**3GPP TSG-SA4 Meeting # 120 *S4aI221364***

 **Online <Start\_Date> - <End\_Date>**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **26.502** | **CR** | **<CR#>** | **rev** | **<Rev#>** | **Current version:** | **17.1.1** |  |
|  |
| *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)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network |  |

|  |
| --- |
|  |
| ***Title:***  | Correction of the User Service Provisioning call flow wrt MB-SMF interactions  |
|  |  |
| ***Source to WG:*** | Ericsson |
| ***Source to TSG:*** | S4 |
|  |  |
| ***Work item code:*** | <Related\_WIs> |  | ***Date:*** | <Res\_date> |
|  |  |  |  |  |
| ***Category:*** | **<Cat>** |  | ***Release:*** | <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:*** | The MBSF need to provide a set of input parameters, when using the Nmbsmf API calls. The derivation of the input parameters from Nmbsf parameters is not obvious. |
|  |  |
| ***Summary of change:*** | A clear description on the derivation of the input parameters is provided. |
|  |  |
| ***Consequences if not approved:*** | Not possible to define stage 3 for the Nmbsf API. |
|  |  |
| ***Clauses affected:*** |  |
|  |  |
|  | **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 \*\*\*\*

## 5.3 Procedures for User Service provisioning

The procedure begins with the MBS Application Provider provisioning an MBS User Service and, within its scope, a set of MBS User Data Ingest Sessions, as shown in figures 5.3‑1 and 5.3.‑2 below.



Figure 5.3‑1: Call flow for MBS User Service provisioning by MBS Application Provider

First, the MBS Application Provider provisions a new MBS User Service Session in the MBS System:

1. To support Use Cases (e.g. Group Communication) where there is a requirement for TMGI allocation to be managed outside the MBS System, the MBS Application Provider pre-allocates a TMGI for some or all of the MBS Distribution Sessions declared in step 3 below by invoking the *Nmbsmf\_TMGI\_Allocate* service operation on the MB‑SMF at reference point Nmb13 (or N33+N29mb, if invoked via the NEF), as specified in clause 9.1.2.2 of TS 23.247 [5].

2. The MBS Application Provider invokes the *Nmbsf\_MBSUserService\_Create* service operation at reference point Nmb10 (or N33+Nmb5 if invoking via the NEF) to create a new MBS User Service, as defined in clause 4.5.3.

Immediately, or at some later time, the MBS Application Provider creates at least one MBS User Data Ingest Session (as defined in clause 4.5.5) within the scope of the MBS User Service created in step 2 above:

3. The MBS Application Provider creates an MBS User Data Ingest Session by invoking the *Nmbsf\_MBSUserDataIngestSession\_Create* service operation at reference point Nmb10 (or N33+Nmb5, if invoked via the NEF).

 The MBS User Data Ingest Session optionally includes a schedule of start and end times referred to as *active periods*.

 The MBS User Data Ingest Session comprises the details of one or more MBS Distribution Session(s), as defined in clause 4.5.6. Each such MBS Distribution Session fully specifies one of the distribution methods defined in clause 6 and may optionally nominate a TMGI to be used if one was pre-allocated in step 1 above.

4. The MBS Application Provider subscribes to status events from the MBSF relating to the MBS User Data Ingest Session just created by invoking *Nmbsf\_MBSUserDataIngestSession\_StatusSubscribe* service operation at reference point Nmb10 (or N33+Nmb5, if invoked via the NEF).

5. The MBSF may notify the status of each created MBS User Data Ingest Session to the MBS Application Provider by invoking the *Nmbsf\_MBSUserDataIngestSession\_StatusNotify* callback service operation at reference point Nmb10 (or N33+Nmb5, if invoked via the NEF).

Shortly before a provisioned MBS User Data Ingest session is scheduled to become active (see clause 4.5.5), or immediately if no schedule of active periods is provisioned, the MBSF establishes in the MBSTF all MBS Distribution Sessions comprising that MBS User Data Ingest Session as shown in figure 5.3‑2 below.



Figure 5.3‑2: Call flow for MBS User Service internal provisioning

For each such MBS Distribution Session:

6. If a TMGI was not nominated by the MBS Application Provider in step 1 above, the MBSF allocates one at this point for the MBS Distribution Session by invoking the *Nmbsmf\_TMGI\_Allocate* service operation on the MB‑SMF at reference point Nmb1, as specified in clause 9.1.2.2 of TS 23.247 [5].

