**3GPP TSG-RAN WG2 #126 *R2-24xxxxx***

**Fukuoka Japan May 20th – 24th, 2024**

Agenda Item: 8.3.2.1

Source: OPPO(Rapporteur)

Title: Summary of [POST126][031][AIMob] Simulations (OPPO)

Document for: Discussion, Decision

# Introduction

This the summary of following post email discussion:

* [POST126][031][AIMob] Simulations (Oppo)

Intended outcome: Agree to evaluation documentation and small simulation related FFS (needed to start simulation evaluation for August meeting)

Endorse Skeleton TR

Deadline: short

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| --- | --- | --- |
| Company | Delegate | Email address |
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# Discussion

## Simulation report template

It is expected simulation result on RRM measurement use case will be submitted to RAN2#127 meeting for further evaluation after the summer. In order to document simulation results reported by each company, a report template is necessary to be aligned among companies. In RAN2#126, contributions [1] and [2] proposed their understanding of how such a template can be. Table 1 lists the parameters based on agreements made so far.

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| --- | --- | --- | --- |
| Report parameters | | **Company A** | **……** |
| Reported simulation assumptions | UE trajectory option (option 1,2,3 in[4]) |  |  |
| UE trajectory boundary processing option (option 1,2,3 in[4]) |  |  |
| UE speed (30,60,90,120 Km/h) |  |  |
| Inter-frequency correlation assumption in general (yes or no)(Note 1) |  |  |
| Measurement reduction rate(50%,…Note2) |  |  |
| Prediction window (?ms,… Note 3) |  |  |
| Any other parameters (Note 4) |  |  |
| Data Size (Sample number) | Training/validity |  |  |
| Testing |  |  |
| AI/ML model  input/output | Model input (Note 5) |  |  |
| Model output |  |  |
| AI/ML model description | Model type (e.g., LSTM, CNN, transformer …) |  |  |
| Model complexity in a number of parameters(M) |  |  |
| Model complexity in model size (e.g. Mbyte) |  |  |
| Computational complexity [FLOPs] |  |  |
| Metrics | Average L3 cell level RSRP difference (dBm) |  |  |
| Other optional KPIs (e.g., L1 beam level RSRP difference,) |  |  |
| ... | ... |  |  |

Table 1

*Note1: Only applicable for FR1 to FR1 inter-frequency prediction. It should be N/A, if not applicable*

*Note2: Only applicable for intra-frequency prediction, either temporal domain case B or spatial domain. It should be N/A, if not applicable*

*Note3: Only applicable for intra-frequency temporal domain case A. It should be N/A, if not applicable*

*Note4: This could be any other parameter e.g.,* *Inter-frequency shadow fading correction (e.g. full, partial, no),* *Number of configured beams, observation window(ms) etc.*

*Note5: Apart from input of RRM sub case 1,2,3, any other input e.g. L1 filtering for L1 beam measurement, UE location are also captured here*

For prediction window, companies seem to be fine to align at least one value. And up to submitted simulation result, it is open for modification in RAN2#127 meeting. During [AT126][030][AIMob] discussion people seems to agree with rapporteur that it should be multiple times of sample period. Considering the FR1 and FR2 channel will be quite different and agreed sample period is also different, we’d better assume different prediction window for them also.

Question 1: What value(s) do you recommend for prediction window for RRM measurement use case for FR1 and FR2 respectively?

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| Company | comments |
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Question 2: Apart from parameters listed in Table 1, what other parameter(s) need be reported? If yes, please provide detail parameter, corresponding description and justification.

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| Company | comments |
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Question 3: For parameters in Table 1, any further comments?

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| Company | comments |
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## RRC parameters

Few parameters are left not agreed during [AT126][030][AIMob] discussion as following:

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| --- | --- |
| L3 filtering parameter for both FR1 and FR2 | Recommended value |
| FR1 FilterCoefficient | 4 |
| FR2 FilterCoefficient(Note 6) | 4 |

Table 2

|  |  |
| --- | --- |
| Measurement period | Recommended value |
| FR1 to FR1 intra-frequency w.o. gap | 200ms |
| FR1 to FR1 inter-frequency with gap | 120ms |
| FR2 to FR2 intra-frequency w.o. gap | 480ms |

Table 3

|  |  |
| --- | --- |
| Consolidation parameter | Recommended value |
| nrofSS-BlocksToAverage for FR1 | 1 |
| nrofSS-BlocksToAverage for FR2 | 3 |
| absThreshSS-BlocksConsolidation for FR1(Note 7) | -156dbm[2] |
| absThreshSS-BlocksConsolidation for FR2(Note 7) | -156dbm[2] |

Table 4

*Note 6,7: These two parameters are added by rapporteur in case they could be different between FR1 and FR2*

*Note 7: the recommended value from [2] is just for discussion purpose.*

If you have better recommendation, please provide your value(s):

|  |  |
| --- | --- |
| Company | Recommended values |
|  |  |
|  |  |

## TR skeleton

Please provide your comments directly on TR skeleton [3] in the email discussion folder **without** changing original text.

# Reference

1. R2-2404485, Simulation based evaluation of AIML aided mobility, Ericsson
2. R2-2404713, Discussion on simulation assumption of RRM measurement, OPPO
3. R2-2405693 TR 38.744 Skeleton of AI mobility NR OPPO draft TR Rel-19 38.744 0.0.1 FS\_NR\_AIML\_Mob
4. R2-2405941 Summary of [POST125bis][021][AIML mobility ] Simulation assumptions and methodology OPPO discussion Rel-19 FS\_NR\_AIML\_Mob Late