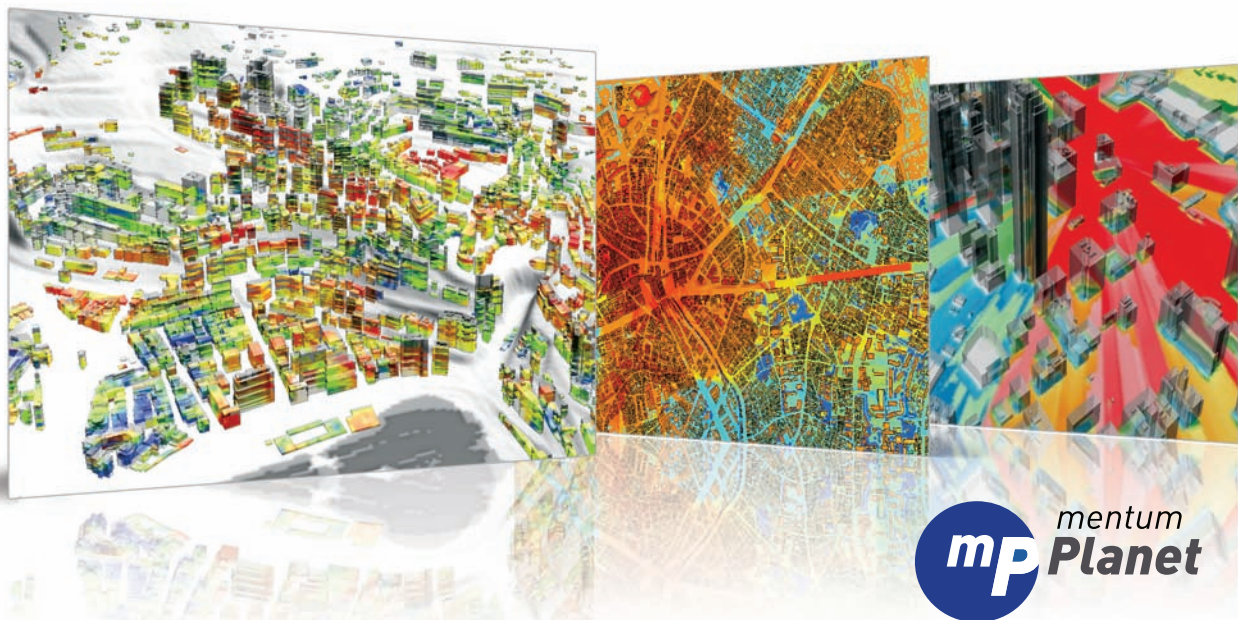




# Mentum Planet

*Delivering More Profitable Wireless Access Networks*

Mentum Planet® is a robust and easy-to-use Windows-based software solution that helps operators, integrators and equipment vendors plan, manage and improve the performance of wireless access networks. Mentum Planet supports all major wireless access standards including LTE-Advanced and Wi-Fi. It addresses all stages of the network lifecycle from strategic planning to ongoing management of network performance. During the last few years, the development focus has been on providing operators with outstanding support for the planning of small cells and heterogeneous networks (HetNets), both in 2D and in 3D. Maximize your investment, increase revenue, improve profitability and accelerate time-to-market with Mentum Planet, the world's most innovative and advanced wireless access network planning, management and optimization platform.



**Figure 1.** Examples of Mentum Planet's traffic, coverage and capacity maps – displayed both in 2D and 3D

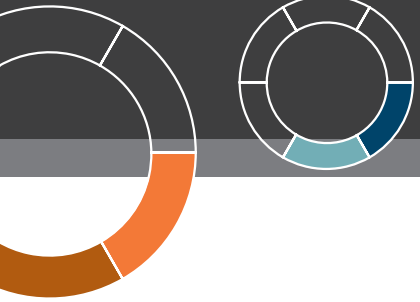
## Pave the Way to the Future

Mentum Planet is at the forefront of network design and optimization, and the solution will empower you to take the right decisions. At InfoVista, we believe that doing things right at the beginning paves the way for doing things right in the future.

