



## Project Summary

**Organization:**  
Cable Onda

**Solution:**  
Communications

**Location:**  
Panama City, Panama Province,  
Republic of Panama

### Project Objective:

- Deliver and document all of Cable Onda's HFC and fiber networks in Panama with Bentley applications by 2018.
- Have all network information managed in an accessible, centralized location.
- Decrease time spent locating the source of outages in the HFC and fiber networks.

### Products used:

Bentley Fiber, Bentley Coax, Bentley Map®, Bentley Expert Designer Communications, MicroStation

## Fast Facts

- Cable Onda is a telecommunications company that has been serving Panama for 35 years and offers "triple play" services to Panama residents.
- The success of a pilot project that implemented Bentley communications software led to the company launching an audit of the entire network.

## ROI

- Calculations conducted in Bentley Fiber and Bentley Coax were more accurate since human error was removed, reducing design time.
- A centralized location of data in a single platform eliminated duplicate information and lessened time spent locating outages.
- Stringent audits improved deliverable quality as engineers can verify their information against the data documented in the platform.

# Panamanian Telecom Company Streamlines Network Design and Documentation

Bentley Communications Optimizes Fiber and Coaxial Network Design in Centralized Location

## Fastest-growing Telecom Company in Panama Manages HFC Networks

Now the fastest-growing telecom company in Panama, Cable Onda quickly evolved into a telecommunications, technology, and entertainment business, from a small cable television company. Serving Panama for 35 years, Cable Onda now offers triple play services of television, telephone, and internet via a modern fiber optic network throughout Panama. It provides service to homes and businesses through a hybrid fiber-coaxial (HFC) network while some businesses are fed directly through fiber.

To better manage its network through current technology, Cable Onda began a USD 228,000 project that moves its networks to a new management and data platform with Bentley software, documenting the networks, including splice enclosures and nodes of the fiber and coax networks. So far, 40 percent of the project has been completed.

The goal is to have the data in a centralized location where it is easily accessible and managed. The entire Cable Onda HFC and fiber optic networks throughout the country of Panama are expected to be designed with Bentley communications applications by the end of 2018.

## Current Data Management System Clunky and Unsystematic

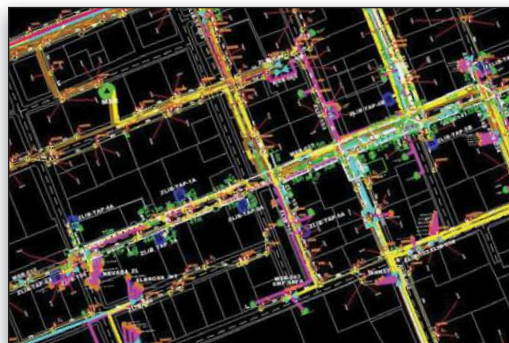
Prior to this project, documentation and network designs were managed with MicroStation® and the information regarding splices and nodes were stored in Excel spreadsheets; there are currently over 3,000 total splice enclosures in the Cable Onda network in Panama. Because of this immense collection of data, it took Cable Onda's network operations center numerous hours to find the right splicing sheets in

Excel and the appropriate plans in MicroStation when there was damage to equipment within the networks as it had to correlate the maps and splice diagrams and estimate where the outage fault was located. This decentralization of information made the management of the large-scale fiber optic and HFC networks inefficient and unorganized.

## Successful Pilot Project Leads to Countrywide Launch

Cable Onda initially acquired the MicroStation platform eight years ago. Then, in 2015, Cable Onda launched a pilot project with Bentley Systems in the province of Colón, Panama. For three months, Bentley instructed Cable Onda on how to properly apply the technology for their specified needs. As a result, 258 splice enclosures were documented in Bentley Fiber and 47 nodes were documented in Bentley Coax and Bentley Fiber in Colón. With Bentley's assistance, the pilot was successfully delivered on schedule.

After the success of the pilot project, Cable Onda launched the project to cover their entire network, and now a team of six people is working in eight-hour shift rotations on this project. So far the company has documented the following four provinces in Panama: Colón, Bocas del Toro, Chiriquí, and Veraguas; presently, the province of Herrera is being documented by Cable Onda's project team.



*Cable Onda used Bentley Fiber to design and comprehensively document their external fiber network in order to manage the network data and restore faults sooner, enhancing customer service.*

## Bentley Software Maps Out Solution

Bentley Expert Designer Communications was used to create the work orders

for the project team and the application helped the team audit the designs and verify the data, checking for duplicate information. Since Cable Onda can control everything that is documented in the platform in Expert Designer and validate

*"Today, we have been implementing and designing our networks on the platform for a year, and it is a change of innovation for our organization, since it correlates our teams with a geo-referenced geographic system. The fiber module transformed our lives."*

*– Andrea Alves,  
Infrastructure and GIS  
Coordinator, Cable Onda*

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the engineering information's accuracy, the quality of the deliverables substantially improved.

Bentley Coax was used to assist the engineers in detecting levels that were out of specification, optimizing signal levels easily, and designing more efficiently. In designing the HFC in Bentley Coax, the application produced more accurate calculations, as they were not prone to human error, and the precision of the equipment placed on the network was enhanced. Cable Onda also used Bentley Fiber to properly document the fiber circuits in their network. This was a clearer method of organizing the information as labeling was intrinsic and, therefore, errors were eliminated. Documentation within Bentley Fiber helps Cable Onda avoid fiber use duplication and informs the company which parts of the network are operating.

The network operations center uses Bentley Geo Web Publisher for Communications (GWPC), a web application that creates and manages geospatial data and helps in locating the probable cause of network trouble. Engineers can now search for damaged equipment in the field faster through GWPC. This comprehensive application allowed Cable Onda to pinpoint what fibers need repair, where the equipment is located, and allowed marketing to identify serviceable areas and turn residents into customers much faster and more efficiently than before.

### **Time Savings Leads to Faster Customer Service**

The Bentley solution eliminated errors due to inaccurate fiber circuit documentation, calculations are more accurate and reliable, and the organization no longer has to tediously sift through multiple Excel spreadsheets and designs in MicroStation. The engineers are also able to design more effectively in the platform as it is interactive, and they are more disciplined when designing in this platform because they must follow a nomenclature and specific design standards.

Since Cable Onda is Panama's largest telecommunications provider, this project will benefit the community because the company is now able to locate outside plant damage faster and restore service quickly. Having all the network design information correlated in a single platform allows the company to easily see what areas or zones of the country are not receiving service. Customers are provided service sooner because the time spent on solving the problems is diminished, resulting in more efficient network maintenance.

Savings in time and effectiveness were the greatest benefits of the project because design time and the time required to locate the source of outages dropped significantly. The success of the project has prompted Cable Onda to design new technologies within the platform facilitated with Bentley communications applications.