**3GPP TSG-RAN WG2 Meeting #131 *R2-250xxxx***

**Bangalore, India, August 25th – 29th, 2025**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **38.304** | **CR** | **0441** | **rev** | **1** | **Current version:** | **18.4.0** |  |
|   |
| *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)*.* |
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| ***Proposed change affects:*** | UICC apps |  | ME | **X** | Radio Access Network | **X** | Core Network |  |

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|  |
| ***Title:***  | Introduction of Rel1-9 NR NTN  |
|  |  |
| ***Source to WG:*** | ZTE Corporation, Sanechips |
| ***Source to TSG:*** |  R2 |
|  |  |
| ***Work item code:*** | NR\_NTN\_Ph3-Core |  | ***Date:*** | 2025-09-02 |
|  |  |  |  |  |
| ***Category:*** | B |  | ***Release:*** | Rel-19 |
|  | *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-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
|  |  |
| ***Reason for change:*** | Introduction of Rel-19 NR NTN to TS 38.304. |
|  |  |
| ***Summary of change:*** | Change is introduced to support the following objectives:1. Add abbreviation for Intended service area
2. In subclause 5.2.4.1:
* Add description that UE may (de)prioritize MBS frequency based on ISA of MBS services.
* Capture in the a note that The Intended Service Area in the Service Announcement can be used for frequency prioritization in MBS NTN.
1. In subclause 5.3.1:
* add editor’s notes on ffs further discussion on barring mechanism considering RAN1 progress on link level discussion.
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| ***Consequences if not approved:*** | Release-19 NR NTN enhancements are not supported |
|  |  |
| ***Clauses affected:*** | 3.2, 5.2.4.1, 5.3.1 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  |  |
| ***affected:*** |  | **X** |  Test specifications |  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications |  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

First change

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

AS Access Stratum

ATG Air To Ground

CAG Closed Access Group

CAG-ID Closed Access Group Identifier

CMAS Commercial Mobile Alert System

CN Core Network

DCI Downlink Control Information

DRX Discontinuous Reception

DTX Discontinuous Transmission

eDRX Extended DRX

ETWS Earthquake and Tsunami Warning System

E-UTRA Evolved UMTS Terrestrial Radio Access

E-UTRAN Evolved UMTS Terrestrial Radio Access Network

GIN Group ID for Network selection

H-SFN Hyper System Frame Number

HRNN Human-Readable Network Name

HSDN High Speed Dedicated Network

IAB Integrated Access and Backhaul

IMSI International Mobile Subscriber Identity

ISA Intended Service Area

L2 Layer-2

MBS Multicast/Broadcast Services

MBS FSAI MBS Frequency Selection Area Identity

MCC Mobile Country Code

MCCH MBS Control Channel

MICO Mobile Initiated Connection Only

MRB MBS Radio Bearer

MTCH MBS Traffic Channel

NAS Non-Access Stratum

NCR Network-Controlled Repeater

NCR-Fwd NCR Forwarding

NCR-MT NCR Mobile Termination

NES Network Energy Savings

NID Network Identifier

NPN Non-Public Network

NR NR Radio Access

NSAG Network Slice AS Group

NTN Non-Terrestrial Network

PEI Paging Early Indication

PEI-O Paging Early Indication-Occasion

PH Paging Hyperframe

PLMN Public Land Mobile Network

PTW Paging Time Window

RAT Radio Access Technology

RNA RAN-based Notification Area

RNAU RAN-based Notification Area Update

RRC Radio Resource Control

SDT Small Data Transmission

SL Sidelink

SNPN Stand-alone Non-Public Network

TN Terrestrial Network

TRS Tracking Reference Signal

U2N UE-to-Network

U2U UE-to-UE

UAC Unified Access Control

UE User Equipment

UMTS Universal Mobile Telecommunications System

VSAT Very Small Aperture Terminal

V2X Vehicle to Everything

Next change

### 5.2.4 Cell Reselection evaluation process

#### 5.2.4.1 Reselection priorities handling

Absolute priorities of different NR frequencies or inter-RAT frequencies may be provided to the UE in the system information, in the *RRCRelease* message, or by inheriting from another RAT at inter-RAT cell (re)selection. In the case of system information, an NR frequency or inter-RAT frequency may be listed without providing a priority (i.e. the field *cellReselectionPriority* is absent for that frequency). If any fields with *cellReselectionPriority* or *nsag-CellReselectionPriority* are provided in dedicated signalling, the UE shall ignore any fields with *cellReselectionPriority* and *nsag-CellReselectionPriority* provided in system information.

When UE is in camped normally state, if it supports slice-based cell reselection and has received the network slice(s) and NSAG information from NAS to be used for cell reselection, UE shall derive reselection priorities according to clause 5.2.4.11.

NOTE 00: UE derives reselection priorities according to clause 5.2.4.11 also in case *SIB16* (see TS 38.331 [3]) is not broadcast in the camped cell.

