

3GPP TSG RAN#102

Edinburgh, Scotland, December 11-15, 2023

Agenda Item: 9.1.1.1

RP-233790

# Views on Rel-19 AI/ML for Air Interface



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# Summary of Rel-18 SI



- In Rel-18 , following agendas were finalized for Study Item:
  - 9.2.1 General aspects of AI/ML Framework
  - 9.2.2 AI/ ML for CSI Feedback Enhancement
    - 9.2.2.1 Evaluation on AI/ML for CSI Feedback Enhancement
    - 9.2.2.2 Other Aspects on AI/ML for CSI Feedback Enhancement
  - 9.2.3 AI/ML for Beam Management
    - 9.2.3.1 Evaluation on AI/ML for Beam Management
    - 9.2.3.2 Other Aspects on AI/ML for Beam Management
  - 9.2.4 AI/ML for Positioning Accuracy Enhancement
    - 9.2.4.1 Evaluation on AI/ML for positioning Accuracy Enhancement
    - 9.2.4.2 Other Aspects on AI/ML for positioning Accuracy Enhancement

# General Aspects of AI/ML Framework



- **Proposal 1:** Following aspects need to be further studied followed by normative work in general aspects:
  - Model identification types and their procedures:
    - Working procedures and applicability
    - Various Specification impacts for Model ID based LCM
  - Discussion on model delivery/transfer and its specification impact
  - Ensuring consistency between model training and inference phase at least for:
    - NW-side additional conditions - There was discussion, but no consensus is achieved.
    - UE-sided additional conditions - This is not discussed and needs further discussion.

# CSI Enhancement use cases



- Based on the status of SI up to RAN1#115, there is no consensus in RAN1 for recommending CSI Compression and CSI prediction use-cases for normative work.
- The reasons for lack of consensus are:
  - Trade-off between performance and complexity/overhead
  - Issues related to inter-vendor training collaboration for CSI compression use case

# CSI Enhancement use cases



- **Proposal 2:** For Release-19, CSI compression should be further continued as study item with following study aspects:
  - Evaluations on performance gain for cell/scenario specific model, comparison with Rel-17 and Rel-18 codebooks
  - Study performance gain vs complexity tradeoff and the specification impact for other use-cases like spatial-frequency-temporal CSI compression, and joint compression-prediction use cases
  - Potential specification impact of different training collaboration types, data collection, model delivery, dataset delivery, model identification procedures, model pairing, monitoring inactive models, etc.
- **Proposal 3:** For Release-19, CSI prediction should be further continued as study item with following study aspects:
  - Study feasibility and remaining aspects of specification impact for data collection, inference and performance monitoring of CSI prediction models



Thank You!