3GPP TSG-RAN WG2 Meeting #127bis R2-2409398

Hefei, China, 14 – 18 October 2024

**Agenda item: 7.25.1**

**Source: Nokia (Rapporteur)**

**Title: Summary of [AT127bis][014][MRMG] Way forward (Nokia)**

**WID/SID: NR\_MG\_enh2-Core - Release 18**

**Document for: Discussion and Decision**

# 1 Introduction

This document is the report of the following email discussion:

* [AT127bis][014][MRMG] Way forward (Nokia)

Intended outcome: Agreeable way forward and CR

Deadline: 10-17-24

# 2 Contact Points

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

|  |  |  |
| --- | --- | --- |
| Company | Name | Email Address |
| Nokia (Rapporteur) | Andrew Lappalainen | andrew.lappalainen@nokia.com |
| MediaTek | Felix Tsai | Chun-fan.tsai@mediatek.com |
| Charter Communications | Phillip Oni | c-phillip.oni@charter.com |
| Samsung | Sangyeob Jung | sy0123.jung@samsung.com |
| Ericsson | Lian Araujo | lian.araujo@ericsson.com |
| CATT | Tangxun | tangxun@catt.cn |
| LGE | SungHoon Jung |  |
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# 3 Discussion

The relevant Tdocs for this offline discussion are given below.

[R2-2407930](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/tsgr2_127bis/docs/R2-2407930.zip) LS on measurements without gap (R4-2413936; contact: Nokia) RAN4 LS in Rel-16 NR\_RRM\_enh-Core To:RAN2

[R2-2408975](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/tsgr2_127bis/docs/R2-2408975.zip) Discussion on early implementation of R18 measurement gap enhancements Nokia, Nokia Shanghai Bell discussion Rel-18 NR\_MG\_enh2-Core

[R2-2408976](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/tsgr2_127bis/docs/R2-2408976.zip) Supporting R17 early implementation of R18 measurement gap enhancements Nokia, Nokia Shanghai Bell, Ericsson, ZTE Corporation, BT Plc., Telecom Italia, CATT CR Rel-18 36.331 18.3.1 5064 - F NR\_MG\_enh2-Core

[R2-2408977](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/tsgr2_127bis/docs/R2-2408977.zip) Supporting R17 early implementation of R18 measurement gap enhancements Nokia, Nokia Shanghai Bell, Ericsson, ZTE Corporation, BT Plc., Telecom Italia, CATT CR Rel-18 38.331 18.3.0 5065 - F NR\_MG\_enh2-Core

[R2-2408212](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/tsgr2_127bis/docs/R2-2408212.zip) Discussion on early implementation of UE capability on measurements gap enhancement (LS R4-2413936) CATT discussion Rel-16 NR\_RRM\_enh-Core

The CRs R2-2408976 and R2-2408977 (Nokia) were drafted based on an earlier (informal) offline discussion held among many companies prior to RAN2#127bis.

R2-2408975 (Nokia) summarized some of the aspects covered in that earlier discussion; however, companies’ comments were not explicitly captured within that Tdoc, so companies may provide further comments on the CRs in this discussion.

R2-2408212 (CATT) analyzed the interoperability issues related to early implementation of the Rel-18 measurement gap features in Rel-17 according to the LS, and also provided a TP for the CRs.

## 3.1 TS 36.331 CR (R2-2408976)

The change introduced in R2-2408976 is to update Table G-1 of TS 36.331 as shown below.

Table G-1: List of CRs Containing Early Implementable Features and Corrections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TDoc Number (RP-xxxxxx): CR Title | CR Number(s) | CR Revision Number(s) | Earliest Implementable Release | Additional Information |
| … | … | … | … | … |
| RP-233883: Protection against improper reselection to GERAN/UTRAN [RESELECTION\_TO GSM\_AND\_UTRAN] | 4971 | 1 | Release 15 |  |
| RP-233915: Introduction of measurements without gap with interruption | 4929 | 6 | Release 17 |  |
| NOTE 1: In case a CR has mirror CR(s), the mirror CR(s) are not listed.  NOTE 2: The Additional Information column briefly describes the content of a CR in cases where the CR title may not be descriptive enough. If the CR title is descriptive enough, then the Additional Information column may be left blank. | | | | |