If UE is in *camped on any cell* state, UE shall only apply the priorities provided by system information from current cell, and the UE preserves priorities provided by dedicated signalling and *deprioritisationReq* received in *RRCRelease* unless specified otherwise. When the UE in camped normally state, has only dedicated priorities other than for the current frequency, the UE shall consider the current frequency to be the lowest priority frequency (i.e. lower than any of the network configured values). When the HSDN capable UE is in High-mobility state, the UE shall always consider the HSDN cells to be the highest priority (i.e., higher than any other network configured priorities). When the HSDN capable UE is not in High-mobility state, the UE shall always consider HSDN cells to be the lowest priority (i.e., lower than any other network configured priorities). If the UE is configured to perform both NR sidelink communication and V2X sidelink communication, the UE may consider the frequency providing both NR sidelink communication configuration and V2X sidelink communication configuration to be the highest priority. If the UE is configured to perform NR sidelink communication and not perform V2X communication, the UE may consider the frequency providing NR sidelink communication configuration to be the highest priority. If the UE is configured to perform V2X sidelink communication and not perform NR sidelink communication, the UE may consider the frequency providing V2X sidelink communication configuration to be the highest priority. If the UE is configured to perform ranging/sidelink positioning, the UE may consider the frequency providing ranging/sidelink positioning configuration to be the highest priority.

A UE on a vehicle with a mobile-IAB cell may consider the frequency for which a mobile-IAB cell is the best cell to be the highest priority. The UE identifies a mobile-IAB cell by *mobileIAB-Cell* in SIB1 (see TS 38.331 [3]). The UE may narrow its search scope for mobile-IAB cell(s) by *mobileIAB-CellList* if broadcasted in SIB4 (see TS 38.331 [3]). A non-mobile-IAB cell may be excluded from this mobile IAB frequency prioritization for up to 300 seconds.

NOTE 0a: The frequency only providing the anchor frequency configuration should not be prioritized for V2X service during cell reselection, as specified in TS 38.331[3].

NOTE 0b: When UE is configured to perform NR sidelink communication or V2X sidelink communication performs cell reselection, it may consider the frequencies providing the intra-carrier and inter-carrier configuration have equal priority in cell reselection.

NOTE 0c: The prioritization among the frequencies which UE considers to be the highest priority frequency is left to UE implementation unless otherwise stated.

NOTE 0d: The UE is configured to perform V2X sidelink communication or NR sidelink communication, if it has the capability and is authorized for the corresponding sidelink operation.

NOTE 0e: When UE is configured to perform both NR sidelink communication and V2X sidelink communication, but cannot find a frequency which can provide both NR sidelink communication configuration and V2X sidelink communication configuration, UE may consider the frequency providing either NR sidelink communication configuration or V2X sidelink communication configuration to be the highest priority.

NOTE 0f: Void.

NOTE 0g: How the UE determines itself to be on a vehicle with a mobile-IAB cell is left to the UE's implementation.

The UE shall only perform cell reselection evaluation for NR frequencies and inter-RAT frequencies that are given in system information and for which the UE has a priority provided.

If the MBS broadcast capable UE is receiving or interested to receive an MBS broadcast service(s) and can only receive this MBS broadcast service(s) by camping on a frequency on which it is provided; or if the MBS ISA capable UE is camping on an NTN cell where the ISA(s) of MBS broadcast services are provided, and the UE is in the ISA(s) associated with MBS broadcast service(s) it is receiving or interested to receive and can only receive this MBS broadcast service(s) by camping on a frequency on which it is provided, the UE may consider that frequency to be the highest priority during the MBS broadcast session as specified in TS 38.300 [2] as long as the two following conditions are fulfilled:

1) SIB1 scheduling information of the cell reselected by the UE due to frequency prioritization for MBS contains SIB20;

2) Either:

- One or more MBS FSAI(s) of that frequency is indicated in SIB21 of the serving cell and the same MBS FSAI(s) is also indicated for this MBS broadcast service in MBS User Service Description (USD) as specified in TS 26.517 [20], or

- SIB21 is not provided in the serving cell and that frequency is included in the USD of this service, or

- SIB21 is provided in the serving cell but does not provide the frequency mapping for the concerned service, and that frequency is included in the USD of this service.

NOTE 0g: It is up to UE implementation which frequency to select, when the USD provides multiple frequencies for the service the UE is interested in.

If the MBS broadcast capable UE is receiving or interested to receive an MBS broadcast service; or if the MBS ISA capable UE is camping on an NTN cell where the ISA(s) of MBS broadcast services area are provided, and the UE is outside of the ISA(s) associated with MBS broadcast service(s) it is receiving or interested to receive, the UE may consider cell reselection candidate frequencies at which it cannot receive the MBS broadcast service to be of the lowest priority during the MBS broadcast session as specified in TS 38.300 [2], as long as SIB1 scheduling information of the cell contains SIB20 on the MBS frequency which the UE monitors and as long as the condition 2) above is fulfilled for the serving cell.

NOTE 0h: Example scenarios in which such down-prioritisation may be needed include the cases where camping is not possible for the UE on the MBS broadcast frequency (e.g. the MBS broadcast frequency belongs to a PLMN different from UE's registered PLMN) while the UE can receive the MBS broadcast service when camped on another frequency than the MBS broadcast frequency or current frequency.

NOTE 0i: The frequency prioritization for MBS broadcast, NR sidelink communication, or V2X sidelink communication may override the re-selection priorities for slice-based cell reselection.

