3GPP TSG-RAN WG2 Meeting #127 DRAFT R2-2407645

Maastricht, Netherlands, Aug 18th – 23rd, 2024

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.331** | **CR** | **4927** | **rev** | **1** | **Current version:** | **18.2.0** |  |
|  | | | | | | | | |
| *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 | **X** | Radio Access Network | **X** | Core Network |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | |
| ***Title:*** | Clarification on MBS broadcast acquisition | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Samsung, CATT, Nokia, LG Electronics Inc., Ericsson, Apple, Qualcomm Incorporated | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_MBS-Core, NR\_SmallData\_INACTIVE-Core | | | | |  | ***Date:*** | | | 2024-08-22 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | *A* |  | | | | | ***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-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | In NOTE 1 in clause 5.2.2.3.1 presently it is specified only for RRC\_CONNECTED that ‘the UE is only required to acquire MBS broadcast if the UE can acquire it without disrupting unicast or MBS multicast data reception’. However, it is not specified for the case of RRC\_INACTIVE. It should be clarified that for RRC\_INACTIVE, UE may acquire MBS broadcast only if the UE can acquire it without disrupting SDT or MBS multicast data reception.  Further, the phrase ‘required to acquire’ implies that UE has some requirements to acquire MBS broadcast, which is not correct understanding. It is also preferable to combine the UE behaviour for both RRC\_CONNECTED and RRC\_INACTIVE for MBS broadcast reception and description is moved to clause 5.9.1.1. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | In clause 5.2.2.3.1, UE behaviour for MBS broadcast acquisition in RRC\_CONNECTED is removed from NOTE 1  In clause 5.9.1.1 it is specified that ‘The UE may acquire MBS broadcast only if the UE can acquire it without disrupting unicast, SDT or MBS multicast data reception’.  Also, UE behaviour for MBS broadcast acquisition is commonly specified regardless of the RRC states and ‘required to acquire’ is expressed as ‘may acquire’.  **Impact Analysis**  Impacted 5G architecture options:  NR SA, (NG)EN-DC, NE-DC, NR-DC  Impacted functionality:  MBS, SDT  Inter-operability:  1. If the NW is implemented according to the CR but the UE is not then the UE may not be able to receive unicast via SDT in RRC\_INACTIVE when MBS broadcast is transmitted as well.    2. If the UE is implemented according to the CR but the NW is not then the UE behavior has no interoperability issue. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | The UE may not be able to receive unicast via SDT in RRC\_INACTIVE, when MBS broadcast is transmitted as well. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.2.2.3.1; 5.9.1.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | - | | | | | | | | |

#### **<Start of First Change>**

##### 5.2.2.3.1 Acquisition of *MIB* and *SIB1*

The UE shall:

1> apply the specified BCCH configuration defined in 9.1.1.1;

1> if the UE is in RRC\_IDLE or in RRC\_INACTIVE; or

1> if the UE is in RRC\_CONNECTED while T311 is running:

2> acquire the *MIB,* which is scheduled as specified in TS 38.213 [13];

2> if the UE is unable to acquire the *MIB*;

3> perform the actions as specified in clause 5.2.2.5;

2> else:

3> perform the actions specified in clause 5.2.2.4.1.

1> if the UE is in RRC\_CONNECTED with an active BWP with common search space configured by *searchSpaceSIB1* and *pagingSearchSpace* and has received an indication about change of system information; or

1> if the UE is in RRC\_CONNECTED with an active BWP with common search space configured by *searchSpaceSIB1* and the UE has not stored a valid version of a SIB or posSIB, in accordance with clause 5.2.2.2.1, of one or several required SIB(s) or posSIB(s) in accordance with clause 5.2.2.1, and, UE has not acquired SIB1 in current modification period; or

1> if the UE is in RRC\_CONNECTED with an active BWP with common search space configured by *searchSpaceSIB1*, and, the UE has not stored a valid version of a SIB or posSIB, in accordance with clause 5.2.2.2.1, of one or several required SIB(s) or posSIB(s) in accordance with clause 5.2.2.1, and, *si-BroadcastStatus* for the required SIB(s) or *posSI-BroadcastStatus* for the required posSIB(s) is set to *notBroadcasting* in acquired *SIB1* in current modification period; or

1> if the UE is in RRC\_IDLE or in RRC\_INACTIVE; or

1> if the UE is in RRC\_CONNECTED while T311 is running:

2> if *ssb-SubcarrierOffset* indicates *SIB1* is transmitted in the cell (TS 38.213 [13]) and if *SIB1* acquisition is required for the UE:

3> acquire the *SIB1,* which is scheduled as specified in TS 38.213 [13];

3> if the UE is unable to acquire the *SIB1*:

4> perform the actions as specified in clause 5.2.2.5;

3> else:

4> upon acquiring *SIB1*, perform the actions specified in clause 5.2.2.4.2.

2> else if *SIB1* acquisition is required for the UE and *ssb-SubcarrierOffset* indicates that *SIB1* is not scheduled in the cell:

3> perform the actions as specified in clause 5.2.2.5.

NOTE 1: The UE in RRC\_CONNECTED is only required to acquire broadcasted *SIB1* if the UE can acquire it without disrupting unicast or MBS multicast data reception, i.e., the broadcasted *SIB1* and unicast/MBS multicast beams are quasi co-located. The UE in RRC\_INACTIVE state while T319a is running, is only required to acquire broadcasted *SIB1* and *MIB* if the UE can acquire them without disrupting unicast data reception, i.e. the broadcast and unicast beams are quasi co-located.

NOTE 2: UE in RRC\_INACTIVE that does not support *inactiveStateNTN-r17* enters RRC\_IDLE upon cell reselection between TN cell and NTN cell, and initiates the NAS signalling connection recovery (see TS 24.501 [23]).

#### **<End of First Change>**

#### **<Start of Last Change>**

#### 5.9.1.1 General

UE receiving or interested to receive MBS broadcast service(s) applies MBS broadcast procedures described in this clause as well as the MBS Interest Indication procedure as specified in clause 5.9.4. The UE may acquire MBS broadcast only if the UE can acquire it without disrupting unicast, SDT or MBS multicast data reception.

MBS broadcast configuration information, except CFR configuration for MCCH/MTCH, is provided on MCCH logical channel. MCCH carries the *MBSBroadcastConfiguration* message which indicates the MBS broadcast sessions that are provided in the cell as well as the corresponding scheduling related information for these sessions. Optionally, the *MBSBroadcastConfiguration* message may also contain a list of neighbour cells providing the same broadcast MBS service(s) as provided in the current cell. The configuration information required by the UE to receive MCCH is provided in *SIB1* and *SIB20*. Additionally, System Information may provide information related to service continuity of MBS broadcast in *SIB21*.

#### **<End of Last Change>**