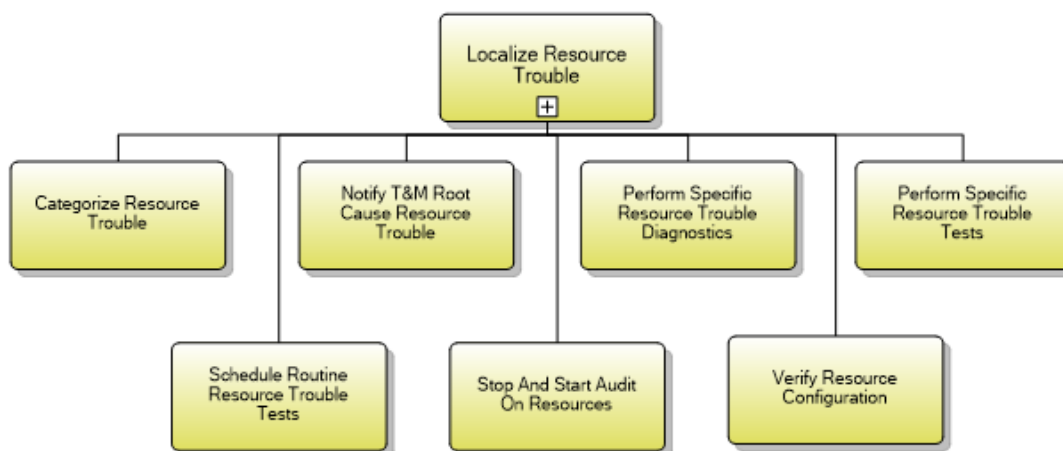


Figure 3: 1.5.8.2 Localize Resource Trouble decomposition

### Localize Resource Trouble

**Process Identifier:** 1.5.8.2

#### Brief Description

Perform analysis to identify the root cause of the specific resource trouble including those resource troubles related to security events. **AM**

#### Comment for the compliance:

AM (Please refer to the document ASS-FUL ETE Design V1 r1 and BR-CC.TT.01 "Trouble Ticket to Solution")

See Level4s in scope below for details of support

### Extended Description

The objective of the Localize Resource Trouble processes is to identify the root cause of the specific resource trouble. These processes are invoked by the Track & Manage Resource Trouble processes.

The responsibilities of these processes include, but are not limited to:

- Verifying whether the resource configuration matches the appropriate service features;
- Performing diagnostics against the specific resources;
- Running tests against the specific resources;
- Starting and stopping audits against specific resources
- Scheduling routine testing of the specific resources.

The Localize Resource Trouble processes will make the results of the root cause analysis available to other processes. The Localize Resource Trouble processes will update the open resource trouble report, as required during the assessment, and when the root cause has been identified.

When the process is complete the Localize Resource Trouble processes will notify the Track & Manage Resource Trouble processes.

### **Comment for the compliance:**

AM (Please refer to the document ASS-FUL ETE Design V1 r1 and BR-CC.TT.01 "Trouble Ticket to Solution")

See Level4s in scope below for details of support

### **Explanatory**

Reserved for future use.

### **Mandatory**

Reserved for future use.

### **Optional**

Reserved for future use.

### **Interactions**

Reserved for future use.

## Verify Resource Configuration

Process Identifier: 1.5.8.2.1



#### **Brief Description**

This process verifies whether the resource configuration matches the appropriate service features. AM

The Tier 2 team will investigate the trouble ticket raised by the Call Center or Tier 1.5. On analyzing the tickets if it is found that the ticket needs to be fixed by operations, the ticket will be handed over to the operations or network team using the workflow in the system. The operations team will assign a technician who will visit the customer site to investigate the problem. The technician will verify the resource configuration to see if it is as per design

#### **Extended Description**

Not used for this process element

#### **Explanatory**

Not used for this process element

#### **Mandatory**

This process verifies whether the resource configuration matches the appropriate service features.

#### **Optional**

Not used for this process element

#### **Interactions**

Not used for this process element

## **Perform Specific Resource Trouble Diagnostics**

**Process Identifier:** 1.5.8.2.2

#### **Brief Description**

This process performs diagnostics against the specific resources. This includes application of signatures and other methods to capture anomalous events or malware.

#### **Extended Description**

Not used for this process element

#### **Explanatory**

Not used for this process element

#### **Mandatory**

This process performs diagnostics against the specific resources. AM

The technician will investigate the resource at the customer location. The technician will perform some specific checks on the resources to verify whether the resources are working properly and if there is any unusual activity. This activity is done to locate the resource trouble

**Optional**

Not used for this process element

**Interactions**

Not used for this process element

## Perform Specific Resource Trouble Tests

**Process Identifier:** 1.5.8.2.3

**Brief Description**

This process runs tests against the specific resources. This can include penetration tests to check for vulnerabilities.

**Extended Description**

Not used for this process element

**Explanatory**

Not used for this process element

**Mandatory**

**This process runs tests against the specific resources. AM**

The technician is responsible for ensuring that the resources related to the trouble ticket have the problem(s) indicated in the trouble tickets and they don't include any further issues rather than the one mentioned in the trouble ticket. Therefore, a technician will perform initial tests on the resources in order to set the most appropriate solution. The test should be part of the testing plan specific for this specific kind of resource trouble. Also, there is Work instructions documented for performing specific resource trouble tests. This is solely based on the expertise of the technician. This can lead to waste in the form of 'Unused Creativity' as the process is not properly documented

**Optional**

Not used for this process element

**Interactions**

Not used for this process element

## Stop and Start Audit On Resources

**Process Identifier:** 1.5.8.2.4

**Brief Description**

This process starts and stops audits against specific resources.

**Extended Description**

Not used for this process element

**Explanatory**

Not used for this process element

**Mandatory**

This process starts and stops audits against specific resources. AM

When a trouble ticket is opened, checking and testing of the resources is due and it is done by the Operations department. Routine audits and checks are done by the operations department. Audit reports and findings are shared with Operation Teams.

**Optional**

Not used for this process element

**Interactions**

Not used for this process element

## Schedule Routine Resource Trouble Tests

**Process Identifier:** 1.5.8.2.5

**Brief Description**

This process schedules routine testing of the specific resources including virus scans and malware testing.

**Extended Description**

Not used for this process element

**Explanatory**

Not used for this process element

**Mandatory**

This process schedules routine testing of the specific resources. AM

The Operations team carry out scheduled tests on the resources and on the network elements as part of the process of preventive maintenance.

**Optional**

Not used for this process element

**Interactions**

Not used for this process element

## Notify T&M Root Cause Resource Trouble

**Process Identifier:** 1.5.8.2.6

**Brief Description**

This process makes the results of the root cause analysis available to other processes. It updates the open resource trouble report, as required during the assessment, and when the root cause has been identified. This process notifies the Track & Manage Resource Trouble processes.

**Extended Description**

Not used for this process element

**Explanatory**

This process makes the results of the root cause analysis available to other processes.

**Mandatory**

This process updates the open resource trouble report, as required during the assessment, and when the root cause has been identified. AM

The Operations department will dispatch a technician to resolve a trouble ticket at the customer premise. The technician will analyze and localize the resource trouble and identify the root cause of the trouble. The technician will resolve the issue with the facility and update the work order with details of the fix. The root cause identified for the trouble tickets are documented or analyzed for the trouble tickets to avoid repetition of similar issues.

**Optional**

Not used for this process element

**Interactions**

This process notifies the Track & Manage Resource Trouble processes.