**Question 1**: Do you agree to the CR in R2-2408976 and/or have any further comments on the CR?

|  |  |  |
| --- | --- | --- |
| Answers to Question 1 | | |
| Company | Yes/No | Further Comments |
| Nokia | Yes |  |
| BT | Yes |  |
| MediaTek | Yes |  |
| Charter | Yes |  |
| Samsung | Yes |  |
| Ericsson | Yes |  |
| LGE | Yes |  |
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**Summary 1**: All companies agree to the CR in R2-2408976.

**Proposal 1**: CR 5064 in R2-2408976 is in principle agreed.

## 3.2 TS 38.331 CR (R2-2408977)

The change introduced in R2-2408977 is to update Table C-1 of TS 38.331 as shown below.

Table C-1: List of CRs Containing Early Implementable Features and Corrections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TDoc Number (RP-xxxxxx): CR Title | CR Number(s) | CR Revision Number(s) | Earliest Implementable Release | Additional Information |
| … | … | … | … | … |
| RP-241544: Clarification RLM/BFD relaxation and short DRX | 4771 | 2 | Release 17 |  |
| RP-233915: Introduction of further measurement gap enhancements | 4063 | 6 | Release 17 | Early implementation part is referring to all aspects other than effective measurement window.  UE supporting early implementation of CR 4063 shall also support early implementation of CR 4510 as specified in Table C-1. |
| RP-233940: Introduction of Rel-18 UE capabilities | 4510 | - | Release 17 | Early implementation part is referring to the aspect covered by:  - R2-2311897: Introduction of UE capabilities for further measurement gap enhancements  UE supporting early implementation of CR 4510 shall also support early implementation of CR 4063 as specified in Table C-1. |

**Question 2**: Do you agree to the CR in R2-2408977 and/or have any further comments on the CR?

|  |  |  |
| --- | --- | --- |
| Answers to Question 2 | | |
| Company | Yes/No | Further Comments |
| Nokia | Yes |  |
| BT | Yes |  |
| MediaTek | No | We think it is sufficient to mention CR 4063 in the list, which is the main change for this feature. In CR 4063, the coversheet also indicating corresponding capability CRs in 38.331 CR 4286 (endorsed in R2-2311897) and 38.306 CR 0906. There is no need to list two items with complex dependence description. |
| Charter | Yes with comment | Agreed with MediaTek that CR 4063 is sufficient. |
| Samsung | Yes with comment | Without listing two CRs in the list, can we always assume that UE shall support both CRs? I.e. if we mention CR 4063 only in the list, isn’t it possible that the UE only supports CR 4510 (though it is not really practical). Hence, there seems to be no harm to list both. |
| Ericsson | Yes | While we think it is ok to keep both CRs on the list to make it clear, we are also fine to keep only the CR 4063. |
| CATT | Yes |  |
| LGE | Yes |  |
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**Summary 2**: MediaTek has concern that listing both CRs 4063 and 4510 in the annex with their dependencies would set an unnecessarily complex precedent for future cases where features are made early implementable.

After further discussion, it was suggested that we can clarify the relationship to the capability CR endorsed in R2-2311897 in the “additional information” column for CR 4063; then there would be no need to list CR 4510 in another row and no need explain the dependencies between the CR 4063 and 4510. After further checking with several companies, this seems acceptable.

The proposed modification to the 38.331 CR 5065 is given below. Rapporteur believes the CR can be agreed in principle with these revisions.

Table C-1: List of CRs Containing Early Implementable Features and Corrections

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TDoc Number (RP-xxxxxx): CR Title | CR Number(s) | CR Revision Number(s) | Earliest Implementable Release | Additional Information |
| … | … | … | … | … |
| RP-241544: Clarification RLM/BFD relaxation and short DRX | 4771 | 2 | Release 17 |  |
| RP-233915: Introduction of further measurement gap enhancements | 4063 | 6 | Release 17 | Early implementation part is referring to all aspects other than effective measurement window. Early implementation also includes the corresponding capability of R2-2311897 (within CR 4510 of RP-233940). |

**Proposal 2**: Revise 38.331 CR 5065 as follows:

- Row containing CR 4063: add “Early implementation also includes the corresponding capability of R2-2311897 (within CR 4510 of RP-233940).” and delete “UE supporting early implementation of CR 4063 shall also support…”

- Delete row containing CR 4510.

