[102-e][203] Maintenance_NR_unlic_NWM - Version 0.0.1
RAN4

3GPP TSG-RAN WG4 Meeting # 102-e, R4-220xxx

Electronic Meeting, February 21 - March 3, 2022

Source: Moderator (Nokia, Nokia Shanghai Bell)

Title: Email discussion summary for [102-e][203] Maintenance_NR_unlic_NWM

Agenda item: 5.1.1.3

Document for: Information

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1 Introduction

This is the document for the email discussion of the following items under the NR-U RRM agenda (email discussion with the flag [102-e][203] Maintenance_NR_unlic_NWM):

- 5.1 NR WIs and TEI

- 5.1.1 NR-based access to unlicensed spectrum [NR_unlic]

    ○ (...)

    ○ **5.1.1.3 RRM requirements [NR_unlic-Core/Perf]**

    ○ (...)

As part of this discussion one technical issue is covered in Topic #1, while comments to draft CRs should be captured in Topic #2.

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2 Topic #1: NR-U Core requirements maintenance

2.1 Companies contributions summary

Table 1: Companies' contributions summary

T-doc number	Company	Proposals/Observations

R4-2205522	Ericsson	Observation 1: If the UE is configured with e_{DRX_IDLE} cycle in LTE, the search time is update to MAX(10 s, one e_{DRX_IDLE} cycle). Proposal 1: RAN4 to introduce the max function for timer T = max(10s, M1*(P1s +K1)*DRX cycles) for NR-U, where
		- K1 is 16 if DRX cycle is 0.32s, 8 if DRX cycle is 0.64s, otherwise, K1 = 4.
		- P1s is the number of DRX cycles each with at least one SMTC occasion not available during the TPLMN and P1s ≤ P1s,max.
		- P1s,max = 32 if DRX cycle is 0.32s; 16 if DRX cycle is 0.64s, otherwise, P1s,max = 8. The UE shall initiate cell selection procedures for the selected PLMN if P1s exceeds P1s,max.

Open issues summary

2.2 Open issues summary

2.2.1 Sub-topic 1-1 - Cell selection in Idle mode for NR-U

Issue 1-1: Time period before cell selection in Idle mode

This issue relates to a discussion that was captured in Issue 3 of R4-2120241, WF on Rel-15 NR RRM core requirements maintenance, and the relationship to requirements with CCA.

- Proposals:

  ○ Proposal 1: RAN4 to introduce the max function for timer T = max(10s, M1*(P1s +K1)*DRX cycles) for NR-U, where

    ■ K1 is 16 if DRX cycle is 0.32s, 8 if DRX cycle is 0.64s, otherwise, K1 = 4.

    ■ P1s is the number of DRX cycles each with at least one SMTC occasion not available during the TPLMN and P1s ≤ P1s,max.

    ■ P1s,max = 32 if DRX cycle is 0.32s; 16 if DRX cycle is 0.64s, otherwise, P1s,max = 8. The UE shall initiate cell selection procedures for the selected PLMN if P1s exceeds P1s,max.

- Recommended WF:

  ○ Please comment on the proposal, and if it is acceptable.

2.3 Companies' views collection for the 1st round

Feedback Form 1: Issue 1-1: Time period before cell selection in Idle mode

2.4 Summary for the 1st round

2.5 Discussion on the 2nd round

3 Topic #2: CRs

3.1 Companies contributions

Table 2: Companies' contributions summary

Tdoc number	Title	Source	Cat	Comments
R4-2203522	Correction of NR-U inter-frequency cell identification and measurements requirements	Nokia, Nokia Shanghai Bell	F	resubmission of R4-2115277
R4-2203523	Correction of NR-U inter-frequency cell identification and measurements requirements	Nokia, Nokia Shanghai Bell	A	resubmission of R4-211326

R4-2204857	Draft CR on maintenance of measurement requirements for NR-U R16	Huawei, Hisilicon	F		resubmission of R4-2115276
R4-2204858	Draft CR on maintenance of measurement requirements for NR-U R17	Huawei, Hisilicon	A		resubmission of R4-2115276
R4-2205076	Draft CR: Clarification of availability of SSB monitoring occasions for RLM and BM	Ericsson	F		resubmission of R4-2115285
R4-2205077	Draft CR: Clarification of availability of SSB monitoring occasions for RLM and BM	Ericsson	A		resubmission of R4-2115285
R4-2205523	draftCR on cell selection in Idle mode for NR-U -r16	Ericsson	F		
R4-2205524	draftCR on cell selection in Idle mode for NR-U -r17	Ericsson	A		
R4-2203524	Correction of inter-frequency measurement procedures TCs under CCA	Nokia, Nokia Shanghai Bell	F		resubmission of R4-2115281
R4-2203525	Correction of inter-frequency measurement procedures TCs under CCA	Nokia, Nokia Shanghai Bell	A		resubmission of R4-2115281
R4-2203526	Removal of TCI state switching TC for unlicensed bands	Nokia, Nokia Shanghai Bell	F		resubmission of R4-2113248