## Categorize Resource Trouble

**Process Identifier:** 1.5.8.2.7

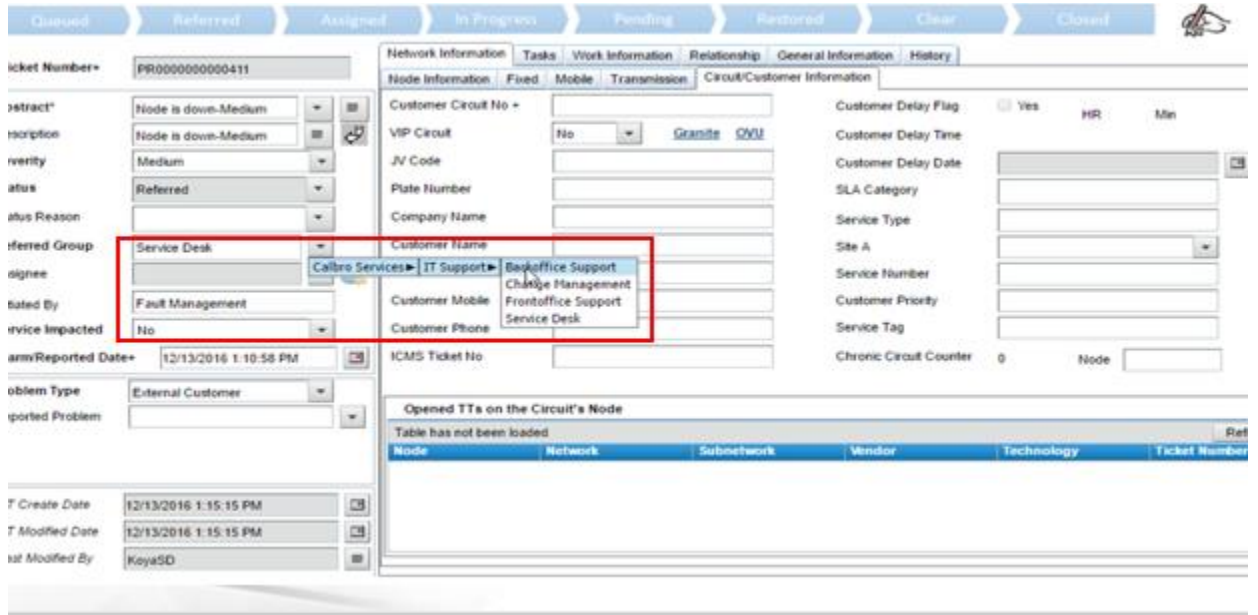
**Brief Description**

This process is responsible for categorizing the resource trouble according to the type of the trouble, impact, and standardized criteria at Resource-Ops level. Moreover, this activity will be carried out with appropriate diligence, in order to provide inputs to the "Track & Manage Resource Trouble" process.

**Extended Description**

This process is responsible for categorizing the resource trouble according to the type of the trouble, impact, and standardized criteria at Resource-Ops level. Moreover, this activity will be carried out with appropriate diligence, in order to provide inputs to the "Track & Manage Resource Trouble" process. AM

The resource troubles are categorized as per severity or criticality. All the trouble tickets are handled in a different manner. As a result, in the scenario where customer is facing a major issue, the services will be available as the trouble would be resolved on priority leading to high customer dissatisfaction.



The screenshot shows a ticket management interface with a top navigation bar containing tabs: Queued, Referred, Assigned, In Progress, Pending, Restored, Clear, and Closed. The main content area is divided into several sections:

- Ticket Information:** Ticket Number (PR000000000411), Description (Node is down-Medium), Severity (Medium), Status (Referred), Status Reason, Referred Group (Service Desk), Assigned By (Fault Management), Service Impacted (No), Reported Date (12/13/2016 1:10:58 PM), Problem Type (External Customer), Reported Problem.
- Network Information:** Customer Circuit No, VIP Circuit (No), JV Code, Plate Number, Company Name, Customer Name, Customer Mobile, Customer Phone, ICMS Ticket No.
- Work Information:** Customer Delay Flag (Yes/No), Customer Delay Time (HR/Min), Customer Delay Date, SLA Category, Service Type, Site A, Service Number, Customer Priority, Service Tag, Chronic Circuit Counter (0), Node.
- Dropdown Menu:** A red box highlights the 'Service Desk' dropdown menu, which includes options: Calbro Services, IT Support, Backoffice Support, Change Management, Frontoffice Support, and Service Desk.
- Table:** A table titled 'Opened TTs on the Circuit's Node' with columns: Node, Network, Subnetwork, Vendor, Technology, Ticket Number. The table is currently empty with the message 'Table has not been loaded'.
- Metadata:** Create Date (12/13/2016 1:15:15 PM), Modified Date (12/13/2016 1:15:15 PM), Modified By (KoyaSD).

**Explanatory**

Reserved for future use.

**Mandatory**

Reserved for future use.

**Optional**

Reserved for future use.

**Interactions**

Reserved for future use.

**1.5.8.3 Correct & Resolve Resource Trouble**

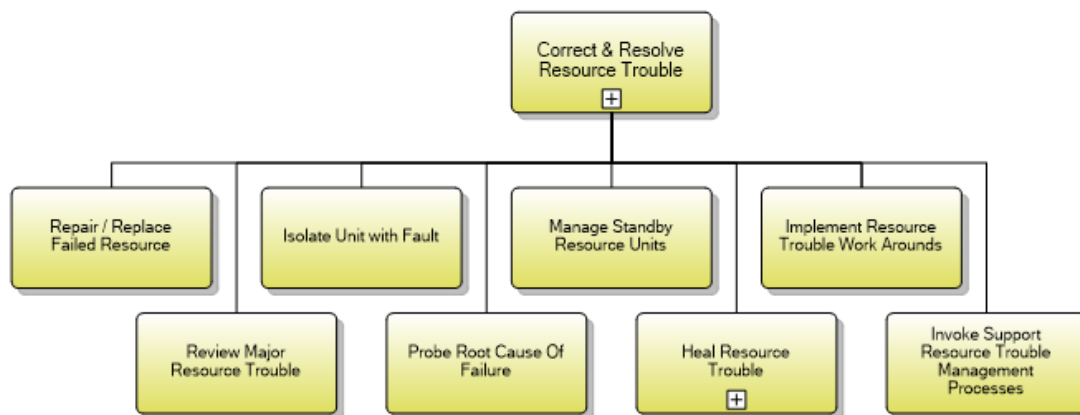


Figure 4: 1.5.8.3 Correct & Resolve Resource Trouble decomposition

## Correct & Resolve Resource Trouble

**Process Identifier:** 1.5.8.3

### Brief Description

Restore or replace resources that have failed as efficiently as possible AM

### Comment for the compliance:

AM (Please refer to the document ASS-FUL ETE Design V1 r1 and BR-CC.TT.01 "Trouble Ticket to Solution")

See Level4s in scope below for details of support

### Extended Description

The objective of the Correct & Resolve Resource Trouble processes is to restore or replace resources that have failed as efficiently as possible.

Based on the nature of the resource failure leading to the associated resource alarm event notification, automatic restoration procedures might be triggered. Manual restoration activity is assigned to the Correct & Resolve Resource Trouble processes from the Track & Manage Resource Trouble processes.

Depending on the nature of the specific resource failure, these processes may possibly repair or replace the failed unit or specific resource. These processes are also responsible for

- to isolate a unit with a fault
- to manage the redundant resource units (e.g. hot standby)
- to (auto) heal a resource
- to identify the root cause of failure
- to repair failed specific resource (including hardware failure and software failure)

For large resource failures requiring extensive repair and/or replacement activity to restore normal operation, these processes will attempt to implement work-arounds to

recover the specific resource operation. In these circumstances, recover of normal operation may require invocation of the Support Resource Trouble Management processes.

They will also report successful restoration of normal operation, restoration through temporary work-arounds or an unsuccessful attempt at restoration to Track & Manage Resource Trouble through updates to the associated resource trouble report. **AM**

**Explanatory**

Reserved for future use.

**Mandatory**

Reserved for future use.

**Optional**

Reserved for future use.

