**3GPP TSG-SA5 Meeting #132e *S5-204144***

**e-meeting 17th-28th August 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **28.532** | **CR** | **0141** | **rev** | **1** | **Current version:** | **16.4.0** |  |
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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:*** | Correct the description for generic provisioning MnS | | | | | | | | | |
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| ***Source to WG:*** | Huawei | | | | | | | | | |
| ***Source to TSG:*** | S5 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NETSLICE | | | | |  | ***Date:*** | | | 2020-08-03 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | A |  | | | | | ***Release:*** | | | Rel-16 |
|  | *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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | The term “createMOI operation service consumer/provider”, “getMOIAttributes operation service consumer/provider”, “modifyMOIAttributes operation service/provider” and “deleteMOI operation service consumer/provider” is described in Clause 11.1 Generic provisioning management service, however, there is no such MnS defined in TS 28.532. | | | | | | | | |
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| ***Summary of change:*** | | Change “createMOI operation service consumer/provider”, “getMOIAttributes operation service consumer/provider”, “modifyMOIAttributes operation service/provider” and “deleteMOI operation service consumer/provider” to Generic term “MnS consumer” and “MnS producer” | | | | | | | | |
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| ***Consequences if not approved:*** | | Incorrect description for generic provisioning MnS | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 11.1.1.1.1, 11.1.1.2.1, 11.1.1.3.1, 11.1.1.4.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | Revision of S5-204144 | | | | | | | | |

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| --- |
| **1st Change** |

#### 11.1.1.1 createMOI operation

##### 11.1.1.1.1 Description

This operation is invoked by Generic Provisioning MnS consumer to request the Generic Provisioning MnS producer to create a Managed Object instance in the MIB maintained by Generic Provisioning MnS producer. This operation will create only one Managed Object instance.

The Generic Provisioning MnS consumer supplies the values of all attributes that are supported, i.e. a) attributes whose Support Qualifier is M and b) attributes whose Support Qualifier is O. The special cases are:

1) If the attribute has a default value specified. In such case, if the Generic Provisioning MnS consumer supplies a value, the supplied value is used; otherwise, the default value is used.

2) If the attribute is specified as capable of carrying a null value or carrying no information. In such case, if the Generic Provisioning MnS consumer supplies a (non-null) value, the supplied value is used; otherwise, the null value is used.

3) If the attribute does not have a default value specified and is specified as incapable of carrying null value and incapable of carrying no information, if there is a Generic Provisioning MnS producer defined default value, then that value will be used.

##### 11.1.1.1.2 Input parameters

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter Name | Support Qualifier | Information Type / Legal Values | Comment |
| managedObjectClass | M | class | This parameter specifies the class of the new managed object instance. |
| managedObjectInstance | M | DN | This parameter specifies the instance of the managed object that is to be created and registered. This is a full DN according to 3GPP TS 32.300 [5]. |
| attributeListIn | M | LIST OF SEQUENCE< attribute name, attribute value> | This parameter may have a null value. When this parameter is supplied, it contains a list of name/value pairs specifying attribute identifiers and their values to be assigned to the new managed object. These values override the values for the corresponding attributes derived from the default value set specified in the definition of the managed object's class. |

##### 11.1.1.1.3 Output parameters

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter name | Support Qualifier | Matching Information / Legal Values | Comment |
| attributeListOut | M | LIST OF SEQUENCE< attribute name, attribute value> | This list of name/value pairs contains the attributes of the new managed object and the actual value assigned to each. |
| status | M | ENUM (OperationSucceeded, OperationFailed) |  |

##### 11.1.1.1.4 Results

In case of success, the ManagedEntity instance has been created with the supplied DN. In case of failure, indication of the failure is provided in the Output parameters.

#### 11.1.1.2 getMOIAttributes operation

##### 11.1.1.2.1 Definition

This operation is invoked by Generic Provisioning MnS consumer to request the retrieval of management information (Managed Object attribute names and values) from the MIB maintained by Generic Provisioning MnS producer. One or several Managed Objects may be retrieved - based on the containment hierarchy.

A SS may choose to split this operation in several operations (e.g. operations to get "handlers" or "iterators" to Managed Objects fulfilling the scope/filter criteria and other operations to retrieve attribute names/values from these "handlers").

