Next-Generation Wireless InSite Introduces Innovative Time-Based Mobility of RF Systems, Lunar Propagation and Wideband Ray-Tracing

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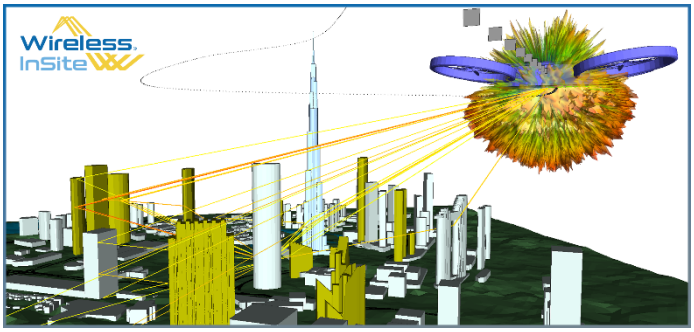

Remcom announces a new version of Wireless InSite® 3D Wireless Prediction Software with advanced capabilities including time-based mobility, lunar propagation modeling, and wideband ray-tracing with S-parameter outputs. As the leading software tool for RF propagation simulation for more than 25 years, the new release (Release 4.0) expands upon Remcom's longstanding commitment to technical precision, supporting rigorous simulation of dynamic and complex RF environments, including on-body propagation and NASA Artemis missions.

Wireless InSite 4.0 introduces a robust mobility framework that accurately models the movement of transceivers and objects within a user-defined scene. Mobile platforms now enable precise evaluation of dynamic scenarios where mounted antennas on scatterers like vehicles and humans affect channel conditions. Time-based outputs, rendered as plots or animations, provide detailed insights into multipath and fading, received power, SINR, and data throughput across time as RF systems and vehicle platforms move through a scene. A new Results Browser and Viewer provide multi-result access and time-sequenced visualization, allowing engineers to focus on dynamic behaviors with clarity.

To support NASA's Artemis mission, Wireless InSite ensures accurate simulation of RF propagation on the Moon by providing the ability to import LRO LOLA terrain datasets and accurately transform the coordinates of RF mobile systems upon the lunar terrain, while also incorporating a lunar materials database. By capturing the reflection and refraction characteristics inherent to the Moon's landscape, these capabilities are essential for future lunar missions.

Utilizing full-wave Huygens antennas, Wireless InSite 4.0 also leverages data generated by Remcom's XFdtd® full-wave 3D electromagnetic solver to capture interactions with people, vehicles, and structures in the near-field of the antenna with high fidelity. The seamless transfer into Wireless InSite preserves the precise physical relationship between the antenna, geometry, materials, and near-field data. Additionally, support for refraction into volumetric materials further refines the simulation of complex electromagnetic interactions with the body or nearby structures for technologies such as 6G, GNSS, WLAN, lunar missions, and on-body communication while in motion.

Wireless InSite 4.0 also allows users to create a single multi-technology scenario and analyze frequency-dependent results. The enhanced wideband ray-tracing capability extends traditional methods by enabling frequency-dependent analysis and providing a waveform library. Engineers can access S-parameter outputs, providing a comprehensive view of antenna performance and EM material interactions. Multi-frequency antennas and materials ensure accurate characterization for any simulation frequency with multiple orders of magnitude in runtime savings.

“Wireless InSite 4.0 is designed for engineers and researchers who require high-precision tools to model RF systems in terrestrial, non-terrestrial and lunar environments. We recognize the challenges inherent in simulating real-world wireless scenarios, and this release reflects our commitment to delivering a simulation platform that accurately predicts system performance under dynamic conditions,” said Ruth Belmonte, product manager for Wireless InSite.

For more information on the latest release of Wireless InSite, please visit Remcom’s website. Current users without an active Remcom Professional Support contract can upgrade to the latest version by contacting sales.

About Remcom: For more than 30 years, Remcom has provided electromagnetic simulation and wireless propagation software for commercial users and U.S. government sponsors. Our innovative software tools, combined with exceptional support, have enabled the world’s most advanced engineering teams to deliver their devices to market by simplifying EM analysis for a wide variety of applications. Remcom is committed to its customers’ unique needs, offering flexible licensing options for installations of all sizes as well as custom-engineered solutions.

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