**3GPP TSG RAN WG2 Meeting #110-e R2-200xxxx  
E-Conference, 1st – 12th June 2020**

**Agenda item: 5.4.3.1**

**Source: Nokia, Nokia Shanghai Bell**

**Title: Summary of [AT110e][014][NR15] UE Cap IPA and email disc last meeting (Nokia)**

**Document for: Discussion and Decision**

1. Introduction

This is a summary of below offline discussion:

5.4.3 UE capabilities and Capability Coordination

5.4.3.0 In-principle Agreed CRs

[R2-2005112](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2005112.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2005112.zip) Ambiguity in fr1-fr2-Add-UE-NR-Capabilities parameter Ericsson, NTT Docomo CR Rel-15 38.331 15.9.0 1648 - F NR\_newRAT-Core

[R2-2005113](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2005113.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2005113.zip) Ambiguity in fr1-fr2-Add-UE-NR-Capabilities parameter Ericsson, NTT Docomo CR Rel-16 38.331 16.0.0 1649 - A NR\_newRAT-Core

*Chair: Why new CR and not a revision?*

[R2-2005407](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2005407.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2005407.zip) SRS Capability report for SRS only Scell Huawei, HiSilicon CR Rel-15 38.331 15.9.0 1559 2 F NR\_newRAT-Core R2-2004197

[R2-2005408](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2005408.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2005408.zip) SRS Capability report for SRS only Scell Huawei, HiSilicon CR Rel-16 38.331 16.0.0 1560 2 A NR\_newRAT-Core R2-2004198

[R2-2005409](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2005409.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2005409.zip) SRS Capability report for SRS only Scell Huawei, HiSilicon CR Rel-15 38.306 15.9.0 0294 1 F NR\_newRAT-Core R2-2004199

[R2-2005410](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2005410.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2005410.zip) SRS Capability report for SRS only Scell Huawei, HiSilicon CR Rel-16 38.306 16.0.0 0295 1 A NR\_newRAT-Core R2-2004200

[R2-2005395](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2005395.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2005395.zip) Correction to RequestedCapabilityCommon Huawei, HiSilicon CR Rel-15 38.331 15.9.0 1561 1 F NR\_newRAT-Core R2-2003463

[R2-2005396](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2005396.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2005396.zip) Correction to RequestedCapabilityCommon Huawei, HiSilicon CR Rel-16 38.331 16.0.0 1562 1 A NR\_newRAT-Core R2-2003464

[R2-2004842](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2004842.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2004842.zip) Missing "Optional features without UE radio access capability parameters" Ericsson CR Rel-15 38.306 15.9.0 0317 - F NR\_newRAT-Core

[R2-2004843](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2004843.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2004843.zip) Missing "Optional features without UE radio access capability parameters" Ericsson CR Rel-16 38.306 16.0.0 0318 - A NR\_newRAT-Core

*Chair: Why new CR and not a revision?*

*All above Treated by email [014]*

5.4.3.1 Other

*Including Late Drop.*

*Including outcome of email discussion [Post109bis-e][064][NR15] XDD FRX differentiation (Qualcomm)*

*Including outcome of email discussion [Post109bis-e][921][NR15] CRs for FR2 CA Fallback (Apple)*

*Including outcome of email discussion [Post109bis-e][922][NR15] Default values for UE capability (Nokia)*

*Including outcome of email discussion [Post109bis-e][923][NR15] clarification on codebook parameters for 2-32 (Huawei)*

*Including outcome of email discussion [Post109bis-e][924][NR15] unnecessary FRx differentiation (ZTE)*

**[AT110e][014][NR15] UE Cap IPA and email disc last meeting (Nokia)**

Scope: Treat all IPA CRs under 5.4.3.0, and from 5.4.3.1: R2-2006021, R2-2006022, R2-2005411, R2-2005412, R2-2005413, R2-2004478, R2-2004479

Part 1: Agree In-principle agreed CRs, for others: Decision whether to make corrections or not, identify agreeable corrections. Deadline: June 4, 0700 UTC.

