

2003 Canadian CableCad User Group Come join us in the beautiful city of Niagara Falls October 20 – 21, 2003

This is an excellent opportunity to network with colleagues and establish beneficial contacts and partnerships with people from other utilities. Come learn about industry trends, share ideas and learn how CableCad is being used in various production environments.

There will be important, relevant and thought-provoking discussions on everything from the latest industry trends to customer testimonials.

ESL representatives will chair roundtable discussions on the future of CableCad development and lead various presentations on new, notable software enhancements including digitizing, database connections, undo and much more.

Want to learn more about Multispeak compliant version of CableCad? How about learning to extend CableCad using .NET instead of UDC? We will even demonstrate a new simple and cost-effective outage management system for CableCad for those interested.

‘Teaming together’ is the theme of this year’s meeting which promises to be one of the most fulfilling in recent memory. We hope you will join us in Niagara Falls, October 20 - 21. Please contact Daphne Rodrigue at 905.946.3222 or email her at droduigue@enghouse.com for more details.

Entertainment on Monday evening will be the award winning Oh Canada Eh! Dinner Show. www.ohcanadaeh.com. This is a musical celebration of Canada that provides an unforgettable Canadian experience. Meet singing Mounties, lumberjacks, Anne of Green Gables and other Canadian characters as you enjoy the songs and scenes of Canada.

Registration Fee: \$250 Canadian

CableCad 4.3 Released

On June 30, 2003 Enghouse Systems Limited announced the release of **CableCad 4.3**, the spatial information management solution for electric utility and telecommunication companies.

Developed to give companies extensive design capabilities to manage network assets the way they want, **CableCad** remains one of the most affordable, customizable, high-performance spatial information management solutions available today.

CableCad 4.3 preserves and leverages your investment in **CableCad** applications and data with improved data sharing and data accessibility. With the new Catalog Manager tool, you can configure **CableCad** to access external enterprise databases and business applications, such as billing, customer, and work order information.

CableCad 4.3 has incorporated XML, ADO, OLEDB and the Microsoft .NET Framework ensuring your application remains compatible with the latest software technology.

New enhancements added to **CableCad 4.3** include:

- Catalog Manager and X-Browse enable the end user to access data stored in external databases such as Oracle, MS Access, SQL Server and others, directly from CableCad
- New command language instructions that provide access to external ODBC database sources and relational databases
- Undo delete functionality

Teaming Together – FibreWired and Enghouse Systems

- **The Challenge** – With the increasing market requirements for high-speed data, video on demand and the deployment of VoIP, organizations, such as utility telecoms over the past several years took advantage of their “right of ways” and rapidly deployed fiber throughout their municipalities. With the deployment their business case continued to grow as businesses, ILECS and their own organization utilized the glass backbone. However, with this usage expansion, also came the challenge of managing outages, capacity and business requirements such as billing usage. Many are now faced with the challenge of bringing their network under operation and management control. FibreWired, based out of Hamilton, Ontario is just one of those companies.
- **The Vehicle to Address the Challenge** - FibreWired is a community-based telecommunications network, started in 1998 and providing leading-edge fibre optic network services to critical clients in Hamilton such as the health care sector, municipal government and emergency services. FibreWired offers a full range of private voice, video and high-speed data services to businesses and organizations throughout the City of Hamilton.

In 2001, FibreWired recognized the need to implement a solution to manage their expanding fiber network. Up until this point their fiber designs, splice information, fiber outages and customer management were either in the heads of their innovated engineers, in a paper format of some type or in a few cases, non-existent. As the demands of their customer grew, their ability to respond efficiently and effectively was challenged by the disparate locations of the knowledge base on network resources.

At the same time, their operating company, Hamilton Hydro, had their GIS implemented on Enghouse’s CableCad product. This implementation had occurred in the mid-1990s and was a stable deployment. Components critical to managing the fiber outside plant were inherent in the CableCad deployment, specifically the land base, as well as the structures such as conduit and poles.

As well as supporting their CableCad clients, Enghouse was in the process of developing and introducing a product portfolio now named NetWORKS, that included

a fiber design and operational management product built upon a GIS platform – FiberWORKS. As well, Enghouse had developed a product to translate CableCad data into shape files that are compatible with the NetWORKS product portfolio.

