**3GPP TSG SA WG5 Meeting #145e S5-225408rev3**

**e-meeting, 15 - 19 August 2022**

**Source: Samsung, EUTC, BMWK, Vodafone, Telefonica, EDF**

**Title: pCR TR 28.829 Business use case - DSO Provides an Incident Report**

**Type: pCR**

**Document for: Approval, Information, Discussion**

**Agenda Item: 6.9.13.6 (FS\_NSOEU: Study on Network and Service Operations for Energy Utilities)**

# 1 Decision/action requested

***SA5 is asked to approve this pCR.***

# 2 References

None

# 3 Rationale

This pCR provides a use case to address one of the objectives of the study.

# 4 Detailed proposal

This document is a pCR intending to add an overview to the new TR 28.829 for the study item FS\_NSOEU, Feasibility Study for Network and Service Operations for Energy Utilities:

In this pCR a use case is provided concerning reporting of communication service incidents by the customer (DSO) to the MNO.

BEGIN CHANGE

## 6.Z Business use case: DSO reports an incident to MNO

### 6.Z.1 Description

**Motivation**

As described in 6.2, DSO reporting to MNO to resolve problems and incidents, current practice, and Annex A, incident reporting is a vital component of service management. Currently incident reporting is done through diverse mechanisms specific to each MNO, such as a voice call to a service desk or a web-based form. While such processes are out of scope of 3GPP and are vital to support of mobile subscribers in general, they are not well suited to a DSO. The DSO operates 100s of 1000s of UEs often with dual SIM configurations, in some cases in multiple countries. This results in a high degree of complexity for the DSO in terms of divergent procedures and manual effort required. A specific aspect of this challenge for DSOs is that the terminology, units and other aspects of incident reports differ between operators. Reporting incidents using 'business to consumer' oriented interfaces is not only cumbersome, it does not scale up to the number of concurrent incidents that can arise for a DSO.

Furthermore, the availability requirements of a mobile consumer are different from that of an energy utility service provider. It is essential that the DSO operations network operations staff be able to ascertain the root cause of an incident as quickly as possible. If the root cause is an incident in the mobile telecommunications network, and this information is readily available, this will help to focus the recovery efforts in the DSO. If on the other hand, there is no known mobile telecommunications network failure, the DSO can focus their recovery efforts on their own network.

The intention of this use case is to identify how standarized interfaces can facilitate large scale, rapid and uniform incident reports from a DSO to an MNO. This use case does not consider how to automate or standardize the incident reporting *process* since process standardization is out of scope of 3GPP and it is recognized that different operators have unique and specific business processes. As incident reporting mechanisms will vary between operators, only a 'least common subset' of reporting information is identified in the requirement, and a 'least common subset' of responses to these reports.

**Background**

See 6.2.

### 6.Z.2 Details

Incident management is triggered when there is a performance incident - either a service is delivered below the service level agreement parameters or there is a service outage. In order to qualify as an 'incident' some parameters may apply (how long it is sustained, how frequently it occurs, etc.) according to the service level agreement, the details of which are out of scope of 3GPP.

When an incident occurs, this triggers processes to end the service performance failure or service outage as quickly as possible. The DSO needs to diagnose the root cause of the incident and take the necessary steps to recover service. To the extent that the service failure is attributed to the mobile network, or the root cause is unknown and could be due to service problems in the mobile network, the DSO works together with the MNO to diagnose the incident and resolve it.

The term 'service desk' represents the service provider contact that is available when incidents occur. The service desk can take many forms and interactions and interfaces are not standardized in current practice.

While resolution is needed on the order of seconds or minutes, communication and collaboration between the DSO and MNO can take much longer, sometimes hours even days. A significant amount of time is needed to describe the incident in terms that enables the MNO to take action. The lack of standards in this area means that the DSO has to identify the reporting formats of each MNO separately, which is labor intensive especially for DSOs that operate across national borders and therefore have large numbers of subscriptions with each operator in each country they operate.

**Use case actors:**

**DSO operations center engineer:** The DSO operations center engineer analyzes collected information, creates and operates network monitoring tools including alarms, and seeks to identify areas of potential improvement in service delivery.

**MNO technical service desk engineer:** The MNO is represented by this actor, whose role is to capture the incident information, analyze the MNO's management system to find corresponding relevant information and to work with the customer who reports the incident and MNO operational staff to resolve the incident if it is indeed an issue in the mobile network.

**Use case service flow:**

1) The DSO operational management system indicates a service outage in the DSO network. The DSO operations center engineer analyzes the alarm.

