3GPP TSG-RAN WG4 Meeting #99-e R4-21xxxx

Electronic Meeting, May 19th – 27th, 2021

**Agenda item:** **6.3.6.3**

**Source: Intel Corporation**

**Title: Way forward on IAB-MT applicability rules drafting in conformance specifications**

**Document for:** **Discussion**

# Way Forward

In RAN4 #98-bis-e meeting demodulation performance requirements for IAB-MT were extensively discussed and all agreements and remaining open issues are captured in[1]. In this paper we share our view on remaining open issues for IAB-MT performance requirements definition.

**Demodulation requirements (TS 38.176-1)**

### 8.2.1 Demodulation performance requirements

Text omitted (CR R4-2110724)

Clause indices should be further revised to adopt adding of new sections.

#### 8.2.1.1 Applicability of requirements

#### 8.2.1.2 Applicability of requirements for optional IAB-MT features

Placeholder for possible introduction in next releases

#### 8.2.1.3 Applicability of requirements for mandatory IAB-MT features with capability signalling

The performance requirements in Table 8.2.1.3-1 shall apply for IAB-MT which support mandatory IAB-MT features with capability signalling only.

Table 8.2.1.3-1: Requirements applicability for mandatory features with IAB-MT capability signalling

|  |  |  |  |
| --- | --- | --- | --- |
| IAB-MT feature/capability [14] | Test type | Test list | Applicability notes |
| 256QAM modulation scheme for PDSCH for FR1 (*pdsch-256QAM-FR1*) | FR1 TDD | PDSCH | Clause [8.2.2.1.5.1] (Test 1) |  |
| Supported maximum number of ports across all configured NZP-CSI-RS resources per CC (*maxConfigNumberPortsAcrossNZP-CSI-RS-PerCC*) | FR1 TDD | PDSCH | Clause [8.2.2.1.5.1] (Test 4, 5) | The requirements apply only in case the number of NZP-CSI-RS ports in the test case satisfies UE capability on maximum number of NZP-CSI-RS ports |
| Supported maximum number of PDSCH MIMO layers (*maxNumberMIMO-LayersPDSCH*) | FR1 TDD | PDSCH | Clause [8.2.2.1.5.1] (Test 3, 4, 5) | The requirements apply only in case the PDSCH MIMO rank in the test case does not exceed UE PDSCH MIMO layers capability |

**CSI reporting requirements (TS 38.176-1)**

### 8.2.3 CSI reporting requirements

Text omitted (CR R4-2110544)

Clause indices should be further revised to adopt adding of new sections.

#### 8.2.3.1 Applicability of requirements

Unless otherwise stated, the minimum performance requirements in Clause [8.2.3.2] and [8.2.3.3] shall apply only, if PMI/RI reporting is declared to be supported (see [D.XXX in table x.x-x]).

#### 8.2.3.2 Applicability of requirements for optional IAB-MT features

Placeholder for possible introduction in next releases

#### 8.2.3.3 Applicability of requirements for mandatory IAB-MT features with capability signalling

The performance requirements in Table 8.2.3.3-1 shall apply for IAB-MT which support mandatory IAB-MT features with capability signalling only.

Table 8.2.3.3-1: Requirements applicability for mandatory features with IAB-MT capability signalling

|  |  |  |  |
| --- | --- | --- | --- |
| IAB-MT feature/capability [14] | Test type | Test list | Applicability notes |
| Supported maximum number of PDSCH MIMO layers (*maxNumberMIMO-LayersPDSCH*) | FR1 TDD | CQI | Clause [8.2.3.1] | The requirements apply only in case the PDSCH MIMO rank in the test case does not exceed UE PDSCH MIMO layers capability |
| PMI | Clause [8.2.3.2] |
| RI | Clause [8.2.3.3] |
| Supported maximum number of ports across all configured NZP-CSI-RS resources per CC (*maxConfigNumberPortsAcrossNZP-CSI-RS-PerCC*) | FR1 TDD | PMI | Clause [8.2.3.2] | The requirements apply only in case the number of NZP-CSI-RS ports in the test case satisfies UE capability on maximum number of NZP-CSI-RS ports |
| RI | Clause [8.2.3.3] (Test 4) |

**Demodulation requirements (TS 38.176-2)**

### 8.2.2 Demodulation performance requirements

Text omitted (CR R4-2110546)

Clause indices should be further revised to adopt adding of new sections.

#### 8.2.2.1 Applicability of requirements

#### 8.2.1.2 Applicability of requirements for optional IAB-MT features

Placeholder for possible introduction in next releases

#### 8.2.2.3 Applicability of requirements for mandatory IAB-MT features with capability signalling

The performance requirements in Table 8.2.2.3-1 shall apply for IAB-MT which support mandatory IAB-MT features with capability signalling only.

Table 8.2.2.3-1: Requirements applicability for mandatory features with IAB-MT capability signalling

|  |  |  |  |
| --- | --- | --- | --- |
| IAB-MT feature/capability [14] | Test type | Test list | Applicability notes |
| Supported maximum number of PDSCH MIMO layers (*maxNumberMIMO-LayersPDSCH)* | FR2 TDD | PDSCH | Clause [8.2.2.1.5.1] (Test 2-1)Clause [8.2.2.1.5.2] (Tests from 2-1, 2-2, 2-3) | The requirements apply only in case the PDSCH MIMO rank in the test case does not exceed UE PDSCH MIMO layers capability |
| Support of PT-RS with one antenna port for DL reception (*onePortsPTRS*) | FR2 TDD | PDSCH | Clause [8.2.2.1] |  |

**CSI reporting requirements (TS 38.176-2)**

### 8.2.3 CSI reporting requirements

Text omitted (CR R4-2110721

Clause indices should be further revised to adopt adding of new sections.

#### 8.2.3.1 Applicability of requirements

Unless otherwise stated, the minimum performance requirements in Clause 8.2.3.2 and 8.2.3.3 shall apply only, if PMI/RI reporting is declared to be supported (see [D.XXX in table x.x-x]).

#### 8.2.3.2 Applicability of requirements for optional IAB-MT features

Placeholder for possible introduction in next releases

#### 8.2.3.3 Applicability of requirements for mandatory IAB-MT features with capability signalling

The performance requirements in Table 8.2.3.3-1 shall apply for IAB-MT which support mandatory IAB-MT features with capability signalling only.

Table 8.2.3.3-1: Requirements applicability for mandatory features with IAB-MT capability signalling

|  |  |  |  |
| --- | --- | --- | --- |
| IAB-MT feature/capability [14] | Test type | Test list | Applicability notes |
| Supported maximum number of PDSCH MIMO layers (*maxNumberMIMO-LayersPDSCH)* | FR2 TDD | CQI | Clause [8.2.3.1] | The requirements apply only in case the PDSCH MIMO rank in the test case does not exceed UE PDSCH MIMO layers capability |
| RI | Clause [8.2.3.3] |
| Support of 1 port PTRS (*onePortsPTRS*) | FR2 TDD | CQI | Clause [8.2.3.1] |  |
| PMI | Clause [8.2.3.2] |
| RI | Clause 8.2.3.3 |

# References

1. R4-21xxxxx “Email discussion summary for [99-e][325] NR\_IAB\_Demod”, Nokia, Nokia Shanghai Bell, RAN #99-e, May 2021