Bentley Fiber

For the Productive Design and Management of Outside Plant Fiber Networks

Bentley Fiber is a comprehensive product for designing, documenting, and maintaining outside plant fiber networks. It accommodates all the requisite fiber architectures, including FTTx, in a geospatial environment that provides for detailed engineering calculations performed interactively during the design process. Bentley Fiber supports Oracle Spatial and relational database persistence.

Integrated Modeling and Documentation Workflows

Bentley fiber provides a common environment for comprehensive project delivery and connects users, projects, and your enterprise. You now have a personal portal to access learning, communities, and project information. You can also share personal files including i-models and PDFs directly from your desktop with other users, or stage them for easy access from a Bentley app, such as Bentley Map Mobile. With the new project portal, your project teams can review project details and status, and gain visibility into project performance.

Intelligent Network Model Brings Productivity Gains

The intelligent network model is created and maintained in a geospatial information system (GIS) environment and can be used by practically every department of a communications service provider. The operations department uses the intelligent network model for network monitoring, trouble-ticketing dispatch, tracing to locate fiber outages, and locating affected customers. Operations uses the intelligent network model for call-before-you-dig responses and engineering retrieves information such as services available for addresses or to determine amplifier, node, or power supply feeding specific addresses. Additionally, the intelligent network model can generate engineering reports such as total cable footage, as well as house or device counts within a specified geographic area.

The intelligent network model is needed by billing and other business departments for purging duplicate addresses, discovering missing addresses not in the billing system but serviceable, managing accurate rate center, and e911 boundary relationships. Accounting uses the model to generate reports of assets, for franchise fee calculations, duct and pole leasing invoices and payments, the generation of reports to taxing authorities, and identifying retransmission royalties.

Optimized Engineering Environment Lets Designers Work Faster with Fewer Errors

Bentley Fiber provides an easy-to-use GUI for specifying equipment standards used in the design and documentation of fiber networks. All types of equipment required in FTTP, HFC, and other fiber architectures are supported. Configuring equipment standards ensures consistency throughout projects. Bentley Fiber supports the multiplexing and de-multiplexing of wavelength for use in commercial fiber and HFC architectures. This functionality is available in splice enclosures, OSP node chassis, and is fully supported by Bentley Inside Plant. Bentley Fiber

New WDM enhancements allow users to create equipment that can be placed inside a splice enclosure or a node according to their specific network requirements.

allows efficient fiber cable splicing automatically or manually, depending on the complexity of the network. From an easy-to-use GUI, users can select fibers to splice together, the type of splice to use, the position they will occupy in the enclosure, their status, tray/slot/holder location, and fiber entry port allocation for the incoming sheaths.

Quickly find any device, locate an outage anywhere in the network, locate a path between two devices based on a number of criteria, or locate customers. Users have access to handy locate functions including locate device by several methods: locate customer, locate slack, and locate outage. Bentley Fiber generates customizable .xls template bills of material reports (BOMs), reel ordering reports, and intelligent splicing documentation for use in downstream work processes. Reports are displayed on the screen and may be output as text files for printing or import to other systems. Various reports are available, including a resource report that details the equipment specifications, a device information report with the properties of the routed equipment, a device bills of material that lists the materials and costs of equipment used on current work or in an entire project, a sheath BOM report of the active work or an entire project, and a reel BOM assigns sheaths to reels on the active work or an entire project.

Bentley Fiber provides the capability to route and manage conduit within a duct system and to perform capacity analysis. Integrated Bentley Map® print preparation capabilities can be used to facilitate construction plans. Print preparation functionality is delivered with a standard schema and sample border templates and other items. This facilitates quick startup, but print preparation is also fully customizable to meet the user's organizational standards.

Bentley Fiber At-A-Glance

Supported Persistence Modes
- DGNP (relational database)
- Spatial short transaction – temporary workspaces created by Bentley Map for each session; all modifications must be posted to the live workspace at the end of the session or the data is lost
- Spatial long transaction – workspaces created by Bentley Expert Designer for Communications can be stored for prolonged periods of time until they are merged to the live workspace at the end of the project

Fiber Design and Documentation
- Intelligent network model
- Color-coded cross sections based on buffer tube or ribbon fiber
- Automatic routing function traces strand for quick operator input
- Connectivity maintenance during creation and edit
- Equipment model validation
- Easy assignment of optical system name and description to a grouping of fibers
- Circuit allocation and bandwidth management on an individual fiber basis
- Full network connectivity between outside plant and inside plant with Bentley Inside Plant
- Full support of WDM devices and network models

Analysis and Engineering Calculations
- Engineering calculations integral to the design process
- End-to-end tracing at sheath and fiber level
- Engineering calculations can be performed by area or the entire network
- Fiber loss budget analysis
- Optical coupler optimization
- Rippling/throwing of optical systems or circuits
- Business decision support for locating paths for connection in the fiber network model

Reports and Splicing Diagrams
- Splice diagrams and associated reports
- Circuit Layout Record drawings based on ISP and OSP network connectivity node
- Customizable .xls BOM template capability
- Equipment report
- Device information report
- Consolidated bill of materials containing fiber equipment and cable
- Device bill of materials
- Sheath bill of materials
- Reel bill of materials

Work Prints
- Copy multiple areas into work print preparation environment
- Employ stand-alone DGN with device/facility/structure properties embedded in XML
- Customize borders
- Customize annotation and legends

Configurable Equipment Standards
- User-customizable attributes
- Easy-to-use equipment GUI

- Detailed database and graphical properties defined
- Spans
- Fibers (both buffer tube and ribbon)
- Sheath information
- Nodes
- WDM devices and fiber splitters and more

Integrated Strand Mapping
- Configurable specifications
- Structure creation
- Addresses automatically associated to structures
- Address information from billing systems can be utilized

Duct Management
- Route and manage conduit and bundles
- Assign ownership
- Create elevation views
- View cross sections
- View wall diagram reports

Operations Functions
- Locate outage
- Locate device
- Locate customer
- Locate slack node
- Locate path
- Use FTTx customer activation, deactivation, and work order generation tools

Supported Architectures
- FTTx
- HFC
- FITL
- LAN/WAN
- Metropolitan
- Long haul
- SONET/ATM

OSS Integration
- Integration with network monitoring, work force management, and other OSS Systems
- IMPORT/EXPORT OSS capability utilizes a common data exchange structure
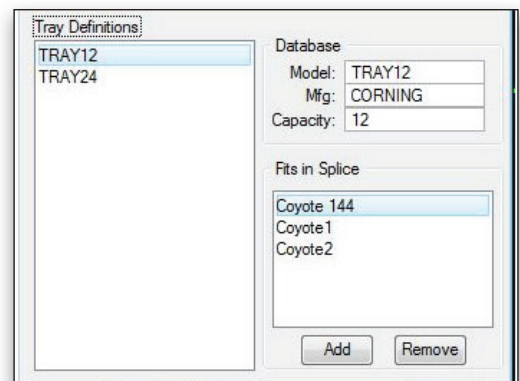
Bentley Fiber now gives users the ability to build trays that fit into splice enclosures for more detailed fiber positions.