3GPP TSG RAN WG4 Meeting #113 R4-241xxxx

Orlando, USA, 18th – 22nd , November 2024

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| *CR-Form-v12.3* |
| **CHANGE REQUEST** |
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|  |  | **CR** | **5205** | **rev** |  | **Current version:** |  |  |
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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 |  | Radio Access Network |  | Core Network |  |

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| ***Title:***  | CR for direct Scell activation at Scell addition |
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| ***Source to WG:*** |  |
| ***Source to TSG:*** |  |
|  |  |
| ***Work item code:*** |  LTE\_NR\_DC\_CA\_enh |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** | F |  | ***Release:*** | Rel-16 |
|  | *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)* |
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| ***Reason for change:*** | Tfirstssb\_max deifinition is not clear due to lack of the pinpoint to further additional side condtions which is different compare with clause 8.3.2 |
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| ***Summary of change:*** | Add new side condition within Scell known condition to Tfirstssb\_max deifinition |
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| ***Consequences if not approved:*** | The side condtion to cover the Tfirstssb\_max is not clear. |
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| ***Clauses affected:*** | 8.3.4 |
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|  | **Y** | **N** |  |  |
| ***Other specs*** |  |  |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** |  |  |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  |  |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

**<<START OF CHANGES>>**

### 8.3.4 Direct SCell Activation at SCell addition

The requirements in this clause apply for UE being configured in the RRC reconfiguration message, TS 38.331 [2], with one SCell for which the parameter *sCellState* is set to *activated*. If the RRC reconfiguration message for direct SCell activation also configures PSCell addition or PSCell change, the direct SCell activation delay may be longer than the requirements defined in this clause.

The UE shall configure the SCell in activated state upon successful completion of the RRC reconfiguration procedure within the specified delay. The UE shall be capable to transmit valid CSI report and apply actions for the directly activated SCell no later than in slot $n+\frac{N\_{direct}}{NR slot length}$ ,

where:

- Slot n is the last slot overlapping with the PDSCH containing the RRC reconfiguration message,

- Ndirect = TRRC\_Process + T1 + Tactivation\_time + TCSI\_Reporting - 3ms for the cases specified in clause 8.3.2 that TCI state is not indicated within Tactivation\_time; otherwise, Ndirect = TRRC\_Process + T1 + THARQ + Tactivation\_time + TCSI\_Reporting

-TRRC\_Process: RRC procedure delay as specified in clause 11.2 of TS 36.331 [16] if the corresponding RRC message is embedded in E-UTRA RRC message, otherwise it is the RRC procedure delay defined in clause 12 of TS 38.331 [2],

-T1: Delay from slot $n+\frac{T\_{RRC\\_Process}}{NR slot length}$ until the transmission of *RRCReconfigurationComplete* message,

Note: *T1* is UE implementation dependent.

-THARQ (in ms) is the timing between DL data transmission and acknowledgement as specified in TS 38.213 [3],

-If the SCell is known and belongs to FR1, *TCSI\_Reporting* is specified in clause 8.3.2 and *Tactivation\_time* is defined as:

- TFirstSSB+ 5ms, if the measurement period of the SCell being activated is equal to or smaller than 2400ms.

- TFirstSSB\_MAX + Trs + 5ms, if measurement period of the SCell being activated is larger than 2400ms.

where,

the measurement period in Table 9.2.5.2-1 applies if the target SCell was in an intra-frequency layer corresponding to an activated SCell;

the measurement period in Table 9.2.5.2-3 applies if the target SCell was in an intra-frequency layer corresponding to a deactivated SCell;

the measurement period in Table 9.3.5-1 applies if the target SCell was in an inter-frequency layer.

*-* Otherwise, Tactivation\_time and TCSI\_Reporting are specified in clause 8.3.2, where the following definitions of TFirstSSB and TFirstSSB\_MAX shall override the existing ones:

- TFirstSSB: the time to the end of the first complete SSB burst indicated by the SMTC after slot n + $\frac{T\_{RRC\\_Process}+T\_{1}}{NR slot length}$

- TFirstSSB\_MAX: the time to the end of the first complete SSB burst indicated by the SMTC after slot n + $\frac{T\_{RRC\_{Process}}+T\_{1}}{NR slot length}$ further fulfilling:

- In FR1, in case of intra-band SCell activation, the occasion when all active serving cells and SCells being activated or released are transmitting SSB bursts in the same slot; in case of inter-band SCell activation, the first occasion when the SCell being activated is transmitting SSB burst.

- In FR2, the occasion when all active serving cells and SCells being activated or released are transmitting SSB bursts in the same slot.

In addition to CSI reporting defined above, UE shall also apply other actions related to the activation command specified in TS38.321 [7] for an SCell at the first opportunities for the corresponding actions once the SCell is activated.

The SCell in FR1 is known provided the following conditions are met for the SCell:

- During the last 5 seconds before the reception of the direct SCell configuration command:

- the UE has sent a valid measurement report for the SCell being directly activated, and

- the SSB measured remains detectable according to the cell identification conditions specified in sections 9.2 and 9.3,

- the SSB measured during the period equal to [5] seconds also remains detectable during the SCell activation delay according to the cell identification conditions specified in clause 9.2 and 9.3.

Otherwise, the SCell is unknown.

The SCell in FR2 is known provided it meets the corresponding conditions as defined in clause 8.3.2. Otherwise, the SCell is unknown.

The UE may be allowed to cause interruptions to serving cells on other component carriers during an interruption window, as specified in clause 8.2. The starting point of an interruption window on spCell or any activated SCell shall not occur before slot *n*+1, and shall not occur after slot *n+*1+$\frac{T\_{RRC\\_Process}+T\_{1}+T\_{X}}{NR slot length}$, where NR slot length is with respect to the numerology of the SCell being activated, and *TX* is:

- *TFirstSSB*, for any scenario where *Tactivation\_time*includes *TFirstSSB*;

- *TFirstSSB\_MAX*, for any scenario where *Tactivation\_time*includes *TFirstSSB\_MAX*;

- *Tuncertainty\_MAC +TFineTiming*, for any scenario where *Tactivation\_time*includes *TFineTiming*.

The length of the interruption window may be different for different victim cells, and depends on the applicable scenario and on the frequency band relation between the aggressor cell and the victim cell.

Starting from the slot $n+\frac{T\_{RRC\\_Process }+ T\_{1}}{NR slot length}$ until the UE has completed the direct SCell activation, the UE shall report CQI index = 0 (out of range) if the UE has available uplink resources to report CQI for the SCell.

**<<END OF CHANGES>>**