**3GPP TSG-SA4 MBS Post # 122S4aI230053**

**Online, -**

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| *CR-Form-v12.2* | | | | | | | | |
| **Draft CHANGE REQUEST** | | | | | | | | |
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|  | **26.502** | **CR** | **0015** | **rev** | **-** | **Current version:** | **17.3.0** |  |
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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 | **x** | Radio Access Network |  | Core Network | **x** |

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| ***Title:*** | [5MBUSA] Correction of Nmb5 / Nmb10 notification events | | | | | | | | | |
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| ***Source to WG:*** | Ericsson LM | | | | | | | | | |
| ***Source to TSG:*** | S4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5MBUSA | | | | |  | ***Date:*** | | | 11.2.2023 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *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-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)* | |
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| ***Reason for change:*** | | The Object ingest base URL is a mandatory parameter in case of PUSH mode operation. It is used as the resource locator for ingesting objects using HTTPS into the MBSTF at Nmb8. However, the description is only focusing on the substituation of the object ingest base URL with the object distribution base URL. | | | | | | | | |
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| ***Summary of change:*** | | The definition the object ingest base URL is corrected by making it mandatory for PUSH mode and defining its purpose. | | | | | | | | |
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| ***Consequences if not approved:*** | | Inconsistent Specification. | | | | | | | | |
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| ***Clauses affected:*** | | 4.5.6 | | | | | | | | |
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|  | | **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 \*\*\*\*

### 4.5.6 MBS Distribution Session parameters

This entity models an MBS Distribution Session, as provisioned by the MBS Application Provider and as managed by the MBSF. This MBSF subsequently uses this information to provision a corresponding MBS Distribution Session in the MBSTF.

The following parameters assigned by the MBS Application Provider may be updated by the MBS Application Provider at any time:

- Target service areas,

- MBS Frequency Selection Area (FSA) Identifier (applicable only to broadcast Service type)

- QoS information.

With the exception of the *MBS Session Identifier* (which is immutable after initial assignment) and the *Location-dependent service flag* (which is immutable after creation), all other parameters assigned by the MBS Application Provider may be updated by the MBS Application Provider when the MBS Distribution Session is in the INACTIVE state.

The baseline parameters for an MBS Distribution Session that are common to all distribution methods are listed in table 4.5.6‑1 below. All parameters are exposed to the MBS Application Provider except where noted otherwise.

