**3GPP TSG-RAN WG4 Meeting # 100-e R4-210XXXX**

**Electronic Meeting, 16th – 27th August, 2021**

**Agenda item: 6.1.1.6.1**

**Source:** Moderator (Nokia, Nokia Shanghai Bell)

**Title:** Email discussion summary for [100-e][207] NR\_unlic\_RRM\_2

**Document for:** Information

# Introduction

This is the document for the email discussion of the following items under the NR-U RRM performance agenda (email discussion with the flag [100-e][207] NR\_unlic\_RRM\_2):

* 6.1.1.6 RRM performance requirements (38.133) [NR\_unlic-Perf]
	+ 6.1.1.6.1 General [NR\_unlic-Perf]
	+ 6.1.1.6.2 Measurement accuracy requirements [NR\_unlic-Perf]
	+ 6.1.1.6.3 Test cases [NR\_unlic-Perf]
		- 6.1.1.6.3.1 General [NR\_unlic-Perf]
		- 6.1.1.6.3.2 RRC IDLE cell re-selection [NR\_unlic-Perf]
		- 6.1.1.6.3.3 HO (delay and interruptions) [NR\_unlic-Perf]
		- 6.1.1.6.3.4 RRC Re-establishment [NR\_unlic-Perf]
		- 6.1.1.6.3.5 RRC Connection Release with Redirection [NR\_unlic-Perf]
		- 6.1.1.6.3.6 Random access [NR\_unlic-Perf]
		- 6.1.1.6.3.7 Timing (transmit timing and TA) [NR\_unlic-Perf]
		- 6.1.1.6.3.8 BWP switching delay and interruptions [NR\_unlic-Perf]
		- 6.1.1.6.3.9 PSCell addition/release (delay and interruption) [NR\_unlic-Perf]
		- 6.1.1.6.3.10 SCell activation/deactivation (delay and interruption) [NR\_unlic-Perf]
		- 6.1.1.6.3.11 Other interruptions [NR\_unlic-Perf]

As this work item is in maintenance mode, and only few discussion papers are left, delegates are encouraged to comment on the Draft CRs and discussion points on both 1st and 2nd round of discussion.

The list of topics covered in this email thread is

* Topic #1: CCA models
	+ Sub topic 1-1: CCA models
		- Issue 1-1: Avoiding LMAX in test cases with DRX
* Topic #2: Test case specific details
	+ Sub topic 2-1: RRC Connection Release with Redirection
		- Issue 2-1: Configuration of LCCA and WCCA for RRC connection release with redirection test cases
	+ Sub topic 2-2: SCell activation/deactivation
		- Issue 2-2: Configuration of LCCA and WCCA for SCell activation/deactivation

Moderator’s note: This email thread only covers part of the NR-U RRM performance requirements. Papers under the agenda items 6.1.1.6.3.12 to 6.1.1.6.3.20 are covered in the email thread [100-e][206] NR\_unlic\_RRM\_1.

Please remember to fill in the contact information of the delegates answering to this email thread.

# Topic #1: CCA models

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations** |
| AI 6.1.1.6.3.1 |  | General |
| R4-213227 | Nokia, Nokia Shanghai Bell | Observation 1: Configuring the CCA model with a large WCCA and small LCCA results in a decrease on the minimum achievable CCA success probability, and may reduce CCA failures significantlyObservation 2: In many TCs with DRX, the large values required WCCA would force the CCA model to reduce the CCA failures, and the change for failures during DRX active periods would be significantly reduced. Proposal 1: The CCA model should only consider CCA failures within DRX active period when evaluating LCCA. |

## Open issues summary

### Sub-topic 1-1 CCA models

*Sub-topic description:*

*On this subtopic only 1 discussion paper has a proposal. This proposal is meant to clarify the behavior of LMAX limitation on test cases with DRX.*

*Open issues and candidate options before e-meeting:*

**Issue 1-1: Avoiding LMAX in test cases with DRX**

* Proposals
	+ Option 1 (R4-213227): The CCA model should only consider CCA failures within DRX active period when evaluating LCCA
	+ Option 2: Other option?
* Recommended WF
	+ Discuss if Option 1 can be agreed

## Companies views’ collection for 1st round

### Open issues

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| **Company** | **Comments** |
| XXX | Sub topic 1-1: CCA modelsIssue 1-1: Avoiding LMAX in test cases with DRX… |
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## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

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|  | **Status summary**  |
| **Sub-topic #1** | *Tentative agreements:**Candidate options:**Recommendations for 2nd round:* |