- **Evolution of the Solution** – FibreWired Hamilton’s network was being deployed on the Hamilton Hydro structures – poles and conduit. Enghouse’s installed customer was also Hamilton Hydro. As well, Enghouse had developed a tool that was capable of providing FibreWired with the ability to manage their fiber from **strand**, to **customer**, to **wavelengths**. Enghouse was in position to facilitate the migration of critical data from Hamilton Hydro in NetWORKS, such as structures, to identify the location of their fiber.
- **The Implementation -** With the key critical common elements in place; FibreWired’s need for a fiber network management solution; Enghouse’s ability to supply a solution; and access to the land base and structures from Hamilton Hydro, Enghouse and FibreWired Hamilton began the discussions for the implementation of FiberWORKS at FibreWired Hamilton. The project began in February 2001.

Working jointly with Hamilton Hydro and FibreWired (Hamilton) CableCad files were translated into TIF files. A total of 1,428 files are maintained representing 35 layers of data. Included in this deployment is the ability for FibreWired to view the Hamilton Hydro structures through a simple hyperlink by the user.

Though the NetWORKS portfolio includes a complete “structures management” module, that provides the ability to create duct networks, generate manhole butterflies and wall diagrams, FibreWired decided it was best to leave the maintenance and updating of manhole diagrams in CableCad since it was already being maintained by Hydro Hamilton. There was no reason to duplicate the effort. In response to the client, Enghouse developed a utility to export duct, manhole, trench, and pole data from CableCad. FibreWired accesses manhole diagrams through a hyper-link command that gives the user the ability to quickly locate and identify spare ducts for fiber cable.

Once Enghouse had provided the tools to share the appropriate Hamilton Hydro data, the investment of training the key users to begin the conversion of the fiber network data that had been on paper and in people’s heads into FiberWORKS.

- **Project Management Implementation Elements** - Critical to the effective deployment of this effort were the following elements:
 - ✓ Project Management Resource – There was a need for a single point of contact and accountability from both organizations, Enghouse and FibreWired to manage the deployment through data translation, training, interfacing with IT and maintaining a schedule.
 - ✓ Data Conversion Resources – FibreWired elected to work with Enghouse to migrate their network into FiberWORKS using their resources. Internal resources are closest to the network data. However, the trade-off is the length of time to convert the data.

Some organizations are considering a “turn-key” solution where the supplier FiberWORKS solution delivered with their land-base and network already

implemented into the platform. Enghouse then trains the appropriate staff on using the NetWORKS to continue to manage their network onward.

- ✓ Software Platforms – Though NetWORKS is fully capable of operating on MS Access, the efficiencies are increased exponentially if deployed using a relational database such as Oracle or SQL Server. In the project management planning stages, prior to deployment, an evaluation of the organizations database of choice should be researched and implemented.
- ✓ Hardware Configurations – In order to realize maximum efficiencies of NetWORKS, an independent server box should be secured for deploying NetWORKS and your database. Having the workstation and server on the same computer can cause performance issues, particularly with multiple users accessing the program.

The Results of the Effort – Implementation of NetWORKS continues to be a positive yet challenging endeavour for all. FibreWired's executive team recognized early on the financial importance of integrating landbased systems, which would allow its technical and marketing teams to respond quickly to customer network requirements; maintain a competitive edge in the marketplace and an focus clearly on profitability.

NetWORK Additions

Enghouse has developed a commercial off-the-shelf solution to meet the challenges of Utility Telecoms, Municipal Telecoms, and Independent Telecoms. In today emerging markets companies require organizational and information systems that provide continuous improvement in service quality, operational efficiency, network management, and data accessibility. Companies involved in the communication industry are confronted with a number of business issues including keeping a strong competitive position, protecting or replacing legacy systems, reducing operating costs while improving customer service and maintaining a high level of customer satisfaction. Key business drivers such as deregulation, liberalization, adopting industry best practices, and increased customer expectations all drive the need to implement systems responsive to meeting these challenges.