Table 4.5.6‑1: Common baseline parameters of MBS Distribution Session entity

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Cardinality | Assigner | Description |
| Distribution Session Identifier | 1..1 | MBSF | An identifier for this MBS Distribution Session that is unique within the scope of the MBS User Service (see clause 4.5.3). |
| State | 1..1 |  | The current state of the MBS Distribution Session: INACTIVE, ESTABLISHED, ACTIVE or DEACTIVATING (see clause 4.6.1). |
| MBS Session Context | 1..\* |  | As defined in clause 6.9 of TS 23.247 [5] (see NOTE 1).  There shall be one MBS Session Context associated with the MBS Distribution Session unless multiple *Target service areas* are specified (see below). |
| MB‑UPF tunnel endpoint address | 0..1 |  | The tunnel endpoint address of the MB‑UPF that supports this MBS Distribution Session at reference point Nmb9 (see NOTE 1, NOTE 4). |
| MBMS GW tunnel endpoint address | 0..1 |  | The tunnel endpoint address of the MBMS GW that supports this MBS Distribution Session at reference point SGi‑mb (see NOTE 1, NOTE 4). |
| User Plane traffic flow information | 0..1 |  | Details of the MBS-4-MC User Plane traffic flow to be used by the MBSTF for this MBS Distribution Session, including the multicast group destination address and port number to be used inside the unicast tunnel at reference point Nmb9 (see NOTE 1).  This parameter is mandatory except in the case of Packet Distribution Method operating in Forward-only mode, in which case multicast-addressed packets ingested at reference point Nmb8 are relayed to Nmb9 without changing their address. |
| MBS Session Identifier | 0..1 | MBSF or MBS Application Provider | The Temporary Mobile Group Identity (TMGI) or Source-Specific Multicast (SSM) IP address of the MBS Session supporting this MBS Distribution Session (see NOTE 2).  Multiple MBS Distribution Sessions within the scope of the same MBS User Service may share the same value if they are location-dependent MBS Services, as defined in clause 6.2.3 of TS 23.247[5].  TMGI values are allocated by the MBSF in conjunction with the MB‑SMF unless supplied by the MBS Application Provider at the time of provisioning. |
| Target service areas | 0..\* | MBS Application Provider | The set of regions comprising the MBS service area in which this MBS Distribution Session is to be made available (see NOTE 2).  The provided set of regions shall be disjoint with that of every other MBS Distribution Session sharing the same MBS Session Identifier.  A unique MBS Session Context shall be associated with the MBS Distribution Session for each declared service area, distinguishable by its Area Session Identifier. |
| MBS Frequency Selection Area (FSA) Identifier | 0..1 |  | (Applicable only to broadcast *Service type*.) Identifies a preconfigured area within which, and in proximity to, the cell(s) announce the MBS FSA ID and the associated frequency corresponding to this MBS Distribution Session (see NOTE 3). |
| Location-dependent service flag | 0..1 |  | An indication that this MBS Distribution Session corresponds to a location-dependent MBS Session.  If the flag is unset or omitted, the MBS Distribution Session is not location-dependent. |
| Multiplexed service flag | 0..1 |  | If set, all MBS Distribution Sessions in the scope of the same parent MBS User Data Ingest Session with identical or empty sets of *Target service areas* shall be multiplexed onto the same MBS Session.  All MBS Distribution Sessions in the multiplex shall be assigned the same MBS Session Identifier. |
| Restricted membership flag | 0..1 |  | (Applicable only to multicast *Service type*.) An indication that this MBS Distribution Session is restricted to a set of UEs according to their current subscription status in the MBS System.  If the flag is set, only UEs in the restricted set are permitted to join thls MBS Distribution Session; otherwise, any UE is permitted to join. |
| QoS information | 0..1 |  | A 5G QoS Identifier (5QI) [2] to be applied to the traffic flow for this MBS Distribution Session (see NOTE 2).  The 5QI information is used by the MBSF to set the Quality of Service for the MBS Session by interacting with the PCF at reference point Nmb12. |
| Maximum content bit rate | 1..1 |  | The maximum bit rate for content in this MBS Distribution Session. |
| Maximum content delay | 0..1 |  | The maximum end-to-end content distribution delay that is tolerated for this MBS Distribution Session by the MBS Application Provider. |
| Distribution method | 1..1 |  | The distribution method for this MBS Distribution Session, as defined in clause 6. |
| Operating mode | 0..1 |  | The operating mode in the case where multiple modes are defined in clause 6 for the indicated distribution method. |
| FEC configuration | 0..1 |  | Configuration for Application Level FEC (AL-FEC) information added by the MBSTF to protect this MBS Distribution Session.  The AL‑FEC scheme shall be identified using a term from the Reliable Multicast Transport (RMT) controlled vocabulary of FEC Encoding IDs [17] expressed as a fully-qualified URI, e.g. urn:ietf:rmt:fec:encoding:0.  The overhead of AL‑FEC protection shall be specified as a proportion of the (unprotected) MBS data, e.g. 1.1 for 10% overhead.  Additional scheme-specific parameters may be signalled in the form of uncontrolled name–value pairs. |
| Traffic marking information | 0..1 | MBS Application Provider or MBSF | Information (e.g. a Differentiated Services Code Point) used by the MBSTF to mark the multicast packets that it conveys to the MB‑UPF at reference point Nmb9. |
| NOTE 1: Internal parameter not exposed to the MBS Application Provider.  NOTE 2: Parameter not relevant to the MBSTF.  NOTE 3: Used to guide frequency selection by the UE for a broadcast MBS Session.  NOTE 4: At least one of *MB‑UPF tunnel endpoint address* or *MBMS GW tunnel endpoint address* shall be present. | | | |

An MBS Distribution Session Announcement (see clause 4.5.8 below) shall be associated with an MBS Distribution Session when the latter is in the ESTABLISHED or ACTIVE state.

