

Product Brief: spatialNET

Efficiently Plan, Design, Build, and Manage Any Communications Network with spatialNET®

spatialNET® is a core component of SPATIALInfo's spatialSUITE solutions portfolio that manages physical network inventories for today's communications service providers.

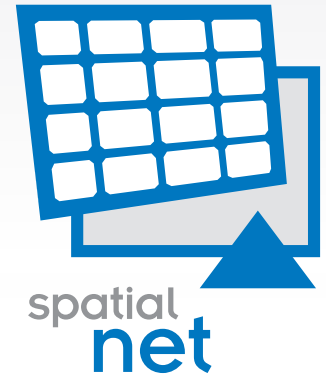
Design and Manage the Complete Physical Network Inventory

spatialNET provides engineers with a familiar, CAD-based platform for designing fiber, coax, and twisted-pair communications networks. But unlike typical CAD-base systems that save data in distributed flat files, spatialNET manages data in a fully configurable, spatially enabled information model that interactively stores design data alongside detailed documentation for every network element.

The result is a centralized enterprise repository reflecting a current, accurate state of configuration and end-to-end connectivity for the entire communications network. Users see the network in seamless, real-time geospatial map views that track physical location, equipment specifications, connectivity, attributes, and capacity for equipment, cables, and all other assets.

Produce Highly Functional, Efficient Designs

Complete with design, modeling, inventory, and documentation capabilities for the classes of equipment found in all communications networks, spatialNET handles the most complex design configurations. Automated tools help users determine where to build new facilities, find the nearest tap or splice case, determine segment capacity, or find key engineering data. With accurate network information at their fingertips, users answer questions essential for designing optimal networks that deliver services to customers quickly, efficiently, and cost-effectively.



End-to-end design, engineering, and inventory management application that makes network data available to enhance business practices across the communication service provider's organization.

Key Benefits

Increased efficiency in drafting and design shortens the time from build-out to activation and increases revenue opportunities.

Precise spatial positioning of equipment reduces underground locate costs.

Detailed documentation of assets allows for optimal provisioning of network equipment.

Up-to-date reporting of network assets reduces the need for field audits and lessens MTTR.

End-to-end network connectivity model allows for fast location of faults, losses, and outages and efficient resolution of issues.

Equipment dictionaries and design profiles enforce standards and ensure networks are built as designed, reducing future maintenance costs.

Extend Data Across the Enterprise

spatialNET brings the communications service provider's most critical asset - their network data - to the forefront of the organization, making it available not only to designers and engineers but also to key users across the enterprise. SPATIALinfo's non-proprietary information model delivers current, accurate network data to systems supporting ERP, finance, project management, billing, provisioning, order management, and an array of other critical OSS functions to facilitate effective business decisions and enhance operational efficiency in every department.

Complete Modeling Capabilities for All Communications Networks

spatialNET streamlines design, engineering, and asset-management processes for all network types with:

- An intelligent graphical design interface that renders network component details in a real-world, visual environment and models full, end-to-end connectivity through all cables, buildings, structures, and equipment
- Design automation functions that suggest appropriate equipment types, alleviating design mistakes and simplifying the design process
- Interactive design tools that leverage standard CAD functions for easy placement of network equipment and automatic management of data and annotation whitespace
- Intelligent equipment association that dynamically connects network equipment to support structures and associated addresses and automatically recalculates strand and cable lengths as the network is updated
- Complete, fully configurable equipment dictionary templates with defined attributes that standardize design and enforce engineering standards
- Customizable design profiles that allow designers to create and use equipment dictionary groupings to manage design specifications
- Active equipment modeling that preserves network integrity throughout the design and as-built process by showing equipment as it exists in the real world, with business rules enforced to ensure proper configurations are maintained
- A sophisticated job management system allowing multiple users to manage the same network area without overwriting each other's changes
- Accurate bill-of-materials reports generated from detailed designs to facilitate planning and procurement
- Support for asset identifier attributes, including bar codes, RFID, FCID, and CLLI codes