NOTE 0j: The ISA(s) UE considered for frequency (de)-prioritization for MBS broadcast can be ISA(s) provided in SIB and/or target service area in USD. It is up to UE’s implementation to decide whether it is inside ISA(s) or not.

In case UE receives *RRCRelease* with *deprioritisationReq*, UE shall consider current frequency and stored frequencies due to the previously received *RRCRelease* with *deprioritisationReq* or all the frequencies of NR to be the lowest priority frequency (i.e. lower than any of the network configured values) while T325 is running irrespective of camped RAT. The UE shall delete the stored deprioritisation request(s) when a PLMN selection or SNPN selection is performed on request by NAS (TS 23.122 [9]).

NOTE 1: UE should search for a higher priority layer for cell reselection as soon as possible after the change of priority. The minimum related performance requirements specified in TS 38.133 [8] are still applicable.

NOTE 1a: The UE does not consider MBS broadcast, NR sidelink communication or V2X sidelink communication functionality to replace cell reselection priorities caused by HSDN or *deprioritisationReq* functionality.

The UE shall delete priorities provided by dedicated signalling when:

- the UE enters a different RRC state; or

- the optional validity time of dedicated priorities (T320) expires; or

- the UE receives an *RRCRelease* message with the field *cellReselectionPriorities* absent; or

- a PLMN selection or SNPN selection is performed on request by NAS (TS 23.122 [9]).

NOTE 2: Equal priorities between RATs are not supported.

The UE shall not consider any exclude-listed cells as candidate for cell reselection.

The UE shall consider only the allow-listed cells, if configured, as candidates for cell reselection.

NCR-MT may be configured with additional allowed cell list and/or forbidden cell list, see TS 38.300 [2]. The NCR-MT shall consider only the allowed cell list, if configured by OAM as candidates for cell reselection (ignore above exclude-listed cells and/or allow-listed cells). The NCR-MT shall not consider the cells for cell reselection in the forbidden cell list, if configured by OAM.

The UE in RRC\_IDLE state shall inherit the priorities provided by dedicated signalling and the remaining validity time (i.e. T320 in NR and E-UTRA), if configured, at inter-RAT cell (re)selection.

NOTE 3: The network may assign dedicated cell reselection priorities for frequencies not configured by system information.

Next change

### 5.3.1 Cell status and cell reservations

Cell status and cell reservations are indicated in the *MIB* or *SIB1* message as specified in TS 38.331 [3] by means of the following fields:

- *cellBarred* (IE type: "barred" or "not barred")
Indicated in *MIB* message. In case of multiple PLMNs or NPNs indicated in *SIB1*, this field is common for all PLMNs and NPNs. This field is ignored by UEs supporting NTN for NTN access, or by UEs supporting ATG for ATG access.

*- cellBarredATG* (IE type: "barred" or "not barred")
Indicated in *SIB1* message. In case of multiple PLMNs or NPNs indicated in *SIB1*, this field is common for all PLMNs and NPNs. This field is only applicable to ATG UEs.

*-* *cellBarred2RxXR* (IE type: "barred")
Indicated in *SIB1* message. In case of multiple PLMNs or NPNs indicated in *SIB1*, this field is common for all PLMNs and NPNs. This field is only applicable to 2Rx XR UEs.

- *cellBarred-eRedCap1Rx* (IE type: "barred" or "not barred")
Indicated in *SIB1* message. In case of multiple PLMNs or NPNs indicated in *SIB1*, this field is common for all PLMNs and NPNs. This field is only applicable to eRedCap UEs.

- *cellBarred-eRedCap2Rx* (IE type: "barred" or "not barred")
Indicated in *SIB1* message. In case of multiple PLMNs or NPNs indicated in *SIB1*, this field is common for all PLMNs and NPNs. This field is only applicable to eRedCap UEs.

- *cellBarredFixedVSAT* (IE type: "barred" or "not barred")
Indicated in *SIB1* message. In case of multiple PLMNs indicated in *SIB1*, this field is common for all PLMNs. This field is only applicable to VSAT UEs using NTN access.

- *cellBarredMobileVSAT* (IE type: "barred" or "not barred")
Indicated in *SIB1* message. In case of multiple PLMNs indicated in *SIB1*, this field is common for all PLMNs. This field is only applicable to VSAT UEs using NTN access.

- *cellBarredNES* (IE type: "not barred")
Indicated in *SIB1* message. In case of multiple PLMNs or NPNs indicated in *SIB1*, this field is common for all PLMNs and NPNs. This field is only applicable to UEs indicating any of the values in *nes-CellDTX-DRX* as specified in TS 38.306 [24].

- *cellBarredNTN* (IE type: "barred" or "not barred")
Indicated in *SIB1* message. In case of multiple PLMNs indicated in *SIB1*, this field is common for all PLMNs. This field is ignored if the UE does not support NTN access.

- *cellBarredRedCap1Rx* (IE type: "barred" or "not barred")
Indicated in *SIB1* message. In case of multiple PLMNs or NPNs indicated in *SIB1*, this field is common for all PLMNs and NPNs. This field is only applicable to RedCap UEs.