The following MBS Distribution Session parameters are additionally relevant when the distribution method is the Object Distribution Method:

Table 4.5.6‑2: Additional MBS Distribution Session parameters for Object Distribution Method

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | Cardinality | Assigner | Description |
| Object acquisition method | 1..1 | MBS Application Provider | Indicates whether the objects(s) are to be pushed into the MBSTF by the MBS Application Provider or whether they are to be pulled from the MBS Application Provider by the MBSTF as part of the corresponding MBS User Data Ingest Session.  In the latter case, the *Object acquisition method* indicates whether the object(s) are to be retrieved once from the MBS Application Provider at the start of each active period of the corresponding MBS User Data Ingest Session, or whether the MBSTF is required to check their validity periodically, for example once per rotation of an object carousel. |
| Object acquisition identifiers | 1..\* |  | Identifies the object(s) to be ingested and distributed by the MBSTF during this MBS Distribution Session.  This could be the ingest URL of the object, or the ingest URL of a manifest describing a set of objects, or a reference into a manifest describing a set of objects. |
| Object ingest base URL | 0..1 | MBS Application Provider or MBSF | Assigned by the MBS Application Provider for the pull-based *Object acquisition method*. Assigned by the MBSF for push-based object acquisition.  In the case of push-based object acquisition, the Object ingest base URL is the base resource locator used by the MBS Application Provider when publishing objects intended for this MBS Distribution Session to the MBSTF via Nmb8 using HTTPS. In this case, its value shall be unique for a given MBSTF.  When present, the URL prefix is substituted by the MBSTF with the *Object distribution base URL* prior to distribution of ingested objects.  If omitted, nothing is substituted in the content ingest URL when forming the object distribution URL. |
| Object distribution base URL | 0..1 | MBS Application Provider | A URL prefix substituted by the MBSTF in place of the *Object ingest base URL* prior to distribution of ingested objects.  If present, the optional *Object ingest base URL* shall also be present.  If omitted, the object distribution URL is the same as the object ingest URL. |
| Object repair base URL | 0,,1 | MBSF | A URL prefix substituted by the MBSTF Client in place of the *Object distribution base URL* when repairing objects not received completely intact from this MBS Distribution Session. The value shall point to the MBS AS.  Present only when object repair is provisioned for this MBS Distribution Session. |

The following MBS distribution session are additionally relevant when the distribution method is the Packet Distribution Method:

Table 4.5.6‑3: Additional MBS Distribution Session parameters for Packet Distribution Method

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| --- | --- | --- | --- |
| Parameter | Cardinality | Assigner | Description |
| Packet ingest method | 1..1 | MBS Application Provider | Indicates whether packets are to be ingested using multicast ingest or unicast ingest.  Multicast ingest is valid for Proxy mode only. In this case, the MBSTF shall join a Source-Specific Multicast (SSM) group indicated in *MBSTF ingest endpoint addresses* parameter.  Unicast ingest is valid for Proxy mode and Forward-only mode. In this case, the MBSTF shall allocate a listening IP address and port number for packet ingest and shall return it to the MBSF in the *MBSTF ingest endpoint addresses* parameter below. |
| MBSTF ingest endpoint addresses | 1..1 | MBS Application Provider, MBSF, MBSTF | The endpoint addresses used by the MBS Application Provider and MBSTF to establish a connection at reference point Nmb8 prior to the commencement of this MBS User Data Ingest Session.  In the case of Proxy mode, this shall be the Source-Specific Multicast (SSM) endpoint addresses (including the source IP address, destination multicast group address and destination UDP port) nominated by the MBS Application Provider or else by the MBSF.  In the case of Forward-only mode, this shall be the IP addresses and UDP port numbers at the source and destination ends of the content ingest tunnel, nominated respectively by the MBS Application Provider and the MBSTF. |

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