**3GPP TSG-RAN Meeting #104 RP-241648**

**Shanghai, China, 17 June - 20 June, 2024** (revision of RP-241620)

**Source: MidWave Wireless**

**Title: Introduction of the 1.4 GHz Band**

**Document for: Approval**

**Agenda Item: 9.1.5**

3GPP™ Work Item Description

For guidance, see [3GPP Working Procedures](http://www.3gpp.org/specifications-groups/working-procedures), article 39; and [3GPP TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm).  
Information about Work Items can be found at <http://www.3gpp.org/Work-Items>

Title: Introduction of the 1.4 GHz Band

Acronym: 1400\_Band\_NR

Unique identifier:

NOTE: For new WIs/SIs leave the Unique identifier empty or you can make a proposal for an Acronym.

If this is a RAN WID including Core and Perf. part, then Title, Acronym and Unique identifier refer to the feature WI.

Please tick (X) the applicable box(es) in the table below:

Either:

|  |  |
| --- | --- |
| **This WID includes a Core part** | **X** |
| **This WID includes a Performance part** | **X** |

or:

|  |  |  |
| --- | --- | --- |
| **This WID includes a Testing part** | |  |
| **and it addresses the following 3GPP work area:** | **Radio Access** |  |
| **Core Network** |  |
| **Services** |  |

1 Impacts

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Affects:** | UICC apps | ME | AN | CN | Others (specify) |
| **Yes** |  | X | X |  |  |
| **No** | X |  |  | X | X |
| **Don't know** |  |  |  |  |  |

2 Classification of the Work Item and linked work items

2.1 Primary classification

This work item is a …

|  |  |
| --- | --- |
|  | Feature |
| X | Building Block |
|  | *Work Task* |
|  | Study Item |

NOTE: Normally, Core/Perf./Testing parts in RAN WIDs are Building Blocks. Only if they are under an SA or CT umbrella, we define them as work tasks. If you are in doubt, please contact MCC.

2.2 Parent and child Work Items

|  |  |  |
| --- | --- | --- |
| Parent and child Work Items | | |
| Unique ID | Title | Nature of relationship |
|  | Introduction of the 1.4 GHz Band | Parent WID |

NOTE: RAN agreed some time ago, that it describes the feature WI + Core/Perf. part WI or Testing part WI in one WID. Therefore the table above should just include the feature WI Unique ID and title and Nature of relationship is "parent WID".

2.3 Other related Work Items and dependencies

|  |  |  |
| --- | --- | --- |
| Other related Work Items (if any) | | |
| Unique ID | Title | Nature of relationship |
|  |  | *{optional free text}* |

NOTE: Also related or dependent WIs in other TSGs should be indicated.

3 Justification

The FCC has recently authorized flexible commercial use of the 1.4 GHz band in the United States. The commercial 1.4 GHz band is divided into two segments. The lower band segment spans 1390 MHz - 1395 MHz. The upper band segment spans 1432 - 1435 MHz.

Because of the flexible regulatory treatment applied to the 1.4 GHz band, either band segment may be used for UL or high-power DL operation. Thus, the band is unique in its ability to support TDD, FDD, SDL and SUL modes of operation.

To facilitate 1.4 GHz ecosystem development, the present WI proposes a FDD band spanning 1390 MHz - 1395 MHz for UL and 1432 - 1435 MHz for DL.

4 Objective

4.1 Objective of SI or Core part WI or Testing part WI

The objective of this work item is to:

* Specify a new NR FDD operating band for the US 1.4 GHz allocation spanning 1390-1395 MHz for UL and 1432-1435 MHz for DL.
* Specify band numbering and RF characteristics of the 1.4 GHz band.
* Specify 3 MHz channel BW for DL and UL in the 1.4 GHz band, with 15 KHz SCS.
* Note: This NR band will be introduced in a REL-independent way starting from REL-15.
* .

4.2 Objective of Performance part WI

NOTE: Leave empty if the WI proposal does not contain a RAN performance part.

Define performance requirements for a new NR FDD operating band for the US 1.4 GHz allocation.

4.3 RAN time budget request (not applicable to RAN5 WIs/SIs)

NOTE: For all new RAN related WIs/SIs which are not led by RAN WG5 the WI/SI rapporteur has to fill out the attached Excel table to request time budgets for corresponding RAN WG meetings.  
The Excel table has to be filled out for all affected RAN WGs and up to the target date of the WI/SI.  
One time unit (TU) corresponds to ~ 2 hours in the meeting.  
If no TU is needed leave the field empty otherwise enter a number >0 in the field.

