3GPP RAN WG2 Meeting #124 R2-2313773

Chicago, United States, November 13th – 17th, 2023

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| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  | **38.321** | **CR** | **1730** | **rev** | **-** | **Current version:** | **17.6.0** |  |
|  |
| *For* [*HELP*](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 Rel-18 NTN enhancements to TS 38.321 |
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| ***Source to WG:*** | InterDigital  |
| ***Source to TSG:*** | RAN2 |
|  |  |
| ***Work item code:*** | NR\_NTN\_enh-Core |  | ***Date:*** | 2023-12-01 |
|  |  |  |  |  |
| ***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 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)* |
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| ***Reason for change:*** | Introduction of Release-18 support for non-terrestrial network enhancements |
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| ***Summary of change:*** | The changes within introduce support for hard and soft satellite switch with resynchronization to TS 38.321 |
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| ***Consequences if not approved:*** | No support for Release-18 non-terrestrial networks enhancements |
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| ***Clauses affected:*** | 5.2a |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** | **X** |  |  Other core specifications  | TS 38.300 CR 0734 TS 38.304 CR 0357TS 38.306 CR 1015TS 38.331 CR 4501 |
| ***affected:*** |  | **X** |  Test specifications |  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications |  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | - |

<<<<<<<<<<<<<<<<<<<< First change begins >>>>>>>>>>>>>>>>>>>>

## 5.2a Maintenance of UL Synchronization

The MAC entity shall for each Serving Cell:

1> if an indication of uplink synchronization has been received from upper layers (see clauses 5.2.2.6 and 5.7.X of TS 38.331 [5]):

2> if indication of uplink synchronization is received after indication of uplink synchronization loss due to satellite switch with re-synchronization (see clause 5.7.X of TS 38.331 [5]):

3> set NTA value (as defined in TS 38.211 [8]) to zero for PTAG;

3> indicate to lower layers a Differential Koffset with value zero.

2> allow uplink transmission on the Serving Cell.

1> if an indication of uplink synchronization loss or uplink synchronization loss due to satellite switch with re-synchronization is received from upper layers (see clause 5.2.2.6 and 5.7.X of TS 38.331 [5]):

2> flush all HARQ buffers;

2> not perform any uplink transmission on the Serving Cell.

NOTE: The MAC entity suspends all UL operations (e.g. stop RACH, SR, and UL HARQ operation) after receiving the indication of an uplink synchronization loss and resumes the operation when receiving an indication of uplink synchronization.

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