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

Electronic Meeting, 24th February – 6th March 2020

Agenda: 5.4.3

Source: Ericsson

Title: [AT109e][008][NR15] Cap Discussion (Ericsson, Mediatek, Huawei, NTT docomo, Qualcomm, Nokia)

Document for: Discussion, Decision

# 1 Introduction

This document contains a list of TDocs to be discussed in the offline discussion below. Companies are invited to give their views on each TDoc submitted.

* [AT109e][008][NR15] Cap Discussion (Ericsson, Mediatek, Huawei, NTT docomo, Qualcomm, Nokia)

 Scope: Treat the documents [R2-2001322](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_109_e%5CDocs%5CR2-2001322.zip), [R2-2001224](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_109_e%5CDocs%5CR2-2001224.zip), [R2-2000425](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_109_e%5CDocs%5CR2-2000425.zip), R2-2000684, [R2-2001221](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_109_e%5CDocs%5CR2-2001221.zip), [R2-2000165](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_109_e%5CDocs%5CR2-2000165.zip), [R2-2002081](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_109_e%5CDocs%5CR2-2002081.zip), [R2-2000034](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_109_e%5CDocs%5CR2-2000034.zip), [R2-2001220](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_109_e%5CDocs%5CR2-2001220.zip), [R2-2000011](file:///D%3A%5CDocuments%5C3GPP%5Ctsg_ran%5CWG2%5CTSGR2_109_e%5CDocs%5CR2-2000011.zip).

 Intended outcome: First Round comments, goal to determine which of the CRs that we should attempt to agree, find candidates to leave out (postpone).

 Deadline: Feb 26 1200 CET

# 2 List of TDocs

Companies are invited to give their views on each TDoc submitted below.

## R2-2001322

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| **Company** | **Views** |
| Nokia | Disagree. This seems tob pretty obvious that the procedure description was to be read with a given rat-type.Isn't this enough tht it is stated already in the description "This procedure is invoked once per requested rat-Type". |
| Intel | Agree with Nokia, not needed. |
| NTT DOCOMO | Disagree on the reason for change. In case of the example illustrated in the cover sheet, NR SA BC3 (band 5) is not regarded as the fallback of NE-DC BC1. As the definition gives, only the SCells can be removed for fallbacks. For the above case, the entire LTE SCG (L\_band1) is removed including PSCell, which is not regarded as fallback. The same story applies to NE-DC BC2 and NR SA BC4 in the figure. |
| Qualcomm Incorporated | Not needed. The intention is that the section 5.6.1.4 is called per RAT-type in section 5.6.1.3. |
| MediaTek | Agree with DCM, fallback only refer to combination by releasing at least one SCell or uplink configuration of SCell, or SCG, not PCell, therefore, the examples are not considered as fallback. |
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## R2-2001224

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| **Company** | **Views** |
| Nokia | Partially agree to the issue but not to the proposed solution, but we don't need a new list indicator but just probably indicate that the index refers to a different BC list since a UE cannot be in NE-DC and other variant of DC at the same time? So, partially OK with the proposal but we don't need separate signalling. |
| Intel | Same comments as Nokia |
| NTT DOCOMO | Agree with Nokia, Intel |
| Qualcomm Incorporated | Prefer the original proposal in R2-2001224 becasue of its cleaness. It should be noted that CG-ConfigInfo can include multiple indices, from the original band combination list (which can include NE-DC band combiantion) and the NE-DC only band combinations. |
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## R2-2000425

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| **Company** | **Views** |
| Nokia | Disagree. This is not correct as we think the BCs should not even be filled in. |
| Intel | We think there is scope for mis-alignment and are ok to see other company views, esp considering that this changes the procedural text of how UE prepares capability. |
| NTT DOCOMO | Agree on the proposed change. When NR-DC/NE-DC capable UE compiles a list of “candidate band combinations“, according to the procedure text, the UE included NR-DC/NE-DC band combinations. So, if capabilityRequestFilterCommon is not present, UE needs to remove them. So, we think that the CR is needed. |
| Qualcomm Incorporated | The issue raised by the CR is valid. Support the CR. |
| MediaTek | This is our CR. Without this change, we understand that the UE will incorrectly populate the NR-DC/NE-DC band combinations that should be excluded when the capabilityRequestFilterCommon is not present. |
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## R2-2000684