- Update summary of changes in the CR cover sheet based on above.

**Proposal 3**: With the revisions of Proposal 2, CR 5065 can be agreed in principle.

## 3.3 Proposals from R2-2408212

In R2-2408212, CATT analyzed the interoperability issues as given below:

In our view, if only the R17 network is implemented supporting this feature and the UE is not, since UE will not report the assoicated capability, then the network will not enable this feature for the UE and not request UE to report its requirement on interruption, so no interoperability problems are foreseen. If only the UE is implemented supporting this feature and the network is not, if UE report this capability to network, the network will not recoganize this capability and not request UE reporting its requirement on interruption, so no interoperability problems are foreseen as well. Therefore, it can be seen that there is no interoperability problem if it is early implemented from R17. As the magic sentence is usually added in the CR cover sheet, but the corresponding CRs had been approved before and there is no chance to make change in their cover sheets, we just propose to make this clarification in RAN2 chair note.

**Proposal 1: RAN2 to confirm that the early implementation of Rel-18 feature nr-NeedForInterruptionReport-r18 or interRAT-NeedForInterruptionNR-r18 from Rel-17 will not cause interoperability issues.**

Considering the CRs R2-2408976 and R2-2408977 discussed above would have the limitation mentioned by CATT regarding the lack of magic sentence, Proposal 1 from CATT’s Tdoc is relevant.

**Question 3**: Do you agree that Proposal 1 from R2-2408212 (CATT) should be captured in the chair notes?

|  |  |  |
| --- | --- | --- |
| Answers to Question 3 | | |
| Company | Yes/No | Further Comments |
| Nokia | Yes |  |
| BT | Yes |  |
| MediaTek | Yes/No | We understand this is the definition early implementation, so it has been agreed by RAN4. But fine to confirm in Chair notes. |
| Charter | Yes | The description clearly discuss that there will be no interoperability issues, so, we agreed. |
| Samsung | Yes | Since we skip the magic sentence in R2-2408977, there is no harm to capture above in the minutes. |
| Ericsson | Yes | Same view as Mediatek. |
| CATT | Yes |  |
| LGE |  |  |
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**Summary 3**: Some companies think it is redundant to capture Proposal 1 from R2-2408212 in the chair notes; however, no company is against it. Therefore the proposal can be confirmed.

**Proposal 4**: RAN2 confirms that the early implementation of Rel-18 feature nr-NeedForInterruptionReport-r18 or interRAT-NeedForInterruptionNR-r18 from Rel-17 will not cause interoperability issues.

In the rapporteur’s view, it is unnecessary to further discuss the TP from R2-2408212, since it was quite similar to the CRs R2-2408976 and R2-2408977 (and since CATT already co-signed those CRs).

## 3.4 Other issues

Rapporteur believes there would be no other points to discuss but companies may provide any other comments below.

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| --- | --- |
| Company | Further Comments |
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**Summary 4**: No other issued raised by companies.

# 4 Conclusion

Based on the outcome of this discussion, rapporteur proposes the following:

**Proposal 1**: CR 5064 in R2-2408976 is in principle agreed.

**Proposal 2**: Revise 38.331 CR 5065 as follows:

- Row containing CR 4063: add “Early implementation also includes the corresponding capability of R2-2311897 (within CR 4510 of RP-233940).” and delete “UE supporting early implementation of CR 4063 shall also support…”

- Delete row containing CR 4510.

- Update summary of changes in the CR cover sheet based on above.

**Proposal 3**: With the revisions of Proposal 2, CR 5065 can be agreed in principle.

**Proposal 4**: RAN2 confirms that the early implementation of Rel-18 feature nr-NeedForInterruptionReport-r18 or interRAT-NeedForInterruptionNR-r18 from Rel-17 will not cause interoperability issues.