Engineers using Mentum Planet are able to proactively deploy successful networks by:

- Identifying challenges
- Evaluating strategies
- Optimizing spectral efficiency
- Improving indoor and outdoor coverage
- Achieving outstanding performance
- Avoiding backhaul bottlenecks





## Technological Leadership

Wireless networks are evolving quickly, and introducing new radio access technologies is a costly undertaking for any operator. Network design and optimization solutions play a critical role in the assessment, planning and deployment of new wireless networks. Operators deploying WCDMA and LTE today want to do so knowing that their network planning solution will be ahead of the curve when it comes to technology support, and that small cells, HetNets and LTE-Advanced (from Release 10 and onwards) will be supported when they need it. From the product's origin as Planet at MSI to today's latest incarnation with full support for LTE-Advanced, Mentum Planet has

## Accuracy as a Guiding Principle

The value of any simulation-based planning tool is tied to its ability to emulate real-world conditions. Mentum Planet excels at accurately modeling changes prior to implementation so customers benefit from accurate budgeting, efficient planning and optimal return on investment in their deployed networks. In addition to industry-standard propagation models, Mentum Planet offers several remarkably accurate and unique models, such as CRC-Predict and the Planet Universal Model, a hybrid model that offers unmatched accuracy in all environments. Accuracy in propagation modeling is the foundation that enables the Mentum Planet simulators (e.g. LTE Monte Carlo simulation) to reliably replicate wireless network behavior. Another aspect of

## 3D to truly model the world

The design and optimization of wireless networks in urban areas is a complex task. Not only is it important to ensure that all network information is defined accurately (e.g. antenna placement), but also there is a need to visualize the network performance in 3D because the environment is fundamentally made of tall man-made structures. Furthermore, considering that the majority of the network traffic in urban areas is indoors, there is a need for a solution that enables the visualization of coverage KPIs indoors. Mentum Planet's Metro Network Design Package is a brand new module including accurate 3D propagation modeling and 3D network visualization. The Metro Network Design Package enables engineers to develop better wireless networks in the urban cores.

remained a technological leader in the industry. Mentum Planet has supported LTE since early 2008, and Infovista continues to deliver on its promise of supporting new and advanced radio access technologies before the need even exists.

## Technology Support

- Small cells including Wi-Fi
- HetNets
- 4G: LTE-Advanced, LTE, WiMAX
- 3G/3G+: HSPA+, HSPA, WCDMA, EVDO, CDMA
- 2G/2G+: EDGE, GPRS, GSM, IDEN
- Other: DVB-H, DVB-T, TETRA, P25

accuracy is the ability to estimate the traffic load. Mentum Planet offers a wide set of features to create accurate traffic maps based on high-resolution geodata, current traffic load, geo-localized measurements and social media information.

## Real-world Network Design

- Best-in-class propagation models
- Automatic propagation model selection
- Support for multiple resolutions and 3D environments
- Merging of predictions with surveys
- Detailed modeling of access networks
- Detailed antenna modeling including 3D patterns

## Detailed City Network Design

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

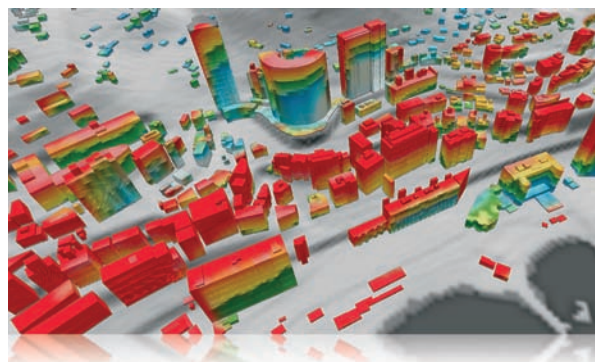


Figure 2. Example of 3D visualization of coverage in a city

## Accessible Efficiency

At InfoVista, we understand that having the right tool to get the job done goes well beyond having a long list of software features. It also means being efficient at doing your work and quickly learning the product. For that to happen, Mentum Planet offers an intuitive user interface that is contextually driven and is backed by best-in-class user documentation and a comprehensive help system, to ensure you get the answers to your questions quickly. As the only RF planning and optimization solution that embeds MapInfo professional GIS, Mentum Planet users have easy access to worldwide data and an

## Breadth of Capabilities

The requirement for a network planning tool goes well beyond planning a network. In fact, Mentum Planet is used for the entire lifecycle of a network—from initial strategic design to network optimization and even network performance management. Through its ability to simulate the real-world performance of an access network under various conditions (e.g. load, site configuration, etc.), Mentum Planet has become the tool that operators use to make critical CAPEX decisions, such as market expansions, technology overlay deployments or rollout of new devices or services. By associating live network measurements with simulations, operators can further validate their models and build confidence in their simulation results. With unmatched simulation and analytical capabilities, and management of “what-if” scenarios, Mentum Planet offers the perfect platform to ensure operators make the right business decisions.

