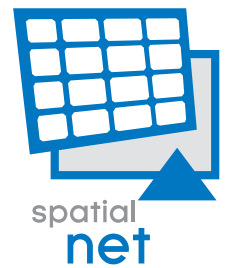


spatialNET



END-TO-END PHYSICAL NETWORK INVENTORY MANAGEMENT

A current and accurate physical network inventory is a critical aspect when managing a successful communications network. However, many communications service providers are faced with the challenge of maintaining constantly evolving network data. New build-out, network configuration changes, repairs, and the migration to new network technologies all contribute to making asset management a formidable task. To remain competitive, organizations need an agile network management solution that can be integrated throughout the enterprise.

The core component of the spatialSUITE portfolio, spatialNET enables service providers of any size and network architecture to efficiently manage physical network data. Planners, designers, and engineers utilize spatialNET's sophisticated design and engineering tools to create and manage accurate network asset data, while asset managers and system integrators leverage its scalable information model to deliver data in real-time to users and systems across the organization, including provisioning, billing, assurance, and other critical OSS/BSS functions.

DESIGN AND MANAGE THE ENTIRE NETWORK

Utilizing a familiar CAD-based UI for designing fiber, RF, HFC, and twisted-pair communications networks, spatialNET provides engineers with a fully configurable, spatially-enabled information model. With the use of configurable tools, users are able to design networks and manage asset data efficiently in an intelligent design interface that renders network component details in a real-world, visual environment. Users can model the full end-to-end physical network through all cables, buildings, structures, and equipment. Additional design capabilities include:

- › Dynamic connection to network assets through intelligent equipment association, allowing automatic recalculation of strand and cable lengths as the network evolves
- › Accurate bill of materials (BOM) reports generated from details designs to facilitate planning and inventory management
- › Unique asset identifier tracking, including serial numbers, bar codes, RFID tags, and CLLI codes
- › Extensive tracing capabilities across all network architectures to analyze connectivity and service availability
- › Browse, search, and edit tools allow the largest network inventories to be managed with a higher degree of efficiency and currency

Key Benefits

- › Increased efficiency in drafting and design shortens the time from build-out to activation and increases revenue opportunities
- › Equipment dictionaries and design profiles enforce standards to ensure networks are built as designed, reducing construction, as-built, and maintenance costs
- › Detailed documentation of network assets allows for optimal provisioning of equipment
- › Up-to-date reporting of network assets reduces the need for field audits and lowers mean-time-to-repair, reducing the need for costly truck rolls
- › End-to-end network connectivity enables fast location of faults, losses, and outages, providing efficient resolution of network issues

FIBER NETWORK DESIGN AND MANAGEMENT

spatialNET includes a rich fiber network model that supports a variety of active (Active Ethernet) and passive (PON, GPON) fiber-to-the-home network deployment architectures as well as fiber backhaul networks. spatialNET also supports fiber microduct network architectures, allowing for them to be efficiently designed in spatialNET, with a completely connected model of ducts that can be managed to document capacity as ducts are filled at each phase of project roll-out. Additional design and management features built into spatialNET for fiber networks include:

- › Detailed modeling for fibers, buffer tubes, blown fiber, ducts, microducts, trays, and ribbon cables
- › Complete modeling for inside plant with Inside Data Management (IDM)
- › Channel multiplexing on individual fibers for CWDM and DWDM
- › Advanced capacity management, planning, and ring-modeling for identifying diverse network paths
- › Fiber location capabilities with available physical capacity (dark fiber) and logical capacity (unused wavelengths or channels)
- › Complete length management for aerial and underground cables, loops, and risers
- › Tracking of usage, ownership, and priority of fiber network assets
- › Advanced network topology for managing splicing details
- › Reporting and integration capabilities for network-to-address and network-to-device functionality
- › “Master circuit” configurability for network elements, enabling physical bearer support for logical inventory systems

RF NETWORK DESIGN AND MANAGEMENT

With advanced route design, splicing, cable, and associated equipment management capabilities, spatialNET can model HFC networks and RF signals, amplifiers, and power from the central office or head end, through the field, and all the way to the customer premises. spatialNET’s integrated design allows designers to build networks that meet ever-increasing customer demands for high-bandwidth data, telephone, internet, video-on-demand, and HD television services. By utilizing spatialNET to design and manage their network, communications service providers are able to meet these needs effectively and efficiently. spatialNET’s design capabilities for HFC networks also include:

- › Automatic signal-leveling to correctly calculate and propagate signal levels across the network
- › Color-coded visual warnings for tracking selected signal-level tolerances on all equipment and cables
- › Centralized and distributed power support and forward- and return-path management for all HFC architecture
- › Tracking of individual fiber-to-buss port assignments at the node
- › Automatic configuration and placement of taps and passive devices, with configurable warnings when return signals are out of design specifications
- › Customizable options for modeling RF tap power calculations as a linear or polynomial shape

COPPER DESIGN AND MANAGEMENT

In addition to supporting fiber and RF networks, spatialNET also manages copper loop networks, enabling operators transitioning from copper to a fiber network to leverage their network asset data in a spatially-enabled repository. Service providers operating a multi-technology network such as fiber-to-the-curb (FTTC) with VDSL runs to the home, are also able to access network data through a single enterprise network asset management platform. spatialNET support for copper networks includes:

- › Inline equipment location (load coils, bridges, taps, and others) supports next-generation services such as 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) or 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

INSIDE DATA MANAGEMENT

spatialNET's Inside Data Management (IDM) tools enable users to seamlessly model end-to-end network connectivity from inside plant to outside plant, with full tracing capabilities through all assets, including head-ends, hubs, central offices, commercial complexes, and any building site type. Key features of IDM include:

- › Ability to model risers from floor to floor
- › Support for multi-floor facilities
- › Ability to model floors, rooms, aisles, closets, and addresses
- › Improved space management, including IDM Location Finder and sub-slots
- › Automated generation of rack elevation and network ortho-schematic views directly from the database
- › QA checks and automation functions to ensure valid and consistent network documentation
- › Operate over LAN and WAN network environments. All functions, rules, and graphical symbology are configurable to comply with any system's standards
- › Configurable Port Groups
- › Sub-equipment port mapping
- › Schematic views showing port-to-port connectivity between devices
- › Full integration with CAD for precise data entry and high quality visual output

JOB MANAGEMENT SYSTEM

spatialNET leverages a sophisticated job management system (JMS) that allows multiple users to work in the same area simultaneously for long periods of time. JMS control ensures database integrity by providing a consistent set of data during a design job, and keeps work-in-progress separate from the as-built data. spatialNET also tracks the detailed status of every asset in a job using a configurable state model, providing a real time view of the operational status of the network. Using the JMS framework, large projects containing multiple designs can be managed effectively to provide better visibility on completion status and the future network. To help model the design workflow as it occurs in the real work, JMS also supports:

- › Creation and management of job scenarios to test design alternatives
- › The creation of dependencies between jobs to enforce the order of posting
- › A partial posting solution for the subset of a design job that has actually been built
- › Conflict detection between different job scenarios

spatialNET is part of the spatialSUITE portfolio of network asset management products available from Synchronoss. For more information on spatialNET and the other broadband solutions available from Synchronoss, please visit our website at <http://www.synchronoss.com>.