Fiber Design and Management

- Design and modeling for FTTH and GPON networks
- Channel multiplexing to the individual fiber for CWDM and DWDM
- Advanced route-finding, planning, and ring-modeling for identifying diverse network paths
- "Master circuit" configurability for network elements, enabling physical bearer support for logical inventory systems
- Detailed modeling for fibers, buffer tubes, and ribbon cables
- Complete length management for aerial and underground cables, loops and risers

RF Design and Management

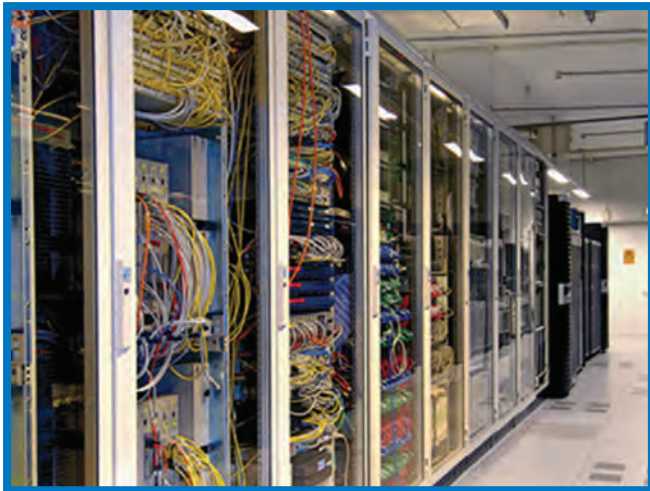
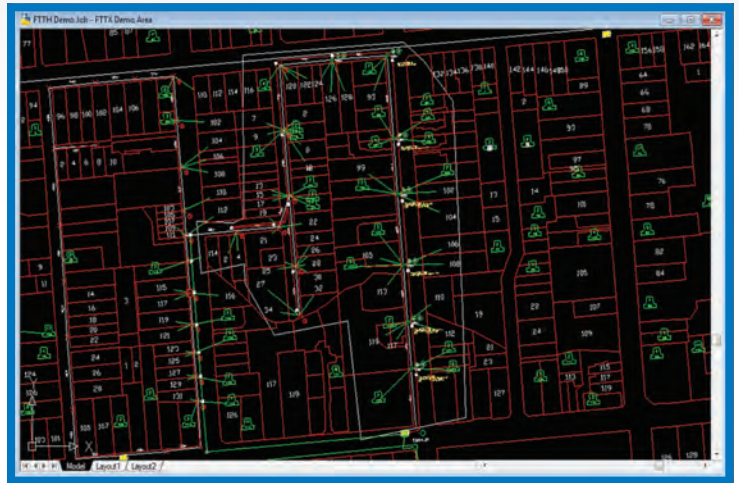
- Automatic signal-leveling correctly calculates and propagates signal levels across the RF network
- Color-coded visual warnings track selected signal level tolerances on all equipment and cables
- Node port management tracks individual fiber-to-buss port assignments at the node
- Automatic tap configuration places taps and adds signal values with a single mouse click
- Design profile configurability allows manual overwrites of profile signal levels for consistency in equipment groupings across the network
- Centralized and distributed power support and forward- and return-path management for all HFC architectures

Design and Management for Fiber, RF, and Copper Networks

With advanced route design, splicing, cable- and fiber-management capabilities, spatialNET models copper, fiber, RF, and HFC networks from the central office or head end, through the field, and all the way to the customer premises. spatialNET's integrated design capabilities help network designers build

Inside Plant (ISP) Design and Management

spatialNET seamlessly models end-to-end network connectivity from inside plant to outside plant, with full tracing capabilities through any ISP site, including head ends, cable term panels, central office, and node sites. spatialNET supports the ISP network at the rack, shelf, chassis, card, and port levels through internal cabling, riser diagrams, and distribution frames to cross-connects and ONUs and finally out to the subscriber's premises.