Part 2: For others, for agreeable parts, continuation to agree CRs. Deadline: June 10, 0700 UTC

2. Discussions

## 2.0 Discussion on IPA CRs in 5.4.3.0

|  |  |
| --- | --- |
| Company | Any comments on IPA CRs? Feedback here with CR number and comment |
| Lenovo | Yes, we have some comments to the updated CRs 0317/0318 (R2-2004842/43).  5.1 PWS features  In the description of KPAS, EU-Alert the reference to TS 36.304 needs to be corrected to TS 38.304.  5.3 RRC connection  The feature name “mo-VoiceCall establishment cause for mobile originating MMTEL video” and its description is not correct. Reason: in NR separate establishment cause values mo-VoiceCall and mo-VideoCall are defined, and for MO MMTEL video the value mo-VideoCall applies.  Irrespective of that we think that both establishment cause related features are NAS features and do not need to be defined in TS 38.306. Reason: call establishment is a NAS feature and UE AS sets the establishmentCause acc. to the information received from NAS. |
| Huawei, HiSilicon | R2-2004842 and R2-2004843 have some updates based on IPA CRs and needs further discussion. We don’t think adding 5.3 and 5.4 is correct, establishment cause and reception of SIB are usual procedures and it is not the intention to add everything for idle mode into 38.306. If this was the intention of the original CR, we then prefer to add nothing into 38.306. |
| MediaTek | We do not see the addition of 5.3 and 5.4 essential, corresponding behaviour is clear. |
| Ericsson | @Lenovo:  - Thanks for spotting, KPAS/EU-Alert should refer to 38.304.  - Sorry that was sloppy from me, for MMTEL video it should say:  ***mo-VideoCall* establishment cause for mobile originating MMTEL video**  It is optional for UE to support *mo-VideoCall* establishment cause for mobile originating MMTEL video as specified in TS 38.331 [9].  - We agree that the cause is set by NAS:  1> set the *establishment/resumeCause* in accordance with the information received from upper layers;  - But AS needs to support sending these cause values indicated by upper layers.  - As a general remark we also want to comment that we align the LTE and NR specifications here, i.e. this was discussed and agreed for LTE, and by leaving out selective topics we create ambiguity between LTE and NR for feature that work identical. Furthermore, it should be motivated why this should not be specified for NR, while this is specified for LTE.  @Huawei:  - The intention is to align LTE and NR specification, specifically for topics that are identical in both RATS. As we argued above, by leaving out selective topics we create ambiguity. |

Phase 1:

[Rapporteur] For R2-2004842 and R2-2004843 take updates from companies into account:

- Continue making the changes based on company feedback (Lenovo)

- Remove changes from 5.3 and 5.4 (Huawei, MTK)

## 2.1 Discussion on default values

## Including outcome of email discussion [Post109bis-e][922][NR15] Default values for UE capability (Nokia)

## Please provide your comments to the drafts in R2-2006021 (Rel-15) and R2-2006022 (Rel-16 shadow)

* NOTE the drafts are available in the email discussion folder as the revision numbers were acquired after the meeting started