## Discussion on 2nd round (if applicable)

# Topic #2: Test case specific details

## Companies’ contributions summary

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| **T-doc number** | **Company** | **Proposals / Observations** |
| AI 6.1.1.6.3.5 |  | RRC Connection Release with Redirection |
| R4-2113234 | Nokia, Nokia Shanghai Bell | Observation 1: If during the time to identification of NR cell the number of unavailable SMTC occasions exceed L1,max the UE initiates cell selection procedure. Proposal 1: Configure CCA model with LCCA\_DL=8 and WCCA\_DL=Tidentify-NR\_CCA for the test cases of RRC connection release with redirection under CCA. |
| AI 6.1.1.6.3.10 |  | SCell activation/deactivation (delay and interruption) |
| R4-2113237 | Nokia, Nokia Shanghai Bell | Observation 1: The number of CCA failures in SCell activation requirements is limited by L1,max, L2,1,max, L2,2,max, L3,1,max, and L3,2,max, whose usage depends on the scenario and applies for the activation time Tactivation\_time\_withCCA. Observation 2: For a SMTC period of 20 ms L1,max = L2,1,max = L2,2,max = L3,1,max = L3,2,max = 2. Proposal 1: Configure CCA model with LCCA\_DL=2 and WCCA\_DL= Tactivation\_time\_withCCA for the test cases of RLM in-sync test cases in non-DRX mode. |

## Open issues summary

### Sub-topic 2-1: RRC Connection Release with Redirection

*Sub-topic description:*

*For this subtopic only 1 discussion paper was contributed to the meeting, discussing the CCA parameter configuration for RRC connection release with redirection.*

*This configuration is important to be defined in order to avoid reaching LMAX.*

*Open issues and candidate options before e-meeting:*

**Issue 2-1: Configuration of LCCA and WCCA  for RRC connection release with redirection test cases**

* Proposals
	+ Option 1 (R4-2113234): Configure CCA model with LCCA\_DL=8 and WCCA\_DL=Tidentify-NR\_CCA for the test cases of RRC connection release with redirection under CCA.
	+ Option 2: Other options?
* Recommended WF
	+ Can Option 1 be agreed?

### Sub-topic 2-2 SCell activation/deactivation

*Sub-topic description:*

*For this subtopic only 1 discussion paper was contributed to the meeting, discussing the CCA parameter configuration for RRC connection release with redirection.*

*This configuration is important to be defined in order to avoid reaching LMAX.*

*Open issues and candidate options before e-meeting:*

**Issue 2-2: Configuration of LCCA and WCCA  for SCell activation/deactivation**

* Proposals
	+ Option 1 (R4-2113237): Configure CCA model with LCCA\_DL=2 and WCCA\_DL= Tactivation\_time\_withCCA for the test cases of SCell activation and deactivation test cases in non-DRX mode.
	+ Option 2: other options?
* Recommended WF
	+ Can Option 1 be agreed?

## Companies views’ collection for 1st round

### Open issues

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| **Company** | **Comments** |
| XXX | Sub topic 2-1: RRC Connection Release with RedirectionIssue 2-1: Configuration of LCCA and WCCA for RRC connection release with redirection test cases…Sub topic 2-2: SCell activation/deactivationIssue 2-2: Configuration of LCCA and WCCA for SCell activation/deactivation…. |
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### CRs/TPs comments collection