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| **Company** | **Views** |
| Nokia | Disagree, it is clear to us that the common fields must be used. |
| Intel | We think the CR is ok. |
| NTT DOCOMO | We also think that the CR is o.k to agree, since the intended behaviour becomes clearer. |
| Qualcomm Incorporated | Support the CR. |
| MediaTek | This is our CR. In response to Nokia, I guess there may be some misunderstanding. Yes, it is clear that common field must be used but we are not clarifying this part. We try to clarity that the SRB capability could also be included in NR DC IEUE-NR-Capability -> nrdc-Parameters -> *generalParametersNRDC*The current wording saying that --“The UE shall only set the bit in UE-MRDC-Capability -> generalParametersMRDC“. This prevent UE from including SRB capability in NR-DC IE, which is not intended behavior. Hope that this is more clear.  |
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## R2-2001221

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| **Company** | **Views** |
| Intel | We think the CR is not needed, if the IE is absent, the UE does not support this feature. |
| NTT DOCOMO | Agree with Intel. According to the agreed UE feature list, the consequence of not supported is "PDSCH RE mapping is not supported", and hence it is strange to change the meaning to "support default RE mapping pattern". Even if this is not supported, gNb can configure PDSCH so that PDSCH and ZP/NZP CSI RS are not overlaped. So I think we can't say system is broken without this CR. |
| Qualcomm Incorporated | Agree with Intel and NTT DOCOMO. |
| MediaTek | Agree with above. |
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## R2-2000165

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| **Company** | **Views** |
| Nokia | Please note we are waiting for RAN1 feedback on the LS we sent tot hem. The contribution is tentatively submitted to current meeting with the values based on our understanding of what defaults might be reasonable. |
| Intel | We think we can wait until the RAN1 feedback to conclude this then. |
| NTT DOCOMO | Agree with Intel. |
| Qualcomm Incorporated | Prefer to wait for RAN1, and have a single CR. The content of the current CR looks fine. |
| MediaTek | Agree with companies that we should wait for R1 response.On *maxSimultaneousResourceSetsPerCC*, the CR mandates UE to report value 1, but the correct udnerstanding should be the UE is mandated to report one or higher values. Also, for some mandatory field, it is redundant to add „.., the UE is mandated to report XXX or higher values.“ |
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## **R2-2002080/R2-2002081 related to LS-in, R2-2000034 from RAN1**

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| **Company** | **Views** |
| Intel | Our view is to get more clarification from RAN4.For us this LS has created quite a bit of ambiguity …!   It would have been easier if RAN4 just introduced contiguous intra-band operation on inter-band EN-DC combinations where there is frequency overlap between NR and LTE **(interpretation #1**). Then the introduction of the new feature would simply be covered using the below signaling and all the legacy UEs and gNBs would use the contiguous operation based on the new signaling. And without this signaling the non-contiguous means of operation is assumed. ***InterBandENDC-ContiguousSupport* ENUMERATED { supported}   OPTIONAL** But, it is not clear from the LS that RAN4 assumes the intra-band non-contiguous operation is already the working case for existing UEs and gNBs that support such inter-band EN-DC BCs.   “RAN4 has agreed that intra-band EN-DC requirements shall apply for inter-band EN-DC configurations where the frequency range of the E-UTRA band is a subset of the frequency range of the NR band”Does this mean that based on this agreement, a new set of requirements are applied to these inter-band EN-DC config? And among these new set of requirements, the ones related to non-contiguous operation are mandatory and contigous are optional…? **(interpretaion #2)**If yes, then the signaling from DCM would be useful, and for UEs which do not signal this IE, the new set of requirements do not apply. Another ambiguity if we assume that the second interpretaion is correct is the deployment of carriers for the legacy UE (the UE does not report this IE). Can the gNB configure contiguous and non-contiguous way for the carriers as it wishes, but the new requirements introduced in the LS are not applicable?  We hope it’s the first interpretation! But think more clarity is needed, as the current TP from DCM brings the question of what is the difference in UE behaviour if the UE reported that it only supports non-contiguous operation using new signaling vs the UE which does not report this IE. |
| MediaTek | Our understand is Intel’s interpretaion #2 and consdier DCM‘s CR correct. But also prefer to clarify the legacy UE/network behavior. |
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## R2-2001220 related to LS-in, R2-2000011 from RAN1

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| **Company** | **Views** |
| Intel | Ok with this. |
| NTT DOCOMO | Agree on this CR |
| Qualcomm Incorporated | Support the CR. |
| MediaTek | Support the CR. |
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## R2-2000011

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| **Company** | **Views** |
| Intel | RAN1 LS |
| NTT DOCOMO | Could be merged into R2-2001220 |
| Qualcomm Incorporated | Yes, it is just RAN1 LS and addressed by R2-2001220 above. We can remove this item from this email discussion summary. |
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# 3 Conclusion

In the previous sections we made the following observations:

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Based on the discussion in the previous sections we propose the following:

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