|  |  |
| --- | --- |
| Company | Comments [R2-2006021 (Rel-15) and R2-2006022 (Rel-16 shadow] |
| Nokia | [Proponent] |
| Qualcomm Incorporated | Change to csi-RS-IM-ReceptionForFeedback seems to be motivated to implement the UE minimum requirement from RAN1’s FG2-32.  [Nokia] Correct, the discussion is just for alignment. We think it should be enough to set the default for components 2 and 7 to: 8 per CC for each band in FR1 and 2 per CC for each band in FR2, if signalled per band; 8, if signalled per UE, if a UE supports at least one band in FR1; 2, if signalled per UE, if a UE supports bands only in FR2.  In FG-32, 8TX for FR1 is only mandated for wideband CSI report, but these UE capability parameters cannot differentiate wideband CSI and subband CSI.  [Nokia] Maybe we don’t need to reflect the distinction between WB/SB in 2-33 because this distinction refers to a specific codebook, so it is already correctly captured in the codebookParameters components for Type I. 2-33 indicates only the max number of ports configured/active in a CC or across all CCs, so.  It should also be noted that the UE will have to signal additional limitation in csi-RS-IM-ReceptionForFeedbackPerBandComb at BC level in order to make sure the number of active resource is only 1.  Since there is no concept of signalling multiple candidates for the following parameters. The UE may end up in only reporting capabilities that are required by FG2-32 and no more than that.  [Nokia] I think we are aligned on this. Essentially UE reports here needs to be also in sync with 2-32.   * csi-RS-IM-ReceptionForFeedback * csi-RS-IM-ReceptionForFeedbackPerBandComb   [Nokia] Overall, from MTK comment as well it seems that we don’t need to capture anything but rely on 2-32 captured by Huawei’s changes. We’re fine with that approach. |
| Huawei, HiSilicon | For beam switching time, we agree that the behaviour was not defined for 224 and 336. We understand that we assume that no Rel-15 UE in the field would report 224 and 336. If it is the case, we are fine with 48 as the default value in Rel-15. However, for Rel-16, RAN1 is still discussing the beamSwitchTiming, and maybe a new Rel-16 capability signalling would be introduced. So the correction for beamSwitchTiming in Rel-16 CR is suggested to be removed. Besides, there is a typo in the coversheet, “236” should be “336“.  Regarding the above discussion on CSI-RS-IM-ReceptionForFeedback, we agree that we don’t need to capture anything here and the changes in below 2.2 can already support the same intention. |
| OPPO | We still believe the change to codebookParameters seems not necessary considering this IEs are mandatory to report. Maybe rapporteur can clarify what is additional information here. |
| MediaTek | We believe the UE minimum requirement from RAN1’s FG2-32 is covered by R2-2005412 and R2-2005413, so there is no need to include more clarification under csi-RS-IM-ReceptionForFeedback and csi-RS-IM-ReceptionForFeedbackPerBandComb.  On column “M” for supportedSRS-Resources, supportedDMRS-TypeDL, and supportedDMRS-TypeUL, it’d be “FD” with the changes. |
| Ericsson | For beamSwitchTiming, maybe we do not need to say “up to 48”, since anyway this value represents the minimum number of OFDM symbols needed, then we could simply say “If this field is not included, the ~~maximum~~ beam switch timing is 48 OFDM symbols.” |
| ZTE | Generally, we agree with modifications for both R15 and R16. We just have a small question on the beamSwitchTiming in the R16 version, which was also included in the TEI part of RAN1 feature list table. and in RAN2, it has been agreed that the TEI part shall also be included in the mega CR, so we just want to know whether it shall be included in the mega CR or just in this separate CR. |
|  |  |

## 2.2 Codebook parameters

Including outcome of email discussion [Post109bis-e][923][NR15] clarification on codebook parameters for 2-32 (Huawei) in R2-2005411.

* Please provide your comments in the table below for R2-2005412 and R2-2005413

|  |  |
| --- | --- |
| Company | Comments [R2-2005412 (Rel-15) and R2-2005413 (Rel-16 shadow)] |
| Qualcomm Incorporated | No comment |
| Huawei, HiSilicon | Proponent |
| MediaTek | Support. |
| Samsung | No comment |
| Ericsson | No comment. |
| ZTE | No comments |
|  |  |

## 2.3 Unnecessary FRx differentiation

Including outcome of email discussion [Post109bis-e][924][NR15] unnecessary FRx differentiation (ZTE) in R2-2004478

