3GPP TSG-RAN WG2 Meeting #118 Electronic [R2-220xxxx](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-220xxxx.zip)

Elbonia, 09 – 20 May 2022

**Agenda item: 6.24.1**

**Source: Nokia (Rapporteur)**

**Title: Report of [AT118-e][039][NR17] n77 Canada (Nokia)**

**WID/SID: TEI17 - Release 17**

**Document for: Discussion and Decision**

# 1 Introduction

This document is the report of the following email discussion:

n77 for Canada

offline, CB online W2 if needed

* [AT118-e][039][NR17] n77 Canada (Nokia)

Scope: Treat [R2-2204459](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2204459.zip), [R2-2205393](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205393.zip), [R2-2205394](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205394.zip), [R2-2205395](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205395.zip), [R2-2205396](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205396.zip), [R2-2205450](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205450.zip), Ph1 Determine agreeable parts, Ph2 agree CRs

Intended outcome: Report, Agreed CRs

Deadline: Schedule 1

[R2-2204459](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2204459.zip) LS On Canada band n77 (R4-2206568; contact: Telus) RAN4 LS in Rel-17 To:RAN2 Cc:RAN

[R2-2205393](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205393.zip) Distinguishing support of band n77 restrictions in Canada Nokia, Nokia Shanghai Bell, Ericsson, Huawei, Telus, Bell Canada CR Rel-17 36.306 17.0.0 1847 - C TEI17

[R2-2205394](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205394.zip) Distinguishing support of band n77 restrictions in Canada Nokia, Nokia Shanghai Bell, Ericsson, Huawei, Telus, Bell Canada CR Rel-17 36.331 17.0.0 4799 - C TEI17

[R2-2205395](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205395.zip) Distinguishing support of band n77 restrictions in Canada Nokia, Nokia Shanghai Bell, Ericsson, Huawei, Telus, Bell Canada CR Rel-17 38.306 17.0.0 0714 - C TEI17

[R2-2205396](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205396.zip) Distinguishing support of band n77 restrictions in Canada Nokia, Nokia Shanghai Bell, Ericsson, Huawei, Telus, Bell Canada CR Rel-17 38.331 17.0.0 3078 - C TEI17

[R2-2205450](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205450.zip) Discussion on n77 issues Xiaomi Communications discussion Rel-17 TEI17

# 2 Contact Points

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

|  |  |  |
| --- | --- | --- |
| Company | Name | Email Address |
| Nokia (Rapporteur) | Tero Henttonen | tero.henttonen@nokia.com |
| Huawei, HiSilicon | Yang Zhao | zhaoyang@huawei.com |
| Apple | Naveen Palle | naveen.palle@apple.com |
| ZTE | Wenting Li | Li.wenting@zte.com.cn |
| Samsung | Jaehyuk JANG | jack.jang@samsung.com |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# 3 Discussion

This discussion was triggered by the document [R2-2204459](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2204459.zip), requesting to provide similar signallling for the band n77 in Canada as was provided earlier for band n77 in the US. This was also discusssed in RAN#95e with the following decisions (with yellow highlighting showing the decisions impacting current RAN2 meeting and cyan highlighting showing how RAN plans to progress with the general issue):

|  |
| --- |
| **RP-221008** **Moderator's summary for discussion [95e-39-R17-TEIs]** ***RAN4 Chair (Huawei)***  Replaces  RP-220899  conclusion: proposals #1, #2, #3 of RP-221008 are endorsed    Solution specific to Canada n77 band:  Proposal #1: RAN tasks RAN4 and RAN2 to finalize the work to address Canada n77 issue based on RP-220038 in TEI17 and provide CRs for approval in RAN#96.    n77-like issues:  Proposal #2: It is recommended to have a two-quarter RAN-level SI to systematically study the regulatory compliance issues for regional frequency ranges on large global bands  - Investigate and identify the root cause of this issue as the first step  - If needed (pending outcome of the bullet above), provide a general solution for regulatory compliance issues for regional frequency ranges on large global bands considering  - Introduction of new bands  - Solutions without introduction of new bands, i.e., reusing the existing band numbers with appropriate signaling to differentiate UE support  - The UE should be ensured to support the full frequency range on its supported bands, and the fragmentation of market should be avoided  NOTE: The SI is expected to be submitted in RAN#96    Extension of switching to multiple TAG for UL CA:  Proposal #3: To support Tx switching with multiple TAG on 2 bands, it is proposed to add the following note in Rel-18 WI on multi-carrier enhancements in RAN#96, and consider release independence for the switching band pairs  Note: Extension of TX switching for 2 bands to multiple TAG configurations is included in the scope. The work is limited to RAN4. |

The documents [R2-2205393](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205393.zip), [R2-2205394](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205394.zip), [R2-2205395](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205395.zip), [R2-2205396](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205396.zip) take a very concrete approach to this by having the exact same approach for CRs as was done for the US (with slight differences in the cover page), i.e. one capability bit and a new NS-value. In contrast, the proposals in [R2-2205450](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205450.zip) propose more than one capability bit (e.g. two bits or a bitmap) and some UAC enhancements for cell barring, which seems to be related to the SI that . To start with, it seems the question is whether anything else than what was done for US is needed, after which it's easier to progress with the CR details.

