Connected Intersection toward Beyond 5G/6G era

Connecting all objects at intersections to realize safer and comfortable mobility in cyber and real space
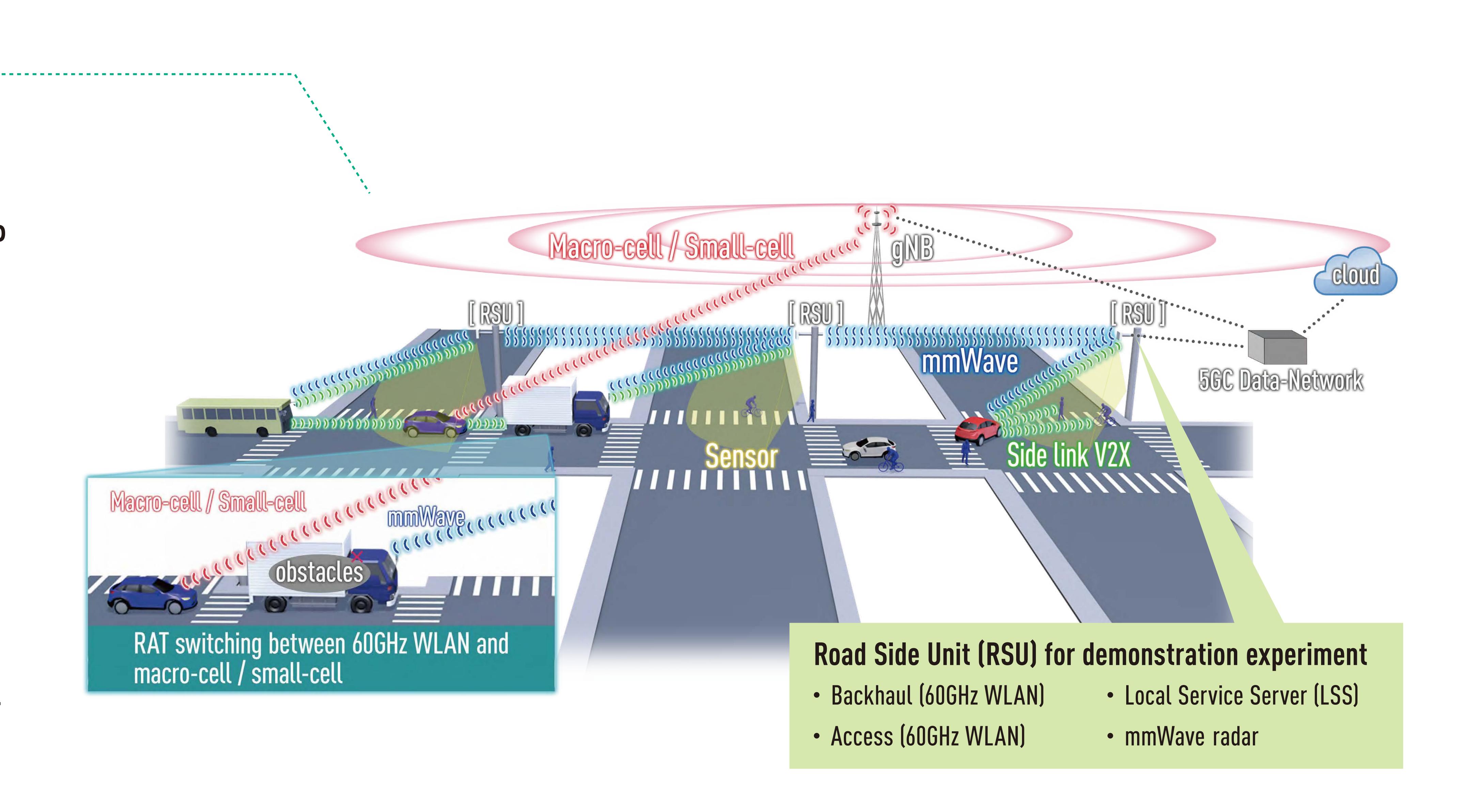
Multi-access network with mmWave

Connecting cyber and real space at RSU edge

Benefits

- High efficiency communication using 60GHz WLAN as a non-3GPP access technology overlaid on 5G systems
- Predicts propagation degradation of mmWave network and avoiding blockage

Technical Advantages

- Communication timing control to predict and avoid blockage by obstacles and to achieve maximum throughput
- RAT switching between 60GHz WLAN and macro-cell / small-cell to predict and avoid blockage by obstacles

Applications

- Large-capacity communication in limited area (ex. downloading dynamic map)
- Real-time communication for mobility (Remote monitoring of automated driving cars)

Macro-cell / Small-cell

gNB

cloud

[RSU]

[RSU]

[RSU]

mmWave

5GC Data-Network

Sensor

Side link V2X

Macro-cell / Small-cell

mmWave

obstacles

RAT switching between 60GHz WLAN and macro-cell / small-cell

Road Side Unit (RSU) for demonstration experiment
- Backhaul (60GHz WLAN)
- Access (60GHz WLAN)
- Local Service Server (LSS)
- mmWave radar