3GPP TSG-RAN WG2 #109-e Tdoc R2-200xxxx

Electronic meeting, 24th February – 6th March, 2020

**Title: [DRAFT]** Reply LS on Handling of Fallbacks for combined contiguous and non-contiguous CA or DC configurations in FR2

**Response to:** LS on Handling of Fallbacks for combined contiguous and non-contiguous CA or DC configurations in FR2 (R4-1910239)

**Release:** Rel-15

**Work Item:** NR\_newRAT-Core

**Source:** MediaTek Inc. [To be RAN WG2]

**To:** RAN WG4, RAN

**Cc:** -

**Contact Person:**

#### Name: Alex Hsu

E-mail Address: alex dot hsu at mediatek.com

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

**Attachments:** -

**1. Overall Description:**

RAN2 would like to thank RAN4 for their LS on handling of fallbacks for combined contiguous and non-contiguous CA or DC configurations in FR2 [R4-1910238]. Below is an excerpt from the minutes from RAN2#109-e:

* Chair’s decided way forward

 **R2 assume to follow R4 decision to not support all fall-backs.**

 **Send an LS to R4 with questions to understand more detailed requirements for a solution, and understand better what R4 actually means with not supporting all fallbacks.**

 **Next Q expect to agree on the solution (solution could cover impact in R4 and R2).**

Based on discussions during RAN2#108 and RAN2 #109e, RAN2 did also not reach a common understanding about the main justification for the change requested by RAN4 and the trade-off between benefits in RAN4 and cost from a RAN2 protocol perspective. Therefore, RAN2 would like to understand more detailed requirements for a solution, and understand better what R4 actually means with not supporting all fallbacks.

RAN2 would like to remind that the principle of implicitly supported fallback BCs was introduced to avoid the unbearable increase of UE capability containers with increasing number of carriers. Even with this principle, some UEs already advertise MRDC capability containers with more than 8k Bytes.

Besides the signalling overhead, some companies raised concerns that support of UEs not supporting all fallback combinations would require significant changes to existing network implementations, would restrict configuration options and would further increase the computational complexity of the capability evaluation on the NW side.

Q1: What is RAN4’s motivation/benefit for the suggested change and its impact to the RAN2 specifications?

Q2: In the LS, RAN4 states that “Deactivating carriers within the CA or DC combination is still possible”, which seems also a way of “supporting fallback” from R2 point of view. Please explain the difference of “not supporting all fallback” through of CA/DC deactivation and RRC reconfiguration.

[Nokia] The intention from RAN4 was to not support the fallbacks as a standalone band combination and hence the statement on the carriers. Do we really need to ask this? [Ericsson] We are ok with the above question but we would also be fine remove it.

Q3: On the request to “not supporting all fallbacks for FR2”, which of below options is R4’s expectation:

[Nokia] We did not understand the relevance of a) and b). Will you please explain this more clearly? :-)

1. fallback support of a FR2 BC is defined in TS38.101-2 and other undefined fallback is not supported. In this case, fallback support is not only based on R2 specifications and capability report but also R4 specification.
2. Fallback support of a BC is completely based on R2 specifications and capability report regardless of R4 specification. In this case, R2 specifications and capability report needs to provide complete information on supported fallbacks.

For three meetings, RAN2 has analysed a set of solutions to accommodate the suggested change the RAN4 agreement. ultiple companies support the solution (see Annex 3 and R2-2000600) to introduce a new separate list for *exceptional* band combinations (i.e. with fallback exceptions) upon NW enabling. The high level concept of the solution is described below.

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| * Step 1: NW side indicates with 1-bit in the *UECapabilityEnquiry* message asking UE to report the band combinations with fallback exceptions.
* Step 2: UE reports the band combinations with fallback exceptions in a separate band combination container *supportedBandCombinationList-FR2CAFallbackException* together with one bit indication.
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Q3: What is the criteria to consider a band combination “exceptional” e.g. due to practical issues? Will those band combination(s) be captured in the RAN4 specifications?

Q4: If an “exceptional” band combination is captured in the RAN4 specifications, does RAN4 foresee an “exceptional” band combination to become normal band combination in the future?

**2. Actions:**

**To RAN4:** RAN2 respectfully asks RAN4 to answer to the above questions.

**3. Date of Next TSG-RAN WG2 Meetings:**

TSG-RAN WG2 Meeting #109bis 2020-04-20 to 2020-04-24 e-meeting, JP

TSG-RAN WG2 Meeting #110 2019-05-25 to 2019-05-29 Athens, GR

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