

Motivation for new Work Item on NR-NR Dual connectivity

RP-180983

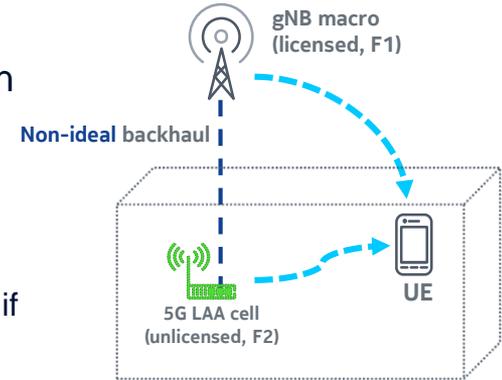
RAN#80

La Jolla, CA, US, June 11 - 14, 2018

Source: Nokia, Nokia Shanghai Bell

Motivation (1/2)

- Release 15 does not cover full NR-NR dual connectivity*
 - At most to use carrier aggregation like synchronous dual connectivity
- Release 15 NR-NR dual connectivity requires time synchronization between base stations of different type of networks
- This would be problematic in many cases, like:
 - Dual connectivity with FR2 network, including indoor installations
 - Otherwise indoor network would not need synchronization, especially if in isolated location. Or indoor network could be synchronized locally without same time reference as macro network
 - Dual connectivity with 5G unlicensed cell
 - Especially problem with distributed antenna system for licensed band
 - Dual connectivity between FDD NR and TDD NR bands
 - Now also FDD network need to be synchronized with TDD network



Motivation (2/2)

- Release 16 can improve the NR-NR dual connectivity operation:
 - Enabling fully asynchronous operation
 - Avoids otherwise unnecessary time synchronization between different type of bands and deployment
 - Makes operator managed 5G unlicensed (5G LAA) easier to deploy
 - Allows different timing references between different type of networks
 - Avoids the need to synchronize FDD NR deployment with NR TDD/NR Unlicensed

Lower network deployment cost for NR-NR dual connectivity

Scope for the Proposed WI on enhanced URLLC in RP-180980

- Enhancements in different RAN WGs (as identified in RAN#79*) to enable full NR-NR DC
- RAN1: For synchronous NR-NR DC, evaluate if RLM/RRM/PRACH(CBRA)/common search space monitoring, etc. on the secondary cell group need enhancements
- RAN1. Asynchronous NR-NR DC related update for power control operation
- RAN2: Control plane architecture, QoS flow handling between MN and SN, SCG configuration handling in Inactive state, Security aspects, Measurements for SCG management, Measurement and gap coordination, UE capability coordination
- RAN3: No work identified
- RAN4: To define the UE RF requirements and RRM requirements for NR-NR DC band combinations

Note: If Release 15 already support synchronous NR-NR DC, most of the topics mentioned above are already covered

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