- *cellBarredRedCap2Rx* (IE type: "barred" or "not barred")
Indicated in *SIB1* message. In case of multiple PLMNs or NPNs indicated in *SIB1*, this field is common for all PLMNs and NPNs. This field is only applicable to RedCap UEs.

- *cellReservedForOperatorUse* (IE type: "reserved" or "not reserved")
Indicated in *SIB1* message*.* In case of multiple PLMNs or NPNs indicated in *SIB1*, this field is specified per PLMN or per SNPN.

- *cellReservedForOtherUse* (IE type: "true")
Indicated in *SIB1* message. In case of multiple PLMNs indicated in *SIB1*, this field is common for all PLMNs.

*- cellReservedForFutureUse* (IE type: "true")
Indicated in *SIB1* message. In case of multiple PLMNs or NPNs indicated in *SIB1*, this field is common for all PLMNs and NPNs.

NOTE 0: IAB-MT ignores the *cellBarred*, *cellReservedForOperatorUse, cellReservedForFutureUse,* and *intraFreqReselection* (i.e. treats *intraFreqReselection* as if it was set to *allowed*) as defined in TS 38.331 [3]. IAB-MT also ignores *cellReservedForOtherUse* for cell barring determination (i.e. NPN capable IAB-MT considers *cellReservedForOtherUse* for determination of an NPN-only cell) as defined in TS 38.331 [3].

NOTE 0a: NCR-MT ignores the *cellBarred*, *cellReservedForOperatorUse, cellReservedForFutureUse,* and *intraFreqReselection* (i.e. treats *intraFreqReselection* as if it was set to *allowed*) as defined in TS 38.331 [3]. NCR-MT also ignores *cellReservedForOtherUse* for cell barring determination (i.e. NPN capable NCR-MT considers *cellReservedForOtherUse* for determination of an NPN-only cell) as defined in TS 38.331 [3].

- *halfDuplexRedCapAllowed* (IE type: "true")
Indicated in *SIB1* message. In case of multiple PLMNs or NPNs indicated in *SIB1*, this field is common for all PLMNs and NPNs. This field is only applicable to (e)RedCap UEs.

- *iab-Support* (IE type: "true")
Indicated in *SIB1* message. In case of multiple PLMNs or NPNs indicated in *SIB1*, this field is specified per PLMN or per SNPN. This field is only applicable to IAB-MT.

- *ncr-Support* (IE type: "true")
Indicated in *SIB1* message. In case of multiple PLMNs or NPNs indicated in *SIB1*, this field is common for all PLMNs and NPNs. This field is only applicable to NCR-MT.

- *mobileIAB-Support* (IE type: "true")
Indicated in *SIB1* message. In case of multiple PLMNs or NPNs indicated in *SIB1*, this field is specified per PLMN or per SNPN. This field is only applicable to mobile IAB-MT.

When cell status is indicated as "not barred" and "not reserved" for operator use and not "true" for other use and not "true" for future use,

- UEs shall treat this cell as candidate during the cell selection and cell reselection procedures.

When cell broadcasts any CAG-IDs or NIDs and the cell status is indicated as "not barred" and "not reserved" for operator use and "true" for other use, and not "true" for future use:

- All NPN-capable UEs shall treat this cell as candidate during the cell selection and cell reselection procedures, other UEs shall treat this cell as if cell status is "barred".

When cell status is indicated as "true" for other use, and either cell does not broadcast any CAG-IDs or NIDs or does not broadcast any CAG-IDs and the UE is not operating in SNPN Access Mode,

- The UE shall treat this cell as if cell status is "barred".

When cell status is indicated as "true" for future use,

- The UE shall treat this cell as if cell status is "barred".

When *cellBarredNES* is absent and *cellBarred* is set to"barred",

- The UE indicating any of the values in *nes-CellDTX-DRX* shall treat this cell as if cell status is "barred".

When *cellBarredNTN* is not broadcast in this cell,

- For NTN access, the UE shall treat this cell as if cell status is "barred".

When *halfDuplexRedCapAllowed* is not broadcast in this cell,

- The (e)RedCap UE only capable of operating in half-duplex for FDD shall treat this cell as if cell status is "barred".

When *cellBarredATG* is not broadcast in this cell,

- For ATG access, the UE shall treat this cell as if cell status is "barred".

When *cellBarredFixedVSAT* is not broadcast in this cell,

- For NTN access, the fixed VSAT UE shall treat this cell as if cell status is "barred".

When *cellBarredMobileVSAT* is not broadcast in this cell,

- For NTN access, the mobile VSAT UE shall treat this cell as if cell status is "barred".

When *cellBarred2RxXR* is broadcast in this cell,

- The 2Rx XR UE shall treat this cell as if cell status is "barred".

When *intraFreqReselectionRedCap* is not broadcast in this cell,

- The RedCap UE shall treat this cell as if cell status is "barred".

When *intraFreqReselection-eRedCap* is not broadcast in this cell,

- The eRedCap UE shall treat this cell as if cell status is "barred".

