3GPP TSG RAN Meeting #102
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Views on Channel Modeling for 7-24 GHz

Apple

Rel-19 Channel Modeling for FR3 | Channel Model Validation

- **Justification:**
  - Frequency band 7-24 GHz (FR3) is of interesting for next generation cellular network
  - Existing channel model in TR 38.901 supports entire frequency range of 0.5 - 100 GHz
    - Include UMi, UMa, indoor, backhaul, D2D/V2V and stadium scenarios
    - The derivation of the channel model was based on measurement
    - Most measurements were conducted in FR1 (sub-6 GHz) and FR2 (24 - 71 GHz), separately
      - The channel model for FR3 is based on interpolation, which may not be accurate
- **Objective:**
  - Validate, and adapt if necessary, channel model of TR 38.901 for 7-24 GHz using measurement [RAN1]

Rel-19 Channel Modeling for FR3 | Channel Model Validation

- **Justification:**
  - Large antenna array deployment is expected in next generation cellular system
    - Rayleigh distance could be increased, due to small wavelength in FR3 and large antenna aperture
      - Rayleigh distance is comparable with cell size
      - Spherical wave propagation needs to be considered within Rayleigh distance
    - Cluster blockage has different impacts
    - Antenna elements at different spatial positions have different multipath properties

- **Objective:**
  - Extend, as necessary, the channel model of 38.901 for 7-24 GHz, considering at least the following aspects [RAN1]
    - Near-field propagation
    - Spatial non-stationarity

Rel-19 Channel Modeling for FR3 | Conclusion

- **Objective 1: Validate, and adapt if necessary, channel model of TR 38.901 for 7-24 GHz using measurement [RAN1]**

- **Objective 2: Extend, as necessary, the channel model of 38.901 for 7-24 GHz, considering at least the following aspects [RAN1]**
  - **Near-field propagation**
  - **Spatial non-stationarity**

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