3GPP RAN Rel-18 Workshop
June 28th – July 2nd, 2021

RWS-210426

Agenda Item : 4.2

Source : InterDigital

Title : V2X Enhancements for R18

Document for : Discussion and Decision

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V2X/Sidelink

Justification:

- Enabling SL operation in FR2 and multiple carrier/BWP can meet increasingly higher data rate, better reliability, and lower latency required in emerging SL communication applications including, e.g.,
  - Advanced V2X use cases, e.g., sensor information sharing
  - AR/VR applications, e.g., immersive gaming
  - Smart home, e.g., intelligent monitoring
- Coverage enhancement and further SL power saving improvement are desired for different categories of devices connected via SL such as
  - VRU devices
  - Low power wearable devices
  - RedCap UEs
- Extending SL operation to shared spectrum can offload the traffic from licensed spectrum and provide connectivity improvement especially in IIoT applications.

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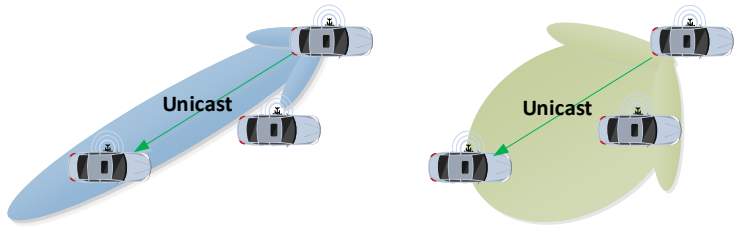
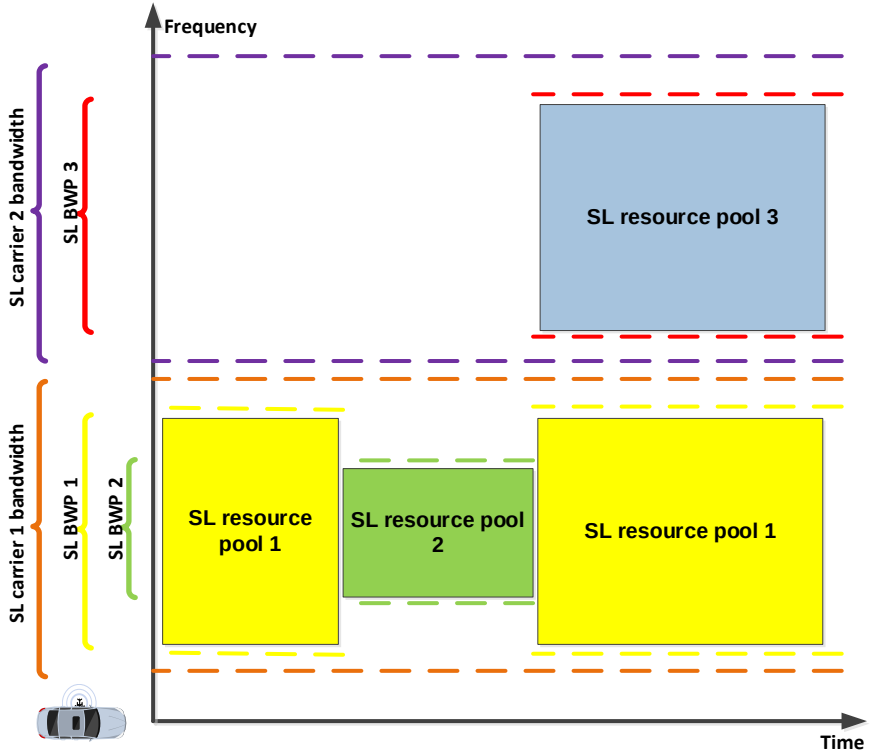
V2X/Sidelink

Potential Rel-18 scope:

- FR2 SL operation and beam management
  - SL beam management for V2X scenario
  - Beam-based PSCCH/PSSCH/PSFCH transmission/reception
- SL multi-carrier and BWP operation
  - PDCP duplication and SL carrier (re)selection
  - Multiplexing over carriers, sync and resource management
  - Flexible/dynamic BWP operation for SL
- SL power saving
  - Physical layer aspect of SL DRX enhancement (e.g., SL WUS)
- SL coverage enhancement
  - Multi-slot transmission and extended PSFCH format
- SL support in unlicensed spectrum
  - Incorporation of SL sensing into LBT-based channel access



Beam-based unicast transmission with better coverage and less interference



Flexible BWP operation enabling e.g., power saving and carrier aggregation

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