

RP-191765

3GPP TSG RAN Meeting #85

Newport Beach, USA, 16-20 September 2019

Views on Rel-17 Sidelink Enhancements

Spreadtrum Communications

- Complete Rel-16 sidelink leftovers
 - Rel-16 focuses on basic sidelink features only
 - Performance requirements of lower latency (3ms), higher reliability (99.999%), higher data rate (1000Mbps) and larger communication range (platooning support up to 20 vehicles) are not fully guaranteed in Rel-16
- New use cases beyond Rel-16
 - V2X
 - Vulnerable road users for dynamic ride sharing/dangerous situation awareness
 - Non-V2X
 - Critical communication
 - Commercial
 - NCIS use cases targeting AR/VR gaming and local seminar/conference applications (22.842)

- Carrier aggregation [RAN1/RAN2]
 - Includes multiple carrier operation , PDCP packet duplication, handling limited TX/RX capability and synchronization across multiple SL carriers
 - Sidelink CA can also help to increase reliability
- MIMO enhancements [RAN1]
 - CQI feedback to gNB in mode 1
 - High modulation order
 - More than 2 layers transmission
 - SL CSI Enhancement

- Resource allocation enhancements [RAN1]
 - Enhancements in mode 2d, e.g., group leader making resource allocation
- FR2 enhancements [RAN1]
 - Sidelink beam management and recovery
 - Multiple antenna panels
 - Design a simplified beam management procedure, together with a robust beam recovery. No need to introduce a Uu-like complicated beam management.

- Sidelink power saving operation [RAN1/RAN2]
 - Power efficient resource allocation, e.g., partial sensing
 - Sidelink DRX configuration and operation

- Sidelink low latency operation [RAN1]
 - Sidelink preemption
 - Self contained HARQ feedback
 - Enhancements on sidelink configured grant

- UE-to-Network Relay, UE-to-UE Relay [RAN2/RAN1]
 - Relay type
 - Number of relay hops
 - Relay selection/reselection procedure

- UE discovery and grouping [RAN2/RAN1]
 - Discovery for UE-to-network relay discovery, UE-to-UE relay discovery, group member discovery
 - Discovery procedure and related messages

- For new use cases, the following aspects should be updated:
 - Evaluation scenarios
 - UE dropping model, including UE's length/width/height/speed/position distribution and clustered UE dropping method;
 - Traffic model
 - Performance metric

- Proposal 1: Rel-17 sidelink technical enhancements should be studied in a WI and a SI, separately.
- Proposal 2: Sidelink technical enhancements for throughput optimization, reliability improvement, latency reduction, and power saving should be studied in a WI.
- Proposal 3: Sidelink technical enhancements for coverage extension, e.g. support of relay and UE discovery, should be studied in a SI.



THANK YOU!