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3GPP TSG RAN meeting #93e
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RP-212363

Views on inter-gNB coordination related topics for Rel-18

Background

- Based on pre-plenary email discussion, the moderator proposed the following conclusions (with additional notes and contentious points):
  - Enhancements to Inter-gNB/gNB-DU coordination to enable CA between cells under different gNB-DUs.
    - Performance assumptions for the backhaul should be established. Support of legacy UEs and Uu impact should be considered. Possibility of using current RAN architecture should be considered.
    - Performance analysis by RAN1 and gNB impact analysis by RAN3.
  - Inter-gNB/gNB-DU multi-TRP operation
    - Performance assumptions for the backhaul should be established. Possibility of using current RAN architecture should be considered.
    - Performance analysis by RAN1 and gNB impact analysis by RAN3
  - Enhancement for resiliency of gNB-CU (RAN3)
    - Support mechanisms for DU connecting to multiple CUs (for the same PLMN). Support at least the case of no UE context transfer or sharing between CUs.
    - Prioritize CU CP but CU UP not precluded

Per-topic Considerations (1)

Enhancements to Inter-gNB/gNB-DU coordination to enable CA between cells under different gNB-DUs

- A study could aim at evaluating cost/benefit, on the assumption of support of legacy UEs
- RAN1 could focus on performance / benefit aspects (e.g., versus DC) and associated backhaul requirements
- RAN3 work can wait for RAN1 evaluation

Inter-gNB/gNB-DU multi-TRP operation

- Inter-DU mTRP will likely require a new backhaul interface between DUs.
- Similar to the above topic, it would be preferred for RAN1 to establish the performance gains, and associated backhaul requirements before any work in RAN3.

Per-topic Considerations (2)

Enhancement for resiliency of gNB-CU

- Generally fine with the moderator's proposal
  - "Support mechanisms for DU connecting to multiple CUs (for the same PLMN). Support at least the case of no UE context transfer or sharing between CUs. Prioritize CU CP but CU UP not precluded."
- Some companies have noted that resiliency can be obtained via "appropriate implementation" as stated in TS 38.401
  - We see the focus here as mainly facilitating F1 aspects that are not easily covered by implementations (in case of multi-vendor deployments).
  - We also noticed related functionality for AMF redundancy over NG/N2.
- In addition, we see some synergy with support for slice-specific gNB-CUs as the related procedural and architecture aspects have much commonality.
- Way forward: a RAN3 study along these lines

Summary

- Proposal 1: For both inter-gNB CA and inter-gNB multi-TRP operation:
  - Any study should start from RAN1 and determine performance benefit with respect to backhaul requirements, before architecture impacts are considered;
  - Support for legacy UEs should be assumed .

- Proposal 2: For gNB-CU resiliency, a RAN3 standalone study should be considered:
  - Focus on F1 aspects that are not easily covered by implementations e.g., “mechanisms for DU connecting to multiple CUs (for the same PLMN)”
  - Consider synergy with support for slice-specific gNB-CUs

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