* Please provide your comments in the table below for R2-2004479 and R2-2004480

|  |  |
| --- | --- |
| Company | Comments [R2-2004479 (Rel-15) and R2-2004480 (Rel-16 shadow)] |
| Lenovo | To be cross-checked with MCC whether the CR#1605/1606 are correct. It seems that CR# for TS 38.331 were allocated instead for TS 38.306.  [ZTE] Thanks a lot for pointing out, it is true we’ve made mistake during Tdoc reservation, will request new numbers. |
| Qualcomm Incorporated | No comment |
| Huawei, HiSilicon | No comment |
| MediaTek | Support. |
| Samsung | No comment |
| Ericsson | Agree with the intention, but maybe formulation could be improved as:  "N/A" in the column indicates it is not applicable to the feature (e,g. the signaling supports the UE to have different values between FDD and TDD or between FR1 and FR2).  For csi-ReportFramework, csi-RS-IM-ReceptionForFeedback and csi-RS-ProcFrameworkForSRS, fields, we think for the cases in Phy-Parameters the FR1-FR2 DIFF column should not be set to yes, since actually the interpretation for such fields is only for the case where the UE is configured with serving cells on both FR1 and FR2 bands, as clarified in CR R2-2005112.  [ZTE]Agree, will be updated in next version (together with fixed CR number) |
| ZTE | No comment |
|  |  |

# 3. Conclusion

Summary to be provided at end of the discussion.

# References

5.4.3.0 In-principle Agreed CRs

[R2-2005112](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2005112.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2005112.zip) Ambiguity in fr1-fr2-Add-UE-NR-Capabilities parameter Ericsson, NTT Docomo CR Rel-15 38.331 15.9.0 1648 - F NR\_newRAT-Core

[R2-2005113](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2005113.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2005113.zip) Ambiguity in fr1-fr2-Add-UE-NR-Capabilities parameter Ericsson, NTT Docomo CR Rel-16 38.331 16.0.0 1649 - A NR\_newRAT-Core

*Chair: Why new CR and not a revision?*

[R2-2005407](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2005407.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2005407.zip) SRS Capability report for SRS only Scell Huawei, HiSilicon CR Rel-15 38.331 15.9.0 1559 2 F NR\_newRAT-Core R2-2004197

[R2-2005408](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2005408.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2005408.zip) SRS Capability report for SRS only Scell Huawei, HiSilicon CR Rel-16 38.331 16.0.0 1560 2 A NR\_newRAT-Core R2-2004198

[R2-2005409](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2005409.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2005409.zip) SRS Capability report for SRS only Scell Huawei, HiSilicon CR Rel-15 38.306 15.9.0 0294 1 F NR\_newRAT-Core R2-2004199

[R2-2005410](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2005410.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2005410.zip) SRS Capability report for SRS only Scell Huawei, HiSilicon CR Rel-16 38.306 16.0.0 0295 1 A NR\_newRAT-Core R2-2004200

[R2-2005395](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2005395.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2005395.zip) Correction to RequestedCapabilityCommon Huawei, HiSilicon CR Rel-15 38.331 15.9.0 1561 1 F NR\_newRAT-Core R2-2003463

[R2-2005396](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2005396.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2005396.zip) Correction to RequestedCapabilityCommon Huawei, HiSilicon CR Rel-16 38.331 16.0.0 1562 1 A NR\_newRAT-Core R2-2003464

[R2-2004842](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2004842.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2004842.zip) Missing "Optional features without UE radio access capability parameters" Ericsson CR Rel-15 38.306 15.9.0 0317 - F NR\_newRAT-Core

[R2-2004843](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2004843.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2004843.zip) Missing "Optional features without UE radio access capability parameters" Ericsson CR Rel-16 38.306 16.0.0 0318 - A NR\_newRAT-Core

*Chair: Why new CR and not a revision?*

*All above Treated by email [014]*

**Default values**

Including outcome of email discussion [Post109bis-e][922][NR15] Default values for UE capability (Nokia)

[R2-2004454](file:///D:\\Documents\\3GPP\\tsg_ran\\WG2\\TSGR2_110-e\\Docs\\R2-2004454.zip" \o "D:Documents3GPPtsg_ranWG2TSGR2_110-eDocsR2-2004454.zip) Default values for UE capability Nokia, Nokia Shanghai Bell, NTT Docomo CR Rel-15 38.306 15.9.0 0176 5 F NR\_newRAT-Core R2-2002990 Revised

