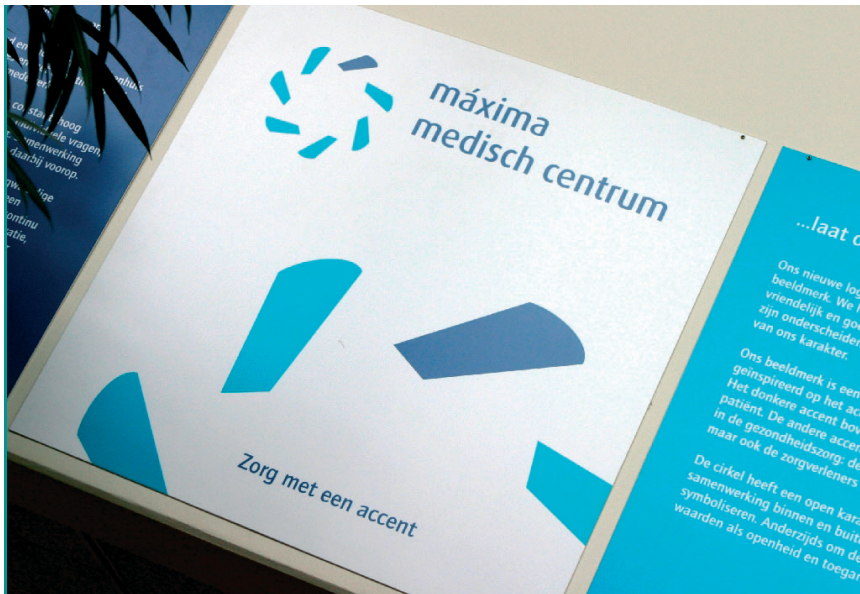


MMC Upgrades Data Centers with 10-Gigabit UTP Cabling and Integrates Networks on a Single Infrastructure

SYSTIMAX® GigaSPEED® X10D Solution gives Máxima Medical Center the reliable, high performance connectivity vital to patient care



The Máxima Medical Center (MMC), one of the Netherlands' leading training hospitals, was formed by the merger of Diaconessenhuis in Eindhoven and St Joseph's Hospital in Veldhoven. The combined organization has a staff of 3,400 who treat nearly 470,000 patients each year. Of these, 23,600 patients are accommodated in 836 beds across the two locations.

Both hospital complexes offer a full range of specializations and have operating rooms, intensive care units, hospitalization departments and 24/7 emergency rooms. All these, and other hospital facilities, are served by one data center in Eindhoven and a second in Veldhoven.

The data centers support applications ranging from management of patient records to storage of medical images, making heavy demands on connectivity and data storage. The Eindhoven center has more than 70 terabytes of storage capacity while Veldhoven has 20 terabytes. Fast access to information held in these data stores is vital both to the efficient running of the hospital and the quality of patient care.

"Reliable, robust high-speed connections are absolutely essential in our working environment, especially when every second counts," said Rob Aerts, Head of Telematics at MMC. "When x-ray or monitoring equipment is switched on in operating or emergency rooms, we have to be sure that cabling connections are resilient and have been correctly installed."

SYSTIMAX®
SOLUTIONS

To ensure it has the right cabling infrastructure to meet its requirements, MMC worked with SYSTIMAX BusinessPartner, Getronics PinkRoccade. With a workforce of almost 10,500, Getronics PinkRoccade is an ICT market leader in the Netherlands. Using its wide experience in providing access to critical information, it developed plans to gear up for future ICT needs at the hospitals. These plans included a new data center at Eindhoven and major improvements at the Veldhoven center.

“We compiled an inventory of our needs and quickly reached the conclusion that we needed a 10 Gigabit cabling infrastructure. That’s what it takes to handle medical images, such as x-rays and CT scans - our surgeons need to have these immediately available as they prepare for operations,” said Rob Aerts. “When designing an infrastructure, we need to look to the future as well. Cabling selected today will be around much longer than the hardware and applications it originally supports.”

At the 54,000m² Veldhoven hospital, the cabling infrastructure has more than 9,000 outlets, and the 48,000m² Eindhoven building has a similar number. Some of the cabling on these sites is being renewed for the first time in sixteen years. During this time, data traffic in the hospital has outgrown 10 Mb/s half duplex and progressed to 1Gb/s full duplex networking.

To upgrade connectivity in the data centers at the heart of its networks, MMC opted for copper Unshielded Twisted Pair (UTP) cabling. The choice of copper rather than fiber was made primarily because copper was considered more reliable.

“Copper cabling also gives us the advantage of being able to supply electricity via Power-over-Ethernet,” said Rob Aerts. “And it’s developing all the time as a medium - there’s still a lot of potential in UTP.

“Using UTP copper cabling, we wanted to communicate at 10 Gb/s - CommScope was the only supplier who shared our vision and could give us what we needed. We did look at shielded solutions, but transmission with unshielded cabling is clearly superior.

“In shielded cabling, the metal foil shield can cause problems. Its grounding needs to be well organized – which makes for complications in hospitals.”

Setting up the new data center in Eindhoven was a challenge since MMC wanted it put in an area previously used for a staff room and bicycle sheds - and it needed to have the first machines operational within eight weeks. Using CommScope, together with careful planning and management, a 12-strong Getronics PinkRoccade team was able to meet this target.

In design and implementation of both data center infrastructures, Getronics PinkRoccade, struck a balance between investment, risk and flexibility.

By using standards-based solutions it ensured the network can be easily expanded or upgraded when the need arises. Components can be added or replaced individually, without extra investment to guarantee compatibility.

SYSTIMAX® GigaSPEED® X10D cabling chosen for the data centers meets the full specification of the Category 6A cabling standard for 10 Gb/s transmission over a 100m, four-connector channel. For other horizontal connections, MMC selected GigaSPEED XL cabling that fully conforms with the 1Gb/s Category 6 standard - even under adverse conditions.

In network backbones and longer distance 10 Gb/s connections across the sites, MMC specified SYSTIMAX LazrSPEED® multimode fiber. This solution can support 10G Ethernet over distances up to 550m without need for expensive singlemode electronics.

MMC chose Low Smoke Zero Halogen (LSZH) versions of both the copper and fiber cables to enhance fire safety. More than 2,000 kilometers of the copper cable and 1,200 kilometers of the fiber have been installed on the two sites. To connect this in its communications rooms, it is using SYSTIMAX FlexiMAX patch panels for copper connections and 600-type shelves for fiber.

The new integrated UTP cabling infrastructure now supports several of the hospitals’ essential services, including video surveillance, cardiac monitoring and access control. Previously, these were connected via separate cabling systems.

By combining several services on a single infrastructure, the new installation makes management and maintenance much simpler. In the near future, MMC intends to take this a step further by implementing IP telephony on its 10-Gigabit UTP network.

During the latest phase of development at its Veldhoven site, MMC is building a 15,000 m² Woman-Mother-Child center including a neonatal unit for premature babies. This new facility will also benefit from SYSTIMAX Structured Cabling Solutions.

Commenting on the project Frits Kuus, Business Development Manager, SYSTIMAX® Solutions, CommScope, in the Netherlands said: “For medical staff at MMC, getting the right information when it is needed can be literally a matter of life and death. To give them the connectivity they need throughout both their sites, MMC preferred SYSTIMAX GigaSPEED UTP Solutions to shielded types. And, in its data centers, it is using GigaSPEED X10D copper cabling rather than fiber. This is a great vote of confidence in the performance and robustness of our 10 Gb/s copper technology.”