

ISART 2022

Standardizing Propagation Modeling

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Intel Corporation

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Reza Arefi

Emerging Spectrum Strategies and Planning – Market-driven spectrum and regulatory strategies that support Intel’s existing and future products

Actively contributing to wireless standards since 1998 and international spectrum regulations since 2001.

Led the development of M.2101, ITU-R Recommendation on modeling of 4G/5G systems for sharing and compatibility studies

Chairs ITU-R group in charge of development and update of P.2108, Recommendation on Clutter Loss

Next G Alliance’s Spectrum Working Group Vice Chair

Executive Board member and Vice President of Global mobile Suppliers Association (GSA)

Member of FCC TAC, CSRIC, and CSMAC, Senior Member of IEEE and a member of IEEE-SA

Presently focused on identifying optimal spectral vehicles and necessary regulatory developments to enable the next generation mobile use cases



How Can Standardization Help

- Propagation models are created through a complex process involving **measurements, simulations, and data processing**
- Harmonizing **methods** used for the above facilitates:
 - Review and verification
 - Collation of data to increase variability
 - Enhancing the model
- Data/equipment **calibration** with others
 - Detailed documentation of measurement methodologies, simulation assumptions
 - Examples: antenna placements, digital maps
 - Comparison of statistics on interim results could help remove major differences in methods and processes
 - Example: In measurements, stats of multipath; how urban is urban → power delay profile
 - Example: In simulations, stats of LoS probability, distance to first building, etc.