**3GPP TSG-RAN WG2 Meeting #118-e R2-220xxxx**

**Online, May 09 – 20, 2022**

**Agenda Item: 5.1.4.3**

**Source: Huawei, HiSilicon**

**Title: Summary of [AT118-e][021][NR1516] UE capabilities II**

**Document for: Discussion and decision**

# Introduction

This document summarizes the following offline discussion.

* [AT118-e][021][NR1516] UE capabilities II (Huawei)

 Scope: Treat R2-2206002, R2-2204485, R2-2205558, R2-2205559, R2-2205560, R2-2205561, R2-2205453, R2-2205556, R2-2205557, R2-2205984, R2-2205985,

 Ph1 Determine agreeable parts, Ph2 for agreeable parts agree CRs (offline agreement, CB online only if necessary).

 Intended outcome: Report, Agreed CRs

 Deadline: Schedule 1

# Contact from companies

|  |  |
| --- | --- |
| Company | Email |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

# Discussion

## Part 1: Intended to determine agreeable parts

### **Configured UL grant**

[R2-2206002](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2206002.zip) Clarification on configuredUL-GrantType1-v1650 Qualcomm Incorporated CR Rel-16 38.306 16.8.0 0736 - F NR\_newRAT-Core

The above CR[1] adds the configuredUL-GrantType1-v1650 and configuredUL-GrantType2-v1650 to be the possible prerequisite capability in the field description for all related features, which is missing in current specification.

**Q1 Do companies agree with the intention of the CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes or No** | **Comments** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

### **Measurement**

[R2-2204485](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2204485.zip) LS on UE capability for inter-frequency measurement without MG (R4-2207090; contact: Huawei) RAN4 LS in Rel-16 NR\_RRM\_enh-Core To:RAN2

[R2-2205558](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2205558.zip) Correction on UE capability for inter-frequency measurement without MG Huawei, HiSilicon CR Rel-16 38.306 16.8.0 0720 - F NR\_RRM\_enh-Core

[R2-2205559](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2205559.zip) Correction on UE capability for inter-frequency measurement without MG Huawei, HiSilicon CR Rel-17 38.306 17.0.0 0721 - A NR\_RRM\_enh-Core

In the LS[2], RAN4 informed that non-CA capable UE is not expected to indicate support of *interFrequencyMeas-Nogap-r16*. The CRs[3][4] add the restriction above for the capability in TS 38.306. Otherwise, if a non-CA capable UE signals the capability, the network may configure inter-frequency measurement without gap, and the UE behaviour is unclear.

**Q2 Do companies agree with the intention of the CRs?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes or No** | **Comments** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

[R2-2205453](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2205453.zip) Clarification on the rmtc-Config-r16 Xiaomi Communications, Apple, OPPO CR Rel-16 38.331 16.8.0 3087

The CR[5] is to clarify that *rmtc-Config-r16* is only applicable for shared spectrum, and a condition tag *SharedSpectrum2* is added for *rmtc-Config-r16*.

**Q3 Do companies agree with the intention of the CR?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes or No** | **Comments** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

[R2-2205556](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2205556.zip) Correction on measurementEnhancement capability for high speed scenario Huawei, HiSilicon CR Rel-16 38.306 16.8.0 0718 - F NR\_HST-Core

[R2-2205557](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2205557.zip) Correction on measurementEnhancement capability for high speed scenario Huawei, HiSilicon CR Rel-17 38.306 17.0.0 0719 - A NR\_HST-Core

The CRs[6][7] are to clarify that intra-NR enhanced RRM requirements are applicable to SN configured measurement when (NG)EN-DC is configured, but inter-RAT E-UTRAN RRM requirements are not.