[R2-2005709](file:///D:/Documents/3GPP/tsg_ran/WG2/RAN2/2005_R2_110-e/Docs/R2-2005709.zip) Default values for UE capability Nokia, Nokia Shanghai Bell, NTT Docomo CR Rel-15 38.306 15.9.0 0176 6 F NR\_newRAT-Core [R2-2004454](file:///D:/Documents/3GPP/tsg_ran/WG2/RAN2/2005_R2_110-e/Docs/R2-2004454.zip) Late

=> Revised in R2-2006021

R2-2006021 Default values for UE capability Nokia, Nokia Shanghai Bell, NTT Docomo CR Rel-15 38.306 15.9.0 0176 7 F NR\_newRAT-Core R2-2004454 Late

[R2-2004455](file:///D:/Documents/3GPP/tsg_ran/WG2/RAN2/2005_R2_110-e/Docs/R2-2004455.zip) Default values for UE capability Nokia, Nokia Shanghai Bell, NTT Docomo CR Rel-16 38.306 16.0.0 0304 - A NR\_newRAT-Core Revised

[R2-2005710](file:///D:/Documents/3GPP/tsg_ran/WG2/RAN2/2005_R2_110-e/Docs/R2-2005710.zip) Default values for UE capability Nokia, Nokia Shanghai Bell, NTT Docomo CR Rel-16 38.306 16.0.0 0304 1 A NR\_newRAT-Core [R2-2004455](file:///D:/Documents/3GPP/tsg_ran/WG2/RAN2/2005_R2_110-e/Docs/R2-2004455.zip) Late

=> Revised in R2-200-6022

R2-2006022 Default values for UE capability Nokia, Nokia Shanghai Bell, NTT Docomo CR Rel-16 38.306 16.0.0 0304 2 A NR\_newRAT-Core R2-2004455 Late

**Codebook parameters**

Including outcome of email discussion [Post109bis-e][923][NR15] clarification on codebook parameters for 2-32 (Huawei)

[R2-2005411](file:///D:/Documents/3GPP/tsg_ran/WG2/RAN2/2005_R2_110-e/Docs/R2-2005411.zip) Summary of [Post109bis-e][923][NR15] clarification on codebook parameters for 2-32 Huawei, HiSilicon report NR\_newRAT-Core

[R2-2005412](file:///D:/Documents/3GPP/tsg_ran/WG2/RAN2/2005_R2_110-e/Docs/R2-2005412.zip) on the capability of Basic CSI feedback (2-32) Huawei, HiSilicon CR Rel-15 38.306 15.9.0 0332 - F NR\_newRAT-Core

[R2-2005413](file:///D:/Documents/3GPP/tsg_ran/WG2/RAN2/2005_R2_110-e/Docs/R2-2005413.zip) on the capability of Basic CSI feedback (2-32) Huawei, HiSilicon CR Rel-16 38.306 16.0.0 0333 - F NR\_newRAT-Core

**Unnecessary FRx differentiation**

Including outcome of email discussion [Post109bis-e][924][NR15] unnecessary FRx differentiation (ZTE)

[R2-2004478](file:///D:/Documents/3GPP/tsg_ran/WG2/RAN2/2005_R2_110-e/Docs/R2-2004478.zip) Report of [Post109bis-e][924][NR15] Unnecessary FRx differentiation ZTE Corporation discussion Rel-15 NR\_newRAT-Core

[R2-2004479](file:///D:/Documents/3GPP/tsg_ran/WG2/RAN2/2005_R2_110-e/Docs/R2-2004479.zip) CR on unnecessary xDD FRx differentiation ZTE Corporation, Sanechips CR Rel-15 38.331 15.9.0 1605 - F NR\_newRAT-Core

[R2-2004480](file:///D:/Documents/3GPP/tsg_ran/WG2/RAN2/2005_R2_110-e/Docs/R2-2004480.zip) CR on unnecessary xDD FRx differentiation ZTE Corporation, Sanechips CR Rel-16 38.331 16.0.0 1606 - F NR\_newRAT-Core