

3GPP TSG RAN meeting #103  
Maastricht, Netherlands, March 18-21, 2024

RP-240330

Qualcomm

Agenda Item: 9.1.4

# General views on RAN4-led non-spectrum R19 projects

Qualcomm Incorporated

# Summary

- Principles for Rel-19 RAN4 package approval
- RAN4 Specification Quality Issues

# Principles for Rel-19 RAN4 package approval

- Better control the RAN4 load - avoid over-overload of RAN4
  - RRM session is the worst in terms of load in the past few releases, the quality of the specifications is concerning to us
- Better matching of available TUs with the actual RAN4 time
  - TUs are split in RF/RD, however, this is not always consistent with how time is used during the meetings
  - Problem can be somewhat alleviated by moving some items from RRM/Main session to the BDaT session to spread the overall load evenly among the three sessions, handle items in the same session every meeting
    - In order to make the schedule predictable, collisions should be scheduled consistently throughout the release
      - Topics to be handled in parallel should be announced at the beginning of the release and handled in parallel in every meeting
      - Companies can plan topic handling accordingly
      - Start from the beginning of Rel-19
    - Collisions between topics happen even now with the parallel ad-hoc sessions
      - Topic handling becomes easier if the schedule is consistent throughout a release
    - Total number of TUs should not be increased -> RRM workload should not be increased
- Maintain discipline on what is a spectrum item, limit the “wild card” approval to actual spectrum items
  - Items only requiring band/band combination specific work, not general requirements
  - See RP-212682

# Principles for Rel-19 RAN4 package approval

- Rel-19 RAN 1/2/3 led items approved in RAN#102 have a relatively big RAN4 impact (expected big impact is marked in red)
  - RAN1 led items with RAN4 impact:
    - AI/ML - RRM/demod; MIMO evolution - RRM/demod; Duplex evolution - BSRF,RRM; Ambient IOT -RF(all device types - tags, reader, ect), RRM; LP-WUS/WUR - UERF/RRM/demod ; NES-RRM
  - RAN2 led items with RAN4 impact:
    - Mobility enhancements - RRM; XR Enh - RRM; NTN - RF/RRM/Demod; AI/ML(Mobility) - RRM
- ~6.5TUs for each RF and RD available for RAN4 led items based on the TU allocation after RAN#102
  - RF TUs are usually underestimated because spectrum items have small TU allocations and are approved without time limites
  - RRM session has constantly been the busiest for many releases
  - RAN4 package should be kept relatively small
- Limit approval of RAN4-led projects to items with clear operator support/commercial demand
  - Do not approve another round of leftovers or “basket” items (e.g. RF/RRM/demod enhancements) just because there are some leftovers or some other enhancements can be done

# RAN4 Specification Quality

## Specification Issues

- RAN4 UE specification quality is worrisome for both RRM (38.133) and RF (38.101-X)
  - Large number of maintenance CRs in each meeting, some even for Rel-15
  - Large amount of time spent clarifying the specifications
  - RAN4 workload makes it impossible to thoroughly check CRs and propose/discuss improvements
  - More details and proposals are shown in RP-240335
- RRM Specification Issues - 38.133
  - Very large size (already split into multiple files)
  - Extremely difficult to understand what the actual requirements are and how they apply
- RF Specification Issues - 38.101-X
  - Many ambiguities, many sub-features defined separately instead of a general framework (e.g. PC handling with CA), many dependencies on implementation details
- RAN4 should spend time on fixing the specifications
  - Setting up a dedicated WI or a dedicated agenda item within maintenance are options to consider
  - These issues should be understood and resolved before the work on next generation starts



# Thank you

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