**Interactions**

Reserved for future use.

## Repair / Replace Failed Resource

**Process Identifier:** 1.5.8.3.1

**Brief Description**

This process may possibly repair, reconfigure, or replace the failed unit or specific resource (including hardware failure and software failure).

**Extended Description**

Depending on the nature of the specific resource failure, this process may possibly repair, reconfigure, or replace the failed unit or specific resource. It also reports successful restoration of normal operation or an unsuccessful attempt at restoration to Track & Manage Resource Trouble through updates to the associated resource trouble report.

The responsibilities of this process include:

- Check reserve hardware parts for replacement (in case of hardware failure).
- Replace hardware parts (in case of hardware failure).
- Procure hardware if there is no spare parts (in case of hardware failure).
- Perform testing after replacement (in case of hardware failure)
- Upgrade software (in case of software failure).
- Reporting the result of the attempt to restore normal operations

**Explanatory**

Not used for this process element

**Mandatory**

Depending on the nature of the specific resource failure, this process may possibly

repair or replace the failed unit or specific resource. It also reports successful restoration of normal operation or an unsuccessful attempt at restoration to Track & Manage Resource Trouble through updates to the associated resource trouble report.

**AM**

Based on the ticket, the operations team will assign a technician to the ticket. The technician will visit the customer location and diagnose the facilities under consideration. The technician will contact the support team within operations in case the technician needs more help in resolving the issue. Once the diagnosis is complete, the technician will either repair or replace the failed resource

**Optional**

Not used for this process element

**Interactions**

Reports successful restoration to Track & Manage Resource Trouble through updates to the associated resource trouble report.

## Isolate Unit with Fault

**Process Identifier:** 1.5.8.3.2

**Brief Description**

This process is responsible for isolating a unit with a fault.

**Extended Description**

Not used for this process element

**Explanatory**

Not used for this process element

**Mandatory**

This process is responsible for isolating a unit with a fault. **AM**

Once the ticket has been assigned to Operations team, the technician will visit the location and diagnose the facilities. During diagnoses the technician will isolate the unit which is at fault to repair or replace or reconfigure the resources.

**Optional**

Not used for this process element

**Interactions**

Not used for this process element

## Manage Standby Resource Units



**Process Identifier:** 1.5.8.3.3

**Brief Description**

This process is responsible for managing the redundant resource units (e.g. hot standby).

**Extended Description**

Not used for this process element

**Explanatory**

Not used for this process element

**Mandatory**

This process is responsible for managing the redundant resource units (e.g. hot standby). **AM**

Standby resources are available only with customers where STC has a Service Level Agreement

**Optional**

Not used for this process element

**Interactions**

Not used for this process element

## Implement Resource Trouble Work Arouns

**Process Identifier:** 1.5.8.3.4

**Brief Description**

For large service failures requiring extensive re-assignment and/or re-configuration activity to restore normal operation, this process will attempt to implement workarounds to recover the specific service operation. It also reports restoration through temporary workarounds or an unsuccessful attempt at restoration to Track & Manage Service Problem through updates to the associated Service Trouble report.

**Extended Description**

Not used for this process element

**Explanatory**

Applies for large service failures requiring extensive re-assignment and/or re-configuration activity to restore normal operation,

**Mandatory**

This process will attempt to implement workarounds to recover the specific service operation. It also reports restoration through temporary workarounds or an unsuccessful attempt at restoration to Track & Manage Service Problem through updates to the associated Service Trouble report. **AM**

The district operations team is authorized to implement work around when the services are down, as the customer is being able to use the services until the services are corrected.

**Optional**

Not used for this process element

**Interactions**

This process reports restoration to Track & Manage Service Problem through updates to the associated Service Trouble report.

## Invoke Support Resource Trouble Management Processes

**Process Identifier:** 1.5.8.3.5

**Brief Description**

This process recovers normal operation by invocation of the Support Resource Trouble Management processes. It also reports successful restoration of normal operation or an unsuccessful attempt at restoration to Track & Manage Resource Trouble through updates to the associated resource trouble report.

**Extended Description**

Not used for this process element

**Explanatory**

Not used for this process element

**Mandatory**

This process recovers normal operation by invocation of the Support Resource Trouble Management processes. It also reports successful restoration of normal operation or an unsuccessful attempt at restoration to Track & Manage Resource Trouble through updates to the associated resource trouble report. **AM**

Before dispatching the technician, the operations team will assess the ticket and check if it needs support from other partners such as in the case of cable cut the team has to contact the cable repair team. The ticket will be then handed over to the partner to resolve the issue and this is will be part of the preventive maintenance process.

**Optional**

Not used for this process element

**Interactions**

This process reports successful restoration to Track & Manage Resource Trouble through updates to the associated resource trouble report.

## Review Major Resource Trouble

**Process Identifier:** 1.5.8.3.6

**Brief Description**

To review the resolution of resource troubles that have been categorized as major impact, in order to prevent recurrence and learn lessons for the future.

**Extended Description**

To review the resolution of resource troubles that have been categorized as major impact, in order to prevent recurrence and learn lessons for the future. **AM**

Service review committee meeting is held to ensure all resource Outages and Major resource troubles are reviewed periodically and necessary time-bound. Corrective Actions are initiated to Prevent the re-occurrence of those resource troubles in order to maintain a healthy Network & high Customer Satisfaction.

After handling severe outage incidents, the problem management process is triggered to analyze the problem and to find the root causes behind it, to prevent its recurrence and to document lessons learnt for the future.

**Explanatory**

Reserved for future use.

**Mandatory**

Reserved for future use.

**Optional**

Reserved for future use.

**Interactions**

Reserved for future use.

## Probe Root Cause of Failure

**Process Identifier:** 1.5.8.3.7

**Brief Description**

Probe the root cause of failure to identify repair point and prevention of recurrence.

**Extended Description**

The objective of Probe Root Cause of Failure process is to find out a root cause of failure causing resource trouble for dealing with hardware repair and software upgrade. The process is performed after resource healing, and analyzes the problem (e.g., the failure software bugs and/or hardware faults causing failure of network function).

The responsibilities of these processes include:

- Perform testing of resource for isolation of cause of failure.
- Identify a real cause of failure.
- Obtain existing knowledge information related to recovery.
- Determine an optimal way to repair.

-Determine schedule for repair work.

-Update knowledge information coping with recovery if the event is unknown failure.

#### AM

Service review committee meeting is held to ensure all resource Outages and Major resource troubles are reviewed periodically and necessary time-bound Corrective Actions are initiated to Prevent the re-occurrence of those resource troubles in order to maintain a healthy Network & high Customer Satisfaction.

After handling severe outage incidents, the problem management process is triggered to analyze the problem and to find the root causes behind it, to prevent its recurrence and to document lessons learnt for the future.

#### Explanatory

N/A

#### Mandatory

N/A

#### Optional

N/A

#### Interactions

N/A

## Heal Resource Trouble

**Process Identifier:** 1.5.8.3.8

#### Brief Description

Heal failed resource before identification of root cause of failure.

Heal failed resource before identification of root cause of failure.

#### Extended Description

The objective of Recover Resource Trouble process is to promptly recover failed resource, especially software-based resource (e.g., virtual network function:VNF) before identification of the detailed root cause of failure, such as software bugs like memory leak, and hardware failure like fan fault and link down.

The responsibilities of these processes include:

- Isolate failed resource (e.g., failed VNF) from service.
- Check available resource related to infrastructure (e.g., CPU, memory, Disk etc..) to create new network function for recovery.
- Create new network function for recovery.
- Perform testing in order to check normality of the created function.

The objective of Recover Resource Trouble process is to promptly recover failed resource, especially software-based resource (e.g., virtual network function: VNF)

before identification of the detailed root cause of failure, such as software bugs like memory leak, and hardware failure like fan fault and link down.