##### 11.1.1.2.2 Input Parameters

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Qualifier | Information Type | Comment |
| baseObjectInstance | M | DN | This parameter specifies the base object instance.  If the "scope" parameter is absent, then either only the base object or the complete subtree below and including the base object shall be selected. The default behaviour is protocol specific. |
| scope | M | n/a | This parameter specifies the scope. It is a structured parameter and consists of the sub-parameters "scopeType" and "scopeLevel". The scope describes which object instances are selected with respect to a base object instance. The base object instance needs to be specified using a dedicated attribute. |
| > scopeType | M | ENUM {  BASE\_ONLY,  BASE\_ALL  } | If the optional "scopeLevel" parameter is not supported or absent, allowed values of "scopeType" are "BASE\_ONLY" and "BASE\_ALL".  The value "BASE\_ONLY" indicates only the base object is selected.  The value "BASE\_ALL" indicates the base object and all of its subordinate objects (incl. the leaf objects) are selected.  This parameter is redundant and can be omitted when confirming only the protocol specific default behaviour. |
|  |  | ENUM {  BASE\_NTH\_LEVEL,  BASE\_SUBTREE  } | If the "scopeLevel" parameter is supported and present, allowed values of "scopeType" are "BASE\_NTH\_LEVEL" and "BASE\_SUBTREE".  The value "BASE\_NTH\_LEVEL" indicates all objects on the level, which is specified by the "scopeLevel" parameter, below the base object are selected. The base object is at "scopeLevel" zero.  The value "BASE\_SUBTREE" indicates the base object and all of its subordinate objects down to and including the objects on the level, which is specified by the "scopeLevel" parameter, are selected. The base object is at "scopeLevel" zero. |
| > scopeLevel | O | Integer | See definition of "scopeType" parameter. |
| filter | O | See Comment. | This parameter defines filter criteria to be applied to the objects selected by the "baseObjectInstance", "scope" and "scopeLevel" parameters.  The actual syntax and capabilities of the filter is SS specific. However, each SS should support a filter consisting of one or several assertions that may be grouped using the logical operators AND, OR and NOT.  Each assertion is a logical expression of attribute existence, attribute value comparison ("equal to X, less than Y" etc.) and MO Class. |
| attributeListIn | O | LIST OF attribute name. | This parameter identifies the attributes to be returned by this operation. If the parmeter is absent or empty all attributes shall be returned. |

##### 11.1.1.2.3 Output Parameters

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Qualifier | Matching Information | Comment |
| managedObjectClass | M | ManagedEntity class | For each returned MO: The class of the MO. |
| managedObjectInstance | M | ManagedEntity DN | For each returned MO: The name of the MO. This is a full DN according to 3GPP TS 32.300 [5]. |
| attributeListOut | M | LIST OF SEQUENCE< attribute name, attribute value > | For each returned MO: A list of name/value pairs for MO. |
| status | M | ENUM (OperationSucceeded, OperationFailed) | An operation may fail because of a specified or unspecified reason. |

##### 11.1.1.2.4 Results

In case of success, all of the ManagedEntity instances selected for retrieval are returned. In case of failure, a specified or unspecified reason may be provided in the Output parameters.

#### 11.1.1.3 modifyMOIAttributes operation

##### 11.1.1.3.1 Description

This service operation is invoked by Generic Provisioning MnS consumer to request the modification of one or more Managed Object instances from Generic Provisioning MnS producer. Attributes of one or several Managed Objects may be modified.