NetWORKS allows network operating companies to modularly structure their network and facility management as well as control systems to meet the specific operating requirements by adding NetWORKS capabilities such as:

- Structures Management
- Work Order Management
- FiberWORKS
- CopperWORKS
- CoaxWORKS
- NetWORKS ISP

NetWORKS has been developed with the latest GIS technology from ESRI. Enghouse has developed NetWORKS from the ground up and is designed and optimized specifically for ArcGIS 8.x. *"No legacy code exists or fork lifting from earlier ArcInfo 7.x versions was*

performed. Enghouse started with a clean slate when developing NetWORKS, which significantly contributed to its consistent architecture, scalability, and extensive network design and management functionality”, says Andrew Nellestyn, President, Enghouse Systems Limited. The **NetWORKS** Communications Data Model developed by Enghouse conforms to the ArcGIS Data Model architecture and is designed to adapt and scale to all types of communication companies and sizes.

On June 10, 2003 Enghouse announced the release of **CopperWORKS** and **NetWORKS ISP**, the copper and Inside Plant components of the **NetWORKS 3.1** product portfolio. **CopperWORKS** and **NetWORKS ISP** continue Enghouse’s expansion of its integrated **NetWORKS** product portfolio.

CopperWORKS provides design, network analysis, facilities and network management capabilities for efficient and cost effective management of complex copper networks. **CopperWORKS** integrates with the existing **FiberWORKS** component, thus supporting hybrid copper-fiber network deployments. Both North American and International copper pair configurations are incorporated. **CopperWORKS** maintains logical pair counts and physical pair assignments, which let you track pairs by logical pair compliments and/or physical connectivity.

NetWORKS ISP compliments **CopperWORKS** with the capability to model all rack-mounted copper equipment, distribution frames, and switching equipment located within a central office. The **CopperWORKS** bi-directional trace (upstream and downstream) can trace a pair from the central office to the customer or from the customer back to the termination point in the central office. When a complete pair trace is performed, each splice, terminal, and cross connect along the pair’s path is traced. **CopperWORKS** and **NetWORKS ISP** greatly enhance a communication company’s ability to manage their entire copper network, inside plant assets, and network capacity.

“Enghouse has delivered a must-have product for any network delivery company. The combination of NetWORKS modularity and feature functionality provides communication companies with a network design and management tool that not only addresses their network management efficiencies, but their budget requirements as well”, says Bud Porter, AM/FM Solutions Manager, ESRI.

On June 27, 2003 Enghouse announced the newest release of **NetWORKS 3.1** with **WDM Management**.

As organizations are struggling with balancing the provision of services with expansion of their fiber network, WDM is evolving as a critical vehicle to realize the maximum efficiency from their fiber networks in order to minimize new construction costs. **WDM Management** capabilities greatly enhance a communication company’s ability to manage wavelengths and the assignment of customers to various wavelengths. The **FiberWORKS** Splice Diagrams has been enhanced to illustrate connected fibers, patch panels, routers, and WDM wavelength distribution. **WDM Management** augments **FiberWORKS** with the ability to capture and manage WDM equipment, track wavelengths per fiber, and trace any wavelength along a cable path.

On July 11, 2003 Enghouse announced the release of **NetWORKS 3.1** with **Structures Management**.

Structures Management is the latest addition to the **NetWORKS** product portfolio. It includes tools to design and manage aerial and underground structures such as poles, anchors, towers,

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chambers, hand holes, ducts, and trenches. Duct capacity analysis and trace tools improve an engineer's ability to identify the optimum path for cable routing and servicing customers. Duct trace will identify alternative duct paths for cable routes constrained by duct size, duct length, duct capacity, and type. The "Sectional Assistant" helps a user generate manhole butterfly and duct occupancy diagrams. This tool reduces the cost and time for creating diagrams as compared to traditional CAD tools. Duct occupancy diagrams are intelligent and will automatically update when cables are removed or added to ducts. **Structures Management** is integrated with the existing **CopperWORKS** and **FiberWORKS** applications, offering the ability to manage copper and fiber cables within the same underground and aerial network. **NetWORKS 3.1** greatly enhances a communication company's ability to manage their entire underground and aerial infrastructure and capacity.