When *cellBarredRedCap1Rx* is set to "barred" and *barringExemptEmergencyCall* is present in *SIB1*, if the cell will not be treated as barred by the UE for any reason other than the *cellBarredRedCap1Rx* being set to "barred" (see TS 38.331 [3]), and cell selection criteria are fulfilled as defined in clause 5.2.3,

- The RedCap UE that supports barring exemption for emergency call (see TS 38.306 [24]) and only 1Rx branch shall treat this cell as an acceptable cell.

When *cellBarredRedCap2Rx* is set to "barred" and *barringExemptEmergencyCall* is present in *SIB1*, if the cell will not be treated as barred by the UE for any reason other than the *cellBarredRedCap2Rx* being set to "barred" (see TS 38.331 [3]), and cell selection criteria are fulfilled as defined in clause 5.2.3,

- The RedCap UE that supports barring exemption for emergency call (see TS 38.306 [24]) and 2Rx branches shall treat this cell as an acceptable cell.

When *cellBarred-eRedCap1Rx* is set to "barred" and *barringExemptEmergencyCall* is present in *SIB1*, if the cell will not be treated as barred by the UE for any reason other than the *cellBarred-eRedCap1Rx* being set to "barred" (see TS 38.331 [3]), and cell selection criteria are fulfilled as defined in clause 5.2.3,

- The eRedCap UE that supports barring exemption for emergency call (see TS 38.306 [24]) and only 1Rx branch shall treat this cell as an acceptable cell.

When *cellBarred-eRedCap2Rx* is set to "barred" and *barringExemptEmergencyCall* is present in *SIB1*, if the cell will not be treated as barred by the UE for any reason other than the *cellBarred-eRedCap2Rx* being set to "barred" (see TS 38.331 [3]), and cell selection criteria are fulfilled as defined in clause 5.2.3,

- The eRedCap UE that supports barring exemption for emergency call (see TS 38.306 [24]) and 2Rx branches shall treat this cell as an acceptable cell.

When *cellBarred2RxXR* and *barringExemptEmergencyCall* are both present in *SIB1*, if the cell will not be treated as barred by the UE for any reason other than the *cellBarred2RxXR* being present in *SIB1* (see TS 38.331 [3]), and cell selection criteria are fulfilled as defined in clause 5.2.3,

- The 2Rx XR UE that supports barring exemption for emergency call (see TS 38.306 [24]) shall treat this cell as an acceptable cell.

When cell status is indicated as "not barred" and "reserved" for operator use for any PLMN/SNPN and not "true" for other use and not "true" for future use,

- UEs assigned to Access Identity 11 or 15 operating in their HPLMN/EHPLMN shall treat this cell as candidate during the cell selection and reselection procedures if the field *cellReservedForOperatorUse* for that PLMN set to "reserved".

- UEs assigned to Access Identity 11 or 15 shall treat this cell as candidate during the cell selection and reselection procedures if the field *cellReservedForOperatorUse* for selected/registered SNPN is set to "reserved".

- UEs assigned to an Access Identity 0, 1, 2 and 12 to 14 shall behave as if the cell status is "barred" in case the cell is "reserved for operator use" for the registered PLMN/SNPN or the selected PLMN/SNPN.

- UEs assigned to Access Identity 3 shall behave as if the cell status is "barred" in case the cell is "reserved for operator use" for the registered PLMN or the selected PLMN.

NOTE 1: Access Identities 11, 15 are only valid for use in the HPLMN/ EHPLMN and registered/selected SNPN; Access Identities 12, 13, 14 are only valid for use in the home country and registered/selected SNPN as specified in TS 22.261 [12].

NOTE 1a: Access Identity 3 is only valid for PLMNs that indicate to potential Disaster Inbound Roamers that the UEs can access the PLMN as specified in TS 22.261 [12].

When cell status "barred" is indicated or to be treated as if the cell status is "barred",

- The UE is not permitted to select/reselect this cell, not even for emergency calls;

- The UE shall select another cell according to the following rule:

- If the cell is to be treated as if the cell status is "barred" due to being unable to acquire the *MIB*:

- the UE may exclude the barred cell as a candidate for cell selection/reselection for up to 300 seconds.

- the UE may select another cell on the same frequency if the selection criteria are fulfilled.

- else:

- If the UE is a RedCap UE, the UE shall acquire *SIB1* and, in the remainder of this procedure, consider '*intraFreqReselection* in MIB' to be '*intraFreqReselectionRedCap* in *SIB1*', if available; or,

- If the UE is an eRedCap UE, the UE shall acquire *SIB1* and, in the remainder of this procedure, consider '*intraFreqReselection* in MIB' to be '*intraFreqReselection-eRedCap* in *SIB1*', if available; or,

- If the UE is a 2Rx XR UE, the UE shall acquire *SIB1* and, in the remainder of this procedure, consider '*intraFreqReselection* in MIB' to be '*intraFreqReselection2RxXR* in *SIB1*', if available:

- If the cell is to be treated as if the cell status is "barred" due to being unable to acquire the *SIB1*:

- the UE may exclude the barred cell as a candidate for cell selection/reselection for up to 300 seconds.

- the UE may select another cell on the same frequency if the selection criteria are fulfilled.

- If the cell status "barred" is indicated in *MIB* but the UE is unable to acquire the *SIB1*; or

- If the UE is a RedCap UE and *intraFreqReselectionRedCap* in *SIB1* is not available; or

- If the UE is an eRedCap UE and *intraFreqReselection-eRedCap* in *SIB1* is not available:

- the UE shall exclude the barred cell as a candidate for cell selection/reselection for 300 seconds.

