

Proven, integrated network planning and management for reliable and efficient connectivity.



RFARCHITECT **Optimized Radio Frequency Communications**

The primary problems facing Radio Frequency (RF) network planners, engineers, and managers are limited spectrum resources, increasing network complexity and throughput requirements, and unintentional Electromagnetic Interference (EMI).

THE INDUSTRY'S LEADING EXPERTS



Wireless providers today are faced with increased demand for reliable, high-speed service for voice, data, and video. As the electromagnetic environment evolves to accomodate these

needs, future networks will feature increased signal density and node complexity. Dynamic awareness of these networks will require tools to give planners fast, thorough, and precise analysis to help establish reliable network plans.

Huntington Ingalls Industries experts have over 30 years of electromagnetic environmental effects expertise. We have developed sophisticated, time-tested algorithms for Electromagnetic Spectrum Operations (EMSO) and RF network planning and engineering (NP&E), allowing us to build a comprehensive network planning and deconfliction application.

AN INTEGRATED SOLUTION

RFarchitect allows spectrum network operators to optimize

spectrum usage while maintaining interference-free RF network plans. RFarchitect uses equipment characteristics and high-fidelity GIS data to model and optimize network deployments, showing network planners the best options for maintaining links and data throughput.

Users can input equipment data and optional parameters, and RFarchitect calculates, models, and displays network configurations and geographic locations for resource deployment. RFarchitect features integrated tools to refine plans as deployment requirements change.

RFarchitect operates in the Windows environment. Selected terrain and digitized map data are provided with the RFarchitect installation. Data for additional areas can be loaded directly from National Geospatial-Intelligence Agency (NGA) CD-ROMs (CADRG, DTED) or directly from any available web mapping server (WMS) as needed for each deployment.

RELIABLE PERFORMANCE

RFarchitect has been fielded by the DoD for use in high-adversity environments, repeatedly demonstrating reliability and adaptability. RFarchitect decentralizes network planning and frequency assignment capabilities through modular deployment and customizeable installation. Additionally, each RFarchitect installation is able to manage multiple deployment scenarios, and can view terrain data and supporting imagery even offline. RFarchitect can distribute network plan updates between users whenever requirements change, helping guarantee resilient network connections.



REDUCED TIME

RFarchitect provides link optimization tools that search local areas for high-elevation points when planning communications assets positions. This occurs while RFarchitect maintains link reliability to ensure a fully-operational RF network even in the presence of Electronic Warfare (EW) emitters.



INTERFERENCE ANALYSIS

RF network congestion analysis facilitates a complete network RF assignment. RFarchitect includes default radio characteristics, but also accepts user modified radio characteristics, guaranteeing accurate modeling of the RF environment and potential interference sources.

each scenario.



Database (EL-CID) records, grounding RFarchitect's analysis in the best data available for

RFarchitect integrates with TIREM, the premier

propagation model in the United States.

MRTopo, our topographical data server, enables

TIREM to model and simulate propagation in

a geographic area with speed and reliability.

PATH RELIABILITY

Our terrain-based propagation analysis tool (TIREM) allows RFarchitect to integrate RF network analysis for Line-of-Sight (LOS) paths with terrain analysis (high point retrieval, path profiling, area coverage) and analysis of worldwide geoclimatic factors, including tropospheric-scatter and knife-edge refraction.

NETWORK LAYDOWN PLANNING

Our analysis tools support EMI prediction, prevention, detection, and mitigation. Federal agencies and private sector partners alike trust HII to provide accurate and timely analysis to enable spectrum-sharing without EMI.



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About Huntington Ingalls Industries, Technical Solutions:

SPOTLIGHT ON: RESOURCE OPTIMIZATION

The best scenario analysis depends on quickly

retrieving the best data available, and HII's RFarchitect accomplishes both. Our analysis

for ground and air transmitters and receivers rests on a full library of sub-meter LiDAR data.

RFarchitect now allows users to determine

terrain data resolutions and import equipment

characteristics data from Stepstone and

Equipment Location-Certification Information

Building on a legacy of more than a century of naval shipbuilding, Huntington Ingalls Industries' Technical Solutions division provides mission-critical national security solutions to a wide variety of government and commercial customers worldwide. Comprising more than 7,000 professionals worldwide, our unique national security services portfolio includes unmanned systems, nuclear and environmental services, intelligence, surveillance and reconnaissance (ISR), cyber and electronic warfare, live, virtual and constructive (LVC) training solutions, and fleet sustainment and logistics. For more information, visit tsd.huntingtoningalls.com.

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