2) The root cause of the service outage is not clear. The DSO operations center engineer initiates a service desk procedure with the MNO providing service for the network that has a service outage. This service desk procedure includes submission of a **standard form for incident reporting** that can be provided by the DSO by means of an interface exposed by the MNO.

3) The MNO technical service desk engineer obtains information from the DSO operations center engineer, principally by means of the exposed interface. If needed, other means of communication are also provided by the MNO service desk (e.g. web based reporting tools), partly through other forms of communication (phone, messages, etc.)

4) The MNO technical service desk engineer works with the MNO's operational staff and management tools to identify the corresponding network status.

a) Sure enough, there is a service outage in the mobile network corresponding to the service desk 'ticket' initiated by the DSO.

a.1) The MNO technical service desk engineer informs the DSO operations center engineer of the incident and the expected time until resolution, by means of the **standard form for** **incident response**.

a.2) The DSO operations center engineer takes the appropriate action, e.g. initiates recovery procedures using a back up access system, if possible, or otherwise works to mitigate the impact of the outage.

b) Alternatively, the MNO network is functioning as expected - there is no service outage in the mobile netwo

b.1) The MNO technical service desk engineer informs the DSO operations center engineer by means of the **standard form for incident response** that the incident is not related to MNO network performance degradation or service failure.

b.2) The DSO operations engineer continues to work to identify the root cause of the failure, excluding the mobile network as the cause.

b.3) Eventually the source of the failure is identified and remedied.

*A quick and standard exchange of information can provide valuable data to both sides minimising the request for further information during the troubleshooting of the incident.*

### 6.Z.3 Potential Requirements

1. Subject to operator policies, the 5G mobile network management system shall support a means to expose a standard interface for incident reporting by authorized third parties who require extremely high availability service for a large number of deployed UEs. The process of incident reporting itself is out of scope of this requirement as this is a business process. The information that this report contains is intended to be a 'common subset' supported by incident reporting procedures and tools today. An example of such information elements includes: {UE Identifier e.g. IMSI, performance characteristics that constitute a service level failure, time of start of incident, location of UE, cell ID serving the UE, . . . }

NOTE 1: More than one incident report may be submitted, e.g. as more information is learned by the customer.

NOTE 2: The information elements to include in the incident report will be defined and evaluated during the 'solution description' phase. These information elements are expected to include {UE Identifier e.g. IMSI, performance characteristics that constitute a service level failure, time of start of incident, location of UE, cell ID serving the UE, . . . }

NOTE 3: This requirement does not imply that the incident reporting interface required will replace existing tools or processes. The 'common subset' of information defined for the incident reporting interface does not limit incident reporting by the customer to the operator to this subset - additional information will be collected by tools and/or interfaces as well.

2. Subject to operator policies, the 5G mobile network management system shall support a means to expose a standard interface for incident response to authorized third parties who require extremely high availability service for a large number of deployed UEs. The process of responding to incident reports itself is out of scope of this requirement as this is a business process. The information that this response contains is intended to be a 'common subset' supported by incident responses procedures and tools today. An example of such information elements includes: {incident does or does not correspond to known fault or performance degradation in the mobile network, expected time of restoration of service, . . .}

NOTE 4: More than one incident reporting response may be sent to the customer, e.g. as more information is learned by the MNO.

NOTE 5: The information elements to include in the incident report will be defined and evaluated during the 'solution description' phase. These information elements are expected to include {incident does or does not correspond to known fault or performance degradation in the mobile network, expected time of restoration of service, . . .}

NOTE 6: This requirement does not imply that the incident response interface required will replace existing tools or processes. The 'common subset' of information defined for the incident response interface does not limit incident response by the operator to the costomer to this subset - additional information will be provided by tools and/or interfaces as well.

NEXT CHANGE

## 7.F Key Issue # F: DSO reports an incident to the MNO

### 7.F.1 Description

In response to the use case 6.Z and the potential requirements identified in 6.Z.3, new and existing solutions for incident reporting will be considered.

### 7.F.2 Potential Solutions

#### 7.F.2.1 Potential Solution # 1: TMF API 621 (Trouble Ticket)

##### 7.F.2.1.1 Introduction

Editor's Note: Investigate whether and how a DSO could create a Trouble Ticket to report an incident.

##### 7.1.2.1.2 Description

Editor's Note: This clause further details the potential solution and any assumptions made.

#### 7.F.2.2 Potential Solution # 2: MnS-based standardized interface

##### 7.F.2.2.1 Introduction

Editor's Note: Investigate the feasibility of a MnS-based standardized interface.

##### 7.1.2.2.2 Description

Editor's Note: This clause further details the potential solution and any assumptions made.

END OF CHANGE