

URBAN PROPAGATION EXTENSION FOR STK/COMMUNICATIONS

The Urban Propagation Extension provides very fast site-specific path loss predictions for communication links in urban environments.

The extension offers an unmatched combination of fidelity and speed, as compared to empirical and full-physics alternatives, across a broader range of frequencies and link geometries. These attributes make it ideal for defense and intelligence applications involving trade studies, time-based scenarios and coverage analysis.

Urban path loss predictions are seamlessly integrated with STK's analytic models of moving platforms, communication systems and ISR sensors. This provides a valuable mission perspective for applications including tactical communications, net-centric ISR, cyber warfare and urban tactics.

Features

Site-specific

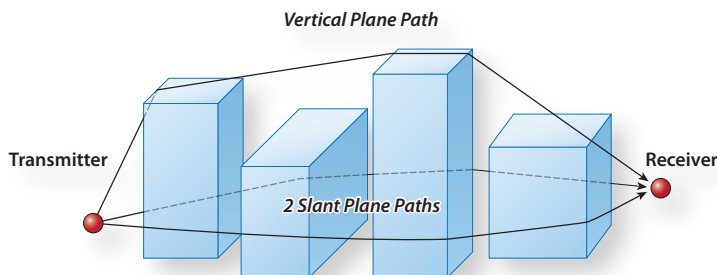
Site-specific building geometry is considered for correspondingly higher fidelity results than empirical models (e.g. Hata, COST-Hata) which ignore local building obstructions. Building geometry is supplied via shapefile - a popular vector data format supported by many geospatial software products and urban data suppliers.

Physics-based

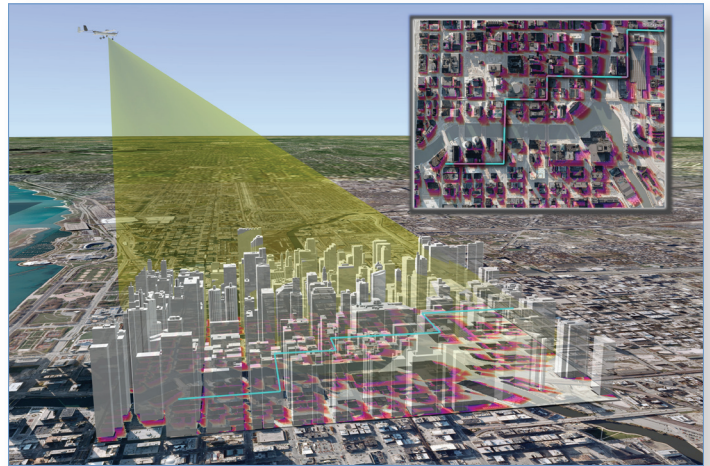
Using the well established Uniform Theory of Diffraction, a triple-path geodesic model computes three dominant paths from the transmitter to the receiver. Received powers are summed to estimate total signal strength.

Better fit for defense and intelligence

Most empirical models were developed for cellular telephone applications and impose limitations on antenna



Computations consider three diffracted paths to receiver



UAV comm relay to a military convoy

heights, ranges and frequencies that are too restrictive for defense and intelligence problems. The Urban Propagation Extension has no limitations on antenna heights, supports ranges up to 10 km and is valid above 100 MHz.

Very fast computation time

Using rapid ray tracing techniques and efficient diffraction methods, aggregate computation times can be over two orders of magnitude faster than full-physics models employing Finite Difference Time Domain (FDTD) methods. This makes the Urban Propagation Extension a better fit for trade studies, dynamic scenarios and large coverage analysis.

Comparable fidelity to full-physics models

Results compare very favorably with the much longer running full-physics models. Comparative data is available.

The Urban Propagation Extension is powered by Remcom's Wireless InSite® Real-Time propagation algorithms. Remcom, an AGI business partner, has been a pioneer in the field of electromagnetic simulation since 1994 serving multiple Department of Defense and commercial customers.

To learn more about the Urban Propagation Extension please contact AGI at 1.800.220.4785 or 1.610.981.8000, or explore www.agi.com/UrbanComm for product details.