- the UE may select another cell on the same frequency if re-selection criteria are fulfilled.

- If the UE is neither a RedCap UE nor an eRedCap UE; or

- if the UE is a RedCap UE and *intraFreqReselectionRedCap* in *SIB1* is available; or

- if the UE is an eRedCap UE and *intraFreqReselection-eRedCap* in *SIB1* is available:

- If the field *intraFreqReselection* in *MIB* message is set to "allowed":

- the UE may select another cell on the same frequency if re-selection criteria are fulfilled;

- If the cell is to be treated as if the cell status is "barred" due to being unable to acquire the *SIB1*:

- the UE may exclude the barred cell as a candidate for cell selection/reselection for up to 300 seconds;

- else:

- the UE shall exclude the barred cell as a candidate for cell selection/reselection for 300 seconds.

- If the field *intraFreqReselection* in *MIB* message is set to "not allowed":

- If the cell is to be treated as if the cell status is "barred" due to being unable to acquire the *SIB1*:

- the UE may exclude the barred cell as a candidate for cell selection/reselection for up to 300 seconds;

- If the cell operates in licensed spectrum:

- the UE shall not re-select to another cell on the same frequency as the barred cell and exclude such cell(s) as candidate(s) for cell selection/reselection for 300 seconds;

- else:

- the UE may select to another cell on the same frequency if the reselection criteria are fulfilled.

- else:

- If the cell operates in licensed spectrum, or if this cell belongs to a PLMN which is indicated as being equivalent to the registered PLMN or the selected PLMN of the UE, or if this cell belongs to an SNPN which is equal to or indicated as being equivalent to the registered SNPN or the selected SNPN of the UE:

- the UE shall not re-select to another cell on the same frequency as the barred cell and exclude such cell(s) as candidate(s) for cell selection/reselection for 300 seconds;

- else:

- the UE may select to another cell on the same frequency if the reselection criteria are fulfilled.

- the UE shall exclude the barred cell as a candidate for cell selection/reselection for 300 seconds.

The cell selection of another cell may also include a change of RAT.

NOTE 2: If barring of a cell is triggered by the condition of *trackingAreaCode* and *trackingAreaList* not being provided, as specified in TS 38.331 [3], the barring only applies to this PLMN and the UE can re-evaluate the barring condition again due to selection of another PLMN.

Editor’s Notes: FFS whether to further consider methods to allow UEs not supporting DL CE to down-prioritize or prevent re-selection to cells operating with DL CE.

End of change

**Annex – Agreements in NTN**

Agreements implemented in the specs are highlighted in green

FFS issues captured in editor’ notes for further discussion are highlighted in yellow

DL Coverage Enhancements

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| **RAN2#125bis Agreements**1.With regard to link level enhancement, RAN2 waits for RAN1 agreement on the DL channels to enhance before starting any RAN2 work.2.We will continue the discussion on RAN2 aspects of DL coverage enhancements (e.g. cell level / beam level DTX/DRX mechanism, etc.) in the next meetings, trying to identify questions to RAN1 for aspects where we need their input |
| **RAN2#126 Agreements**1.Based on the solution being investigated in RAN1, RAN2 will further discuss whether/how legacy UEs might operate in a cell supporting DL coverage enhancements. 2.RAN2 assumes that both EFC and EMC are supported* Ask RAN1 to keep us informed on their progress on whether the existing SSB pattern for an NR cell (e.g. SSB position in burst, SSB index number, etc.) is changed in Rel-19 NR NTN, and whether the SSB periodicity is extended compared with existing TN values.
* More in general, ask RAN1 whether/how the solution they are investigating is expected to impact common control signalling for UEs in RRC idle / RRC inactive
* Also remind RAN1 that satellite beams are currently not visible to UEs and any decision about different beam status will have to relate to beams visible to the UE (e.g. SSB beams)

