

DATA SHEET

Planet®

Accuracy Matters

Infovista has a long tradition in wireless system modeling within RF planning software that dates back to the first mobile networks. Each new generation of wireless standard comes with increasingly complex technologies that must be modeled by the simulation software. Flexible numerology, Massive MIMO and the use of millimeter wave (mmWave) frequencies are critical elements of 5G; for the technology to be simulated these advances must be accurately modeled. When it comes to planning 5G: accuracy matters.

PLANNING AND OPTIMIZATION FOR 5G AND TODAY'S COMPLEX NETWORKS

RF engineers want assurance their network planning solution has a roadmap that anticipates and meets their requirements. They need an application that supports evolving mobile standards such as IoT and 5G.

Addressable Technologies

2G	3G	4G	5G	IoT	Public Safety
TDMA-FDMA	WCDMA / HSPA	LTE/LTE-A	5G NR	NB-IoT & Cat-M	P25
GSM / GPRS / EDGE	cdma2000 / EVDO	Wi-Fi		SIGFOX	TETRA
		WiMAX		LoRa	

5G SUPPORT

- 5G NR + future release development
- mmWave propagation modeling
- Flexible numerology support
- Massive MIMO modeling
- 3D geodata: buildings and vegetation
- Feature support of new 3GPP developments

FOCUSED ON PROPAGATION ACCURACY

Planet excels at accurate predictive modeling so that mobile operators can reliably simulate mobile network performance and benefit from effective budgeting, efficient planning and optimal ROI in their deployments. Planet offers a range of best-in-class 3D propagation models for all environments and a range of frequencies (including mmWave bands up to 60 GHz). These unique and accurate models include CRC-Predict and Planet 3D model (P3M), as well as the Universal Model.

REAL-WORLD SIMULATIONS

- 3D propagation and related analysis, as well as visualization
- Automated model tuning, as well as merging of measured data with predictions for greater accuracy
- Best model selection through use of propagation signatures
- 3D antenna pattern modeling
- APIs for integration of 3rd party models

MODEL THE WORLD

Eighty percent of mobile traffic is generated indoors but served by outdoor cells, resulting in different performance levels for mobile devices in various indoor and outdoor environments. Users can accurately simulate urban environments with an advanced propagation model and visualize them with the Planet 3D Viewer. Planning can be improved by incorporating geolocated subscriber information to understand how to increase the capacity delivered and quality of mobile coverage in urban areas.

DETAILED CITY NETWORK DESIGN

- Predict coverage with a model optimized for 3D propagation
- Account for indoor traffic with 3D traffic maps
- Analyze indoor and outdoor network coverage
- Visualize multi-floor coverage in 2D or 3D

**RF Planning to Live Planning:
Incorporating Network Feedback**

Planet combines network measurements with advanced predictions for highly accurate network planning and optimization. Engineers can have an unprecedented level of geolocated insight into subscriber behavior and experience through network vendors' call trace data directly imported into Planet. With a unique RF fingerprinting assisted geolocation algorithm, indoor and outdoor traffic hotspots are detected, allowing operators to pinpoint areas with abnormal call events and plan corresponding network upgrades for optimal and accurate small-cell installations. Signal strength and traffic maps can also be created based on call trace data, further improving the result of any Automatic Cell Planning (ACP) exercise.

SUBSCRIBER-AWARE DATA

- Network information from a mobile user point of view
- Support of all major vendors across 2G, 3G & LTE networks
- High accuracy geolocation in 3D using advanced algorithms
- Input for accurate traffic heat maps
- Continuing R&D in support of the 3GPP roadmap

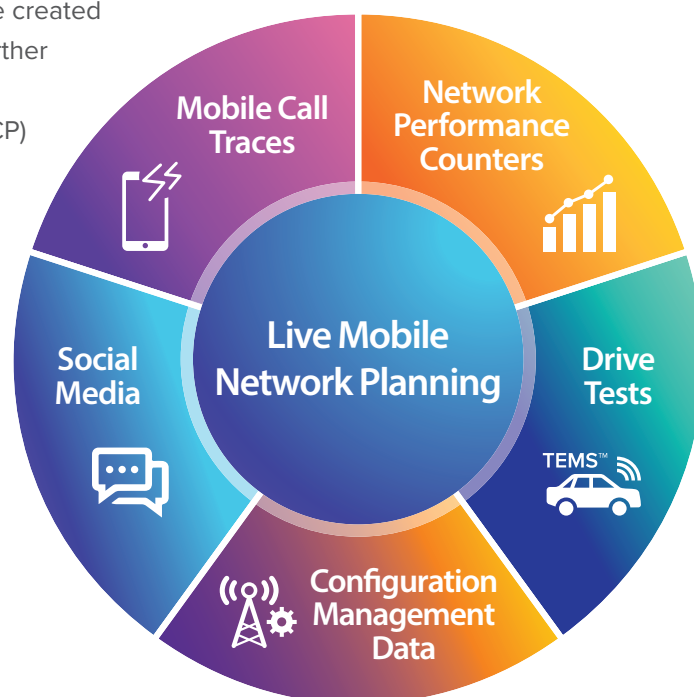


Figure 2. Many live sources of data can be used by Planet.

LIVE NETWORK CONFIGURATION DATA

A complete network planning and optimization solution pairs highly accurate network analyses with live network information from several sources, including network configuration. These parameters can be updated directly in Planet or through an interface with VistaNEO —Infovista’s multi-vendor RAN configuration management platform. This integration ensures that network additions and upgrades are based on the current network configuration.

