**3GPP TSG- Meeting #S5-244893**

**Changsha, CN,15**th **– Revision of S5-244163**

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** |  **0077** | **rev** | **1** | **Current version:** |  |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network | **X** | Core Network | **X** |

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|  |
| ***Title:***  | Rel-18 CR TS 28.535 Correction reference to TS 28.545 |
|  |  |
| ***Source to WG:*** |

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| Ericsson-LG Co., LTD |

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| ***Source to TSG:*** | S5 |
|  |  |
| ***Work item code:*** | eSBMA |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***Release:*** |  |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | TS 28.545 is not valid for release 18 and future releases and cannot be referred to from this TS. In previous meeting the reference to TS was removed with updating the same reference number with new TS. Further there are missing document numbers for some references. |
|  |  |
| ***Summary of change:*** | Correct reference [6] (Void) and add a new reference for TS 28.111 in the document. Add relevant reference document.  |
|  |  |
| ***Consequences if not approved:*** | According to rules same reference number cannot be used for a new TS. Without correction, if a reference (TS 28.545) is used in another document, it will result to fault statement. Without the TS/TR number in the text, keeping track of the source documents is difficult. |
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| ***Clauses affected:*** | 2, 4.3, 4.9.1, 5.1.1, 5.1.2  |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

***First change***

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 22.261: "Service requirements for the 5G system".

[3] 3GPP TS 28.550: "Management and orchestration; Performance assurance".

[4] 3GPP TS 28.531: "Management and orchestration; Provisioning".

[5] ETSI GS ZSM 002 (V1.1.1) (2019-08): "Zero-touch network and Service Management (ZSM); Reference Architecture".

[6] Void

[7] 3GPP TS 28.552: "Management and orchestration; 5G performance measurements".

[8] 3GPP TS 28.554: "Management and orchestration; 5G end to end Key Performance Indicators (KPI)".

[9] 3GPP TS 28.532: "Management and orchestration; Generic management services".

[10] 3GPP TS 23.003: " Numbering, addressing and identification".

[11] ETSI GS ZSM 009-1 (V1.1.1) (2021-06): "Zero-touch network and Service Management (ZSM); Closed-Loop Automation; Part 1: Enablers".

[A] 3GPP TS 28.111: "Fault management"

***Next change***

## 4.3 Communication service assurance service

Communication service assurance relies on a set of management services that together provide the CSP with the capability to assure the communication service as per agreement (for example an SLS) with a CSC (e.g. enterprise). The overall solution and information flows between management services and the closed control loop steps ETSI GS ZSM 002 [5] are shown in Figure 4.3.1.



Figure 4.3.1: Overview of closed control loop information flows

In Figure 4.3.1 the controlled entity represents the resources used by a communication service and the assurance of this communication service is provided by the closed control loop between the different management services provided by the management system.

The input to the closed control loop is the data concerning the resources used by the communication service and corrresponding service KPIs which is monitored by the closed control loop and step "Monitor", analyzed by the closed control loop step “Analyze”, a decision on potential solution by the closed control loop step "Decide" which may be a possible action for the closed control loop step "Execute", The role of the decision support services is to provide variable degrees of automated decision making and human oversight support. The following two examples demonstrate how a closed control loop can be used:

- when a service experience degradation is detected (for example due to resource shortage or faults in the network), the resources used by a communication service may be adjusted automatically to improve the service experience

- the data associated with the communication service is monitored by the management services for data collection, this management service provides information to an assurance root cause analysis management service (example of an analytics service) and based on that information the assurance root cause analysis takes place, followed by proposing activities, mitigation or suggestions to solve the problem. The proposed activities, for example mitigation or problem-solving suggestion(s) are executed through provisioning services to bring the behaviour of the communication service within the requested boundaries of the metrics (SLS goals) that are controlled by the closed control loop.

The management services available for the closed control loop steps for "Monitor", "Analyze" and "Decide" are based on file transfer described in TS 28.550 [3], or data streaming described in TS 28.550 [3] and notifications described in TS 28.111 [A].

The information provided from the "Monitor" step to the "Analyze" step includes performance measurements (see TS 28.552 [7]), KPI’s (see TS 28.554 [8]), performance threshold monitoring events and fault supervision events (see TS 28.532 [9]).

The insights provided from the "Analyze" step to the "Decide" step includes analytics outcomes that are not specified in the present document.

The decision support services provided from the "Decide" step to the "Execute" step are not specified in the present document.

***Next change***

### 5.1.1 Communication service assurance

The CSP needs to meet the CSC expectations on automation as well as internal goals on CAPEX and OPEX efficiency.

The CSP has access to capabilities, procedures and tools that can address both CAPEX and OPEX in the provisioning and management of communication services to their customers (CSC). The CSC expects the CSP to offer a variety of communication services including business critical communication services that allow the CSC (e.g. Enterprise) to run their applications in a predictable manner TS 22.261 [2]. Hence automation of the onboarding of the CSC application, which will use communication services provided by the CSP, on a 5GS, is a requirement to meet the following needs:

- reduce the complexity for a CSC application to be on-boarded on a 5GS,

- improve the network performance over time, based on predicting communication service behaviour,

- assure the target goals for a CSC, and

- reduce the cost ownership through automation.

During the operation of the communication service the CSP provides assurance of service quality requirements and CSP meets the CSC expectations on automation as well as internal goals on CAPEX and OPEX efficiency.

**REQ-CSA\_NSA-FUN-01** The 3GPP management system shall have capabilities to receive communication service requirements from its authorized consumers.

**REQ-CSA\_NSA-FUN-02** The 3GPP management system shall have capabilities to monitor, and report to its authorized consumers the degree of fulfilment of committed communication service requirements of authorized consumers.

**REQ-CSA\_NSA-FUN-03** The 3GPP management system shall have capabilities to take actions to adjust the 5GS in order to meet the communication service requirements of authorized consumers.

**REQ-CSA\_NSA-FUN-04** The 3GPP management system shall have capabilities to act to fulfil the service quality requirements of authorized consumers.

### 5.1.2 Communication service assurance for shared resources

In this scenario, it is assumed that the SLA's for the two communication services will allow for them to share resources, for example RAN resources.

The management systems CS-Assurance service receives the request from Order Care and using a MDAS CS preparation assistance service, explores and evaluates communication service realisation and impact on other communication services, if any.

Once the Order Care has committed to an SLA with a CSC, the management system activates the communication service.

As the communication service operates, a management service for communication service assurance, CSA, continuously monitors the SLA fulfilment using MDAS, PM assurance services TS 28.550 [3] including and core network NWDAF QoE analytics service, if available.

Based on goals for SLA fulfilment, or other KPIs, the CSA service may initiate an action when SLA goals are not met, be that over- or under fulfilment. The CSA service may use an MDAS to assist in selecting proper action and how to best execute the action.

The CSA service triggers the action by using provisioning service TS 28.531 [4] towards RAN, transport and core network and monitors the effect of the change.

REQ-CSIA\_CON-01: The 3GPP management system shall have the capability providing a management service for assisting in assessing (evaluating) a target SLA for a requested communication service.

REQ-CSIA\_CON-02: The 3GPP management system shall have the capability providing a management service for assisting in asserting an agreed SLA for a requested communication service.

***End of changes***