Also ask RAN1 whether they are also working on UL beam hopping (and whether this is separate from DL beam hopping) |
| **RAN2#127 Agreements**1. From RAN2 point of view, if the SSB periodicity is no larger than 160ms, there is no RAN2 impact on SSB configuration (there might still be impacts on DTX aspects)2. From RAN2 point of view, If the SSB periodicity is larger than 160ms, for example ssb-PeriodicityServingCell, measurement gap periodicity, SMTC configuration, ssb-Periodicity-r17 for NonCellDefiningSSB-r17 may need to be extended. And the field description of nAndPagingFrameOffset may need to be enhanced to consider the SSB periodicity higher than 160ms.3. RAN2 can further consider SMTC impacts due to beam-hopping / larger SSB periodicity4. If there is a need to bar pre-Rel19 NTN UEs from accessing a cell operating with DL coverage enhancement (e.g. because of extreme SSB periodicity) the existing NTN bar bit can be used. FFS about the behaviour for Rel-19 UEs not supporting DL coverage enhancement when the existing NTN bar bit is set. |
| **RAN2#127bis Agreements**1. If it turns out that there is a need to bar UEs not supporting DL-CE, Rel-19 UEs not supporting DL-CE can be barred from accessing a cell operating with DL-CE using the existing NTN bar bit, in the same way as pre-Rel19 NTN UEs (this is an extension of the previous agreement to include also Rel-19 UE not supporting DL-CE)2. If it turns out that there is a need to bar UEs not supporting DL-CE, then we need to introduce a barring mechanism to control access of UEs supporting Rel19 NTN DL-CE. FFS on the details. (This also implies that UEs supporting Rel19 NTN DL-CE will not consider the existing NTN barring bit)3. (also depending on the details of the RAN1 solution) we can further consider methods to allow UEs not supporting DL CE to down-prioritize or prevent re-selection to cells operating with DL CE. |
| **RAN2#128 Agreements**1. If we need to bar UEs not supporting DL-CE (via legacy mechanism), we introduce a new barring in SIB1 to be able to selectively bar “UEs supporting DL-CE” (FFS if we will finally refer to “UEs supporting extended SSB periodicity” instead). FFS on the details (e.g. how many bits, etc.)2. As part of the work on DL-CE, RAN2 investigates related UE power consumption impact (including legacy UEs)3. RAN2 will consider whether to introduce separate signalling (e.g. new SMTC5 list) for DL CE cells SMTCs, e.g. if different periodicities need to be signalled or to prevent reselection to specific cells |
| **RAN2#129 Agreements*** From RAN2 perspective, we support option a (clustered cells illuminated) and option b (scattered cells illuminated) for further discussion on SMTC. No LS is sent to RAN1.
* RAN2 observes that if the cells active simultaneously are in clusters, existing SMTC mechanism (a maximum of 4 SMTCs per frequency) may be sufficient (FFS if any solution identified for option b applies to option a as well).
* RAN2 observes that if the cells active simultaneously are scattered, (for the case of intra-frequency neighbouring cells), the SSBs of surrounding neighbour cells may be transmitted at different times and existing SMTC mechanism may not be enough.

1.RAN2 assumes it will be possible to have different SSB periodicity among neighbour cells in the same frequency layer2.RAN2 assumes that in a NR NTN cell, SSB beam sweeping in different spatial directions is possible as in a NR TN cell: the whole cell is covered by the different SSB beams in half-frame3.RAN2 also assumes that, with the current status of RAN1 discussion, if one cell is defined by multiple “satellite beams”, the satellite beams are all simultaneously active or inactive (“beam hopping” applies equally to all the satellite beams of a given cell)4.The number of SMTC/gaps a UE needs to consider at any time will not be increased further |
| **RAN2#129bis Agreements**1. From SSB extension point of view, RAN2 assumes there is no need to introduce new barring bits2. We wait for further progress in RAN1 on link level enhancements before further discussing the possible impacts on access barring3. RAN2 considers to support configuring two different SMTC periodicities (with different offsets) for SMTCs in one frequency layer for idle, inactive and connected mode. We ask RAN4 whether it is feasible to support this in Rel-19 timeframe (also include previous agreement that at any time the UE will not use more SMTCs in parallel than in previous releases).4. We support configuring more than 4 SMTCs per frequency (e.g. 6) for idle/inactive UEs. It will be up to UE implementation to select which of the SMTCs to consider (send this RAN2 decision to RAN4 for checking)5. Network can provide assistance information (for Rel-19 UEs, not necessarily supporting DL CE) on the association between SMTC and location to help UE to perform SMTC selection for idle/inactive mode. FFS on the details of location information, e.g. serving cell SSB index, reference location, etc. In any case it is up to UE implementation on how to utilize the assistance information for SMTC selection in idle/inactive mode. |
| **RAN2#130 Agreements**1. the maximum configured SMTCs per frequency for idle/inactive UEs is 6 (can come back if we find and issue)2. To support SMTC enhancements for DL CE UE, introduce a new SMTC list instead of extending legacy smtc4list (can consider signalling optimizations for the new list to refer to the content of smtc4list to avoid signalling duplications)3. We introduce a location-based SMTC selection procedure where each SMTC can be associated with a reference location of the intended neighbor cells that need to be measured by the UE. FFS if also an SSB-index based SMTC selection is supported4. No enhancement for cell selection/reselection for DL CE is pursued (can re-discuss this if we will finally introduce a new barring scheme)Working Assumption:1. We introduce a mechanism to assist the NW to configure the SMTCs in connected mode, according to one of the following 2 options: Alt 1: UE provide the closest N reference locations/neighbor cells to network. Alt 2: UE reports the selected SMTCs from configured SMTC set to network. We continue in the next meeting on whether to confirm the WA (and go for either Alt1 or Alt2) or whether we don’t introduce any enhancement (i.e. not confirm the WA) |

