**3GPP TSG RAN WG1 #118R1-2407451**

**Maastricht, Netherlands, August 19th – 23rd, 2024**

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
|  |
|  | **38.211** | **CR** | **0137** | **rev** | **-** | **Current version:** | **18.3.0** |  |
|  |
| *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:***  | Correction on determination of restricted type for candidate cell PRACH transmission in LTM |
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| ***Source to WG:*** | Moderator (Fujitsu), Ericsson, Nokia, ZTE, Huawei, Lenovo, Apple |
| ***Source to TSG:*** | R1 |
|  |  |
| ***Work item code:*** | NR\_Mob\_enh2-Core |  | ***Date:*** | 2024-08-21 |
|  |  |  |  |  |
| ***Category:*** | F |  | ***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 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-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19) Rel-20 (Release 20)* |
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| ***Reason for change:*** | According to the current version of specification, the type of restricted set for PRACH is determined from *RestrictedSetConfig* or *msgA-RestrictedSetConfig*. However, these perameter are configured for the serving cell, and hence the configuration for early UL sync should be provided for each candidate cell.  |
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| ***Summary of change:*** | For the PRACH transmission for early UL sync to candidate cells, the type of restricted set is determined from the RRC parameter *ltm-RestrictedSetConfig.* |
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| ***Consequences if not approved:*** | UE cannot determine the type of restricted set for PRACH transmitted to candidate cells for early UL sync. |
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| ***Clauses affected:*** | 6.3.3.1 |
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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 ...  |
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| ***Other comments:*** | **Isolated Impact Analysis:**This CR has no isolated impact on network and UE behavior. |
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| ***This CR's revision history:*** | This is the first version of this CR |

#### 6.3.3.1 Sequence generation

The set of random-access preambles  shall be generated according to



from which the frequency-domain representation shall be generated according to



where , , $L\_{RA}=1151$, or $L\_{RA}=571$ depending on the PRACH preamble format as given by Tables 6.3.3.1-1 and 6.3.3.1-2.

There are 64 preambles defined in each time-frequency PRACH occasion, enumerated in increasing order of first increasing cyclic shift  of a logical root sequence, and then in increasing order of the logical root sequence index, starting with the index obtained from the higher-layer parameter *prach-RootSequenceIndex* or *rootSequenceIndex-BFR* or by *msgA-PRACH-RootSequenceIndex* if configured and a type-2 random-access procedure is initiated as described in clause 8.1 of [5, TS 38.213]. Additional preamble sequences, in case 64 preambles cannot be generated from a single root Zadoff-Chu sequence, are obtained from the root sequences with the consecutive logical indexes until all the 64 sequences are found. The logical root sequence order is cyclic; the logical index 0 is consecutive to $L\_{RA}-2$. The sequence number  is obtained from the logical root sequence index according to Tables 6.3.3.1-3 to 6.3.3.1-4B.

The cyclic shift  is given by



where  is given by Tables 6.3.3.1-5 to 6.3.3.1-7, the higher-layer parameter *msgA-RestrictedSetConfig*, if provided, determines the type of restricted sets (unrestricted, restricted type A, restricted type B), or the higher-layer parameter *ltm-RestrictedSetConfig* associated with a candidate cell indicated in Cell indicator field of a PDCCH order, if provided, determines the type of restricted sets (unrestricted, restricted type A, restricted type B) ; otherwise, the higher-layer parameter *restrictedSetConfig* determines the type of restricted sets (unrestricted, restricted type A, restricted type B), and Tables 6.3.3.1-1 and 6.3.3.1-2 indicate the type of restricted sets supported for the different preamble formats.

<unchanged part omitted>