**3GPP TSG-RAN WG4 Meeting # 97-e R4-2016817**

**Electronic Meeting, Nov .2nd – 13th 2020**

**Title: [Draft]LS on DC location reporting f or intra-band UL CA**

**Response to:**

**Release:** Rel-16

**Work Item:** NR\_RF\_FR1-Core

**Source:** RAN4

**To:** RAN2

**Cc:** RAN1

**Contact Person:**

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**Attachments:**

**[1] R4-2015212, “More on DC location reporting for Intra band UL CA”, Nokia**

**[2] R4-2014714, “DC location future compatible proposal”, Qualcomm**

**[3] R4-2016514, “on FR1 UL CA DC location”, Huawei, HiSilicon**

**1. Overall Description:**

RAN4 further discussed how to handle TX DC location for intra band UL CA and at least reached the following three consensuses.

Firstly, RAN4 agreed that each TX DC location should be based on permutations of all possible simultaneously activated BWPs within configured BWPs as baseline in Rel16 and reporting defined in R15 is still allowed for TX DC location of intra-band UL CA.

Secondly, the affecting factors of TX DC locations for intra-band UL CA up to 2CC in Rel16 should be focused on the following:

* The lowest and the highest CC configured
* active BWPs in the lowest and the highest CC
* configured BWPs in the lowest and the highest CC

Thirdly, RAN4 also identified relation between PA architecture, the number of TX DC locations and Tx DC location method:

* For UE indicating 1PA architecture, the number of DC location is one at an instant
* For UE indicating 2PA architecture, the number of DC location is two at an instant, in which one DC location serves for each PA
* each of the DC location can be reported based on one DC location method(s)

It should be note that, there are other factors that might impact the DC location such as “Active BWP in the CCs other than lowest and highest CC activated for more than 2UL CC cases” or “DL CC impact to UL DC location in the DL and UL LO dependency cases”, but RAN4 agrees to further study them in Rel-17.

Finally, RAN4 discussed potential advanced methods to reduce the amount of signalling overhead in > 2CC case such that a method to define default UE behaviour on TX DC location [1] and other advanced reporting methods in [2][3]. RAN4 would like to inform RAN2 on the potential advanced solutions, once reach consensus in RAN4. RAN4, however, still needs more discussion to select the method.

**2. Actions:**

**To RAN1 and RAN2 group.**

**ACTION:**

RAN4 respectfully asks RAN2 to take into account the above in signalling design.

**3. Date of Next TSG–RAN4 Meetings:**

TSG RAN WG4 Meeting #98-e Jan. 25 – Feb.5, 2021 Online