



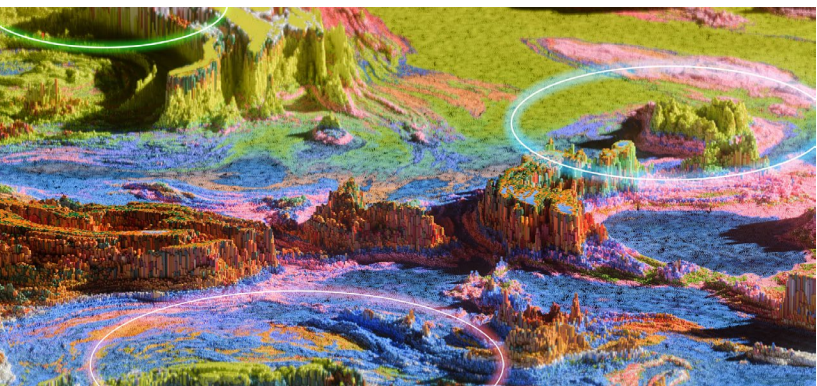
TIREM™

Optimized electromagnetic environment analysis software to predict network coverage and reduce spectrum interference

HII's Terrain Integrated Rough Earth Model (TIREM™) is the premier software tool for precise electromagnetic environment analysis, addressing the increasing demand for interference-free spectrum access. Backed by decades of expertise, HII delivers fast, accurate and scalable solutions to maximize coverage and connectivity while mitigating radio frequency interference (RFI).

Mission Application

- Predicts RF coverage for land mobile radios, point-to-point distances and sensor acquisition ranges from 1MHz into "spectrum frontiers" bands.
- Supports beyond-line-of-sight (BLOS) propagation analysis using knife-edge diffraction and troposcatter.
- Evaluates land-sea transitions, urban clutter and topographic features for accurate path propagation.
- Empowers decision-making with robust tools for spectrum monitoring and modeling across varied terrains.



Advantages

- **Precision RF Analysis:** Combines physics-based algorithms with sub-meter Lidar data for reliable RF analysis.
- **Adaptive Modeling:** Supports long-term fading models and atmospheric condition adjustments.
- **Broad Compatibility:** Complies with modern computing requirements, supporting MathWorks, Python, Windows and Linux platforms.
- **Flexible Terrain Analysis:** Includes empirical models for analysis without requiring detailed terrain data.

Features

- Utilizes deterministic modeling for power, density and field strength calculations, accounting for Fresnel interference and deep fading loss.
- Automatically selects and combines propagation models for land/sea and homogeneous terrain paths.
- Incorporates advanced modeling techniques, including atmospheric ray tracing with rain, dust and fog simulations.
- Stores signal data for post-analysis and integrates more than 1 million calculations for precision.
- Offers a spherical earth model for evaluating profile geometry and line-of-sight (LOS) paths.
- Provides flexible tools as MATLAB components and supports integration for dynamic analysis needs.



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