3GPP TSG-RAN WG2 Meeting #104 R2-18xxxxx

Spokane, USA, 12 – 16 November, 2018

Agenda Item: 10.x.x.x

Source: Qualcomm Incorporated

Title: Summary of email discussion [103bis#14][NR] Channel Bandwidth Signalling (Cell Accessibility)

Document for: Discussion, Decision

# Introduction

In RAN2#103bis meeting, it was discussed how the UE determines the cell is accessible.

[R2-1814227](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_103bis/Docs/R2-1814227.zip) Channel Bandwidth Signalling Qualcomm Incorporated

- Nokia thinks this list is only use to determine where the PRB grid applies, but the UE just uses the BW from the BWP information.

- Ericsson understand that this list was added by RAN4 to be used to determine the carrier bandwidth and the value can be same or different from the BW in the BWP.

- Huawei understand that RAN4 LS asked us to indicate the channel BW to the UE and should not be per SCS. The transmission BW is per SCS.

- Ericsson under the scs-SpecificCarrierList is only for the purpose of defining the channel BW.

Agreements

1: To add UE specific field configuring RAN4 defined channel bandwidth per subcarrier spacing in ServingCellConfig.

2: To specify that the UE considers the cell is accessible if the UE supports the:

- bandwidth signalled by pdcch-ConfigSIB1 in MIB

FFS the bandwidth of at least one SCS in the scs-SpecificCarrierList in SIB1

FFS bandwidth signalled by locationAndBandwidth in SIB1

3 If the cell is not accessible according to 2 above then the UE treats the cell as barred.

The discussion was motivated by the principle of NR that the operation bandwidth in connected mode is flexible and future extensible [1]. This would mean that it is not guaranteed all UEs support the operational bandwidth the serving cell may support.

This email discussion aims to conclude on the FFS points mentioned in the chairman’s meeting notes above.

# Possible solutions

The following two possible conditions for cell accessibility check were discussed.

**Accessibility check #1:** The UE considers the cell is accessible if the UE supports the bandwidth of at least one SCS in the *scs-SpecificCarrierList* in SIB1.

[Email discussion rapporteur’s remark] This may be beneficial for the network supporting the basic BWP configuration option #1 ([R2-1810943](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_AHs/2018_07_NR/Docs/R2-1810943.zip)). The network may configure additional BWP based on the UE capability later. It should be noted however, the network cannot configure additional BWP beyond the BWP of CORESET#0 in Msg4, because the network does not exactly know which BW and SCS pair the UE supports until it receives the UE capability.

**Accessibility check #2:** The UE considers the cell is accessible if the UE supports the bandwidth signalled by *locationAndBandwidth* in SIB1.

[Email discussion rapporteur’s remark] This looks beneficial for the network supporting the basic BWP configuration option #2 ([R2-1810943](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_AHs/2018_07_NR/Docs/R2-1810943.zip)). It was already agreed in RAN2#103bis that the UE applies the configured *locationAndBandwidth* upon the reception of Msg4.

# Discussion

* 1. Accessibility check #1

Companies are asked to provide their view.

|  |  |  |
| --- | --- | --- |
| Company | Support /  Not Support | Comment |
| Nokia, Nokia Shanghai Bell | Depends | We think this is not a sufficient condition: UE needs to support at least the SCS for initial BWP.  For example, suppose cell indicates SCS= 15/30 kHz in *scs-SpecificCarrierList* and initial BWP is using 15 kHz. If UE supports only 30 kHz, it would be allowed to access the cell based on this condition but could not complete initial access. |
|  |  |  |

* 1. Accessibility check #2

Companies are asked to provide their view.

|  |  |  |
| --- | --- | --- |
| Company | Support /  Not Support | Comment |
| Nokia, Nokia Shanghai Bell | Support | We think this is the minimum condition required for UE to camp on the cell. UE needs to support the SIB1 configuration (especially the UL BWP) for completing initial access. |
|  |  |  |

* 1. Other solution / Additional comment

Companies are asked to provide other solution, if any.

|  |  |
| --- | --- |
| Company | Comment |
|  |  |

# Conclusion

# Reference

[1] [R2-1813541](http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_103bis/Docs/R2-1813541.zip) LS on RAN4 design on channel bandwidth (R4-1811905) RAN4