The responsibilities of these processes include:

- Decide healing option based on a healing policy/rule of operator.
- Isolate failed resource (e.g., failed VNF) from service.
- Check available resource related to infrastructure (e.g., CPU, memory, Disk etc..) to create new network function for recovery.
- Create new network function for recovery.
- Perform testing in order to check normality of the created function.

## Not Applicable

**Explanatory**

N/A

**Mandatory**

N/A

**Optional**

N/A

**Interactions**

N/A

### 1.5.8.3.8 Heal Resource Trouble

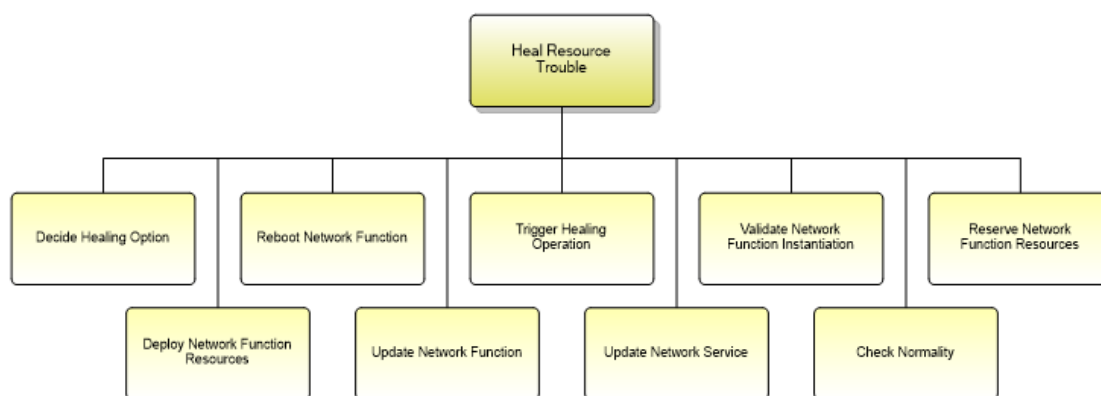


Figure 5: 1.5.8.3.8 Heal Resource Trouble decomposition

### Heal Resource Trouble

**Process Identifier:** 1.5.8.3.8

**Brief Description**

Heal failed resource before identification of root cause of failure.

Heal failed resource before identification of root cause of failure.

**Extended Description**

The objective of Recover Resource Trouble process is to promptly recover failed resource, especially software-based resource (e.g., virtual network function:VNF) before identification of the detailed root cause of failure, such as software bugs like memory leak, and hardware failure like fan fault and link down.

The responsibilities of these processes include:

- Isolate failed resource (e.g., failed VNF) from service.
- Check available resource related to infrastructure (e.g., CPU, memory, Disk etc..) to create new network function for recovery.
- Create new network function for recovery.
- Perform testing in order to check normality of the created function.

The objective of Recover Resource Trouble process is to promptly recover failed resource, especially software-based resource (e.g., virtual network function: VNF) before identification of the detailed root cause of failure, such as software bugs like memory leak, and hardware failure like fan fault and link down.

The responsibilities of these processes include:

- Decide healing option based on a healing policy/rule of operator.
- Isolate failed resource (e.g., failed VNF) from service.
- Check available resource related to infrastructure (e.g., CPU, memory, Disk etc..) to create new network function for recovery.
- Create new network function for recovery.
- Perform testing in order to check normality of the created function.

**Explanatory**

N/A

**Mandatory**

N/A

**Optional**

N/A

**Interactions**

N/A

## Decide Healing Option

**Process Identifier:** 1.5.8.3.8.1

**Brief Description**

Decide healing option based on a healing policy/rule of operator.

#### **Extended Description**

The objective of "Decide Healing Option" process is a responsibility to decide how recover the failure based on a healing policy ( e.g. total number of times of violating a certain threshold, emergency level of a detected alarm or service level agreement that depends on each service provider). For example, the patterns of recover are divided into following patterns:

- Physical network function healing
- Virtual network function healing
- Network service healing

#### **Explanatory**

N/A

#### **Mandatory**

N/A

#### **Optional**

N/A

#### **Interactions**

N/A

### **Reboot Network Function**

**Process Identifier:** 1.5.8.3.8.2

#### **Brief Description**

Execute reboot operation for network function resources.

#### **Extended Description**

The objective of "Reboot Network Function" process is to execute reboot operation. If the failure status still remains after the process execution, it may trigger other healing process or hardware exchange process.

#### **Explanatory**

N/A

#### **Mandatory**

N/A

#### **Optional**

N/A

#### **Interactions**

N/A

### **Trigger Healing Operation**

**Process Identifier:** 1.5.8.3.8.3

**Brief Description**

Trigger lifecycle operation processes for executing network function healing.

**Extended Description**

The objective of "Trigger Healing Operation" process is to call healing operation processes with lifecycle management tasks. In case of success, complete or partial healing has been executed. In case of failure, appropriate error information is returned.

**Explanatory**

N/A

**Mandatory**

N/A

**Optional**

N/A

**Interactions**

N/A

## Validate Network Function Instantiation

**Process Identifier:** 1.5.8.3.8.4

**Brief Description**

Validate to deploy network function.

**Extended Description**

The objective of "Validate Network Function Instantiation" process is to check a feasibility for deploying network function. This process grants an authorization of a lifecycle operation. When applicable, this process give a permission for reserving network function resources (e.g., virtualized infrastructure with location information) based on network function catalog.

**Explanatory**

N/A

**Mandatory**

N/A

**Optional**

N/A

**Interactions**

N/A



## Reserve Network Function Resources

**Process Identifier:** 1.5.8.3.8.5

### **Brief Description**

Reserve required network function, infrastructure and network resources for healing.

### **Extended Description**

The objective of "Reserve Network Function Resources" process is responsible to reserve the required infrastructure resources for healing which may corresponding to following elements, but not limited to:

- Number of CPU core, memory size
- Resource type, minimum bandwidth, QoS
- Storage type, size

### **Explanatory**

N/A

### **Mandatory**

N/A

### **Optional**

N/A

### **Interactions**

N/A

## Deploy Network Function Resources

**Process Identifier:** 1.5.8.3.8.6

### **Brief Description**

Deploy reserved infrastructure and network resources for healing.

### **Extended Description**

The objective of "Deploy Network Function Resources." process is to deploy the needed infrastructure resources and network connectivity.

### **Explanatory**

N/A

### **Mandatory**

N/A

### **Optional**

N/A

### **Interactions**

N/A

## Update Network Function

**Process Identifier:** 1.5.8.3.8.7

**Brief Description**

Update configuration of network function.

**Extended Description**

The objective of "Update Network Function" process is to activate deployed network function instances by modifying a configuration. The result of configuration may corresponds to failed VNF configuration or template.

**Explanatory**

N/A

**Mandatory**

N/A

**Optional**

N/A

**Interactions**

N/A

## Update Network Service

**Process Identifier:** 1.5.8.3.8.8

**Brief Description**

Update configuration of a constituent instances of network service.

**Extended Description**

The objective of "Update Network Service" process is to activate deployed network connectivity which are constituents of healed network service.

**Explanatory**

N/A

**Mandatory**

N/A

**Optional**

N/A

**Interactions**

N/A

## Check Normality

**Process Identifier:** 1.5.8.3.8.9

**Brief Description**

Check normality of network function instance/network connectivity.

**Extended Description**

The objective of "Check Normality" process is to perform testing of virtual network function instance/connection statement ( e.g. to check a current status of alarms regarding failed resources).

