



New Features in Wireless InSite 3.2

NEW UPGRADES TO WIRELESS INSITE® COMMUNICATIONS SYSTEM TOOLBOX

1. WI-FI THROUGHPUT
2. SHANNON CAPACITY CALCULATION
3. NEW COMMUNICATIONS METRICS
4. BIT ERROR RATE CALCULATIONS EXPANDED TO HIGHER-ORDER MODULATION CODING SCHEMES
5. USER-DEFINED THROUGHPUT TABLES

MODEL ENHANCEMENTS

6. USER-DEFINED MATERIALS NOW SUPPORTED BY THE X3D MODEL
7. REMOVED LIMIT ON MATERIAL TYPES ACTIVE IN PROJECT

USER INTERFACE ENHANCEMENTS

8. USAGE IMPROVEMENTS

MAINTENANCE IMPROVEMENTS

9. FIXED ISSUE WITH ERRANT DIFFRACTIONS AT EDGES WHERE THREE FACETS MEET.

New Upgrades to Wireless InSite® Communications System Toolbox

1. Wi-Fi Throughput

Wireless InSite's Communications System Toolbox has been upgraded to allow the calculation of throughput for Wi-Fi protocols 802.11n and 802.11ac. This supports the calculation of the throughput for single-input-single-output (SISO) systems, with an optional multi-stream parameter to provide an initial estimate of potential Multiple-Input-Multiple-Output (MIMO) performance (full integration with Wireless InSite® MIMO coming soon).

2. Shannon Capacity Calculation

In addition to throughput for supported protocols, users may now also calculate the theoretical upper bound on the data rate of a channel, known as the *Shannon Capacity*, either for a specific protocol or for a generic communications channel, based on the Signal-to-Interference-plus-Noise Ratio (SINR) and the bandwidth of the channel.

3. New Communications Metrics

Outputs from the Communications Toolbox have been expanded to include the Signal-to-Interference-plus-Noise Ratio (SINR), the Received Signal Strength Indicator (RSSI), and two standard LTE metrics: the Reference Signal Received Power (RSRP) and the Reference Signal Received Quality (RSRQ).

4. Bit Error Rate Calculations Expanded to Higher-Order Modulation Coding Schemes

Bit Error Rate (BER) calculations have been expanded to support higher order modulation coding schemes, including 256 QAM, 512 QAM, and 1024 QAM, allowing analysis of BER for communications channels relevant to current and future planned protocols.

5. User-defined Throughput Tables

Wireless InSite's new user-defined throughput capability allows users to specify their own mapping between the SINR and the throughput for specified bandwidths, providing a mechanism for representing vendor-specific, or experimental mappings between signal quality and modulation coding scheme.

Model Enhancements

6. User-defined materials now supported by the X3D model

The X3D model now reads reflection and transmission coefficient files provided by the user. Material properties can vary with angle of incidence, orientation of the incident plane, and frequency.

7. Removed limit on material types active in project

The X3D model no longer limits the number of materials per feature.

User Interface Enhancements

8. Usage improvements

- Solid body and 3D are now the default views in the Project View window.
- Tx/Rx antenna pattern visibility is now preserved between sessions.
- Project and application preferences are now preserved between sessions.

Maintenance Improvements

9. Fixed issue with errant diffractions at edges where three facets meet.