**3GPP TSG- Meeting # *S5-253887d1***

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
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| *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:*** |  | | | | | | | | | |
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| ***Source to WG:*** | , Nokia | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
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| ***Work item code:*** | \_Ph3 | | | | |  | ***Date:*** | | |  |
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| ***Category:*** |  |  | | | | | ***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 can be 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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The eSBMA architecture defines mechanisms to version (i.e. MnSVersion) and publish (i.e. MnsRegisty) MnS Producers. At present the SA5 provided stage2 artefacts contain inconsistent versioning (i.e. ‘XXX’) and there are no no guidelines on version handling. TR 28.871 contains a proposal for MnS versioning handling based on similar in TS 29.501. | | | | | | | | |
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| ***Summary of change:*** | | Add MnS versioning overview, requirements and registry usage.  Fix editorial issue in clause 4.8. | | | | | | | | |
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| ***Consequences if not approved:*** | | Inconsistencies in MnS version handling can lead to confusion and cause interoperability issues. | | | | | | | | |
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| ***Clauses affected:*** | | 2, 4.2.4, 4.8 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

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| **1st 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] Void

[3] 3GPP TS 28.530: "Management and orchestration of networks and network slicing; Concepts, use cases and requirements".

[4] 3GPP TS 28.541: "Management and orchestration of 5G networks; Network Resource Model (NRM); Stage 2 and stage 3".

[5] 3GPP TS 28.552: "Management and orchestration of 5G networks; Performance measurements".

[6] 3GPP TS 28.554: "Management and orchestration of 5G networks; 5G End to end Key Performance Indicators (KPI)".

[7] 3GPP TS 32.425: "Telecommunication management; Performance Management (PM); Performance measurements Evolved Universal Terrestrial Radio Access Network (E-UTRAN)".

[8] 3GPP TS 28.531: "Management and orchestration of 5G networks; Provisioning".

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

[10] 3GPP TS 28.500: "Telecommunication management; Management concept, architecture and requirements for mobile networks that include virtualized network functions"

[11] 3GPP TS 28.510: "Telecommunication management; Configuration Management (CM) for mobile networks that include virtualized network functions; Requirements".

[12] 3GPP TS 28.511: "Telecommunication management; Configuration Management (CM) for mobile networks that include virtualized network functions; Procedures".

[13] 3GPP TS 28.512: "Telecommunication management; Configuration Management (CM) for mobile networks that include virtualized network functions; Stage 2".

[14] 3GPP TS 28.513: "Telecommunication management; Configuration Management (CM) for mobile networks that include virtualized network functions; Stage 3".

[15] 3GPP TS 28.515: "Telecommunication management; Fault Management (FM) for mobile networks that include virtualized network functions; Requirements".

[16] 3GPP TS 28.516: "Telecommunication management; Fault Management (FM) for mobile networks that include virtualized network functions; Procedures".

[17] 3GPP TS 28.517: "Telecommunication management; Fault Management (FM) for mobile networks that include virtualized network functions; Stage 2".

[18] 3GPP TS 28.518: "Telecommunication management; Fault Management (FM) for mobile networks that include virtualized network functions; Stage 3".

[19] 3GPP TS 28.520: "Telecommunication management; Performance Management (PM) for mobile networks that include virtualized network functions; Requirements".

[20] 3GPP TS 28.521: "Telecommunication management; Performance Management (PM) for mobile networks that include virtualized network functions; Procedures".

[21] 3GPP TS 28.522: "Telecommunication management; Performance Management (PM) for mobile networks that include virtualized network functions; Stage 2".

[22] 3GPP TS 28.523: "Telecommunication management; Performance Management (PM) for mobile networks that include virtualized network functions; Stage 3".

[23] 3GPP TS 28.525: "Telecommunication management; Life Cycle Management (LCM) for mobile networks that include virtualized network functions; Requirements".

[24] 3GPP TS 28.526: "Telecommunication management; Life Cycle Management (LCM) for mobile networks that include virtualized network functions; Procedures".