### Phase 1: CR approach and inter-operability issues

**Question 1**: Which approach to do in RAN2#118e: Alt.1) The US-like approach (as per [R2-2205393](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205393.zip), [R2-2205394](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205394.zip), [R2-2205395](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205395.zip), [R2-2205396](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205396.zip)) or Alt.2) more extensive approach (as per [R2-2205450](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205450.zip))?

|  |  |  |
| --- | --- | --- |
| Answers to Question 1 | | |
| Company | Alt.1/Alt.2 | Technical Arguments |
| Huawei, HiSilicon | Alt1 | We think Alt1 is simple and already sufficient, we do not think anything else is needed. |
| Ericsson | Alt1 | We think RAN2 already got tasked to do Alt 1 |
| Apple | Alt1 | US n77 like approach is simpler, and extensible without many changes. |
| ZTE | Alt1 |  |
| Samsung | Alt1 |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Summary 1**: TBD.

**Proposal 1**: TBD.

Whichever approach is selected, CRs are needed. As the CRs in [R2-2205393](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205393.zip), [R2-2205394](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205394.zip), [R2-2205395](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205395.zip), [R2-2205396](https://www.3gpp.org/ftp/TSG_RAN/WG2_RL2/TSGR2_118-e/Docs/R2-2205396.zip) likely cover all the impacted specifications, moderator would propose to start discusssing the exact contents of those already in the first phase to better converge on how to write the cover page an inter-operability impacts: Since the NOTE 12 in 38.101-1 doesn't apply for band n77 in Canada, the situation is slightly different than for US, but in practice moderator assumes much the same assumptions apply. Therefore, whichever solution is adopted, it's good to discuss what the cover page inter-operability statement should say for these CRs.

**Question 2**: Are there any inter-operability issues for UEs supporting band n77 from these RAN2 CRs? If so, what should be written to the cover page?

|  |  |  |
| --- | --- | --- |
| Answers to Question 2 | | |
| Company | Yes/No | Technical Arguments |
| Huawei, HiSilicon |  | We think the current analysis in the coversheet looks good. If to discuss details, we understand:   * If the network is implemented according to the CR and the UE is not, we understand there is no inter-operability issue as the network is upgraded and can identify these UEs are legacy UEs without reporting the new capability. * If the UE is implemented according to the CR and the network is not, there may be a grey area. It depends on how the legacy network handled the frequency range now, if the network assumes 3450 – 3650GHz, there is no inter-operability issue; if the network assumes the UE can be operated in any range defined in n77, there could be a chance the configuration is not supported by the UE. |
| Ericsson | No | With Alt1 (NS-value + capability bit), legacy UEs will be barred. Only new UEs which support the NS-value and the capability bit are able to connect. |
| Apple | No | US n77 based approach also takes care of this. |
| ZTE | No | Similar view as Apple |
| Samsung | No |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Summary 2**: TBD.

**Proposal 2**: TBD.

### Phase 2: CR details

Based on Phase 1, (TBA)

**Question 3**: TBA

|  |  |  |
| --- | --- | --- |
| Answers to Question 3 | | |
| Company | Yes/No | Technical Arguments |
| Huawei, HiSilicon | Yes | We support the CRs in general.  However regarding the field name, we still feel the name “*extendedBand-n77-Canada*” is not good, as we never added a specific country name in the field. Although in the field description we have to mention the specific region on this specific issue, it is still preferable to avoid using it in the field name. If in the future there are similar cases emerging in other regions, do we also introduce specific region name as well? Perhaps we could ask MCC for guidance. To us the naming like *extendedBand-n77-2* could be a more generic way. |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Summary 3**: TBD.

**Proposal 3**: TBD.

**Question 4**: TBA

|  |  |  |
| --- | --- | --- |
| Answers to Question 4 | | |
| Company | Yes/No | Technical Arguments |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Summary 4**: TBD.

**Proposal 4**: TBD.

# 4 Conclusion

TBD.