**Explanatory**

N/A

**Mandatory**

N/A

**Optional**

N/A

**Interactions**

N/A

## 1.5.8.4 Track & Manage Resource Trouble

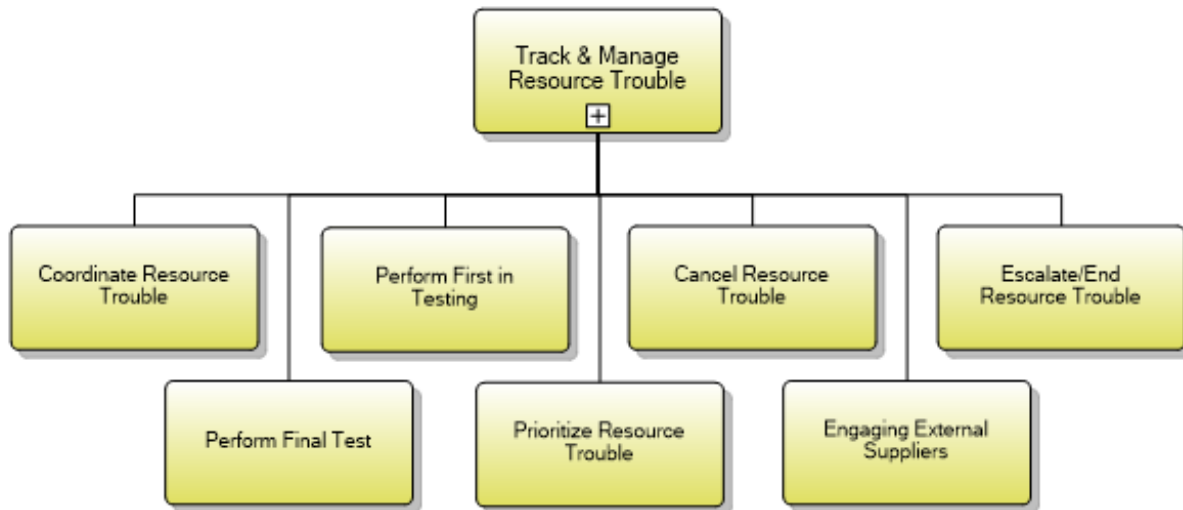


Figure 6: 1.5.8.4 Track & Manage Resource Trouble decomposition

## Track & Manage Resource Trouble

**Process Identifier:** 1.5.8.4

### Brief Description

Ensure testing, repair and restoration activities are assigned, coordinated and tracked efficiently, and that escalation is invoked as required for any open resource trouble reports in jeopardy AM

### Comment for the compliance:

AM (Please refer to the document ASS-FUL ETE Design V1 r1 and BR-CC.TT.01 "Trouble Ticket to Solution")

See Level4s in scope below for details of support

### Extended Description

The objective of the Track & Manage Resource Trouble is to ensure testing, repair and restoration activities are assigned, coordinated and tracked efficiently, and that escalation is invoked as required for any open resource trouble reports in jeopardy.

Responsibilities of these processes include, but are not limited to:

- Initiating first-in testing using automated remote testing capabilities;
- Adding additional information to an open resource trouble report based on the first-in testing;
- Scheduling, assigning and coordinating repair and restoration activities;
- Initiate any final testing to confirm clearance of the service problem;
- Undertake necessary tracking of the execution progress;
- Modifying information in an existing resource trouble report based on assignments;

- Modifying the resource trouble report status;
- Canceling a resource trouble report when the specific trouble was related to a false alarm event
- Monitoring the jeopardy status of open resource trouble reports, and escalating resource trouble reports as necessary.

These processes will co-ordinate all the actions necessary in order to guarantee that all tasks are finished at the appropriate time and in the appropriate sequence.

The Track & Manage Resource Trouble processes are responsible for engaging external suppliers in correction and recovery activities when higher level expertise and/or higher level support is required to resolve the resource trouble. This engagement can be linked to the priority of the resource trouble report, and could occur automatically for highest priority resource trouble reports.

The Track & Manage Resource Trouble processes will also inform the Close Resource Trouble processes by modifying the resource trouble report status to cleared when the resource trouble has been resolved.

#### **Explanatory**

Reserved for future use.

#### **Mandatory**

Reserved for future use.

#### **Optional**

Reserved for future use.

#### **Interactions**

Reserved for future use.

## **Coordinate Resource Trouble**

**Process Identifier:** 1.5.8.4.1

#### **Brief Description**

This process coordinates all the actions necessary in order to guarantee that all tasks are finished at the appropriate time and in the appropriate sequence. It schedules, assigns and coordinates repair and restoration activities, undertakes necessary tracking of the execution progress, modifies information in an existing resource trouble report based on assignments, and modifies the resource trouble report status;

#### **Extended Description**

Not used for this process element

#### **Explanatory**

This process coordinates all the actions necessary in order to guarantee that all tasks are finished at the appropriate time and in the appropriate sequence.

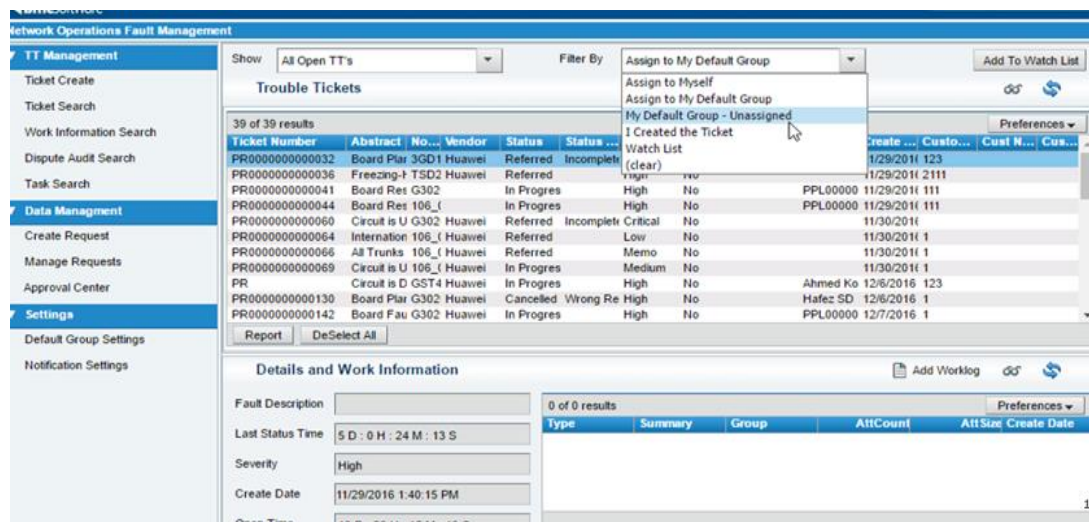
**Mandatory**

This process schedules, assigns and coordinates repair and restoration activities, undertakes necessary tracking of the execution progress, modifies information in an existing resource trouble report based on assignments, and modifies the resource trouble report status; AM

The field operations will receive the ticket from Tier2. The operations team will then own the ticket and track and manage the ticket resolution. The operations team will then manage the coordination with technicians, cable repairs and other required departments or third parties. Tier 1 manages and tracks the trouble ticket throughout its lifecycle.

Failure Orders team provide the technical assistance to internal Operations stakeholders such as validation and scheduling upon operation failures, deliver customer orders to duty stations

within the time commitment, assigning and scheduling customer orders to duty stations and provide technical assistance to support all service centers



**Optional**

Not used for this process element

**Interactions**

Not used for this process element

**Perform First in Testing**

**Process Identifier:** 1.5.8.4.2

**Brief Description**

This process initiates first-in testing using automated remote testing capabilities, and

adds additional information to an open resource trouble report based on the first-in testing.

**Extended Description**

Not used for this process element

**Explanatory**

Not used for this process element

**Mandatory**

This process initiates first-in testing using automated remote testing capabilities, and adds additional information to an open resource trouble report based on the first-in testing. **AM**

The first in testing and remote resolution is to be done by the tier 1 and Tier 1.5.

