3GPP TSG-RAN WG2 Meeting #120 Electronic R2-220xxxx

Toulouse, France, 14 – 18 November 2022

**Agenda item: 6.21.1**

**Source: Qualcomm (Rapporteur)**

**Title: [Post120][052][NR17] higher granularity per-FR gap capability**

**WID/SID: TEI17**

**Document for: Discussion and Decision**

# 1 Introduction

This document is kick off the post meeting discussion [052]:

Per-FR Gap

[R2-2212388](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2212388.zip) Capability for per-FR gaps Ericsson discussion

[R2-2211620](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2211620.zip) Discussion on per-FR gap Intel Corporation discussion Rel-17 TEI17

[R2-2211363](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2211363.zip) More granular per-FR gaps Nokia, Nokia Shanghai Bell discussion Rel-17 TEI17

[R2-2212526](file:///C%3A%5CUsers%5Cjohan%5COneDrive%5CDokument%5C3GPP%5Ctsg_ran%5CWG2_RL2%5CRAN2%5CDocs%5CR2-2212526.zip) Higher granularity for per-FR gap capability discussion Qualcomm Incorporated discussion Rel-17 TEI17

* [Post120][052][NR17] higher granularity per-FR gap capability (Qualcomm)

 Scope: Based on R2-2212527, R2-2212528, Review and update if needed, for agreement. Include also determination whether inter-node signalling is needed, and if so update CRs to include inter-node signaling.

 Intended outcome: Tech Endorsed 38.331 38.306 CRs (for TSG RAN)

 Deadline: Short

# 2 Contact Points

Respondents to the email discussion are kindly asked to fill in the following table.

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| --- | --- | --- |
| Company | Name | Email Address |
| Qualcomm (Rapporteur) | Mouaffac | mambriss@qti.qualcomm.com |
| MediaTek | Felix Tsai | Chun-fan.tsai@mediatek.com |
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# 3 Discussion

The intention behind this discussion is to:

1. Check the draft CRs and provide feedback:
	* Modify the cover page of the CR to include (NG)EN-DC architecture.
	* Modify the capability CR to ensure *independentGapConfig* (legacy capability) and *independentGapConfig-maxCC-r17* (new capability) are mutually exclusive.
2. Check if there is a need to enhance the inter-node messaging to ensure proper coordination between MN and SN when this feature is supported.

One item still not agreed on, is the starting/ending range value for the N1/N2/N3. Some companies prefer it to start from [0..31], other from [1..32].

**Question 1**: please provide your preference for the N1/N2/N3 range:

Option-1: range is [0..31]

Option-2: range is [1..32]

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| Answers to Question 1 |
| Company | Selected Option | Please provide the technical Arguments behind your preference |
| Qualcomm Inc | 1 | This will allow the UE to provide value “0” to indicate that independentGapConfig is not supported when configured cells are:* all FR1 cells (N1 = 0)
* or FR2 cells (N2 = 0)
* or mix of FR1 and FR2 cells (N3 = 0)

Subsequently when UE provides a N1/N2/N3 values > 0, then *independentGapConfig* will be supported when configured cells are:* all FR1 cells and number of serving cells >= N1 🡪 in this case, per 38.133 UE is expected to support gapless measurement on FR2
* all FR2 cells and number of serving cells >= N2 🡪 in this case, per 38.133 UE is expected to support gapless measurement on FR1
* FR1+FR2 serving cells >= N3 🡪 2 independent gap configurations is supported on FR1 and FR2 cells.
 |
| MediaTek | Option 1, but please see comments | There is no need indicates (N1 = 0, N2 = 0, N3 = 0) which implies no support of per-FR gap at all.We need to clarify the meaning of N1, N2, and N3.Our understanding is * If the NW configures only FR1 serving cells and the configured FR1 serving cells **<=** N1, the UE supports FR2 gapless measurement.
* If the NW configures only FR2 serving cells and the configured FR2 serving cells **<=** N2, the UE supports FR1 gapless measurement.
* If the NW configures both FR1 and FR2 serving cells, the configured FR1 serving cells **<=** N1, the configured FR2 serving cells **<=** N2, and the configured FR1 + FR2 serving cells **<=** N3, the UE supports two independent measurement gap configurations for FR1 and FR2. (Note: We are open to discuss whether the highlighted condition is needed)
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**Summary 1**: TBD.

**Proposal 1**: TBD.

**Question 2**: is there a need to enhance the current inter-node messaging to ensure proper coordination exists between the MN and SN when this feature is supported?

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| Answers to Question 2 |
| Company | Yes/No | Please provide the technical Arguments that supports your claim |
| Qualcomm |  | It seems a minor introduce of 2 indications in both directions (MN🡨🡪SN) may be needed.  |
| MediaTek | No strong view |  |
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**Summary 2**: TBD.

**Proposal 2**: TBD.

**Question 3**:do companies agree with the suggested inter-node messaging by ZTE (please check draft CR)

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| Answers to Question 2 |
| Company | Yes/No | Please provide the technical Arguments that supports your claim |
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**Summary 3**: TBD.

**Proposal 3**: TBD.

# 4 Conclusion

TBD.