**3GPP TSG- Meeting # *S5-253884***

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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:*** |  |
| ***Source to TSG:*** | S5 |
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| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***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 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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
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| ***Reason for change:*** | The use cases and requirements for discovery of management services are described in clause 5, and corresponding NRM fragment is defined in TS 28.622. However, it is not clear what functionalities are provided by the discovery of management services. Also the detailed implementation description (RESTful HTTP-based solution set) for each functionality is missing. |
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| ***Summary of change:*** | 1. Add explicit description for functionalities provided by discovery of management service.
2. Add the detailed implementation description (RESTful HTTP-based solution set) for each functionality
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| ***Consequences if not approved:*** | The description for the functionalities provided by discovery of management services is missing in the published TS 28.537. |
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| ***Clauses affected:*** | 2, 5.2.3.0, 5.2.3.2 |
|  |  |
|  | **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:*** |  |

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

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

[4] 3GPP TS 28.552: "Management and orchestration; 5G performance measurements".

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

[6] 3GPP TS 32.422: "Telecommunication management; Subscriber and equipment trace; Trace control and configuration management".

[7] 3GPP TS 32.404: "Telecommunication management; Performance Management (PM); Performance measurements; Definitions and template".

[8] 3GPP TS 32.423: "Telecommunication management; Subscriber and equipment trace: Trace data definition and management".

[9] 3GPP TS 28.622: "Telecommunication management; Generic Network Resource Model (NRM) Integration Reference Point (IRP); Information Service (IS) "

[10] 3GPP TS 28.623: "Telecommunication management; Generic Network Resource Model (NRM) Integration Reference Point (IRP); Solution Set (SS) definitions "

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

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| **2nd Change** |

### 5.2.3 Solutions

#### 5.2.3.0 Overview

##### 5.2.3.0.1 Introduction

The solution for Discovery of Management Services is based on the model driven approach. MnSRegistry NRM is configured by operators to control the behaviour of the management service discovery. Following are the functionalities for discovery of management services:

- Registration of Management Services

- Discovery of Management Services

- Access control of Management Services

##### 5.2.3.0.2 Registration of Management Services

The Registration of Management Services functionalities allow a MnF to register MnS Information (i.e. MnSInfo) for a specific MnS instance that it produces to MnS Registry. When successful registration of an MnS instance, corresponding MnS information is stored in the MnS Registry and available for discovery by other authorized entities (as MnS consumer). Following are the list of concrete functionalities for Registration of Management Services:

**- Register a new MnS instance:** a MnF registers a MnS instance that it produces to MnS Registry. In this case, a new MnSInfo instance is added in the MnSRegistry.

**- Update a registered MnS instance:** a MnF updates the MnS information of a registered MnS instance that it produces. MnS producer can update the whole MnS information or partial MnS information of a registry MnS instance that it produces. In this case, the MnSInfo instance in the MnSRegistry is updated.

**- Query a registered MnS instance:** a MnF retrieve MnS information about registered MnS instance.

**- Deregister a MnS instance:** a MnF deregisters the MnS instance which is no longer provided. In this case, an MnS instance is removed from the MnSRegistry.

##### 5.2.3.0.3 Discovery of Management Services

The Discovery of Management Services functionalities allow MnS consumer to retrieve MnS information on available MnS instances in the MnS Registry based on selection filter. MnSRegistry will verify the received MnS discovery request based on configured access control rules, and provide the MnS information of the available MnS instances based on selection filter. Following are the list of concrete functionalities for Discovery of Management Services:

**-** **Query available MnS instances:** MnS consumer requests to query the available MnS instances by providing the selection filter (e.g. mnsType, mnsCapability and mnsScope). MnSRegistry will response a list of available MnS instances based on specified selection filter and configured access control rules. If the selection filter is not specified in the request, MnS register will provide all MnS instances that the MnS consumer is authorized to consume.

**- S****ubscribe/Unsubscribe changes on available MnS instances:** MnS consumer requests to subscribe or unsubscribe the notifications on changes in one or multiple available MnS instances that the MnS consumer is authorized to consume. MnS consumer also can update its own subscriptions for notification on changes in one or multiple available MnS instances.

**- Notify changes on available MnS instances:** MnS Register sends the notifications on changes in one or multiple available MnS instances to subscribed MnS consumer(s).

##### 5.2.3.0.4 Access control of Management Services

The Authentication service and Authorization service are described in TS 28.533 [3] clause 4.9 and Annex D. The Access control rules are defined in TS 28.319 [X].

#### 5.2.3.1 Stage 2 definition

Following are the stage 2 definition for Discovery of Management Services:

- The operations and notifications of generic provisioning MnS defined in clause 11.1 in TS 28.532 [2].

- The MnSRegistry NRM fragment defined in clause 4.3.41 and clause 4.3.42 in TS 28.622 [9].

#### 5.2.3.2 Stage 3 definition

Following are the stage 3 definition for Discovery of Management Services:

- RESTful HTTP-based solution set

- RESTful HTTP-based solution set for generic provisioning management service is defined in clause 12.1.1 in TS 28.532 [2]. OpenAPI document "TS28532\_ProvMnS.yaml" in clause A.1 in TS 28.532 [2].

- OpenAPI document " TS28623\_MnSRegistryNrm.yaml" in clause 4.3 in TS 28.623 [10].Following are the detailed SS to support Registration and Discovery of Management Services based on Table 12.1.1.1.1-1 and Table 12.1.1.2.1-1 in TS 28.532 [2].

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Functionality | **IS operations** | HTTP Method | Resource URI |
| Registration of Management Services | Register a new MnS instance | createMOI operation | POST | {MnSRoot}/ProvMnS/{MnSVersion}/{URI-LDN-first-part}/MnsRegistry |
| Update a registered MnS instance | modifyMOIAttributes operation | PUTPATCH | {MnSRoot}/ProvMnS/{MnSVersion}/{URI-LDN-first-part}/MnsRegistry/MnsInfo={id} |
| Query a registered MnS instance | getMOIAttributes operation | GET | {MnSRoot}/ProvMnS/{MnSVersion}/{URI-LDN-first-part}/MnsRrgistry/MnsInfo={id} |
| Deregister a MnS instance | deleteMOI operation | DELETE | {MnSRoot}/ProvMnS/{MnSVersion}/{URI-LDN-first-part}/MnsRegistry/MnsInfo={id} |
| Discovery of Management Services | Query available MnS instances | getMOIAttributes operation | GET | {MnSRoot}/ProvMnS/{MnSVersion}/{URI-LDN-first-part}/MnsRegistry |
| Subscribe changes on available MnS instances | createMOI operation | POST | {MnSRoot}/ProvMnS/{MnSVersion}/{URI-LDN-first-part} |
| Unsubscribe changes on available MnS instances | deleteMOI operation | DELETE | {MnSRoot}/ProvMnS/{MnSVersion}/{URI-LDN-first-part}/NtfSubscriptionControl={id} |
| Notify changes on available MnS instances | notifyMOIAttributeValueChanges notification | POST  | {notificationTarget} |

Note: The MnSRegistry and MnSInfo resources are defined in "TS28623\_MnSRegistryNrm.yaml", the NtfSubscriptionControl resource is defined in "TS28623\_SubscriptionControlNrm.yaml".

- YANG/Netconf-based solution set

- YANG/Netconf-based solution set for generic provisioning management service is defined in clause 12.1.3 in 3GPP TS 28.532 [2].

- YANG model " 3gpp-common-mnsregistry.yang" in clause 4.4 TS 28.623 [10].

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| **End of Changes** |