After the ticket has been raised by Tier 1 or Tier 1.5, the Tier 2 will perform remote resolution for the ticket. The Tier 2 team will contact the customer and perform a checklist of tasks to resolve the trouble. In case the trouble ticket is not resolved remotely the Tier 2 team will enter the updated findings against the ticket.

**Optional**

Not used for this process element

**Interactions**

Not used for this process element

## Cancel Resource Trouble

**Process Identifier:** 1.5.8.4.3

**Brief Description**

This process cancels a resource trouble report when the specific trouble was related to a false alarm event.

**Extended Description**

Not used for this process element

**Explanatory**

Not used for this process element

**Mandatory**

This process cancels a resource trouble report when the specific trouble was related to a false alarm event. **AM**

The operations team will assess the trouble ticket and investigate the issue. If the issue is not a valid one, the ticket is passed back to Tier 1 team which has raised the ticket. The Tier 1 team will cancel the ticket when invalid and after confirming the same with the customer. The operations are not responsible for cancelling the resource trouble

**Optional**

Not used for this process element

**Interactions**

Not used for this process element

**Escalate/End Resource Trouble**

**Process Identifier:** 1.5.8.4.4

**Brief Description**

This process provides the escalations between support levels and actors when a resource trouble cannot be solved by the current assigned group. Therefore, the escalation can be carried out between supports levels at Resource-Ops level, or, it can be escalated to others actors, such as, supplier/partners. It is essential the ability to rapidly escalate resource troubles according to clear and agreed rules.

**Extended Description**

Not used for this process element

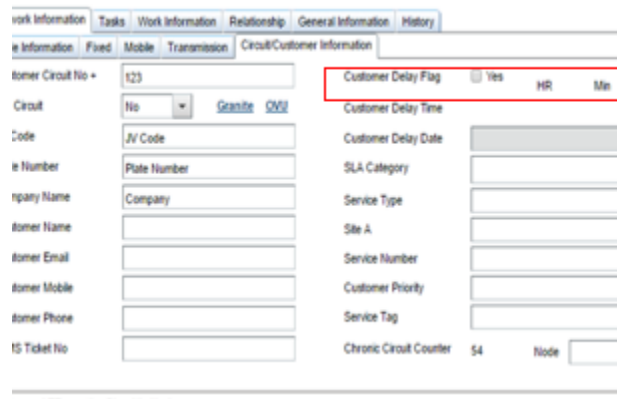
**Explanatory**

Not used for this process element

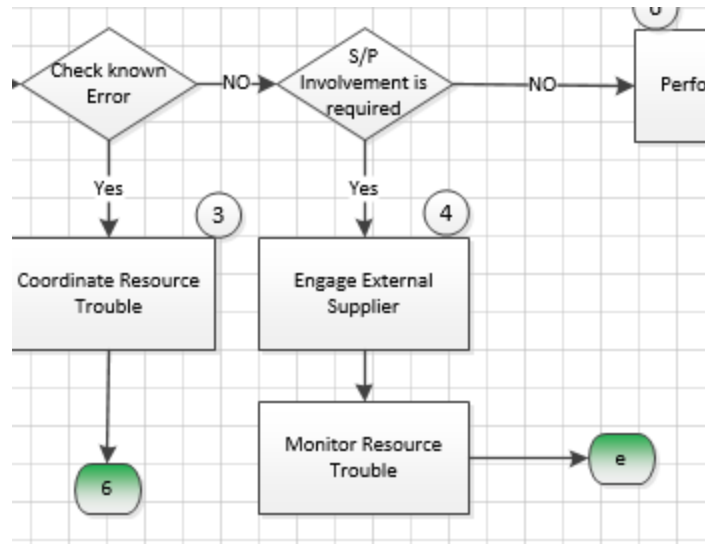
**Mandatory**

This process monitors the jeopardy status of open resource trouble reports, and escalating resource trouble reports as necessary. **AM**

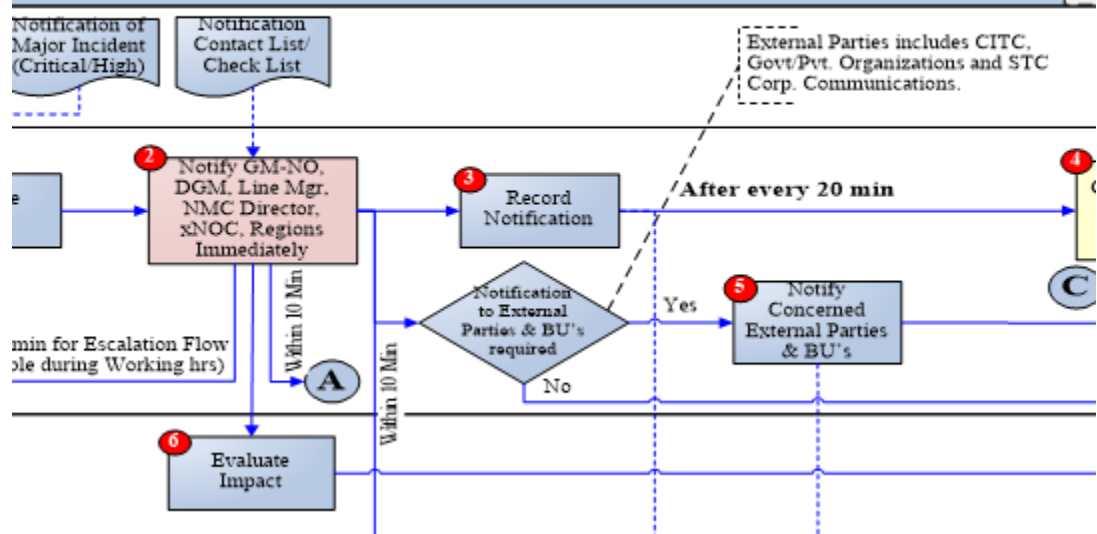
The escalation process is defined and strictly followed.







**Management Notification & Escalation Process for Major Incidents**



**Optional**  
 Not used for this process element

**Interactions**  
 Not used for this process element

**Perform Final Test**

**Process Identifier:** 1.5.8.4.5

**Brief Description**

This process initiates any final testing to confirm clearance of the service problem.

**Extended Description**

Not used for this process element

**Explanatory**

Not used for this process element

**Mandatory**

This process initiates any final testing to confirm clearance of the service problem. AM

Following the technician's restoration of the resource at the customer's residence, the technician will proceed to test the resource and get the problem solved. In case the issue has still not been solved, the technician will get back to the support Center for further aid or will investigate the problem once more to make out the original cause of trouble and its solution.

**Optional**

Not used for this process element

**Interactions**

Not used for this process element

## Engaging External Suppliers

**Process Identifier:** 1.5.8.4.6

**Brief Description**

This process is responsible for engaging external suppliers in correction and recovery activities when higher level expertise and/or higher-level support is required to resolve the resource trouble. This engagement can be linked to the priority of the resource trouble report, and could occur automatically for highest priority resource trouble reports.

**Extended Description**

Not used for this process element

**Explanatory**

Not used for this process element

**Mandatory**

This process is responsible for engaging external suppliers in correction and recovery activities when higher level expertise and/or higher-level support is required to resolve the resource trouble. This engagement can be linked to the priority of the resource trouble report, and could occur automatically for highest priority resource trouble reports. AM

Receiving a ticket from the ticketing systems is the trigger in the process carried out by District Operations. Following that, the Operations team will examine the problem/issue and conclude whether the aid of the external supplier/partner is necessary. If so, the Operation will send the ticket to the external suppliers/partner to repair and will continue tracking the problem/issue solution carried out by the external supplier or partner

**Optional**

Not used for this process element

**Interactions**

Not used for this process element

## Prioritize Resource Trouble

**Process Identifier:** 1.5.8.4.7

**Brief Description**

This process is responsible for assigning the prioritization to resource trouble in order to establish an order for managing it. The prioritization is assigned (usually automatically) according to criteria, such as, categorization and resources affected.

