3GPP TSG RAN WG2 Meeting #111-e R2-200xxxx

Electronic, August 17 – 28, 2020

**Title:** **DRAFT** LS on cell-grouping UE capability for synchronous NR-DC

**Response to:**

**Release:** Release 16

**Work Item:** LTE\_NR\_DC\_CA\_enh-Core

**Source:** Qualcomm Incorporated [To be RAN2]

**To:** RAN1, RAN4

**Cc:**

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**Send any reply LS to:** 3GPP Liaisons Coordinator, mailto:3GPPLiaison@etsi.org

**Attachments:** None

# 1 Overall description

RAN2 would like to inform RAN1 and RAN4 that RAN2 made the following agreement on the release-16 UE capabilities for NR-DC.

**For asynchronous NR-DC:**

* Introduce 1-bit indication on whether Rel-16 UE supports asynchronous operation and its supported cell grouping for a given band combination.
* Absence of cell grouping signaling means the UE only support Rel-15 cell grouping (i.e. MCG fully in FR1 and SCG fully in FR2)
* Cell grouping signaling is supported, FFS: signaling detail of cell grouping (LTE cell grouping capability can be considered)
* MCG and SCG can be differentiated in cell grouping signaling (provided that we can finally agree on a signaling solution). FFS how to signal.

**For synchronous NR-DC:**

* Capture in 38.306 “The UE shall not report this UE capability from this release” in field description of *sfn-SyncNRDC*.
* The UE shall support Rel-15 cell grouping (i.e. MCG fully in FR1 and SCG fully in FR2), for backward compatibility with Rel-15 network. No new signaling is required to be introduced for this.
* RAN2 intends to introduce a releasre-16 UE capability for sync-DC (can be 1 bit, cell grouping or else) in a future meeting. Absence of such UE capability parameter means the UE supports Rel-15 cell grouping only (i.e. MCG fully in FR1 and SCG fully in FR2).

RAN2 could not reach a consensus on the need of cell grouping signaling, including the differentiation between MCG and SCG, for **synchronous NR-DC**.

Some companies think it is not necessary for the following reasons.

* In LTE, cell grouping signaling is only defined for asynchronous DC, but not for synchronous DC.
* Synchronous NR-DC is almost the same as NR CA from the UE implementation perspective.
* Supported cell grouping will be limited by NR-DC band combinations defined by RAN4.

Some companies think it is necessary for the following reasons.

* NR supports FR2 (as a key difference from LTE)
	+ The UE may not support FR2 MCG.
	+ The UE may not support FR1-FR2 CA.
* The UE may not support inter-CG power sharing for a given frequency range.
* The UE may not support PUCCH group consisting of serving cells with different numerologies.

RAN2 therefore would like to request RAN1 and RAN4 to review the views expressed in RAN2 on cell grouping UE capability signaling for **synchronous NR-DC** and provide their view on the need of cell grouping UE capability signaling, including the need of differentiation between MCG and SCG.

# 2 Actions

**To 3GPP RAN1 and RAN4**

**ACTION:** To review the views expressed in RAN2 on cell grouping UE capability signaling for synchronous NR-DC and provide their view on the need of cell grouping UE capability signaling, including the need of differentiation between MCG and SCG.

# 3 Dates of next TSG RAN WG2 meetings

TSG RAN WG2 Meeting #112-e 2 – 13 November 2020, Electronic