R4-2203527	Removal of TCI state switching TC for unlicensed bands	Nokia, Nokia Shanghai Bell	A	resubmission of R4-2113249
R4-2204859	Draft CR on TC of BFD and CBD for NR-U R16	Huawei, Hisilicon	F	resubmission of R4-2115279
R4-2204860	Draft CR on TC of BFD and CBD for NR-U R17	Huawei, Hisilicon	A	resubmission of R4-2115279
R4-2204861	Draft CR on TC of inter-RAT measurement procedure for NR-U R16	Huawei, Hisilicon	F	resubmission of R4-2115280
R4-2204862	Draft CR on TC of inter-RAT measurement procedure for NR-U R17	Huawei, Hisilicon	A	resubmission of R4-2115280
R4-2204863	Draft CR on TC of inter-RAT SFTD measurement procedure for NR-U R16	Huawei, Hisilicon	F	resubmission of R4-2115282
R4-2204864	Draft CR on TC of inter-RAT SFTD measurement procedure for NR-U R17	Huawei, Hisilicon	A	resubmission of R4-2115282
R4-2204865	Draft CR on TC of intra-frequency measurement accuracy for NR-U R16	Huawei, Hisilicon	F	resubmission of R4-2115283
R4-2204866	Draft CR on TC of intra-frequency measurement accuracy for NR-U R17	Huawei, Hisilicon	A	resubmission of R4-2115283
R4-2204867	Draft CR on TC of RLM for NR-U R16	Huawei, Hisilicon	F	

R4-2204868	Draft CR on TC of RLM for NR-U R17	Huawei, Hisilicon	A	
R4-2205078	Draft CR: Addition of SS-SINR/SS-RSRQ measurement accuracy tests for NR-U	Ericsson	F	resubmission of R4-2115284
R4-2205079	Draft CR: Addition of SS-SINR/SS-RSRQ measurement accuracy tests for NR-U	Ericsson	A	resubmission of R4-2115284
R4-2203845	draft Cat-F CR (R16) to SCell Activation Core NR-U	Qualcomm Incorporated	F	Submitted to AI 5.1.5.3.1
R4-2203846	draft Cat-A CR (R17) to SCell Activation Core NR-U	Qualcomm Incorporated	A	Submitted to AI 5.1.5.3.1
R4-2203849	draft Cat-F CR (R16) to SCell Activation Test Cases NR-U	Qualcomm Incorporated	F	Submitted to AI 5.1.5.3.2
R4-2203850	draft Cat-A CR (R17) to SCell Activation Test Cases NR-U	Qualcomm Incorporated	A	Submitted to AI 5.1.5.3.2
R4-2204552	Draft CR to maintain inter-RAT measurements subject to CCA in TS 36.133	OPPO	F	Submitted to AI 4.1.6 Related to R4-2204308 covered in thread [201]
R4-2204553	Draft CR to maintain inter-RAT measurements subject to CCA in TS 36.133	OPPO	A	Submitted to AI 4.1.6 Related to R4-2204308 covered in thread [201]

3.2 Companies' views collection for the 1st round

3.2.1 Resubmitted documents

During RAN4 #100-e some Draft CRs were endorsed but not captured in the Big CRs R4-2115464 and R4-2115462. Since these draft CR are already endorsed in RAN4 #100-e, it is recommended that we endorse them so that they can be implemented. Please state in the comments if the list of resubmitted CRs can be endorsed. The list of resubmitted Draft CRs can be found in the table that follows, where Cat A mirror CRs are omitted.

Table 3: List of resubmitted Draft CRs which were endorsed during RAN4 #100-e but not implemented.

Tdoc number	Title	Source	Comments
R4-2203522	Correction of NR-U inter-frequency cell identification and measurements requirements	Nokia, Nokia Shanghai Bell	Resubmission of R4-2115277
R4-2204857	Draft CR on maintenance of measurement requirements for NR-U R16	Huawei, Hisilicon	resubmission of R4-2115276
R4-2205076	Draft CR: Clarification of availability of SSB monitoring occasions for RLM and BM	Ericsson	resubmission of R4-2115285
R4-2203524	Correction of inter-frequency measurement procedures TCs under CCA	Nokia, Nokia Shanghai Bell	Resubmission of R4-2115281
R4-2203526	Removal of TCI state switching TC for unlicensed bands	Nokia, Nokia Shanghai Bell	Resubmission of R4-2113248
R4-2204859	Draft CR on TC of BFD and CBD for NR-U R16	Huawei, Hisilicon	resubmission of R4-2115279
R4-2204861	Draft CR on TC of inter-RAT measurement procedure for NR-U R16	Huawei, Hisilicon	resubmission of R4-2115280

R4-2204863	Draft CR on TC of inter-RAT SFTD measurement procedure for NR-U R16	Huawei, Hisilicon	resubmission of R4-2115282
R4-2204865	Draft CR on TC of intra-frequency measurement accuracy for NR-U R16	Huawei, Hisilicon	resubmission of R4-2115283
R4-2204867	Draft CR on TC of RLM for NR-U R16	Huawei, Hisilicon	resubmission of R4-2115278
R4-2205078	Draft CR: Addition of SS-SINR/SS-RSRQ measurement accuracy tests for NR-U	Ericsson	resubmission of R4-2115284

Feedback Form 2: Comments on resubmitted CRs endorsed during RAN4#100-e

3.2.2 Other CRs

This session is dedicated to comments on the CRs that introduce new content.