KEEPING CONFIGURATION DATA UP TO DATE

- Live network configuration updates
- Multi-vendor support for 2G, 3G, LTE/LTE-A
- Network planning and design based on the live network
- Feedback during network rollouts

3D GEOLOCATION AND VISUALIZATION

Planet offers advanced 3D geolocation capabilities that allow mobile operators to understand vertically distributed traffic inside buildings and to locate hotspots. Utilizing an advanced 3D fingerprinting algorithm with live mobile network measurements, Planet delivers 3D representations of indoor/ multi-floor predictions and radio network coverage, delivering unparalleled accuracy of network planning and optimization - especially for desirable small-cell locations.

ACCURATE NETWORK PLANNING AND OPTIMIZATION

- Unique 3D view for ultimate network coverage visualization and analysis
- Understand subscribers coverage experience inside buildings and hotspots
- Simplify hotspot identification for small-cell rollouts
- Facilitate evolving network traffic demands and issues
- Reduce or complement in-building walk tests and site visits
- Feedback during network rollouts



Support for Network Optimization

ACCURATE VIEW OF THE TRAFFIC

Planet’s ability to accurately simulate the real world is useful from the early strategic network planning stage to network optimization. 2D and 3D traffic maps reflect actual and expected traffic loads, offering a critical input

MULTI-SOURCE TRAFFIC MAPS

- High-resolution geodata including 3D buildings
- Demographic data
- Geolocated call traces
- Social media usage information
- Live network traffic and cell loads

to network planning and optimization. Geolocated call traces and social media usage inform operators where mobile devices are in use. Network performance management data provides actual traffic and cell loads, as well as historic data for forecasting traffic development.

WORKFLOW AUTOMATION – IMPROVE YOUR NETWORK 24X7

RF and performance engineers constantly receive information from various sources that could be helpful for planning an expansion or troubleshooting a problem. Planet Server streamlines the connections between internal and external stakeholders by making it easier to produce, integrate, access, analyze and modify information derived from air-interface simulations, measurements and related network configuration data. This enterprise-grade solution makes it possible to integrate planning data with other third-party data sources such as relevant network configuration or performance data. Automatic aggregation of this valuable data, combined with the ability to publish network planning simulations and analysis layers on the web, simplifies cross-department information sharing while increasing operational efficiencies.

FLEXIBILITY AND INVESTMENT PROTECTION

With a proven track record, Infovista remains at the forefront of software development for RF engineering. As the only planning solution that embeds MapInfo Professional GIS, Planet grants users with easy access to worldwide data and an advanced GIS toolset that provides a foundation for managing all necessary geographic data. Multi-user support and flexible deployment options make it easy to configure and upgrade Planet in operators' own IT environments or in the cloud, minimizing both OPEX and CAPEX. Infovista product management and R&D are active participants in the wireless ecosystem and continue to enhance Planet's capabilities to meet the 3GPP standard as well as the needs of its vendor and operator customers. RF and performance engineers can rest assured that their investment in Planet will be protected by an extensive roadmap and ongoing software development.

PLANET SERVER

- Enterprise-grade data management
- Support for multi-user collaboration
- ETL (extract, transform, load) capabilities
- Workflow automation (prediction & analysis generation, etc.)
- Publish and share RF layers across the enterprise using Planet Server Explorer

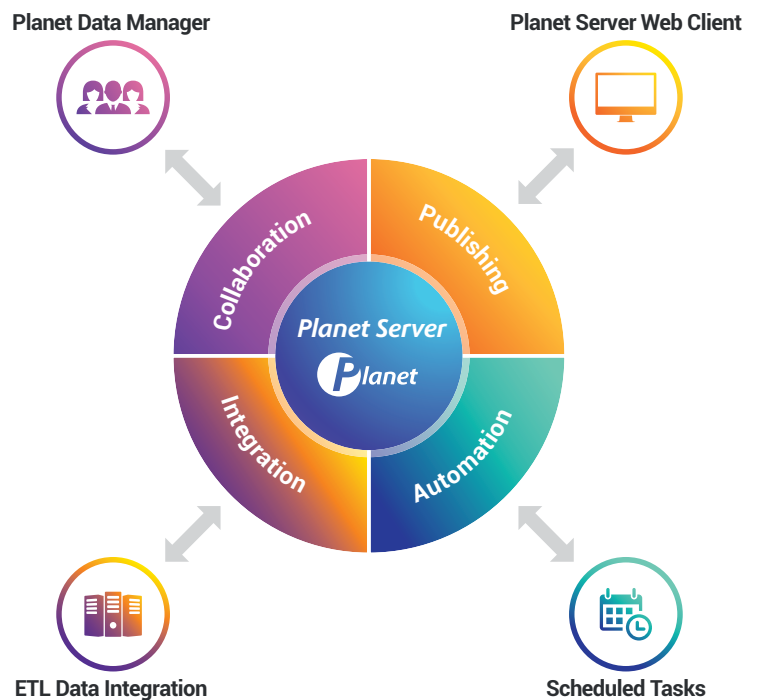


Figure 3. Automate RF planning activities using Planet Server.

RELIABLE SOFTWARE TO INTEGRATE WITH KEY SYSTEMS

- Enterprise ready
- Flexible deployment options
- Data Manager centralized server
- Planet open API
- Integrations with live network
- Embedded professional GIS system

About Infovista

Infovista, the leader in modern network performance, provides complete visibility and unprecedented control to deliver brilliant experiences and maximum value with your network and applications. At the core of our approach are data and analytics, to give you real-time insights and make critical business decisions. Infovista offers a comprehensive line of solutions from radio network to enterprise to device throughout the lifecycle of your network. No other provider has this completeness of vision. Network operators worldwide depend on Infovista to deliver on the potential of their networks and applications to exceed user expectations every day. Know your network with Infovista.

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KNOW YOUR NETWORK™