##### 11.1.1.3.2 Input parameters

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter Name | Support Qualifier | Information Type / Legal Values | Comment |
| baseObjectInstance | M | DN | The MO instance that is to be used as the starting point for the selection of managed objects to which the filter (when supplied) is to be applied. This is a full DN according to 3GPP TS 32.300 [5]. |
| scopeType | M | See corresponding parameter in getMOIAttributes. | See corresponding parameter in getMOIAttributes. |
| scopeLevel | O | See corresponding parameter in getMOIAttributes. | See corresponding parameter in getMOIAttributes. |
| filter | O | See comment. | See corresponding parameter in getMOIAttributes. |
| modificationList | M | LIST OF SEQUENCE <attribute identifier, [attribute values], ENUM( replace, add values, remove values, set to default)>  See Comment for when attribute values are require and when they are optional. | This parameter contains a set of attribute modification specifications, each of which contains:  1). attribute identifier: the identifier of the attribute whose value(s) is (are) to be modified.  2). attribute value: the value(s) to be used in the modification of the attribute. The use of this parameter is defined by the modify operator. This parameter is optional when the set to default modify operator is specified and if supplied, shall be ignored.  3). modify operator: the way in which the attribute values(s) (if supplied) is(are) to be applied to the attribute. The possible operators are:  a) replace: the attribute value(s) specified shall be used to replace the current values(s) of the attribute;  b) add values: the attribute values(s) specified shall be added to the current value(s) of the attribute. This operator shall only be applied to a set-valued attribute and shall perform a set union (in the mathematical sense) between the current values(s) of the attribute and the attribute value(s) specified. Value(s) specified in the attribute value parameter which is(are) already in the current values of the attribute shall not cause an error to be returned.  c) remove values: the attribute value(s) specified shall be removed from the current values(s) of the attribute. This operator shall only be applied to a set-valued attribute and shall perform a set difference (in the mathematical sense) between the current value(s) of the attribute and the attribute values(s) specified. Value(s) specified in the attribute value parameter which is(are) not in the current value(s) of the attribute shall not cause an error to be returned;    d) set to default: when this operator is applied to a single-valued attribute, the value of the attribute shall be set to its default value. When this operator is applied to a set–valued attribute, the value(s) of the attribute shall be set to their default value(s) and only as many values as defined by the default shall be assigned. If there is no default value defined, an error shall be returned.  Note: Set is used here in the mathematical sense so that a set-valued attribute is an unordered set of unique values.  The modify operator is optional, and if it is not specified, the replace operator shall be assumed.  The modificationList parameter contains a single set of attribute modification specifications and this same set is applied to each MO instance to be modified. |

##### 11.1.1.3.3 Output parameters

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter name | Support Qualifier | Matching Information / Legal Values | Comment |
| modificationListOut | M | LIST OF SEQUENCE< ManagedEntity DN, ManagedEntity class, LIST OF SEQUENCE< attribute name, attribute value >> | This parameter will provide for each managed object instance the full DN of the managed object instance, the managedObjectClass, and a list of name/value pairs with the values of all the attributes of the modified managed object instance after modification. The form of this information is SS dependant and may be provided in one or many data structures. |
| status | M | ENUM (OperationSucceeded, OperationFailed, OperationPartiallySucceeded) | An operation may fail because of a specified or unspecified reason and no attributes have been updated. The operation is only successful if all specified attributes of all selected objects are actually modified. Otherwise, the operation is partially successful. |

In lieu of a synchronization parameter, best effort synchronization will apply; that is, all managed objects selected for this operation will perform the operation if possible regardless of whether some managed objects fail to perform it.

##### 11.1.1.3.4 Results

In case of success, all of the ManagedEntity instances selected for modification are modified. In case of failure, a specified or unspecified reason may be provided in the Output parameters.

#### 11.1.1.4 deleteMOI operation

##### 11.1.1.4.1 Description

This service operation is invoked by Generic Provisioning MnS consumer to request the deletion of one or more Managed Object instances in the MIB maintained by the Generic Provisioning MnS producer.

##### 11.1.1.4.2 Input parameters

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter Name | Support Qualifier | Information Type / Legal Values | Comment |
| baseObjectInstance | M | DN | The MO instance that is to be used as the starting point for the selection of managed objects to which the filter (when supplied) is to be applied. This is a full DN according to 3GPP TS 32.300 [5]. |
| scopeType | O | See corresponding parameter in getMOIAttributes. | See corresponding parameter in getMOIAttributes. |
| scopeLevel | O | See corresponding parameter in getMOIAttributes. | See corresponding parameter in getMOIAttributes. |
| filter | O | See comment. | See corresponding parameter in getMOIAttributes. |

##### 11.1.1.4.3 Output parameters

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter name | Support Qualifier | Matching Information / Legal Values | Comment |
| deletionList | M | LIST OF SEQUENCE< ManagedEntity DN, ManagedEntity class name> | If the base object alone is specified, then this parameter is optional; otherwise it contains a list of managedObjectInstance/managedObjectClass pairs identifying the managed objects deleted. |
| status | M | ENUM (OperationSucceeded, OperationFailed, OperationPartiallySucceeded) | An operation may fail because of a specified or unspecified reason. The operation is partially successful if some, but not all, objects selected to be deleted are actually deleted. |

In lieu of a synchronization parameter, best effort synchronization will apply; that is, all managed objects selected for this operation will perform the operation if possible regardless of whether some managed objects fail to perform it.

##### 11.1.1.4.4 Results

In case of success, all of the ManagedEntity instances selected for deletion are deleted. In case of failure, a specified or unspecified reason may be provided in the Output parameters.

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| **End of Change** |