



3GPP TSG RAN R19 Workshop
Taipei, June 15 - 16, 2023

Agenda Item: 5

Document for: Discussion & Decision



中国移动
China Mobile



RWS-230422

AI/ML for NG-RAN in Rel-19

CMCC

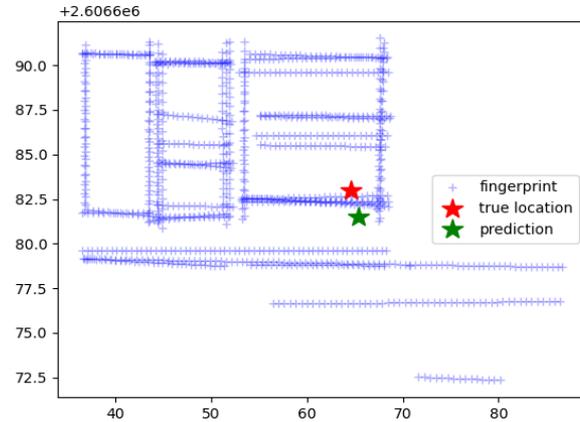
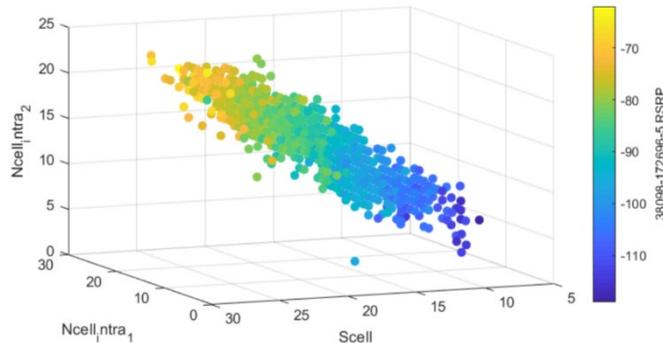
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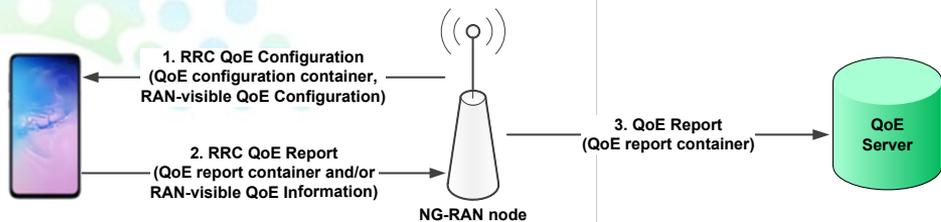




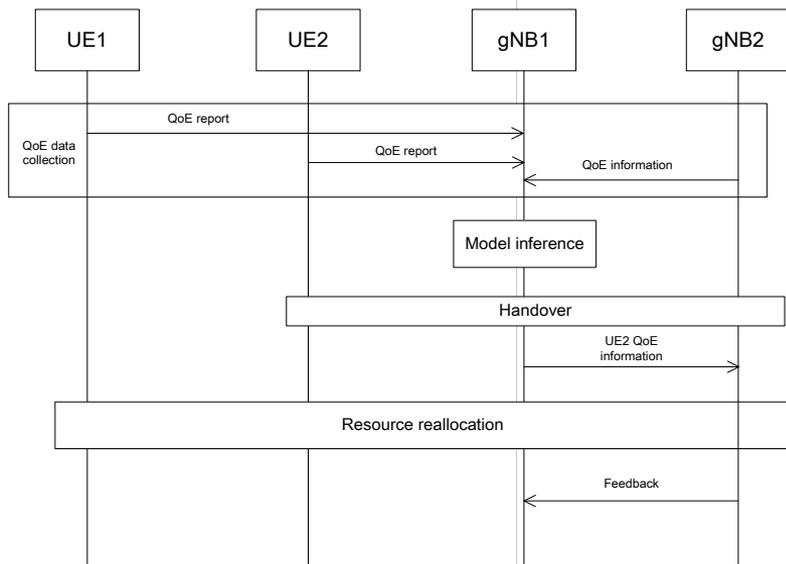
- Study potential new use cases and solutions for artificial intelligence in RAN
 - Inter-frequency measurements prediction
 - AI-based QoE
 - Slice management
 - MR-DC scenario
- Specify data collection enhancements and signaling support within existing/new NG-RAN interfaces and architecture (including non-split architecture and split architecture) for AI/ML use case
- Specify MDT procedure enhancements, if needed
- Specify new UE measurements, if needed
- R18 leftover issues:
 - NG-RAN interface enhancement to support AI for RAN
 - CU-DU split scenario

