3GPP TSG-RAN WG4 Meeting # 99-e DRAFT R4-2107879

Electronic Meeting, May 19-27, 2021

Title: LS on RAN4 recommendation for the 52.6 - 71 GHz frequency range designation

Response to: -

Release: Rel-17

Work Item: NR\_ext\_to\_71GHz-Core

Source: 3GPP RAN WG4

To: 3GPP TSG RAN

Cc: 3GPP RAN WG1, 3GPP RAN WG2, 3GPP RAN WG5

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Attachments: -

**1. Overall Description:**

3GPP RAN WG4 would like to inform 3GPP TSG RAN on the progress of the discussion on 52.6 - 71 GHz frequency range designation.

During the discussion in NR\_ext\_to\_71GHz-Core work item, RAN WG4 was investigating various options for the 52.6 - 71 GHz frequency range designation, including such options as:

* Option 1: Introduce FR2-1 (24.25 – 52.6 GHz) and FR2-2 (52.6 – 71 GHz)

Within option 1, indicate on the preferred approach:

* + “FR2-1 and FR2-2”, or
	+ “FR2.1 and FR2.2”
* Option 2: Introduce FR2-2 (52.6 – 71 GHz) in addition to FR2 (24.25 – 52.6 GHz)
* Option 3: Define FR3
* Option 4:
	+ All UE RF/demod requirements defined as function of band, BW, PC or band combo within FR2;
	+ BS requirements can be updated to cater for an extension of FR2 to include 52.6 – 71 GHz;
	+ All RRM requirements for higher SCS applicable for 52.6 – 71 GHz can be defined as function of SCS within FR2;
* Option 5:
	+ Keep FR2 definition as it is
	+ Introduce FR2x (52.6 – 71 GHz) and FR2-comb (24.25 – 71 GHz)
* Except option 3, all above proposals intend not to introduce FR3.

During the discussion on 52.6 - 71 GHz frequency range designation, pros and cons of the above options were analysed, including RAN4 specification impact considerations. Additionally, RAN5 decision on the introduction of FR2a / FR2b / FR2c terms for the MU and TT purposes was also recognized.

Based on the RAN WG4 discussion, the following is provided as recommendation to 3GPP TSG RAN:

1. To drop “FR3” terminology from consideration on the 52.6 - 71 GHz frequency range designation.
2. Terminology for BS operating in 52.6 - 71 GHz frequency range to be reused from TS 38.104 specification, i.e. *BS type 2-O*.

Furthermore, RAN WG4 would like to inform that the discussion on the terminology for the NR operation in 52.6 - 71 GHz frequency range will continue in RAN WG4, including pros and cons analyses of concepts based on Option 1, Option 2 and Option 4, as listed below:

* Option 1:
	+ Introduce FR2-1 (or FR2.1) for 24.25 – 52.6 GHz, and FR2-2 (or FR2.2) for 52.6 – 71 GHz
	+ The above two ranges to be introduced under the FR2 common range

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|  | Option 1 |
| Frequency range designation | Corresponding frequency range  |
| FR1 | 410 MHz – 7125 MHz |
| FR2 |  FR2-1 (or FR2.1): 24250 MHz – 52600 MHz |
| FR2-2 (or FR2.2): 52600 MHz – 71000 MHz |
| NOTE: Whenever the FR2 is referred, both FR2.1 and FR2.2 frequency sub-ranges shall be considered, unless otherwise stated. |

* Option 4:
	+ All UE RF/demodulation requirements defined as function of band, BW, PC or band combo within FR2;
	+ BS requirements can be updated to cater for an extension of FR2 to include 52.6 – 71 GHz;
	+ All RRM requirements for higher SCS applicable for 52.6 – 71 GHz can be defined as function of SCS within FR2;
* Option 6: in addition to the existing FR2:
	+ Introduce FR2-2 (or FR2x) for 52.6 – 71 GHz, ~~in addition to the existing FR2~~
	+ Introduce ~~FR2x (52.6 – 71 GHz) and~~ FR2-comb for 24.25 – 71 GHz~~, in addition to the existing FR2~~

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|  | Option 6 |
| Frequency range designation | Corresponding frequency range  |
| FR1 | 410 MHz – 7125 MHz |
| FR2-comb | FR2: 24250 MHz – 52600 MHz |
| FR2-2 (or FR2x): 52600 MHz – 71000 MHz |

**2. Actions:**

**To 3GPP TSG RAN:**

**ACTION:** 3GPP RAN WG4 kindly asks 3GPP TSG RAN to take the above recommendation into account.

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

RAN WG4 Meeting #100-e 16th – 27th August 2021 Online meeting

RAN WG4 Meeting #101-e 1st – 12th November 2021 Online meeting