**3GPP TSG-RAN WG4 Meeting #102-e (Draft)R4-2207235**

**Electronic Meeting, 21st Feb 2022 – 3rd Mar 2022**

**Agenda item:** 10.9.4.3

**Source:** Nokia, Nokia Shanghai Bell

**Title:** WF on BS demodulation requirement for FR2 HST

**Document for:** Approval

# Background

* The following WFs were approved previously
	+ R4-2106102, WF for FR2 HST Demodulation, RAN4#98-bis, Samsung
	+ R4-2017828, WF on NR support for HST in FR2”, Samsung. RAN4#97-e meeting
	+ R4-2103240, WF on Deployment Scenario and UE RF Requirement for FR2 HST”, Samsung. RAN4#98-e meeting
	+ R4-2106100, WF on FR2 HST Deployment scenario Analysis, Samsung, RAN4#98b-e meeting
	+ R4-2106101, WF on Channel Modelling for FR2 HST, Nokia, RAN4#98b-e meeting
	+ R4-2106102, WF on Demodulation requirement for FR2 HST”, Samsung, RAN4#98b-e meeting
	+ R4-2108860, WF on FR2 HST Deployment Scenario Analysis, Samsung, RAN4#99-e meeting
	+ R4-2108637, WF for FR2 HST Demodulation, RAN4#99, Samsung
	+ R4-2115726, WF on FR2 HST demodulation, RAN4#100, Samsung
	+ R4-2120703, WF on BS demodulation requirement for FR2 HST, RAN4#101, Nokia, Nokia Shanghai Bell, Samsung.
	+ R4-2203006, WF on BS demodulation requirement for FR2 HST, RAN4#101b, Nokia, Nokia Shanghai Bell,
* Corresponding Email summary in RAN4#102 -e
	+ R4-2207434 Email discussion summary for [102-e][321] NR\_HST\_FR2\_Demod\_Part2.

# WF on topic#2: PUSCH requirements

## Test applicability rules and manufacturer declarations

Issue 2-1-1: Test applicability

Agreement:

FR2 HST PUSCH requirement test shall apply only for the additional DM-RS position declared to be supported.
If more than one DMRS configuration is declared to be supported, the test shall be done for the minimum number of DMRS supported.

Issue 2-1-2: Wording of manufacturer declaration on HST FR2 DM-RS support

Agreement:

Adopt the following manufacturer declaration for different additional DM-RS position support for FR2 HST.

Additional DM-RS position for FR2 high speed train:
Declaration of supported additional DM-RS position(s) for FR2 high speed train scenario for PUSCH and UL timing adjustment, i.e., pos0, pos1, pos2, or any combination.

## MCS selection

Issue 2-2-1: MCS

Agreement (GtW):

MCS 19

## Requirement selection

Issue 2-3-1: Requirement selection

Agreement (GtW):

Apply standard requirement selection to (post-FFT) results with outlier selection, as in Rel-15 [R4-1904713] [R4-19004714]. Choose ideal result alignment threshold as [2.5dB], and impairment threshold as [4dB].

It’s encouraged that companies can further update their results in future meetings to specify final performance requirements.

# CR split (informative)

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| --- | --- | --- |
| **Section number** | **Section title** | **Responsible company** |
| **TS 38.104** |
|  | *Big CR* | Samsung |
| 11 | Radiated performance requirements |
| 11.2 | Performance requirements for PUSCH |
| 11.2.2 | Requirements for BS type 2-O |
| *11.2.2.x* | *Requirements for PUSCH for high speed train* | *Intel* |
| *11.2.2.y* | *Requirements for UL timing adjustment* | *CATT* |
| 11.4 | Performance requirements for PRACH |
| 11.4.2 | Requirements for BS type 2-O |
| 11.4.2.2 | PRACH detection requirements |
| *11.4.2.2.x* | *Minimum requirements for high speed train* | *Huawei* |
| *Annex A* | *Reference measurement channels* | *Intel* |
| *Annex G.3* | *High speed train condition* | *Nokia* |
| *Annex G.4* | *Moving propagation conditions* | *CATT* |
| **TS 38.141-2** |
|  | *Big CR*  | *Nokia* |
| *4.6* | *Manufacturer's declarations* | *Samsung, Nokia* |
| 8 | Radiated performance requirements |
| 8.1.2 | Applicability rule |
| *8.1.2.4* | *Applicability of PUSCH for high speed train performance requirements* | *Huawei* |
| 8.2 | OTA performance requirements for PUSCH |
| *8.2.4* | *Performance requirements for PUSCH for high speed train* | *Ericsson, Samsung* |
| *8.2.5* | *Performance requirements for UL timing adjustment* | *CATT* |
| 8.4 | OTA performance requirements for PRACH |
| 8.4.1 | PRACH false alarm probability and missed detection |
| *8.4.1.6* | *Test requirement for high speed train* | *Huawei* |
| *Annex A* | *Reference measurement channels* | *Intel* |
| *Annex E* | *OTA measurement system set-up* | *Ericsson* |
| *Annex J.3*  | *High speed train condition* | *Nokia* |
| *Annex J.4* | *Moving propagation conditions* | *CATT* |