**3GPP TSG-RAN WG4 Meeting #114bis R4-2504181**

**Wuhan, China, 7-11 April, 2025**

**Source:** Qualcomm Incorporated

**Title:** Simulation Results for SCM for demod

**Agenda item:** 7.16.2

**Document for:** Information

1. Introduction

In the previous RAN4 Meeting #114, we contributed to the SCM Study Item sharing considerations on the Study Item on the use spatial channel model for demodulation performance requirements.

According to the outcome of the discussion during the meeting and based on the approved Way Forward, we provide in this contribution simulation results for information.

**Proposal 1: RAN4 to consider the simulation results included in this document for information.**

# Simulation Results for PDSCH 4L, 4x4

The simulation in this section assume Random PMI.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SNR** | **A1** | **A2** | **A3** | **AAV(1,1)** |
| **0** | 0.0100 | 0.0300 | 0.0100 |
| **1** | 0.0400 | 0.0700 | 0.0200 |
| **2** | 0.0900 | 0.1200 | 0.0500 |
| **3** | 0.1600 | 0.1800 | 0.1400 |
| **4** | 0.2300 | 0.2500 | 0.2400 |
| **5** | 0.2900 | 0.3100 | 0.2900 |
| **6** | 0.3300 | 0.3600 | 0.3300 |
| **7** | 0.3700 | 0.4000 | 0.3700 |
| **8** | 0.4100 | 0.4500 | 0.4300 |
| **9** | 0.4400 | 0.4900 | 0.4700 |
| **10** | 0.4700 | 0.5400 | 0.4900 |
| **11** | 0.4800 | 0.5800 | 0.5000 |
| **12** | 0.5200 | 0.6600 | 0.5300 |
| **13** | 0.5900 | 0.7400 | 0.6400 |
| **14** | 0.6900 | 0.8200 | 0.8000 |
| **15** | 0.7800 | 0.8700 | 0.9000 |
| **16** | 0.8700 | 0.9000 | 0.9500 |
| **17** | 0.9200 | 0.9500 | 0.9800 |
| **18** | 0.9500 | 0.9800 | 1.0000 |
| **19** | 0.9800 | 1.0000 |  |
| **20** | 1.0000 |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SNR** | **A1** | **A2** | **A3** | **AAV(8,1)** |
| **0** | 0.0000 | 0.0100 | 0.0000 |
| **1** | 0.0200 | 0.0300 | 0.0100 |
| **2** | 0.0500 | 0.0800 | 0.0500 |
| **3** | 0.1200 | 0.1700 | 0.1300 |
| **4** | 0.2000 | 0.2500 | 0.2300 |
| **5** | 0.2600 | 0.3000 | 0.2800 |
| **6** | 0.3000 | 0.3400 | 0.3200 |
| **7** | 0.3400 | 0.3700 | 0.3600 |
| **8** | 0.3700 | 0.4200 | 0.4000 |
| **9** | 0.4100 | 0.4500 | 0.4400 |
| **10** | 0.4400 | 0.4900 | 0.4700 |
| **11** | 0.4700 | 0.5200 | 0.4800 |
| **12** | 0.4800 | 0.5600 | 0.5100 |
| **13** | 0.5000 | 0.6100 | 0.5600 |
| **14** | 0.5300 | 0.6700 | 0.6300 |
| **15** | 0.5700 | 0.7400 | 0.7300 |
| **16** | 0.6200 | 0.8100 | 0.8100 |
| **17** | 0.6800 | 0.8700 | 0.8800 |
| **18** | 0.7500 | 0.9000 | 0.9500 |
| **19** | 0.8200 | 0.9500 | 0.9800 |
| **20** | 0.8700 | 0.9800 | 1.0000 |
| **21** | 0.9100 | 0.9800 |  |
| **22** | 0.9500 | 1.0000 |  |
| **23** | 0.9800 |  |  |
| **24** | 0.9800 |  |  |
| **25** | 1.0000 |  |  |

# Simulation Results for SU PMI 8x4, 4L with Type I CSF

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SNR** | **A1** | **A2** | **A3** | **AAV(1,1)** |
| **-5** | 0.0000 | 0.0000 | 0.0000 |
| **-4** | 0.0000 | 0.0000 | 0.0000 |
| **-3** | 0.0100 | 0.0100 | 0.0000 |
| **-2** | 0.0300 | 0.0500 | 0.0200 |
| **-1** | 0.0800 | 0.1100 | 0.0700 |
| **0** | 0.1800 | 0.1800 | 0.1700 |
| **1** | 0.2400 | 0.2600 | 0.2500 |
| **2** | 0.3000 | 0.3200 | 0.3200 |
| **3** | 0.3600 | 0.3700 | 0.3600 |
| **4** | 0.4000 | 0.4200 | 0.4100 |
| **5** | 0.4600 | 0.4700 | 0.4600 |
| **6** | 0.5000 | 0.5200 | 0.5000 |
| **7** | 0.5600 | 0.5800 | 0.5400 |
| **8** | 0.6000 | 0.6400 | 0.6000 |
| **9** | 0.6800 | 0.7000 | 0.7100 |
| **10** | 0.7500 | 0.7700 | 0.8000 |
| **11** | 0.8100 | 0.8300 | 0.8800 |
| **12** | 0.8700 | 0.8700 | 0.9300 |
| **13** | 0.9200 | 0.9000 | 0.9800 |
| **14** | 0.9400 | 0.9400 | 1.0000 |
| **15** | 0.9500 | 0.9800 |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SNR** | **A1** | **A2** | **A3** | **AAV(8,1)** |
| **-5** | 0.0000 | 0.0000 | 0.0000 |
| **-4** | 0.0000 | 0.0000 | 0.0000 |
| **-3** | 0.0100 | 0.0000 | 0.0000 |
| **-2** | 0.0400 | 0.0300 | 0.0100 |
| **-1** | 0.0900 | 0.1100 | 0.0800 |
| **0** | 0.1700 | 0.2100 | 0.1900 |
| **1** | 0.2600 | 0.2700 | 0.2800 |
| **2** | 0.3200 | 0.3300 | 0.3200 |
| **3** | 0.3700 | 0.3800 | 0.3700 |
| **4** | 0.4200 | 0.4200 | 0.4200 |
| **5** | 0.4700 | 0.4800 | 0.4600 |
| **6** | 0.5100 | 0.5200 | 0.4900 |
| **7** | 0.5700 | 0.5600 | 0.5300 |
| **8** | 0.6200 | 0.6200 | 0.5900 |
| **9** | 0.6800 | 0.6800 | 0.6700 |
| **10** | 0.7400 | 0.7600 | 0.7600 |
| **11** | 0.7900 | 0.8100 | 0.8500 |
| **12** | 0.8400 | 0.8500 | 0.9100 |
| **13** | 0.8800 | 0.9100 | 0.9500 |
| **14** | 0.9200 | 0.9500 | 1.0000 |
| **15** | 0.9500 | 0.9800 |  |