**Extended Description**

This process is responsible for assigning the prioritization to resource trouble in order to establish an order for managing it. The prioritization is assigned (usually automatically) according to criteria, such as, categorization and resources affected. **AM**

procedure exists in which trouble tickets and the related resources are prioritized. This means that the tickets investigated and dealt with consideration to the criticality or urgency of the ticket or the importance of the customer

**Explanatory**

Reserved for future use.

**Mandatory**

Reserved for future use.

**Optional**

Reserved for future use.

**Interactions**

Reserved for future use.

## 1.5.8.5 Report Resource Trouble

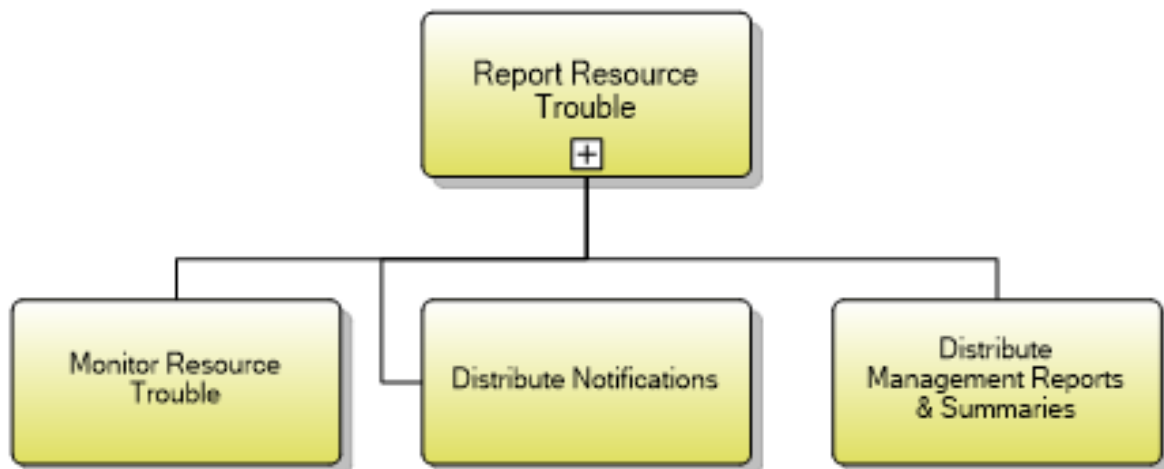


Figure 7: 1.5.8.5 Report Resource Trouble decomposition

## Report Resource Trouble

**Process Identifier:** 1.5.8.5

### Brief Description

Monitor the status of resource trouble reports provide notifications of any changes and provide management reports. This includes resource trouble caused by security events.

**AM**

### Comment for the compliance:

AM (Please refer to the document ASS-FUL ETE Design V1 r1 and BR-CC.TT.01 "Trouble Ticket to Solution")

See Level4s in scope below for details of support

### Extended Description

The objective of the Report Resource Trouble processes is to monitor the status of resource trouble reports, provide notifications of any changes and provide management reports.

These processes are responsible for continuously monitoring the status of resource trouble reports and managing notifications to processes and other parties registered to receive notifications of any status changes, for example, Resource Performance Management and Service Quality Management. Notification lists are managed and maintained by the Support Resource Trouble Management processes.

These processes record, analyze and assess the resource trouble report status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Resource Trouble Management process. These specialized summaries could be specific reports required by specific audiences.

These processes will make the necessary reports about the resource trouble that occurred, the root cause and the activities carried out for restoration.

**Explanatory**

Reserved for future use.

**Mandatory**

Reserved for future use.

**Optional**

Reserved for future use.

**Interactions**

Reserved for future use.

## Monitor Resource Trouble

**Process Identifier:** 1.5.8.5.1

**Brief Description**

This process is responsible for continuously monitoring the status of resource trouble reports and managing notifications to processes and other parties registered to receive notifications of any status changes, for example, Resource Performance Management and Service Quality Management. Notification lists are managed and maintained by the Support Resource Trouble Management processes.

**Extended Description**

Not used for this process element

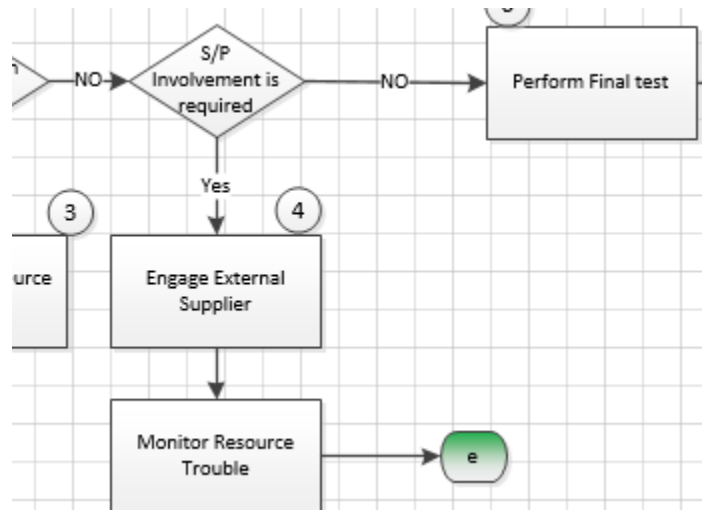
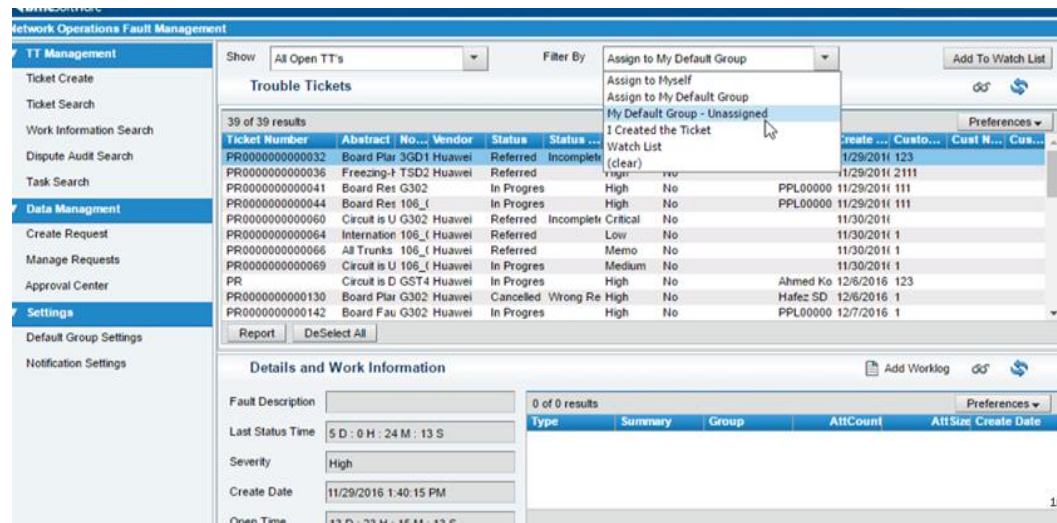
**Explanatory**

Not used for this process element

**Mandatory**

This process is responsible for continuously monitoring the status of resource trouble reports and managing notifications to processes and other parties registered to receive notifications of any status changes, for example, Resource Performance Management and Service Quality Management. **AM**

The Operations duties are monitoring the resource troubles, tracking the scheduling, solving the problems, as well as monitoring the overdue tickets and reporting to the related stakeholders.



**Optional**  
Not used for this process element

**Interactions**  
Notification lists are managed and maintained by the Support Resource Trouble Management processes.

## Distribute Notifications

**Process Identifier:** 1.5.8.5.2

### Brief Description

This process makes the necessary reports about the Service Problem that occurred, the root cause and the activities carried out for restoration.

