**SA WG2 Meeting #156E (e-meeting) S2-230xxxx**

**April 17 – 21, 2023 *revision of S2-230xxxx***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.2* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **23.247** | **CR** | **x-** | **rev** | **-** | **Current version:** | **18.1.0** |  |
|  | | | | | | | | |
| *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 | **x** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Handling of location dependent sessions for Resource sharing across broadcast MBS Sessions during network sharing | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia, Nokia Shanghai-bell | | | | | | | | | |
| ***Source to TSG:*** | S2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | 5MBS\_Ph2 | | | | |  | ***Date:*** | | | April 7th, 2023 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.5.5, 6.18 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | |  | | | | | | | | |

1st change

### 6.5.5 Associated Session ID

In the case of network sharing, an Associated Session ID may be used as specified in clause 6.17. When the AF creates multiple broadcast MBS Sessions via different CNs to deliver the same content, it may provide the Associated Session ID which enables the NG-RAN to identify the multiple MBS Sessions delivering the same content.

Source Specific IP Multicast Address specified in clause 6.5.3 may be used as Associated Session ID.

2nd change

## 6.18 Resource sharing across broadcast MBS Sessions during network sharing

In network sharing scenario as specified in clause 5.18 of TS 23.501 [2], the same MBS broadcast service may be delivered via multiple operators' CN participating in the network sharing to a shared NG-RAN, and the shared NG-RAN nodes may broadcast the MBS data only once for resource efficiency.

When the AF creates multiple broadcast MBS sessions via multiple CNs to deliver the same content, the shared NG-RAN allocates radio resource for one of broadcast MBS Sessions instead of allocating radio resource for all the broadcast MBS Sessions.

NOTE 1: The same QoS requirements are assumed to be provided by the AF for the broadcast MBS Sessions via multiple CNs delivering the same content.

The NG-RAN determines the broadcast MBS sessions delivering the same content in one of the following ways:

- Based on the Associated Session ID (see clause 6.5.X) provided by the AF to the NG-RAN via 5GCs when creating broadcast MBS sessions. or

- Based on the association of MBS session identifiers (i.e. TMGIs) configured in NG-RAN, the shared NG-RAN nodes can determine that the multiple broadcast MBS sessions are transmitting the same content for the same MBS service. For the location dependent MBS session, the existing MBS session identifiers are used to identify multiple broadcast MBS Sessions via different CNs delivering the same content.

NOTE 2: One possibility for configuring the association between TMGIs is configuring a range of TMGIs for each PLMN participating in network sharing, and associating TMGIs with the same offset in the ranges. Example for TMGI range mapping: If the PLMN 1 TMGI range x1 to xn is configured to be mapped to TMGI range y1 to yn in PLMN 2, x1 is mapped to y1, x2 is mapped to y2, and so forth.

Editor's note: For the association of MBS session identifiers (i.e. TMGIs) configured in NG-RAN, it is FFS whether AFs can provide additional information (e.g. TMGI index) to request the allocation of a TMGI from a range of TMGIs for shared MBS services in an MB-SMF.

NOTE 3: When the association of MBS session identifiers is configured in NG-RAN, there is no requirement on the AF to provide an Associated Session ID.

Illustrated in Figure 6.18-1 is an example that the AF creates broadcast MBS Sessions via 5GC Operators A, B and C respectively to deliver the same content and N3mb unicast transport is used from 5GC to the NG-RAN. Based on operator policy in the NG-RAN node, the N3mb tunnel may be established from the 5GC of only one operator (i.e., Operator A in Figure 6.18-1) to the shared NG-RAN, or the N3mb tunnels may be established from the 5GCs of all the operators to the shared NG-RAN. Over the Uu interface, the NG-RAN allocates radio resource for only one of the established broadcast MBS Sessions regardless of the number of N3mb tunnels established to deliver the MBS packets.



Figure 6.18-1: Example of Resource sharing across multiple broadcast MBS Sessions via different CNs to deliver the same content during network sharing

For a location dependent MBS session (see Clauses 6.2.3 and 7.3.4), the AF(s) that create the location dependent area sessions towards the participating PLMNs shall supply service areas that contain the same shared radio cells (but may contain different non-shared radio cells). As for non-location dependent services, the RAN node identifies the MBS sessions based on associated session ID or configured TMGI mapping and for each cell selects the content based on the service areas obtained from the core network participating in RAN sharing. It applies area session IDs only for the interactions with the core networks.

NOTE X: Different Area session IDs will be used by the different core networks for the same service area.

End of changes