Feedback Form 3: R4-2205523, draftCR on cell selection in Idle mode for NR-U -r16

Feedback Form 4: R4-2203845, draft Cat-F CR (R16) to SCell Activation Core NR-U, Qualcomm

Feedback Form 5: R4-2203849, draft Cat-F CR (R16) to SCell Activation Test Cases NR-U, Qualcomm

3.3　　　Summary for the 1st round

3.4　　　Discussion on the 2nd round

4　　　Recommendations for Tdocs

4.1　　　1st round

Table 4: New Tdocs

Title	Source	Comments

Table 5: Existing tdocs

Tdoc number	Title	Source	Recommendation	Comments
R4-2205522	Remaining issues on cell selection in Idle mode for NR-U	Ericsson		

R4-2203522	Correction of NR-U inter-frequency cell identification and measurements requirements	Nokia, Nokia Shanghai Bell	
R4-2203523	Correction of NR-U inter-frequency cell identification and measurements requirements	Nokia, Nokia Shanghai Bell	
R4-2204857	Draft CR on maintenance of measurement re-quirements for NR-U R16	Huawei, Hisilicon	
R4-2204858	Draft CR on maintenance of measurement re-quirements for NR-U R17	Huawei, Hisilicon	
R4-2205076	Draft CR: Clarifi-cation of availabil-ity of SSB monitor-ing occasions for RLM and BM	Ericsson	
R4-2205077	Draft CR: Clarifi-cation of availabil-ity of SSB monitor-ing occasions for RLM and BM	Ericsson	
R4-2205523	draftCR on cell selection in Idle mode for NR-U -r16	Ericsson	
R4-2205524	draftCR on cell selection in Idle mode for NR-U -r17	Ericsson	

R4-2203524	Correction of inter-frequency measurement procedures TCs under CCA	Nokia, Nokia Shanghai Bell	
R4-2203525	Correction of inter-frequency measurement procedures TCs under CCA	Nokia, Nokia Shanghai Bell	
R4-2203526	Removal of TCI state switching TC for unlicensed bands	Nokia, Nokia Shanghai Bell	
R4-2203527	Removal of TCI state switching TC for unlicensed bands	Nokia, Nokia Shanghai Bell	
R4-2204859	Draft CR on TC of BFD and CBD for NR-U R16	Huawei, Hisilicon	
R4-2204860	Draft CR on TC of BFD and CBD for NR-U R17	Huawei, Hisilicon	
R4-2204861	Draft CR on TC of inter-RAT measurement procedure for NR-U R16	Huawei, Hisilicon	
R4-2204862	Draft CR on TC of inter-RAT measurement procedure for NR-U R17	Huawei, Hisilicon	
R4-2204863	Draft CR on TC of inter-RAT SFTD measurement procedure for NR-U R16	Huawei, Hisilicon	

R4-2204864	Draft CR on TC of inter-RAT SFTD measurement procedure for NR-U R17	Huawei, Hisilicon		
R4-2204865	Draft CR on TC of intra-frequency measurement accuracy for NR-U R16	Huawei, Hisilicon		
R4-2204866	Draft CR on TC of intra-frequency measurement accuracy for NR-U R17	Huawei, Hisilicon		
R4-2204867	Draft CR on TC of RLM for NR-U R16	Huawei, Hisilicon		
R4-2204868	Draft CR on TC of RLM for NR-U R17	Huawei, Hisilicon		
R4-2205078	Draft CR: Addition of SS-SINR/SS-RSRQ measurement accuracy tests for NR-U	Ericsson		
R4-2205079	Draft CR: Addition of SS-SINR/SS-RSRQ measurement accuracy tests for NR-U	Ericsson		
R4-2203845	draft Cat-F CR (R16) to SCell Activation Core NR-U	Qualcomm Incorporated		
R4-2203846	draft Cat-A CR (R17) to SCell Activation Core NR-U	Qualcomm Incorporated		
R4-2203849	draft Cat-F CR (R16) to SCell Activation Test Cases NR-U	Qualcomm Incorporated		

R4-2203850	draft Cat-A CR (R17) to SCell Activation Test Cases NR-U	Qualcomm Incorporated		

4.2   2nd round