[25] 3GPP TS 28.527: "Telecommunication management; Life Cycle Management (LCM) for mobile networks that include virtualized network functions; Stage 2".

[26] 3GPP TS 28.528: "Telecommunication management; Life Cycle Management (LCM) for mobile networks that include virtualized network functions; Stage 3".

[27] ETSI GS NFV 003: "Network Functions Virtualisation (NFV); Terminology for Main Concepts in NFV V1.3.1 (2018-01)".

[28] Void.

[29] ETSI GS ZSM 002: "Zero-touch Network and Service Management (ZSM); Reference Architecture V.1.1.1 (2019-08)".

[30] 3GPP TS 23.288: "Architecture enhancements for 5G System (5GS) to support network data analytics services".

[31] 3GPP TS 23.501: "System Architecture for the 5G system".

[32] 3GPP TS 28.622: "Telecommunication management; Generic Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".

[33] IETF RFC 8446: "The Transport Layer Security (TLS) Protocol Version 1.3".

[34] IETF RFC 4253: "The Secure Shell (SSH) Transport Layer Protocol".

[35] 3GPP TS 28.100: "Management and orchestration; Levels of autonomous network".

[36] 3GPP TS 28.533: "Management and orchestration; Architecture framework".

[37] 3GPP TS 28.535: "Management services for communication service assurance; Requirements".

[38] 3GPP TS 28.536: "Management services for communication service assurance; Stage 2 and stage 3".

[39] 3GPP TS 28.537: "Management and orchestration; Management capabilities".

[40] 3GPP TS 28.538: "Management and orchestration; Edge Computing Management".

[41] 3GPP TS 28.540: "Management and orchestration; 5G Network Resource Model (NRM); Stage 1".

[42] 3GPP TS 28.550: "Management and orchestration; Performance assurance".

[43] 3GPP TS 32.421: "Telecommunication management; Subscriber and equipment trace; Trace concepts and requirements".

[44] 3GPP TS 32.422: "Telecommunication management; Subscriber and equipment trace; Trace control and configuration management".

[45] 3GPP TS 32.423: "Telecommunication management; Subscriber and equipment trace; Trace data definition and management".

[46] 3GPP TS 28.312: "Management and orchestration; Intent driven management services for mobile networks".

[47] 3GPP TS 28.557: "Management and orchestration; Management of Non-Public Networks (NPN); Stage 1 and stage 2".

[48] 3GPP TS 28.404: "Telecommunication management; Quality of Experience (QoE) measurement collection; Concepts, use cases and requirements".

[49] 3GPP TS 28.405: "Telecommunication management; Quality of Experience (QoE) measurement collection; Control and configuration".

[50] 3GPP TS 28.406: "Telecommunication management; Quality of Experience (QoE) measurement collection; Information definition and transport".

[51] 3GPP TS 28.631: "Telecommunication management; Inventory Management (IM) Network Resource Model (NRM) Integration Reference Point (IRP); Requirements".

[52] 3GPP TS 28.632: "Telecommunication management; Inventory Management (IM) Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS)".

[53] 3GPP TS 28.633: "Telecommunication management; Inventory Management (IM) Network Resource Model (NRM) Integration Reference Point (IRP); Solution Set (SS) definitions".

[54] 3GPP TS 28.623: "Telecommunication management; Generic Network Resource Model (NRM) Integration Reference Point (IRP); Solution Set (SS) definitions".

[55] 3GPP TS 32.130: "Telecommunication management; Network sharing; Concepts and requirements".

[56] 3GPP TS 28.310: "Management and orchestration; Energy efficiency of 5G".

[57] 3GPP TS 28.104: "Management and orchestration; Management Data Analytics (MDA)".

[58] 3GPP TS 28.313: "Management and orchestration; Self-Organizing Networks (SON) for 5G networks".

[59] 3GPP TS 28.314: "Management and orchestration; Plug and Connect; Concepts and requirements".

