

GIS Networks Broadband TV, Internet, and Telephone

Polish Provider Implements a Server GIS-Based Inventory System

- Highlights**
- An efficient, scalable network inventory system was implemented using ArcGIS Server.
 - Information was organized and merged on the topology and logical structure of coaxial and optical networks.
 - The system provides the convenience of checking service availability in given network points.

Network inventory systems do not increase the turnover or income of operators in a direct way, yet it is thanks to them that operators acquire the operational efficiency expected by their clients and shareholders. Instantaneous access to the information about the network, its components, and parameters of hardware installed, along with its usability statistics and configuration details in today's telecommunications industry, is worth its weight in gold.

Network management of the system allows operators to run processes automatically, which otherwise would take days or even weeks. New client registration, granting access to services, quick launch of new services, network development planning, efficient debt collection, and analyzing the effect of errors are all propelled by network inventory systems.

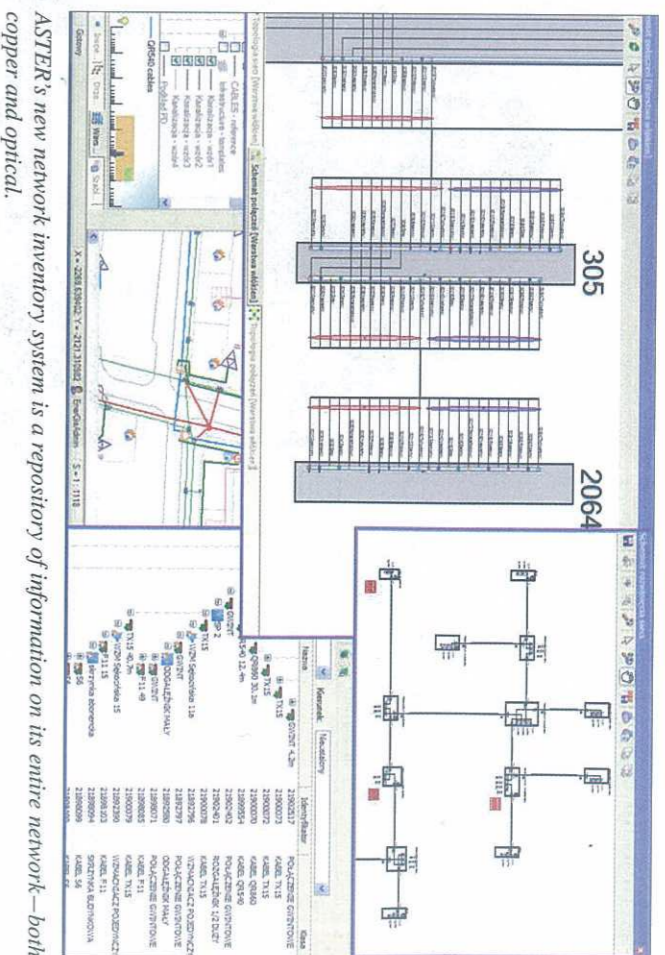
The extent of benefits of using a network inventory system depends on how well the

system reflects the physical network and how many and which business processes make use of the collected data. A hybrid fiber-coaxial (HFC) network is much more complex compared to the traditional copper and optical networks. This is due to the technological aspects of the services provided. It was for this very reason that Polish telecommunications provider ASTER decided to have a new network inventory designed and implemented by a network inventory systems provider.

Entering New Markets with a New Network

ASTER is the first telecom provider in Poland, and one of the first in Europe, to introduce cable TV and offer a triple service of TV, Internet, and telephone. Currently, ASTER provides services to 368,000 subscribers to analog cable television, 48,000 subscribers to digital television, 118,000 subscribers to the Internet, and 44,000 subscribers to digital telecommunications.

After a 10-year period of fast-track development, ASTER began to consider entering new markets. This initiative was difficult without a unified network inventory system. "Without a network inventory system, one cannot think of automating the processes—key to the long-standing profitability of any operator," says Bogdan Klata, network inventory manager for ASTER. "The market will be getting more and more competitive in time, and this will force us to have even better control over operational costs.



ASTER's new network inventory system is a repository of information on its entire network—both copper and optical.

A network inventory system is the cornerstone of successful management on the operational level, which involves launching services, modifying their parameters, and planning future network development."

During ASTER's planning stage, Poland-based Suntech, a network inventory systems provider, proved to have the necessary professional insight, reliable technology, and a pool of professionals capable of handling a project of this scale. Suntech, an ESRI Business Partner, suggested that the solution to ASTER's new system platform lay with ArcGIS Server software.

"When searching for a provider, we set our requirements very high in every area," says Klata. "Data import from previous systems and their unification was at least as challenging as the new solution itself. The task consisted of analyzing and standardizing the information stored in CAD and Bentley MicroStation files, Microsoft Access databases, Microsoft Excel spreadsheets, and text exports from various applications."

ASTER required that the system contain information on both its copper and hybrid fiber-coaxial networks. The company also demanded the system be available for use not only by network inventory department employees but also simultaneously by network design departments (developing the copper and optical networks separately), service departments, the network supervision center, and—with the use of interfaces devised in the project—employees from the customer service department. The system was to be fully integrated with SAP and a network management system. Suntech's solution was to implement an efficient and scalable database for ASTER based on an ArcGIS Server and Microsoft SQL Server platform.

The new network inventory system created by Suntech forms a repository of information on ASTER's entire network—both copper and optical. Approximately a million network components were mapped and described by means of the place of installation, list of available parameters, and current configuration. The server-based system also contains the information on minimal operating parameters, such as noise level in individual network segments, power level, and the like. This data can be used to manage the network (in problem detection, for example). ASTER also uses its network inventory system to store technical documentation that, among other data, contains information on the ways to access

devices, principles of servicing and extending, and its warranty dates.

"Drawing on the information stored in the network inventory system, one can quickly determine whether a customer located at a certain address can be granted access to a given service at once or the network has to be first changed in structure or in configuration," explains Klata. "As for network development departments, they can design new nodes based on actual analysis of the use of network capacity as opposed to guesswork."

ASTER's network is reinforced by dedicated modules used by network development departments. Dedicated modules enable users to determine which areas of the network need to be expanded. The system has also been equipped with collaboration mechanisms—a company cannot design a telecommunications network single-handedly—and mechanisms for simultaneous development of various projects covering the same area.

"To design a network, one needs visualizations and objects from a library that are synchronized with SAP ERP [enterprise resource planning] and are placed on the map and with building diagrams," says Klata. "In this way it is clear which devices are available, which can be linked together and how, and what the parameters of the installed objects are."

Detailed information on network structure is crucial for the financial standing of a telecommunications company. This ArcGIS Server system enables ASTER to verify the possibility of connecting a client to the network more quickly. The quicker services are launched, the sooner invoices can be issued and the sooner the investment in the network will be returned. In addition, availability of information about the pace of network expansion allows a detailed plan for purchasing devices, and information gathered in the system can be drawn on when negotiating purchase contracts.

"The more information we gather in the network inventory system, the more benefits we can get in the long run," says Klata.

More Information

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