TSG-RAN Working Group 4 (Radio) meeting #95-ER4-2008786

Electronic Meeting, May25th – June 5 th 2020

**Source:** Ericsson

**Title:** WF on IAB-MT In-band selectivity and blocking

**Agenda item:** 6.5.2.2.2

**Document for:** Approval

# Introduction

At RAN4#94-E meeting a way-forward for IAB-MT In-Band Blocking and blocking was created based on the discussion [1].

# Way-Forward

~~There is strong dependency on this WF and the WF on REFSENS, so right now, there are three options :~~

~~Possibility 1: If only OTA sensitivity is defined for 1-O, only EISminSENS will be used for ACS and IBB~~

~~Possibility 2: If only OTA REFSENS is defined for 1-O, , Only EIS\_REFSENS will be used for ACS and IBB~~

~~Possibility 3: If both OTA REFSENS and OTA sensitivity are defined for 1-O,~~

This WF takes consideration of the WF on REFSENS and lists the options that could be make later when REFSENS is agreed on IAB-MT type 1-O. This will apply both WA IAB-MT and LA IAB-MT.

~~The Below WF options for IAB-MT Type 1-O will be decided according to above options once WF of REFSENS is agreed.~~

Agreement:

Both EIS\_minSENS and EIS\_REFSENS will be used for IBB, but only both EIS\_minSENS is used for ACS, this is the same as BS ACS type 1-O

For interference signal:

if the interferer signal characteristic ( bandwidth , # of RB) is changed, then the interferer offset also needs to be re-evaluated, both in FR1 and FR2

1. ACS and IBB of FR1 WA IAB-MT Type 1-H:

|  |  |  |  |
| --- | --- | --- | --- |
| WA IAB-MT | Wanted signal level[dBm] | Interference signal level [dBm] | **Interference signal bandwidth and offset** |
| ACS(45dB) | REFSENS+6dB | -52 | CP-OFDM, FFS on others |
| In-band blocking | REFSENS+6dB | -43 | CP-OFDM, FFS on others |

1. ACS of FR1 WA IAB-MT Type 1-O:

|  |  |  |  |
| --- | --- | --- | --- |
| WA IAB-MT | Wanted signal level[dBm] | Interference signal level [dBm] | Interference signal bandwidth and offset |
| ACS (45dB) | EISminSENS +6dB | -52 – ΔminSENS | CP-OFDM, FFS on others |

1. IBB of FR1 WA IAB-MT Type 1-O:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| WA IAB-MT |  | Wanted signal level[dBm] | Interference signal level [dBm] | Interference signal bandwidth and offset |
| In-band blocking | ~~Possibility 1~~ | ~~EIS~~~~REFSENS~~ ~~+6dB~~ | ~~-43 - Δ~~~~OTAREFSENS~~ | CP-OFDM, CP-OFDM, FFS on others |
| ~~Possibility 2~~ | ~~EISminSENS + 6 dB~~ | ~~-43 – ΔminSENS~~ |
| Possibility 3 | EISREFSENS +6dB | -43 - ΔOTAREFSENS |
| EISminSENS + 6 dB | -43 – ΔminSENS |

1. FR1 LA IAB-MT Type 1-H with below candidate options

|  |  |  |  |
| --- | --- | --- | --- |
| LA IAB-MT | | Wanted signal level[dBm] | Interference signal level [dBm] |
| Option 1: ACS 33dB | ACS | REFSENS+14dB | Case 1: REFSENS+45.5  Necessity on case 2 is FFS since the dynamic range for FR1 IAB-MT is open too. |
| In-band blocking | REFSENS+6dB | Case 1:-56  Case 2:-44 |
| Option 2: ACS 45dB | ACS(45dB) | REFSENS+6dB | -44 |
| In-band blocking | REFSENS+6dB | -35 if REFSENS = -93.7dBm |

Note: in option 1 for LA IAB-MT is based on the NF of 9/10dB, if the NF is agreed as 13dB the interference level should be adjusted accordingly.

1. ACS of FR1 LA IAB-MT Type 1-O:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| WA IAB-MT |  | Wanted signal level[dBm] | Interference signal level [dBm] | Interference signal bandwidth and offset |
| Option 1: ACS 33dB ACS(33dB) | ~~Possibility 1/3~~ | EISminSENS +14dB | EISminSENS +45.5 – ΔminSENS | CP-OFDM, other FFS |
| ~~Possibility 2~~ | ~~EISREFSENS +14dB~~ | ~~EISREFSENS +45.5 - ΔOTAREFSENS~~ |
| Option 2: ACS 45dB ACS(45dB) | ~~Possibility 1~~ | ~~EISminSENS +6dB~~ | ~~-44 – ΔminSENS~~ | CP-OFDM, other FFS |
| ~~Possibility 2~~ | ~~EISREFSENS +6dB~~ | ~~-44 - ΔOTAREFSENS~~ |
| Option 3 | EISminSENS +6dB | -44 – ΔminSENS |

1. IBB of FR1 LA IAB-MT Type 1-O:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| WA IAB-MT |  | Wanted signal level[dBm] | Interference signal level [dBm] | Interference signal bandwidth and offset |
| Option 1: | ~~Possibility 1~~ | ~~EIS~~~~REFSENS~~ ~~+6dB~~ | ~~-56 - Δ~~~~OTAREFSENS~~  ~~-44 - Δ~~~~OTAREFSENS~~ | CP-OFDM, Others FFS |
| ~~Possibility 2~~ | ~~EISminSENS + 6 dB~~ | ~~-56 – ΔminSENS~~  ~~-44 – ΔminSENS~~ |
| ~~Possibility 3~~ | EISREFSENS +6dB | -56 - ΔOTAREFSENS  -44 - ΔOTAREFSENS |
| EISminSENS + 6 dB | -56 – ΔminSENS  -44 – ΔminSENS |
| Option 2: In-band blocking | ~~Possibility 1~~ | ~~EIS~~~~REFSENS~~ ~~+6dB~~ | ~~-35 - Δ~~~~OTAREFSENS~~ | CP-OFDM, others FFS |
| ~~Possibility 2~~ | ~~EISminSENS + 6 dB~~ | ~~-35 – ΔminSENS~~ |
| ~~Possibility 3~~ | EISREFSENS +6dB | -35 - ΔOTAREFSENS |
| EISminSENS + 6 dB | -35 – ΔminSENS |

# References

[1] R4-2008699, Email discussion summary for [95e][310] NR\_IAB\_RF\_Part\_3, Samsung