For revisions of already approved WI/SI descriptions: Please remove the Excel table from the WID/SID's zip file. The time budgets are already recorded. If you want to modify them, then this has to be done via the status report and not via a revised WID/SID.

If this WID is covering Core and Performance part, then please fill out one line for each part in the attached Excel table.

**additional comments to the time budget request in the attached Excel table:**

5 Expected Output and Time scale

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **New specifications** *{One line per specification. Create/delete lines as needed}* | | | | | |
| Type | Series | Title | For info  at TSG# | For approval at TSG# | Remarks |
| Internal TR | TR 38.xxx | 1.4 GHz Band | RAN#107 | RAN#107 | Rapporteur:  John Dooley,  MidWave Wireless |

NOTE: If this is a RAN WID including Core and Perf. part, then all new Core part specs have to be listed first and then all new Perf. part specs. Indicate "Core part" or "Perf. part" under Remarks for each spec.  
By default a new specs can only be new for one of both parts.

|  |  |  |  |
| --- | --- | --- | --- |
| **Impacted existing TS/TR** *{One line per specification. Create/delete lines as needed}* | | | |
| TS/TR No. | Description of change | Target completion plenary# | Remarks |
| 38.101-1 | NR; UE Radio transmission and reception | RAN#107 | Core UE part |
| 38.133 | NR; Requirements for support of radio resource management | RAN#107 | Core UE part |
| 38.104 | NR; BS Radio transmission and reception | RAN#107 | Core BS part |
| 36.104 | Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) radio transmission and reception | RAN#107 | Core BS part |
| 37.104 | Multi-Standard Radio (MSR) Base Station (BS) radio transmission and reception | RAN#107 | Core BS part |
| 37.105 | Active Antenna System (AAS) Base Station (BS) transmission and reception | RAN#107 | Core BS part |
| 38.141-1 | NR; Base Station (BS) conformance testing Part 1: Conducted conformance testing | RAN#107 | Perf. BS part |
| 38.141-2 | NR; Base Station (BS) conformance testing Part 2: Radiated conformance testing | RAN#107 | Perf. BS part |
| 36.141 | Evolved Universal Terrestrial Radio Access (E-UTRA); Base Station (BS) conformance testing | RAN#107 | Perf. BS part |
| 37.141 | Multi-Standard Radio (MSR) Base Station (BS) conformance testing | RAN#107 | Perf. BS part |
| 37.145-1 | Active Antenna System (AAS) Base Station (BS) conformance testing; Part 1: conducted conformance testing | RAN#107 | Perf. BS part |
| 37.145-2 | Active Antenna System (AAS) Base Station (BS) conformance testing; Part 2: radiated conformance testing | RAN#107 | Perf. BS part |
| 38.101-5 | NR; User Equipment (UE) radio transmission and reception; Part 5: Satellite access Radio Frequency (RF) and performance requirements | RAN#107 | Core part |
| 38.106 | NR repeater radio transmission and reception | RAN#107 | Core part |
| 38.174 | NR; Integrated Access and Backhaul (IAB) radio transmission and reception | RAN#107 | Core part |
| 38.115-1 | NR; Repeater conformance testing - Part 1: Conducted conformance testing | RAN#107 | Perf part |
| 38.176-1 | NR; Integrated Access and Backhaul (IAB) conformance testing; Part 1: Conducted conformance testing | RAN#107 | Perf part |
| 38.176-2 | NR; Integrated Access and Backhaul (IAB) conformance testing; Part 2: Radiated conformance testing | RAN#107 | Perf part |
| 38.307 | NR; Requirements on User Equipments (UEs) supporting a release-independent frequency band. | RAN#107 | Perf part |

NOTE: If this is a RAN WID including Core and Perf. part, then all new Core part specs have to be listed first and then all new Perf. part specs. Indicate "Core part" or "Perf. part" under Remarks for each spec.  
If an existing spec is affected by both (Core part and Perf. part), then it has to be listed twice with appropriate approval dates.

6 Work item Rapporteur(s)

John Dooley, MidWave Wireless, [john.dooley@midwavewireless.com](mailto:john.dooley@midwavewireless.com)

7 Work item leadership

Primary: RAN WG4

8 Aspects that involve other WGs

None

NOTE: For RAN WIDs: Section 8 applies only to WGs outside of TSG RAN because RAN WG aspects have to be covered in section 4.

9 Supporting Individual Members

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| --- |
| Supporting IM name |
| MidWave |
| Nokia |
| Mavenir |
| Globalstar |
| SDI Squared |
|  |
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|  |