Support of Broadcast service

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| **RAN2#125bis Agreements**1.For MBS broadcast service we don’t restrict the work to any satellite constellation type2.We prioritize working on a solution for MBS broadcast but we don’t preclude other broadcast services, namely ETWS3.We will cover at least the case where the indicated intended service area covers a portion of a NTN cell4.The intended service area can cover the area of more than one NTN cells (or portions thereof)5.Can discuss next time whether the broadcast transmission can be limited to the intended service area only (i.e. no transmission happens outside of the intended serive area)6.At least the following geographical area formats to model service area can be further considered (the signalling of other information than the geographical information can be considered): - Circles (like for TN coverage) - Geographical area information, e.g. via polygons, to better approximate the intended shape of service area |
| **RAN2#126 Agreements**1.For MBS broadcast service, both EFC and EMC are supported.2.RAN2 will not define means for the NW to prevent the reception of the content of the service outside of the intended service area.3.MBS broadcast intended service area is provided via system information4.For MBS broadcast RAN2 considers the following possibilities for including the service area information: SIB20/ SIB21/ MBSBroadcastConfiguration. FFS for ETWS5.When intended service area (e.g., geographical area/TN coverage) is provided for MBS broadcast service, it needs to be associated with MBS session (FFS on the details)* Come back next meeting to check whether a UE may not (or should not) establish MRB(s) associated with a service limited to an intended service area when it is not located within the area (up to UE implementation how the UE detects it’s not in the intended service area)
* Come back next meeting to check whether a UE may (or should) release its established MRB(s) associated with a service limited to an intended service area when exiting the area (up to UE implementation how the UE detects it’s not in the intended service area)
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| **RAN2#127 Agreements**1. The intended broadcast service area is defined by a geographical area represented by a (set of) referenceLocation and radius or by a (set of) polygon(s).2. RAN2 understands that the expected UE behavior is that when the UE is not in any intended service area of its interested broadcast services, the UE may not need to (re)acquire up-to-date MCCH. FFS on solutions3. For an MBS broadcast service intended for a certain area, a R19 UE supporting the feature should not establish MRB(s) for the MBS session associated to the intended area when it is outside the intended area (capture this in Stage 2)4. For an MBS broadcast service intended for a certain area, a R19 UE supporting the feature may initiate the broadcast MRB establishment procedure when UE is inside the intended area; the UE may initiate the broadcast MRB release procedure when UE leaves the intended area (capture this in stage 3) |
| **RAN2#127bis Agreements**1. For each MBS service we include one or more intended service area IDs into MCCH. FFS whether the list of the intended service areas (and related IDs) is also included in MCCH or if it is provided in a new or existing SIB. We will consider possible enhancements (including enhancements left up to UE implementation) to allow UE skipping MCCH re-acquisition when UE is not within intended service area of any interested broadcast service. |
| **RAN2#128 Agreements**1. The encoding of TN coverage introduced in Rel-18 in TS38.331, including tn-ReferenceLocation-r18 and tn-DistanceRadius-r18, is reused for the geographical area of the circle.2. The encoding of Polygon in TS37.355 is reused for the geographical area of the Polygon.3. The IntendedServiceArea is considered as the IE name of the geographical area (we can still update the name in the CR implementation if needed)4. A signalled intended service area for a MBS BC service may include geographic areas across the current serving cell and overlapping neighbor cell(s).5. RAN2 understands that the geographic area information for the intended service areas can be semi-static and not cause frequent updates. 6. Introduce a new SIB to include a list of intended service areas and related pointer (FFS if we point to the intended services areas via the index in the list or with an ID or another way)7. The legacy SIB modification procedure is applied to update the intended service area information in the new SIB. |
| **RAN2#129 Agreements**1.In the new SIB, explicit network-indicated area ID is used to label an intended service area in the list2.It shall be possible to signal multiple service area IDs to one MBS service (we Insert a list of service area IDs in MCCH)3.Introduce “warning area coordinates” in ETWS Primary Notification (SIB6) and in ETWS Secondary Notification (SIB7). FFS on the signalling details for “warning area coordinates” (SIB6 is not segmented) |
| **RAN2#129bis Agreements**1. We add a sentence saying that the UE can optionally support intended service area provision for MBS broadcast service via NTN.2. RAN2 understands the Intended service areas of all MBS broadcast services of the current serving cell that need to be geo-fenced will be included in the new SIBxx (no spec impacts)3. If UE knows it’s not in any intended service areas of any MBS services the UE is interested into, the UE may not need to acquire MCCH4. If no intended service area is explicitly indicated (e.g. in SIBxx) for a MBS service the UE is interested into, existing behavior applies.5. The field warningAreaCoordinates is included in SIB6 while the field warningAreaCoordinatesSegment is included in SIB7 for ETWS primary/secondary notification to indicate Warning Area Coordinates IE.* UE may prioritize the frequency(ies) for an interested service when UE can only receive the service on the frequency(ies) and the UE is in intended service area associated with the service provided in the frequency(ies). Otherwise, UE may de- prioritize the frequency.
* FFS whether and how the association between intended service area and frequencies is acquired.
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| **RAN2#130 Agreements**1. Capture in a Note in Stage 2 that when using ISA(s) for MBS broadcast service reception or MBS service continuity, it is up to UE implementation how to determine if it is in the ISA(s) of MBS broadcast service or not.1. Do not introduce service area information specific for FSAI in SIB21. 2. Do not introduce service area per neighbour cell in MCCH 3. RAN2 assumes that the ISA can be valid for all the frequencies providing the MBS session 4. The new SIBxx containing MBS ISA(s) can be cell or area specific, which is up to NW implementation (No specs change). |