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SYSTIMAX® TeraSPEED™ Network Delivers High Bandwidth For Cross-Town Multimedia Connections

Advanced SYSTIMAX® fiber technology is most cost effective solution for new metro network

When the Danish town of Middelfart decided to replace its municipal network, value for money was a top priority. It wanted high bandwidth, reliability and ease of management combined in the most cost effective solution.

The town's existing leased line network was expensive to run and could no longer meet the bandwidth demands of new, more powerful computing applications. As a result, network bottlenecks were starting to slow the response of key systems.

"The bandwidth requirement was growing rapidly in a number of areas," said Steen Vinderslev, the municipality's Chief Administrator. "This was most noticeable in the schools, where the curriculum calls for frequent use of Web pages. If say, pupils need to download film clips from Danish Radio's homepage they need plenty of bandwidth to get acceptable video quality."

After carefully studying all the alternatives, the Town Council was surprised to find the best solution was to build its own high-speed network using new fiber technology. Before the study, they had expected that a wireless network would be the lowest cost solution.

Over 10 years, a buried fiber network turned out to be less expensive and, at the same time, gave much higher bandwidth. While proposals for radio networks restricted connections for smaller locations to just 8 Mb/s, a fiber network offered everyone 1 Gb/s.

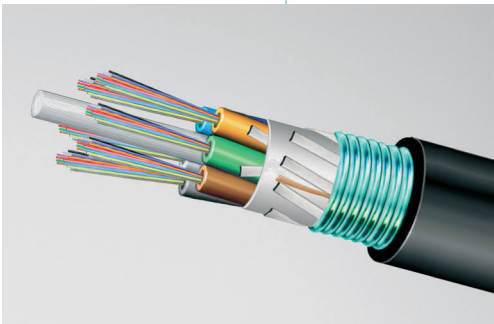
With a gigabit metropolitan network, Steen Vinderslev was confident the town could install any IT application

it needed in the foreseeable future without fear of communications problems. He also knew that the network would comfortably handle voice over IP telephone services.

"With 1 Gb/s we can easily support increased use of critical IT systems and a growing number of PC users," he said. "And we could also set up a central data backup for the Town Hall and all our other buildings without any bandwidth worries."

The winning proposal from Ementor, a SYSTIMAX Prestige BusinessPartner based in the town of Ballerup, specified the SYSTIMAX TeraSPEED™ Solution. This enhanced singlemode fiber, using zero water peak technology, has 50% more usable wavelength than conventional fiber. With this extra transmission capacity, it can carry up to 16 channels using coarse wave division multiplexing or 400 with dense wave division multiplexing. It also has the advantage of using relatively low cost electronics.

The Ementor installation in Middelfart is among the first metropolitan networks in Europe to use TeraSPEED fiber. Nearly 20kms of this was laid in an underground ring linking the Town Hall, eight schools, three care homes and other social buildings. In addition, the network serves the town's harbour facilities and water purification plant.



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Steen Vinderslev, the municipality’s Chief Administrator

In the future, LANs at new municipal buildings, including an ambitious cultural center, will also be linked into the new metro network. Using the TeraSPEED fiber’s full performance, gigabit LANs in new facilities will be able to communicate from end-to-end with similar LANs in other buildings at 1 Gb/s.

Since the network supports critical IT systems, including those used by homecare services, reliability is vital. Its ring configuration helps meet this need by providing two routes to any point, so communication can continue even if the ring is broken.

As well as installing the cabling against a tight schedule, Ementor was responsible for designing and planning the network. To meet its deadlines, the company worked closely with teams from SYSTIMAX® Solutions in Denmark and the SYSTIMAX Solutions™ manufacturing plant in Ireland. Armoured outdoor versions of the TeraSPEED cable were supplied directly from SYSTIMAX Solutions’ warehouses together with all the required high-density LC connectors.

“Installation of the fiber ring, server room cabling and other tasks were all on-schedule from start to finish,” said Steen Vinderslev. “Ementor ensured the project ran smoothly, delivering detailed documentation and alerting us whenever they found areas where things could be done better or more efficiently.”

At the same time as installing the fiber ring, Ementor modernized and simplified LAN cabling in schools and other municipal buildings. Much of the original cabling infrastructure was outdated and had been modified many times during its life, making it hard to manage and maintain.

The new network is centrally monitored from the server room to PCs and IP phones at its outermost points. This makes network management and troubleshooting much easier and less expensive.

“Most problems can be fixed online,” said Steen Vinderslev. “It saves our IT people many hours in locating and solving problems, and also makes it easier to link with Ementor technicians when we need their expertise to solve a particular problem.”

For faster troubleshooting, all network diagrams and data are now accessed online. This is especially useful when modifying or expanding networks.

Before, technicians often depended on finding someone with knowledge of how the network was laid out. This added to running costs by wasting valuable time and technical resources.

“Lower cost of ownership was a key justification for the new system,” said Dorte Blichfeldt, Sales Director, SYSTIMAX Solutions, Denmark. “Today, Middelfart has its own advanced network infrastructure, saving leased line costs and cutting running expenses. It also has enough bandwidth to support the town’s data and voice services for many years to come - so it will be a long time before it needs to pay for replacement cabling.”

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