**3GPP TSG- WG4 Meeting #95-e *R4-2008677***

**, 25 May – 5 June 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | 6909 | **rev** | 1 | **Current version:** |  |  |
|  | | | | | | | | |
| *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:*** | 36.133 CR on interruption requirements for BWP switch on multiple CCs | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Nokia, Nokia Shanghai Bell | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_RRM\_enh-Core | | | | |  | ***Date:*** | | | 2020-06-02 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***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 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)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Introduce interruption requirements for BWP switch on multiple CCs in Rel-16. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Add interruption requirement for BWP switch on multiple CCs in EN-DC and NE-DC | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | No interruption requirements for BWP switch on multiple CCs exist in 36.133. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 7.32.2.7, 7.36.2.6 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 change 1>>**

#### 7.32.2.7 Interruptions at active BWP switching

The requirements in this clause shall apply for the UE configured with only NR PSCell or with NR PSCell and one or more NR SCells. The requirements in the section apply to the case that the BWP switch is performed on a single CC or multiple CCs.

When the DCI-based, timer-based or RRC-based downlink BWP switch and/or uplink BWP switch occur on multiple CCs simultaneously or over partially overlapping period, the interruption requirements described in this section apply for each BWP switch.

DCI-based or timer-based downlink BWP and/or uplink BWP switching due to change in any of the parameters listed in Table 8.2.1.2.7-2 of TS 38.133 [50] or SCS in NR PSCell or in any NR SCell may cause an interruption on PCell or on activated SCell(s) in the MCG. Interruptions are not allowed during BWP switch involving other parameter change.

The starting time of interruption due to DCI-based or timer-based downlink BWP and/or uplink BWP switching is only allowed within the BWP switching delay TBWPswitchDelay as defined in clause 8.6.2 of TS 38.133 [50].

RRC-based downlink BWP and/or uplink BWP switching due to change in any of the parameters listed in Table 8.2.1.2.7-2 of TS 38.133 [50] or SCS in NR PSCell or in any NR SCell may cause an interruption on PCell or on activated SCell(s) in the MCG. Interruptions are not allowed during BWP switch involving other parameter change.

The interruption due to RRC-based downlink BWP and/or uplink BWP switching is allowed anywhere within the BWP switching delay (TRRCprocessingDelay + TBWPswitchDelayRRC) defined in clause 8.6.3 of TS 38.133 [50]. The interruption due to RRC-based downlink BWP and/or uplink BWP switching defined in this clause is applicable provided that:

- the RRC reconfiguration requires the UE to only switch its active BWP and

- the BWP switching occurs on only one NR serving cell.

When BWP switch involves SCS changes,

the UE is allowed to cause interruption on PCell or on any activated SCell(s) regardless of the frequency range of the NR PCell or NR SCell on which the BWP switching occurs.

Otherwise,

the UE capable of per UE measurement gap [2] is allowed to cause interruption on PCell or on any activated SCell(s) regardless of the frequency range of the NR PSCell or NR SCell on which the BWP switching occurs;

the UE capable of per FR measurement gap [2] is allowed to cause interruption on PCell or on any activated SCell(s) provided that the NR PSCell or NR SCell on which the BWP switching occurs belongs to FR1.

The interruption on PCell or on any activated SCell(s) shall not exceed:

- 1 subframe in synchronous EN-DC,

- 2 subframes in asynchronous EN-DC.

**<<End of change 1>>**

**<<Start of change 2>>**

#### 7.36.2.6 Interruptions at active BWP switching

The requirements in this clause shall apply for the UE configured with LTE PSCell only or with LTE PSCell and one or more LTE SCells. The requirements in this section apply to the case that the BWP switch is performed on a single CC or multiple CCs.

When the DCI-based, timer-based or RRC-based downlink BWP switch and/or uplink BWP switch occur on multiple CCs simultaneously or over partially overlapping period, the interruption requirements described in this section apply for each BWP switch.

DCI-based or timer-based downlink BWP and/or uplink BWP switching due to change in any of the parameters listed in Table 8.2.2.2.5-2 in TS 38.133 [50] or SCS on NR PCell or on any NR SCell may cause an interruption on PSCell or on activated SCell(s) in the SCG. Interruptions are not allowed during BWP switch involving other parameter change.

The starting time of interruption due to DCI-based or timer-based downlink BWP and/or uplink BWP switching is only allowed within the BWP switching delay TBWPswitchDelay as defined in clause 8.6.2 of TS 38.133 [50].

RRC-based downlink BWP and/or uplink BWP switching due to change in any of the parameters listed in Table 8.2.1.2.7-2 of TS 38.133 [50] or SCS in NR PSCell or in any NR SCell may cause an interruption on PCell or on activated SCell(s) in the MCG. Interruptions are not allowed during BWP switch involving other parameter change.

The interruption due to RRC-based downlink BWP and/or uplink BWP switching is allowed anywhere within the BWP switching delay (TRRCprocessingDelay + TBWPswitchDelayRRC) defined in clause 8.6.3 of TS 38.133 [50]. The interruption due to RRC-based downlink BWP and/or uplink BWP switching defined in this clause is applicable provided that:

- the RRC reconfiguration requires the UE to only switch its active BWP and

- the BWP switching occurs on only one NR serving cell.

Table 7.36.2.6-1: Void

When BWP switch involves SCS changes,

the UE is allowed to cause interruption on PCell or on any activated SCell(s) regardless of the frequency range of the NR PCell or NR SCell on which the BWP switching occurs.

Otherwise,

the UE capable of per UE measurement gap [2] is allowed to cause interruption on PSCell or on any activated SCell(s) regardless of the frequency range of the NR PCell or NR SCell on which the BWP switching occurs;

the UE capable of per FR measurement gap [2] is allowed to cause interruption on PSCell or on any activated SCell(s) provided that the NR PCell or NR SCell on which the BWP switching occurs belongs to FR1.

The interruption on PSCell or on any activated SCell(s) shall not exceed:

- 1 subframe in synchronous NE-DC,

- 2 subframes in asynchronous NE-DC.

**<<End of change 2>>**