## Enterprise-Ready

While traditional RF planning tools have been independent solutions isolated from other important data sources such as operations support systems (OSS), Mentum Planet seamlessly integrates network solutions and enterprise IT environments. This enables RF and performance engineers to manage, access and utilize data more effectively. Mentum Planet’s integrated data management system facilitates multi-user project collaboration and can provide a centralized database for all RF planning projects. Maintaining applications and data on central servers makes upgrades, redundancy and workflows easier to manage — and helps customers better plan and optimize their networks.

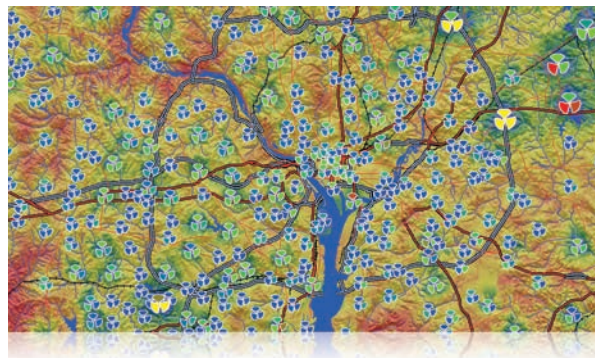
advanced GIS toolset that provides a foundation for managing all geographic data in the planning environment. Engineers can harness the power of Mentum Planet quickly, with any level of expertise, and increase efficiency.

### Usability Advantages

- Modern user-interface
- Online contextual (F1) help
- Tabular editor for mass editing
- Fast and scalable
- Online knowledge base

### Feature Rich Solution

- Advanced analytical capabilities
- Support of multiple scenarios
- Management of measurement data
- Traffic and subscriber modeling
- Network simulations (coverage and capacity)



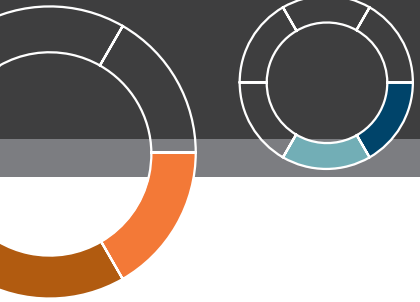
*Figure 3. A network displayed in Mentum Planet*

The Mentum Planet Data Manager is extremely flexible and fully supports thin-client architecture deployments based on Citrix® as well as standard client/server architecture. It has successfully supported more than 500 concurrent users and allowed each to share key data saved in a centralized database from which they can retrieve or submit data in a controlled fashion.

### Flexible Deployment Options

- Data Manager centralized server
- Multi-user collaboration capability
- Support for thin-client deployment
- Flexible, software-based licensing





## Open Next-Generation Platform

In addition to supporting evolving radio technologies, InfoVista remains at the forefront of software evolution to ensure the investment made in Mentum Planet is one that will stand the test of time. Our commitment to innovation has made us an industry leader with a proven track record of outstanding customer satisfaction.

Mentum Planet offers a brand new .NET-based architecture that improves scalability, performance and reliability, so that engineers can manage larger and more complex networks, such as those requiring more sophisticated radio models.

This platform is also completely open, and allows for customization of the application using any .NET compatible language (e.g., Visual Basic) and the Mentum Planet Open API. Deployment of these applications can easily be done as Mentum Planet extensions and shared between users. Finally, Mentum Planet uses standard and documented data formats like documented XML.

### Platform for the Future

- .NET-based architecture
- Mentum Planet Open API
- Easy-to-deploy Mentum Planet extensions
- Use of standard documented file formats

## Mentum Planet Benefits

**Unmatched Accuracy.** Accurate simulation of real-world conditions enables reliable budgeting, efficient planning and optimal return on investment.

**Superior Platform.** Mentum Planet builds on the product's heritage as enterprise-grade RF planning software, while offering the most modern platform in the industry.

**Performance and Scalability.** Network operators can support a countrywide, multi-technology network in a single project.

**Proven Success.** Infovista is the trusted source for wireless network planning software for more than 550 customers globally.

**Accessibility.** Mentum Planet can be deployed to support more than 500 concurrent users, both in the office and in the field.

**Ease of use.** The modern, contextual interface allows engineers to become familiar with the product quickly.



Figure 4. The unique 3D capabilities in Mentum Planet enhance the accuracy.