7. The MBSF creates an MBS Session to reserve resources in the MBS System for each MBS Distribution Session by invoking the *Nmbsmf\_MBSSession\_Create* service operation on the MB‑SMF at reference point Nmb1, as specified in clause 9.1.3.6 of TS 23.247 [5]). Note, that multiple MBS Distribution Sessions are only created in case of location dependent MBS Services, as described in clause 6.2.3 of of TS 23.247 [5]. The TMGI reserved for the MBS Distribution Session in step 1 or step 6 above is provided as an input parameter. The MBSF determines the input parameters in the following way:

- The *DNN* and the *S-NSSAI* are derived from the MBS Application Provider. Note, the MBSF determines the MBS Application provider based on authorization.

- The *MBS service area* is derived from the *target service area*.

- When the service type is Broadcast, then the MBSF creates a list of MBS Frequency Selection Area Identifiers

- In case of location dependent services, more than one MBS Distribution Session objects is available, each with its own ingest infoirmation.

- The *MBS activation time* and the *MBS termination time* are derived from the *session schedule information*.

- When the MBS Session is configures as a Closed Group Multicast (i.e. Not any UE may join), then the MBSF sets the “indication that any UE may join” to false.

Editor’s Note: The usage of *service description* is under discussion in SA2. The parameter is likely related to the packet filter information for identifying separate QoS Flows.

Editor’s Note: The usage of qosInformation is FFS. Additional interactions with the PCF should be added, when QoS is used.

Editor’s Note: It is currently unclear, which API is used for managing the UEs of a Closed Group Multicast.

8. The MBSF creates the MBS Distribution Session in the MBSTF by invoking the *Nmbstf\_MBSDistributionSession\_Create* service operation at reference point Nmb2. This is a mirror of the entity in the MBSF (see clause 4.5.6). In the case of the Packet Distribution Method, the response may include additional content ingest parameters chosen by the MBSTF for this MBS Distribution Session (see *MBSTF ingest endpoint addresses* in table 4.5.6‑3).

9. In the case of the Packet Distribution Method, the MBSF invokes the *Nmbsf\_MBSUserDataIngestSession\_‌StatusNotify* callback service operation at reference point Nmb10 (or Nmb5+N33, if invoked via the NEF) to inform the MBS Application Provider of the content ingest parameters that have been chosen for this MBS Distribution Session (see *MBSTF ingest endpoint addresses* in table 4.5.6‑3).

10. The MBSF subscribes to status events from the MBSTF relating to the MBS Distribution Session just created by invoking the *Nmbstf\_MBSDistributionSessionStatusSubscribe* service operation at reference point Nmb2.

11. The MBSTF attempts to establish content ingest from the MBS Application Provider at reference point Nmb8 according to the ingest parameters and distribution method provisioned for the MBS Distribution Session in question (see table 4.5.6‑1).

 On success, the state of the MBS Distribution Session in the MBSTF becomes *ESTABLISHED*; on failure, it remains *INACTIVE* (see step 2 in clause 4.6.1).

NOTE: Success of this step varies according to the provisioned distribution method and its configuration. Success may, for example, be defined as establishing a network association with the MBS Application Provider (using the additional parameters defined in table 4.5.6‑3), or it may require successful ingest of an initial object from the MBS Application Provider (using the additional parameters defined in table 4.5.6‑2).

12. The MBSTF invokes the *Nmbstf\_MBSDistributionSession\_StatusNotify* callback service operation at reference point Nmb2 to inform the MBSF of the (un)successful establishment of content ingest.

 On success, the state of the MBS Distribution Session in the MBSF becomes *ESTABLISHED*; on failure, it remains *INACTIVE* (see step 2 in clause 4.6.1).

13. The MBSF invokes the *Nmbsf\_MBSUserDataIngestSession\_StatusNotify* callback service operation at reference point Nmb10 (or Nmb5+N33, if invoked via the NEF) to inform the MBS Application Provider of the (un)successful establishment of content ingest for the MBS Distribution Session in the context of its parent MBS User Data Ingest Session.

14. If content ingest was established successfully in step 11 above, the MBSF compiles the metadata relating to this MBS Distribution Session into an MBS Distribution Session Announcement, as defined in clause 4.5.8.

\*\*\*\* Last Change \*\*\*\*