**Q4 Do companies agree with the intention of the CRs?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes or No** | **Comments** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

### **eMIMO**

[R2-2205560](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2205560.zip) Clarification on capabilities reported in different granularity with prerequisite Huawei, HiSilicon CR Rel-16 38.306 16.8.0 0722 - F NR\_eMIMO-Core

[R2-2205561](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2205561.zip) Clarification on capabilities reported in different granularity with prerequisite Huawei, HiSilicon CR Rel-17 38.306 17.0.0 0723 - A NR\_eMIMO-Core

The CRs[8][9] are to clarify that for the eMIMO capabilities with prerequisite defined in a finer granularity, UE shall indicate support of the prerequisite for at least one band/component carrier in at least on band combination.

For example, UE supports *supportNewDMRS-Port-r16* (which is defined in perband level) shall indicate support of *singleDCI-SDM-scheme-r16* (which is defined in perFS level) for the band in at least one band combination reported in BandCombinationList. UE supports *maxNumberActivatedTCI-States-r16* (which is defined in perband level) shall support *multiDCI-MultiTRP-r16* (which is defined in FSperCC level) for at least one component carrier for the band.

**Q5 Do companies agree with the intention of the CRs?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes or No** | **Comments** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

### **CHO and CPC**

[R2-2205984](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2205984.zip) Clarifications on CHO and CPC UE capabilities Huawei, HiSilicon CR Rel-16 38.306 16.8.0 0732 - F NR\_Mob\_enh-Core

[R2-2205985](https://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_118-e/Docs/R2-2205985.zip) Clarifications on CHO and CPC UE capabilities Huawei, HiSilicon CR Rel-17 38.306 17.0.0 0733 - A NR\_Mob\_enh-Core

In above CRs[10][11], it is pointed out that for the CHO and CPC capabilities which are defined in perband level, UE should report consistently among all the supported TDD/FDD/FR1/FR2 bands respectively. To avoid confusion, the description on “at least one band” should be removed.

**Q6 Do companies agree with the intention of the CRs?**

|  |  |  |
| --- | --- | --- |
| **Company** | **Yes or No** | **Comments** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# Conclusions

*To be added…*

# References

1. R2-2206002 Clarification on configuredUL-GrantType1-v1650 Qualcomm Incorporated CR Rel-16 38.306 16.8.0 0736 - F NR\_newRAT-Core
2. R2-2204485 LS on UE capability for inter-frequency measurement without MG (R4-2207090; contact: Huawei) RAN4 LS in Rel-16 NR\_RRM\_enh-Core To:RAN2
3. R2-2205559 Correction on UE capability for inter-frequency measurement without MG Huawei, HiSilicon CR Rel-17 38.306 17.0.0 0721 - A NR\_RRM\_enh-Core
4. R2-2205560 Clarification on capabilities reported in different granularity with prerequisite Huawei, HiSilicon CR Rel-16 38.306 16.8.0 0722 - F NR\_eMIMO-Core
5. R2-2205453 Clarification on the rmtc-Config-r16 Xiaomi Communications, Apple, OPPO CR Rel-16 38.331 16.8.0 3087 - F TEI16
6. R2-2205556 Correction on measurementEnhancement capability for high speed scenario Huawei, HiSilicon CR Rel-16 38.306 16.8.0 0718 - F NR\_HST-Core
7. R2-2205557 Correction on measurementEnhancement capability for high speed scenario Huawei, HiSilicon CR Rel-17 38.306 17.0.0 0719 - A NR\_HST-Core
8. R2-2205560 Clarification on capabilities reported in different granularity with prerequisite Huawei, HiSilicon CR Rel-16 38.306 16.8.0 0722 - F NR\_eMIMO-Core
9. R2-2205561 Clarification on capabilities reported in different granularity with prerequisite Huawei, HiSilicon CR Rel-17 38.306 17.0.0 0723 - A NR\_eMIMO-Core
10. R2-2205984 Clarifications on CHO and CPC UE capabilities Huawei, HiSilicon CR Rel-16 38.306 16.8.0 0732 - F NR\_Mob\_enh-Core
11. R2-2205985 Clarifications on CHO and CPC UE capabilities Huawei, HiSilicon CR Rel-17 38.306 17.0.0 0733 - A NR\_Mob\_enh-Core