## Mentum Planet Software Editions

|                          | Basic             | Professional          | Enterprise            | Ultimate              |
|--------------------------|-------------------|-----------------------|-----------------------|-----------------------|
| Technology Support       | Single Technology | Multi-Technology      | Multi-Technology      | All Inclusive         |
| Multi-User Collaboration | No                | No                    | Yes                   | All Inclusive         |
| Add-Ons                  | Optional          | Optional              | Optional              | All Inclusive         |
| Automated Planning       | Optional          | Optional              | Optional              | All Inclusive         |
| Licensing                | Stand-alone       | Stand-alone or shared | Stand-alone or shared | Stand-alone or shared |
| Support                  | Silver            | Gold                  | Gold                  | Platinum              |

## Mentum Planet Software Editions

Mentum Planet is offered in four distinct editions in order to meet both your requirements and your budget. The support levels, from Silver to Platinum, follow the edition levels.

- **Mentum Planet Basic Edition** is an entry-level product that offers strong propagation and modeling capabilities but which is focused on small deployments. The Basic Edition is of great value for the engineer who requires a network planning and propagation solution for a smaller network.
- **Mentum Planet Professional Edition** is focused on small to medium deployments where the management of multiple technologies is a must.
- **Mentum Planet Enterprise Edition** is the high-end solution large operators are looking for. It is a multi-user, database-centric solution with in-depth modeling of multi-technology networks.
- **Mentum Planet Ultimate Edition** encompasses all Mentum-developed software modules available for Mentum Planet\* today and in the future. With the Ultimate Edition, there are no additional software costs for your radio access network planning needs.

## Mentum Planet Technology Modules

Mentum Planet consists of a core platform which offers TDMA/FDMA technology support and a series of additional technology modules. The feature sets of the core platform and of the technology modules continuously evolve with new releases of Mentum Planet in order to keep up with the ongoing evolution of wireless standards. While each technology module is licensed separately, Mentum Planet truly supports multi-technology networks, such as HetNets with small cells, in a single network planning project.

- TDMA, FDMA (as part of the core platform)
- iDEN
- GSM, GPRS, EDGE
- WCDMA, HSPA
- CDMA, EVDO
- LTE, LTE-Advanced
- WiMAX
- Wi-Fi

## Mentum Planet Add-Ons

Mentum Planet offers several additional modules that can be used in combination with the technology modules.

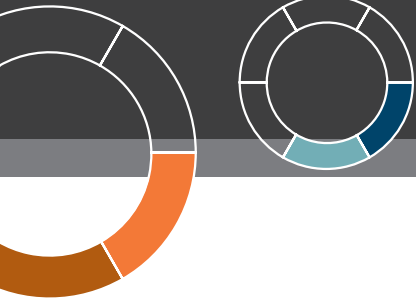
- **Automated Planning** – a complete range of capabilities for Automatic Network Planning, including Automatic Cell Planning (ACP), Automatic Site Placement, Automatic Site Selection and Single Site Optimization.
- **Metro Network Design Package** – detailed network design in urban environments including 3D propagation and visualization of indoor and outdoor network coverage
- **Advanced Measurement Data Package** – provides advanced capabilities to utilize drive test data with the goal to improve the accuracy of propagation models
- **Mentum Planet Open API** – a development kit that allows end users to develop .NET-based applications that utilize the capabilities of Mentum Planet.

## Additional Options

The additional options\* will further enhance your network design and optimization solution.