within multiple-unit buildings

- Rack elevation views generated automatically from database records
- Schematic views showing port-to-port connectivity between devices, with feathering capabilities between floors
- Service-level views, showing how logical services are implemented within the physical network

Easy drag-and-drop functionality properly connects cables with equipment, and clearly defined business rules ensure accurate connections. Complete connectivity modeling through ISP sites enables accurate location of outages and precise determination of available service offerings and network capabilities. A few of spatialNET's unique ISP features include:

- Seamless connectivity from inside to outside plant. Physical and logical traces follow and report on the full signal path from the ISP site to the OSP network
- Floor-plan views of buildings and other network sites, allowing real-world modeling and tracing of ISP sites

Geospatial Asset Management System

spatialNET represents the ideal convergence of CAD and geospatial network management. While the CAD-based client provides an efficient design and engineering interface, spatialNET's enterprise geospatial platform supports the integration of network assets with geo-referenced landbase and address information to create a complete geospatial asset management system.

For accurate and convenient map layout, spatialNET supports a number of commercial landbase formats and offers sophisticated tools for managing address, parcel, and street centerline data.

Addresses can be created from parcel maps in an automated process, and roads can be viewed and automatically labeled to allow quick navigation throughout the asset database. spatialNET also models engineered customer

addresses as well as proposed customer locations to support service qualification analysis for customer service and planning studies.

Working in a geospatial environment accurately records the spatial component of each network asset relative to the landbase and customer information. Geospatial intelligence helps users understand complex relationships between assets. spatialNET optimizes the use of tabular and map-based editing tools to deliver an intuitive and efficient data management environment that improves engineering and operational productivity.

Industry-Standard Platforms

All of SPATIALInfo's products use industry-standard software platforms to bring familiar and functional workspaces to users, system implementers, and IT administrators. Those technologies include:

- **AutoCAD** – Industry leading CAD platform provides powerful yet familiar tools for drafters, designers, and engineers
- **Oracle** – Powerful relational database with spatial data management capabilities that can be leveraged throughout the organization
- **Python** – Open-source scripting language extends spatialNET for customized applications that meet specific company needs
- **Google Maps/Google Earth** – Familiar mapping tools provide a convenient backdrop for the occasional user as well as an accessible environment for validating and studying real-world locations of network assets and their surroundings

Complete Network Design, Engineering, and Asset-Management Solution

spatialNET delivers value with its powerful and open platform for designing and managing network data and leveraging it throughout the enterprise to enhance business practices in sales, marketing, customer service, network operations, field maintenance, and others. Typical return on investment (ROI) studies cited by customers who have deployed spatialNET include:

- Increased speed in network drafting and design
- Shortened time from build-out to activation
- Reduced underground locate costs
- Improved network availability
- Faster acquisition of both residential and business customers
- Lower Mean Time to Repair (MTTR)
- Improved support for priority restoration
- Savings in future maintenance costs

For more information on how spatialNET's network design, engineering, and management solution can deliver a measurable ROI to your organization, please visit www.spatialinfo.com/products or contact us at products@spatialinfo.com.

Copper Design and Management

- Inline equipment location (load coils, bridges, taps, etc.) supporting next-generation services like ADSL and IPN
- Detailed reporting on loop composition and DSL service qualifications, with upstream and downstream tracing at the sheath or circuit level
- Definitions for special usages (T1, DSL, etc.) of copper pairs to keep physical records current and accurate
- Complete tracking and management of ducts, conduits, and manholes, along with associated lease agreements and Continuing Property Records (CPR)
- End-to-end connectivity for tracking physical bearer and special-usage information, providing the full physical path for integration with logical inventory systems



spatialNET® is part of the spatialSUITE line of communications products from SPATIALInfo Inc.

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