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| **CR/TP number** | **Comments collection** |
| 6.1.1.6.3.1 | General |
| [**R4-2113464**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113464.zip)Mirror: R4-2113465Ericsson | Draft CR: Correction of RMC for NR-U test cases |
| Company A |
| Company B |
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| [**R4-2114103**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114103.zip)Mirror: R4-2114104Huawei, Hisilicon | CR on CORESET RMC for NR-U R16 |
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| [**R4-2113228**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113228.zip)Mirror: R4-2113229Nokia, Nokia Shanghai Bell | Correction of CCA model for TCs with DRX |
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| 6.1.1.6.3.2 | RRC IDLE cell re-selection |
| [**R4-2114078**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114078.zip)Mirror: R4-2114080Ericsson | Correction to cell reselection test |
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| [**R4-2114105**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114105.zip)Mirror: R4-2114106Huawei, Hisilicon | CR on TC of cell reselection for NR-U R16 |
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| 6.1.1.6.3.3 | HO (delay and interruptions) |
| [**R4-2114077**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114077.zip)Mirror: R4-2114079Ericsson | Correction to NR-U handover test |
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| [**R4-2114107**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114107.zip)Mirror: R4-2114108Huawei, Hisilicon | CR on TC of HO for NR-U R16 |
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| [**R4-2113230**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113230.zip)Mirror: R4-2113231Nokia, Nokia Shanghai Bell | Draft CR Correction of Handover TCs |
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| 6.1.1.6.3.4 | RRC Re-establishment |
| [**R4-2114433**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114433.zip)Mirror: R4-2114434Ericsson | Correction to RRC re-establishment tests for NR-U in 38.133 |
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| [**R4-2114109**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114109.zip)Mirror: R4-2114110Huawei, Hisilicon | CR on TC of RRC Re-establishment for NR-U R16 |
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| [**R4-2113232**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113232.zip)Mirror: R4-2113233Nokia, Nokia Shanghai Bell | Draft CR RRC Re-establishment with CCA |
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| 6.1.1.6.3.5 | RRC Connection Release with Redirection |
| [**R4-2114435**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114435.zip)Mirror: R4-2114436Ericsson | Correction to RRC re-direction tests for NR-U in 38.133 |
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| [**R4-2114111**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114111.zip)Mirror: R4-2114112Huawei, Hisilicon | CR on TC of RRC Release with Redirection for NR-U R16 |
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| [**R4-2113235**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113235.zip)Mirror: R4-2113236Nokia, Nokia Shanghai Bell | Correction on release with redirection TCs for unlicensed operation |
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| 6.1.1.6.3.6 | Random access |
| [**R4-2113468**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113468.zip)Mirror: R4-2113469Ericsson | Draft CR: Correction of random access procedure test cases for NR-U |
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| [**R4-2114113**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114113.zip)Mirror: R4-2114114Huawei, Hisilicon | CR on TC of RA for NR-U R16 |
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| 6.1.1.6.3.7 | Timing (transmit timing and TA) |
| [**R4-2114437**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114437.zip)Mirror: R4-2114438Ericsson | Correction to UE timing tests for NR in 38.133 |
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| [**R4-2114115**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114115.zip)Mirror: R4-2114116Huawei, Hisilicon | CR on TC of timing requirements for NR-U R16 |
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| 6.1.1.6.3.8 | BWP switching delay and interruptions |
| [**R4-2114439**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114439.zip)Mirror: R4-2114440Ericsson | Correction to BWP switching tests for NR-U in 38.133 |
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| [**R4-2114117**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114117.zip)Mirror: R4-2114118Huawei, Hisilicon | CR on TC of BWP switch requirements for NR-U R16 |
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| 6.1.1.6.3.9 | PSCell addition/release (delay and interruption) |
| [**R4-2114119**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114119.zip)Mirror: R4-2114120Huawei, Hisilicon | CR on TC of PSCell addition and release for NR-U R16 |
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| 6.1.1.6.3.10 | SCell activation/deactivation (delay and interruption) |
| [**R4-2114172**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114172.zip)Mirror: R4-2114173Ericsson | DraftCR (R16) Correction of test cases for SCell (de)activation |
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| [**R4-2114121**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114121.zip)Mirror: R4-2114122Huawei, Hisilicon | CR on TC of SCell activation for NR-U R16 |
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| [**R4-2113238**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2113238.zip)Mirror: R4-2113239Nokia, Nokia Shanghai Bell | TC SCell activation/deactivation for unlicensed bands |
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| 6.1.1.6.3.11 | Other interruptions |
| [**R4-2114170**](https://www.3gpp.org/ftp/TSG_RAN/WG4_Radio/TSGR4_100-e/Docs/R4-2114170.zip)Mirror: R4-2114171Ericsson | DraftCR (R16) Correction of test cases for interruptions |
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## Summary for 1st round

### Open issues

*Moderator tries to summarize discussion status for 1st round, list all the identified open issues and tentative agreements or candidate options and suggestion for 2nd round i.e. WF assignment.*

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|  | **Status summary**  |
| **Sub-topic#1** | *Tentative agreements:**Candidate options:**Recommendations for 2nd round:* |

### CRs/TPs

*Moderator tries to summarize discussion status for 1st round and provided recommendation on CRs/TPs Status update suggestion*

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| **CR/TP number** | **CRs/TPs Status update recommendation**  |
| XXX | *Based on 1st round of comments collection, moderator can recommend the next steps such as “agreeable”, “to be revised”* |

## Discussion on 2nd round (if applicable)

*Moderator can provide summary of 2nd round here. Note that recommended decisions on tdocs should be provided in the section titled ”Recommendations for Tdocs”.*

# Recommendations for Tdocs

## 1st round

**New tdocs**

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| --- | --- | --- |
| **Title** | **Source** | **Comments** |
| WF on … | YYY |  |
| LS on … | ZZZ | To: RAN\_X; Cc: RAN\_Y |
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**Existing tdocs**

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| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation**  | **Comments** |
| R4-210xxxx | CR on … | XXX | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
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Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics incl. existing and new tdocs.
2. For the Recommendation column please include one of the following:
	1. CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
	2. Other documents: Agreeable, Revised, Noted
3. For new LS documents, please include information on To/Cc WGs in the comments column
4. Do not include hyper-links in the documents

## 2nd round

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| --- | --- | --- | --- | --- |
| **Tdoc number** | **Title** | **Source** | **Recommendation**  | **Comments** |
| R4-210xxxx | CR on … | XXX | Agreeable, Revised, Merged, Postponed, Not Pursued |  |
| R4-210xxxx | WF on … | YYY | Agreeable, Revised, Noted |  |
| R4-210xxxx | LS on … | ZZZ | Agreeable, Revised, Noted |  |
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Notes:

1. Please include the summary of recommendations for all tdocs across all sub-topics.
2. For the Recommendation column please include one of the following:
	1. CRs/TPs: Agreeable, Revised, Merged, Postponed, Not Pursued
	2. Other documents: Agreeable, Revised, Noted
3. Do not include hyper-links in the documents

# Annex

Contact information

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| --- | --- | --- |
| **Company** | **Name** | **Email address** |
| (Moderator) Nokia, Nokia Shanghai Bell | Rafael Cauduro Dias de Paiva | rafael.paiva@nokia.com |

Note:

1. Please add your contact information in above table once you make comments on this email thread.
2. If multiple delegates from the same company make comments on single email thread, please add you name as suffix after company name when make comments i.e. Company A (XX, XX)