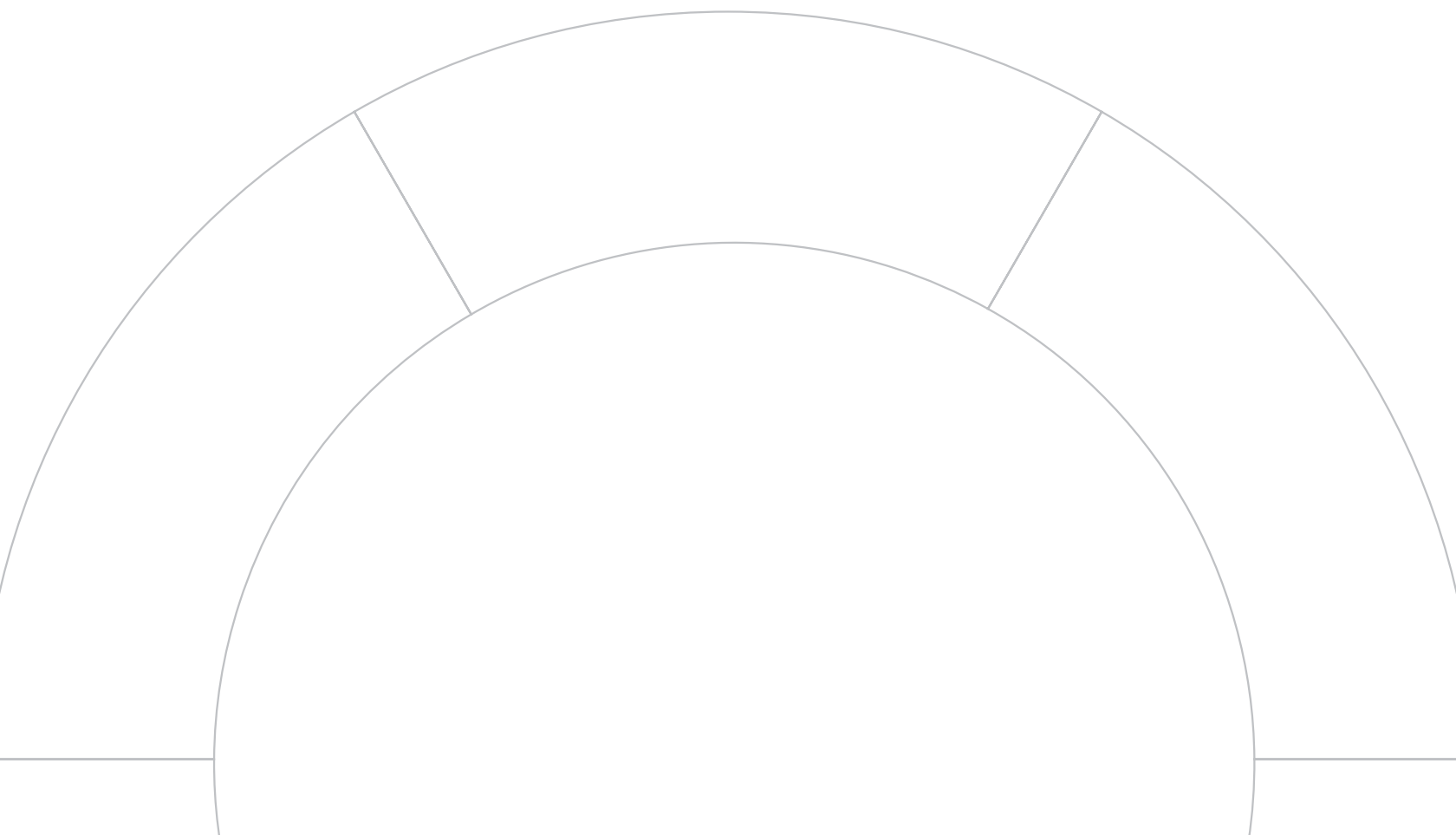
- **Mentum Universal Model** – integration of the best-in-class propagation model with clear and tangible benefits—networks that cost less and perform better
- **Mentum Ellipse** – integration of the market-leading solution for wireless backhaul and microwave link planning.
- **Mentum Geodata** – meets the special requirements of wireless operators and are optimized to work with your planning solution, RF processes and budget.
- **Mentum Fusion** – for further utilization and sharing of operators' key asset—the wireless network and its coverage—to stakeholders within and outside the organization.

\* The Ultimate Edition does not include products sourced from third-party suppliers (e.g. Universal Model) or products not branded under the Mentum Planet brand (e.g. Mentum Ellipse, Mentum Geodata, Mentum Fusion).



## About InfoVista

InfoVista is the leading provider of IP and RF planning, assurance and optimization software solutions and services that enable efficient network and IT transformations. Our award-winning solutions empower communications service providers and IT-intensive enterprises to deliver high-performing and differentiated services while cost-effectively planning, operating, optimizing and monetizing their network. InfoVista's combined expertise and technology innovations in radio and IP networks provide more than 550 customers worldwide with a new level of network intelligence, visibility and control across the entire network life cycle. Using InfoVista's solutions, they deliver optimal quality of service, ensure a high-quality user experience, invest appropriately and consolidate their OSS/BSS ecosystems while keeping total cost of ownership as low as possible. For more information, please visit [www.infovista.com](http://www.infovista.com).



For more information, please visit [www.infovista.com](http://www.infovista.com)  
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