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MOTIVATION FOR NEW WORK ITEM ON ENHANCEMENTS TO LTE OPERATION IN UNLICENSED SPECTRUM

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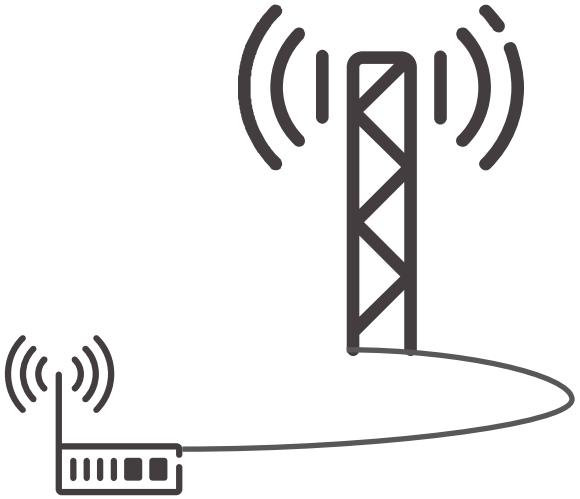
JUSTIFICATION

- Standalone operation in unlicensed spectrum
  - Enabler for:
    - Neutral host deployments
      - Venue specific radio networks



- Dual connectivity operation with unlicensed spectrum
  - Enabler for:
    - Scenario with worse backhaul between network layers

OBJECTIVE

- Standalone operation of LTE in unlicensed spectrum [RAN1, RAN2, RAN4]
  - Support for system information, paging and random access [RAN1, RAN2, RAN4]
  - Support for RRM/RLM/RLF to allow standalone operation [RAN1, RAN2, RAN4]
  - Support for RRC_IDLE [RAN2, RAN4]
  - Support for necessary layer 1 control information [RAN1, RAN2, RAN4]
  - Carrier aggregation support between carriers operating only in unlicensed spectrum [RAN4, RAN1, RAN2]

- Support dual connectivity with a PSCell and any aggregated SCells operating cells with Frame Structure type 3 by extending the standalone support [RAN1, RAN2, RAN4]

OBJECTIVE

- Study, and specify if needed, support for fast Instant Uplink Access based on Instant Uplink solution with necessary modifications for PCell, PSCell and SCell with Frame Structure type 3, including necessary enhancements [RAN1, RAN2, RAN4]
- Specify support for shortened transmission time intervals for DL and UL on PCell, PSCell and SCell with Frame structure type 3, and reduced UE and eNodeB processing times [RAN1, RAN2, RAN4]
- Specify enhancements to enable switching between DL and UL transmissions and between UL transmissions from different UEs with a maximum gap of 25 microseconds [RAN1, RAN4]
- Specify necessary enhancements for more efficient triggering of SRS, e.g. group triggering [RAN1]
- Specify necessary enhancements for PUSCH scheduling, e.g. two stage or revised UL grant [RAN1, RAN4]
- The work item should also specify base station and UE core requirements of 5 GHz spectrum to support the above features [RAN4]

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