### Extended Description

Not used for this process element

**Explanatory**

Not used for this process element

**Mandatory**

This process makes the necessary reports about the Service Problem that occurred, the root cause and the activities carried out for restoration. **AM**

The notifications are sent to the different internal departments or external suppliers for resource trouble. notifications are sent to the customers or concerned stakeholders regarding the change in the order status

**Optional**

Not used for this process element

**Interactions**

Not used for this process element

## Distribute Management Reports & Summaries

**Process Identifier:** 1.5.8.5.3

**Brief Description**

This process records, analyzes and assesses the Service Performance Degradation Report status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Service Quality Management process. These specialized summaries could be specific reports required by specific audiences.

**Extended Description**

Not used for this process element

**Explanatory**

These specialized summaries could be specific reports required by specific audiences.

**Mandatory**

This process records, analyzes and assesses the Service Performance Degradation Report status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Service Quality Management process.

**AM**

Reports are maintained on a daily and weekly basis concerning the problems and trouble tickets and the efficiency of the service by the Operations Team who distributes the reports to management and Operation stakeholders.

**Optional**

Not used for this process element

**Interactions**

Not used for this process element





## 1.5.8.6 Close Resource Trouble Report

**Process Identifier:** 1.5.8.6

### **Brief Description**

Close a resource trouble report when the resource problem has been resolved

### **Extended Description**

The objective of the Close Service Trouble Report processes is to close a service trouble report when the service problem has been resolved.

These processes monitor the status of all open service trouble reports, and recognize that a service trouble report is ready to be closed when the status is changed to cleared.

**AM**

### **Comment for the compliance:**

AM (Please refer to the document ASS-FUL ETE Design V1 r1 and BR-CC.TT.01 "Trouble Ticket to Solution")

See Level4s in scope below for details of support

- The technician will fix the resource issues at the customer location and will update the system. Tier 1 will contact the customer and confirm if the ticket has been closed properly and will update the system accordingly. the customer will hand over the authentication code once the issue has been resolved, to the technician who will enter it into the system to close the ticket.
- The Tier 2 team monitors the progress of open tickets until the problems are solved and the tickets are closed through daily and weekly reports.

### **Explanatory**

Reserved for future use.

### **Mandatory**

Reserved for future use.

### **Optional**

Reserved for future use.

### **Interactions**

Reserved for future use.

## 1.5.8.7 Create Resource Trouble Report

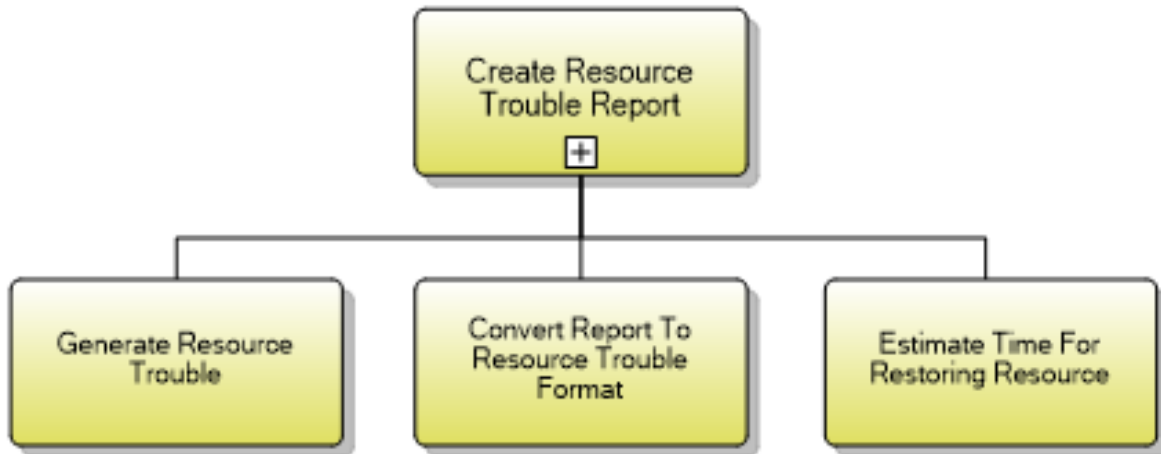


Figure 8: 1.5.8.6 Create Resource Trouble Report decomposition

### Create Resource Trouble Report

**Process Identifier:** 1.5.8.7

**Brief Description**

Create a new resource trouble report AM

**Comment for the compliance:**

AM (Please refer to the document ASS-FUL ETE Design V1 r1 and BR-CC.TT.01 “Trouble Ticket to Solution”)

See Level4s in scope below for details of support

**Extended Description**

The objective of the Create Resource Trouble Report process is to create a new resource trouble report.

A new resource trouble report may be created as a result of resource alarm event notification analysis, and subsequent creation of new resource alarm event records, undertaken by the Survey & Analyze Resource Trouble processes, or at the request of analysis undertaken by other processes in the Service-Ops or Resource-Ops (in particular a Service Trouble Report can generate one or more Resource Trouble Reports) or Engaged Party-Ops and Resource-Ops layers which detect that some form of failure has occurred for which resource restoration activity is required to restore normal operation. If the resource trouble report is created as a result of a notification or request from processes other than the Survey & Analyze Resource Trouble processes, the Create Resource Trouble Report processes are responsible for converting the received information into a form suitable for the Resource Trouble Management processes, and for requesting additional information if required.

These processes will make estimates of the time to restore resource which will be included in the new resource trouble report so that other processes can gain access to this information.

**Explanatory**

Reserved for future use.

**Mandatory**

Reserved for future use.

**Optional**

Reserved for future use.

**Interactions**

Reserved for future use.

## Generate Resource Trouble

**Process Identifier:** 1.5.8.7.1

**Brief Description**

This process creates a new resource trouble report.

**Extended Description**

Not used for this process element

**Explanatory**

Not used for this process element

**Mandatory**

**This process creates a new resource trouble report. AM**

The Tier 1 or Tier 1.5 will raise a trouble ticket using the CRM system. If, however, the technical team is incapable of solving the issue/problem, the ticket is directly transferred to the tier 2 team. This team will proceed to explore the problem further in order to send the trouble ticket to the respective departments when it requires solutions from Operations and report the same as well.

The Tier 2 team will investigate the issue and in case the trouble requires resolution from Operations, the trouble ticket will be passed on to the departments respectively.

Tickets can also be raised for an alarm notification in the Network.

**Optional**

Not used for this process element

**Interactions**

Not used for this process element

## Convert Report to Resource Trouble Format

**Process Identifier:** 1.5.8.7.2

### **Brief Description**

If the resource trouble report is created as a result of a notification or request from processes other than the Survey & Analyze Resource Trouble processes, this process is responsible for converting the received information into a form suitable for the Resource Trouble Management processes, and for requesting additional information if required. **AM**

The information concerning the problems/issues with the resource is assembled and entered into the CRM system by tier 1 in order to raise a ticket. Then formatting the data into an appropriate template for Resource Trouble Management.

### **Extended Description**

Not used for this process element

### **Explanatory**

Reserved for future use.

### **Mandatory**

Reserved for future use.

### **Optional**

Reserved for future use.

### **Interactions**

Reserved for future use.

## Estimate Time for Restoring Resource

**Process Identifier:** 1.5.8.7.3

### **Brief Description**

This process estimates the time to restore service which is included in the new Service Trouble report so that other processes can gain access to this information. **AM**

The operations team commit to the customer the time required to fix the issue. However, internally Operations do estimate the time required to fix and issue and schedule accordingly. This is based on the experience of the district operation team in handling resource trouble.

### **Extended Description**

Not used for this process element

### **Explanatory**

Reserved for future use.

**Mandatory**

Reserved for future use.

**Optional**

Reserved for future use.

**Interactions**

Reserved for future use.