

Title: On extension of Rel-18 WI on multi-carrier enhancements

Agenda item: 9.3.1.2
Source: Samsung
Document for: Decision

Progress of Multi-Carrier Scheduling

RAN1 has completed ~ 80% of required designs for multi-cell scheduling:

- **Basic structure of MC-DCI format fields is practically complete – remaining aspects are to:**
 - Finalize remaining details (e.g. size/placement) for some fields and their interpretation (e.g. FDRA)
 - Update DCI size matching procedure to maintain the “3+1” budget of DCI format sizes
- **PDCCH monitoring (BD/CCE counting and limits and USS set configuration for MC-DCI formats) is practically complete – remaining aspects are on finalizing associated details**
- **HARQ-ACK codebook design is practically complete – remaining aspects are for:**
 - Final details for Type-2 HARQ-ACK codebook
 - Conclusions/agreements on Type-1 HARQ-ACK codebook
- **RRC parameters**
- **UE capabilities (can be considered later as for other Rel-18 WIs)**

Progress of UL – TX Switching

RAN1 has completed ~ 95% of the target design for 3-4 bands UL TX switching:

- RAN1#111 has agreed on the supported switching cases for all scenarios and the applicability of conditions where the switching gap is required
- Ambiguous state handling (for dualUL) reusing the existing Rel-17 oneT/twoT RRC signaling and a new Rel-18 RRC parameter was agreed, e.g., minimum RAN1 spec impact
- Minimum separation time between two UL Tx switches and reference slot definition(s) have been agreed

- **Main remaining open issues:**
 - Configuration of switching period location, e.g., RAN1#111 Proposed FL agreement down-select Alt.1-6 (RAN1)
 - UE capability and RRC configuration aspects

Proposal 1: Extend the Rel-18 WI on multi-carrier enhancement to Q1-2023 with 1 TU allocation for RAN1#112.

Proposal 2: RAN to provide guideline of high priority issues to complete the RAN1 work in RAN1#112 which include:

- Multi-cell DCI design
- DCI size alignment to accommodate multi-cell DCI
- Type 1 and 2 HARQ-ACK codebooks for multi-cell scheduling
- Configuration of switching period location

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Thank you