3GPP RAN #85
Newport Beach
16-20 September 2019

RP-191855

Agenda Item: 8.1.14

Views on generic NR-U enhancements for Rel-17

Qualcomm

Background

- NR-U is being developed in Rel-16
  - Good set of scenarios including license assisted (CA-based and DC-based), as well as, stand-alone operation
  - 5GHz and 6GHz bands being considered
    - Note that 60GH band was part of the original NR-U SI
      - It got de-prioritized because of “lack of waveform” and busy schedule with sub7 unlicensed bands
- Qualcomm expressed its views on NR-U work going forward in RP-190834:

On the use of unlicensed spectrum

- Rel-16 will contain the baseline for NR based unlicensed operation, including standalone
- From Rel-17 onwards, the unlicensed component should be considered in any project as applicable
  - In the same way as we are ok to have FR2 considered as part of several different work/study items
- In other words, it should be possible to have a unlicensed component as part of a URLLC enhancements project and as part of a eMBB enhancements project
  - As opposed to a single “catch-all” NR-U evolution project on its own
- This does not detract from the core 3GPP principle that licensed spectrum is the preferred mode of operation, as per RP-140057 (endorsed in RAN #63)

6

Discussion

- From discussions it became apparent that there could still be certain aspects which are **unlicensed specific:**
  - e.g., Medium access rules and coexistence in the given band with other technologies
- For this reason, we believe that NR-U WI in Rel-17 could focus on:
  - Definition of 60GHz operation inheriting FR2 properties
    - Scope: Access rule (e.g., directional LBT), coex with 11ad
    - SCS to be determined in this WI or in early portion of separate SI on NR>52.6GHz
  - Any major leftover from Rel-16: TBD based on progress in remaining of Rel-16 (hopefully none!)
- Other aspects of interest for unlicensed operation can be treated in corresponding items
  - e.g., application of sidelink communication to unlicensed bands, UE power savings for NR-U operation, IIOT/eURLCC for NR-U, etc

Proposal

- **NR-U Rel-17 work** should focus on items **specific** to unlicensed operation:
  - Definition of NR operation in 60GHz band
  - Left-overs from Rel-16 (TBD)
- Other non NR-U specific items should be addressed as an additional objective on other corresponding items, e.g., power savings, eURLLC/IIOT, SL, etc.

Qualcomm

Thank you!

Follow us on:

For more information, visit us at:

www.qualcomm.com & www.qualcomm.com/blog

Nothing in these materials is an offer to sell any of the components or devices referenced herein.

©2018 Qualcomm Technologies, Inc. and/or its affiliated companies. All Rights Reserved.

Qualcomm and Snapdragon are trademarks of Qualcomm Incorporated, registered in the United States and other countries. Other products and brand names may be trademarks or registered trademarks of their respective owners.

References in this presentation to “Qualcomm” may mean Qualcomm Incorporated, Qualcomm Technologies, Inc., and/or other subsidiaries or business units within the Qualcomm corporate structure, as applicable. Qualcomm Incorporated includes Qualcomm’s licensing business, QTL, and the vast majority of its patent portfolio. Qualcomm Technologies, Inc., a wholly-owned subsidiary of Qualcomm Incorporated, operates, along with its subsidiaries, substantially all of Qualcomm’s engineering, research and development functions, and substantially all of its product and services businesses, including its semiconductor business, QCT.