[60] 3GPP TS 28.315: "Management and orchestration; Plug and Connect; Procedure flows".

[61] 3GPP TS 28.316: "Management and orchestration; Plug and Connect; Data formats".

[62] 3GPP TS 28.555: "Management and orchestration; Network policy management for 5G mobile networks; Stage 1".

[63] 3GPP TS 28.556: "Management and orchestration; Network policy management for 5G mobile networks; Stage 2 and stage 3".

[64] ETSI GS NFV-IFA 008 (V4.3.1): "Network Functions Virtualisation (NFV) Release 4; Management and Orchestration; Ve-Vnfm reference point - Interface and Information Model Specification".

[65] ETSI GS NFV-IFA 013 (V4.3.1): "Network Function Virtualisation (NFV) Release 4; Management and Orchestration; Os-Ma-nfvo reference point - Interface and Information Model Specification".

[66] 3GPP TS 28.105: "Management and orchestration; Artificial Intelligence / Machine Learning (AI/ML) management".

[67] 3GPP TS 28.317: "Management and orchestration;Self-configuration of Radio Access Network Entities (RAN NEs)".

[68] 3GPP TS 28.111: "Management and orchestration; Fault management (FM)".

[69] 3GPP TS 28.318: "Management and Orchestration; Network and services operations for energy utilities".

[70] 3GPP TS 28.319: "Management and orchestration; Access Control for Management services".

[71] 3GPP TS 26.247 "Transparent end-to-end Packet-switched Streaming Service (PSS); Progressive Download and Dynamic Adaptive Streaming over HTTP (3GP-DASH)"

[x] 3GPP 29.501: 5G System; Principles and Guidelines for Services Definition

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| **2nd Change** |

## 4.2 MnS components

### 4.2.1 Introduction

An MnS is specified using different independent components. A concrete MnS is composed of at least two of these components. Three different component types are defined, called MnS component type A, MnS component type B and MnS component type C. These components are defined in the following clauses 4.2.2 and 4.2.3.

### 4.2.2 MnS component type A

The MnS component type A is a group of management operations and/or notifications that is agnostic with regard to the entities managed. The operations and notifications as such are hence not involving any information related to the managed network. These operations and notifications are called generic or network agnostic.

For example, operations for creating, reading, updating and deleting managed object instances, where the managed object instance to be manipulated is specified only in the signature of the operation, are generic.

### 4.2.3 Management information

#### 4.2.3.1 MnS component type B

MnS component type B refers to management information represented by information models representing the managed entities. A MnS component type B is also called Network Resource Model (NRM).

MnS component type B examples are:

1) Network resource models as defined in TS 28.622 [32].

2) Network resource models as defined in TS 28.541 [4].

#### 4.2.3.2 MnS component type C

MnS component type C is performance information of the managed entity and fault information of the managed entity.

The following are examples of Management service component type C:

1. Alarm information as defined in TS 28.111 [68].

2. Performance data as defined in TS 28.552 [5], TS 28.554 [6] and TS 32.425 [7].

### 4.2.4 MnS producer profile

A MnS producer is described by a set of meta data called MnS producer profile. The profile holds information about the supported MnS components and their version numbers. This may include also information about support of optional features. For example, a read operation on a complete subtree of managed object instances may support applying filters on the scoped set of objects as optional feature. In this case the MnS profile should include the information if filtering is supported.

In the context of SBMA, the MnS version can be used to identify the operations (component A) available for an MnS consumer to communicate with a specific version of an MnS producer.

An MnS version number shall consist of at least 3 fields following a MAJOR.MINOR.PATCH pattern as defined in TS 29.501 [x], clause 4.3.1.1.

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## 4.8 Management capability support in multiple tenant environment

In a 3GPP management system, a tenant represents a group of MnS consumers associated with the management capabilities they are allowed to access and consume. The 3GPP management system provides multi-tenancy support, by associating different tenants with different sets of management capabilities. Every tenant may be authorized to access and consume those MnSs that the operator makes available to this tenant based on SLA.