**3GPP TSG-RAN WG2 Meeting #109bis-eR2-200xxxx**

**Electronic, 20th Apr – 30th Apr 2020**

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| *CR-Form-v11.4* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.304** | **CR** |  | **rev** |  | **Current version:** | **16.0.0** |  |
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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 |  |

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| ***Title:*** | Corrections to cell barred handling | | | | | | | | | |
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| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | R2 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_newRAT-Core | | | | |  | ***Date:*** | | | 2020-04-09 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-15 |
|  | *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-12 (Release 12)* *Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
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| ***Reason for change:*** | | 1. As specified in clause 5.3.1 of TS 38.304, there is a conflict in the specified UE behavior for the barred cell between “shall” and “may”.  If the cell is to be treated as if the cell status is “barred” due to being unable to acquire the *SIB1*, or due to *trackingAreaCode* being absent in *SIB1*, then accordig to the first text the UE may exclude the barred cell as a candidate for cell selection/reselection for up to 300 seconds.   |  | | --- | | - If the cell is to be treated as if the cell status is "barred" due to being unable to acquire the *SIB1* or due to *trackingAreaCode* being absent in *SIB1* as specified in TS 38.331 [3]:  - The UE may exclude the barred cell as a candidate for cell selection/reselection for up to 300 seconds. |   However, if the field *intraFreqReselection* in *MIB* message is set to "allowed", 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 "allowed", the UE may select another cell on the same frequency if re-selection criteria are fulfilled;  - The UE shall exclude the barred cell as a candidate for cell selection/reselection for 300 seconds. |   2. As specified in clause 5.2.2.4.2 of TS 38.331, if the UE does not support the bandwidth of cell, UE shall perform the following actions:   |  | | --- | | 3> consider the cell as barred in accordance with TS 38.304 [20]; and  3> perform barring as if *intraFreqReselection* is set to *notAllowed*; |   In case of not supporting the BW of cell the UE could check whether the BW used on other cells on this carrier before 300s expires and therefore “may” rather than “shall” should be applied for this case which needs expicit inclusion in 38.304 once the first correction is applied.  **Impact analysis**  **Impacted 5G architecture options:** Standalone  Impacted functionality:  Cell barring  Inter-operability:  If the network is implemented according to the CR and the UE is not, or vice-versa, there is no interoperability as this affects Idle mode UE behavior only. | | | | | | | | |
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| ***Summary of change:*** | | 1. Correction on the barring handling for being unable to acquire *SIB1* or *trackingAreaCode* being absent in *SIB1*.  2. Correct how to treat barring in case of not supporting the BW of cell. | | | | | | | | |
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| ***Consequences if not approved:*** | | The specified UE behavior to the barred cell has a conflict between “shall” and “may” for several cases, which may cause the UE to spend more time out of service than necessary. | | | | | | | | |
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| ***Clauses affected:*** | | 5.3.1 | | | | | | | | |
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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:*** | |  | | | | | | | | |

CHANGE START

### 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 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

- *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: For IAB node, it ignores the *cellBarred*, *cellReservedForOperatorUse* and *cellReservedForOtherUse* as defined in TS 38.331 [3].

- *iab-Support* (IE type: "true")  
Indicated in *SIB1* message. In case of multiple PLMNs indicated in *SIB1*, this field is specified per PLMN.

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

- All 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 *cellReservedForFutureUse* IEis not indicated as "*true"*:

- All UEs in SNPN AM or with non-empty Allowed CAG list shall treat this cell as candidate during the cell selection and cell reselection procedures.

Editor's note: The applicability of above behaviour for non-NPN capable UE is FFS.

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 *cellReservedForFutureUse* IEis indicated as "*true"*,

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

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

- 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.

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

Editor's note: It is FFS whether above NOTE needs to be updated to consider SNPNs

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 :

- If the cell is to be treated as if the cell status is "barred" due to being unable to acquire the *SIB1* or due to *trackingAreaCode* being absent in *SIB1* as specified in TS 38.331 [3]:

- 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;

- The UE may 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 operates in licensed spectrum or if this cell belongs to a PLMN which is indicated as being equivalent to the registered PLMN:

- the UE shall not re-select a cell on the same frequency as the barred cell;

- else:

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

- The UE shall exclude the barred cell and, 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, also the cells on the same frequency as a candidate for cell selection/reselection for 300 seconds.

- else:

- If the cell is to be treated as if the cell status is "barred" due to being unable to support the *carrierBandwidth* in *SIB1* as specified in TS 38.331 [3]:

- The UE shall consider *intraFreqReselection* in *MIB* message as "not allowed" the UE shall not re-select a cell on the same frequency as the barred cell;

-The UE shall exclude the barred cell and the cells on the same frequency as a candidate for cell selection/reselection for 300 seconds.

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

CHANGE END