3GPP TSG-RAN4 Meeting #95-e R4-2008484

Electronic meeting, 25th May – 5th June 2020

**Title:** [DRAFT] LS on Frequency separation class for DL-only spectrum for FR2

**Response to:** -

**Release:** Rel-16

**Work Item:** NR\_RF\_FR2\_req\_enh

**Source:** Apple Inc. [to be changed to TSG RAN WG4]

**To:** TSG RAN WG2

**Cc:** -

**Contact Person:**

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**Attachments:** None

**1. Overall Description:**

RAN4 has enhanced the frequency separation (Fs) to up to 2400 MHz as shown in Table 1. It is important to emphasize that the frequency separation (Fs) larger than 1400 MHz apply only to downlink frequency separation.

Table 1: Frequency separation classes for non-contiguous intra-band operation

|  |  |
| --- | --- |
| Frequency separation class | Max. allowed Frequency separation (Fs) |
| I | 800 MHz |
| II | 1200 MHz |
| III | 1400 MHz |
| IV | 1000 MHz |
| V | 1600 MHz |
| VI | 1800 MHz |
| VII | 2000 MHz |
| VIII | 2200 MHz |
| IX | 2400 MHz |
| NOTE 1: Fs values larger than 1400 MHz apply only to downlink frequency separation. | |

Additionally, RAN4 has agreed on the introduction of frequency separation class for DL-only spectrum (Fsd).

For the implementation of the signalling, we kindly ask to take into account:

* The signalling of DL-only spectrum (Fsd) is optional.
* DL-only spectrum is available for configuration of only DL CCs and not UL CCs.
* The spectrum covered by the DL-only frequency separation extends on one-side of the bidirectional spectrum in a contiguous manner with no frequency gap between the two.
* The bidirectional spectrum is defined as the UL/DL common spectrum in which the UE supports the configuration of uplink or downlink CCs and is signalled by UL and DL frequency separation from Rel-15.
* The combined downlink spectrum (DL Fs + Fsd) cannot exceed 2400 MHz.
* The signalling shall be implemented in addition to the signalling of frequency separation (Fs) from Rel-15.

RAN4 considers the frequency separation classes for DL-only spectrum as provided in the Table 2 below.

Table 2: Frequency separation classes for DL-only spectrum

|  |  |
| --- | --- |
| Frequency separation class for DL-only spectrum | Max. allowed Frequency separation (Fsd) |
| I | 200 MHz |
| II | 400 MHz |
| III | 600 MHz |
| IV | 800 MHz |
| V | 1000 MHz |
| VI | 1200 MHz |

Additionally, it is important to emphasize that RAN4 also agrees that UE reports Fsd parameter only if it relies on DL-only spectrum, it means whether the UE indicating the Fsd capability to the network relies on some RF implementation precondition. RAN4 would like to ask RAN2 question on the newly introduced signalling Fsd:

**Question: Since whether the UE indicating the Fsd capability to the network relies on some RF implementation precondition, the Fsd is only reported by the UEs which supports the DL-only enhancement. However for other UEs, there is no need to indicate the Fsd to network. Considering the situation, is there any need to indicate some other information besides Fsd from RAN2 signalling design perspective?**

**2. Actions:**

RAN4 kindly asks RAN2 to take into account the parameters above for the signalling implementation and asks RAN2 feedback on the above question.

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**3. Date of Next TSG-RAN WG4 Meetings:**

TSG RAN4 Meeting #96 24th – 28th August 2020 Electronic meeting

TSG RAN4 Meeting #97 12th – 16th Oct 2020 Electronic meeting