- Support of using intra-frequency measurements to predict inter-frequency measurements, hence no gap is required for inter-frequency measurements
- The inter-frequency measurements prediction may suffer poor precision due to the uncertain UE DL RSRP. More UE assistant information could be provided to enable more accurate UE RSRP.





RAN-visible QoE information reporting



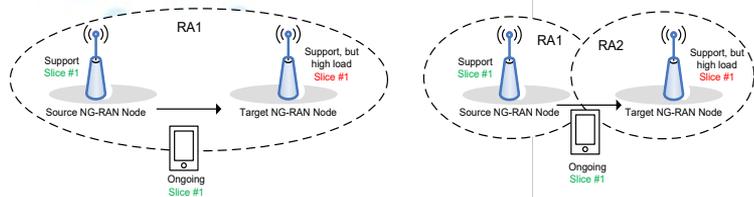
R18 RAN-visible QoE:

- RAN-visible QoE metric, e.g., buffer level, delay, is introduced in Rel-17
- Buffer level threshold triggered RVQoE is supported.
- The QoE report (legacy and RAN-visible) will forward to the QoE server

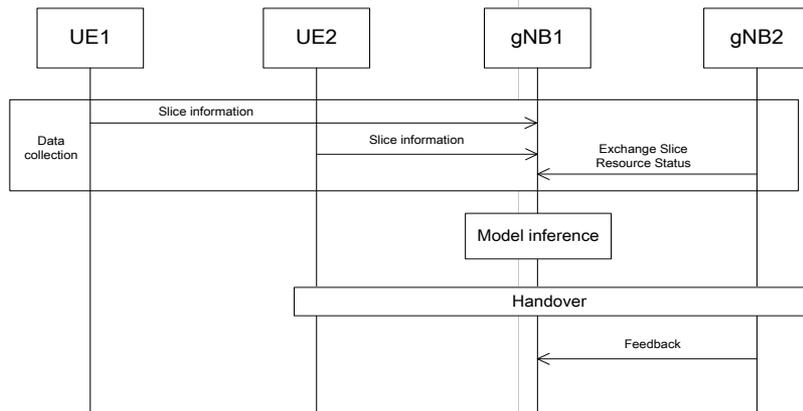
AI-based QoE:

- The QoE report in QoE server consider to be used for AI model training
- Take the RAN-visible QoE information from UEs for inference
- For UE mobility scenario, support exchange the QoE information between source and target node
- Resource reallocation after UE handover

- **Slice Management:**



Service interruption due to slice resource shortage, slice not support, etc.



- Service interruption may occur when the target node not support the handover UE's ongoing slice
- Ongoing service's QoE cannot be guaranteed if the target node has slice resource shortage for the ongoing service slice when handover

AI-based slice management and resource allocation:

- Support of collecting slice resource status from neighboring node
- If handover is needed, gNB use the collected slice information for inference to select suitable target gNB for the handover UE
- Feedback is transferred after handover



- Support of using AI/ML model to predict SCG addition/change/release/activation and deactivation, as well as SCG failure in advance, and provide solutions/actions if SCG addition/change/release/activation/deactivation or failure is predicted, including:
 - SCG addition/change/release
 - SCG activation/deactivation
 - SCG RLF
 - SCG beam failure while the SCG is deactivated
 - CPA/CPC optimization, e.g., execution events
- Prediction information exchange between MN and SN

THANK YOU !