Connectix Cabling Systems™

Connectix Case Study
The Dracy-le-Fort Orthopaedic Centre

The Customer's Issue: The Dracy-le-Fort orthopedic centre deployed digitization of patient records, a shared storage server, connected medical equipment and imaging systems. As a result, it is facing high volumes of data traffic throughout its entire network. The 250m [820 ft] OM2 fibre optic link, situated between the main building and the rehabilitation building, is limited to 1 Gb/s and in need of an upgrade. In addition, having few available fibres, the centre wishes to multiplex in order to increase network capacity, without disrupting services or causing work-related disturbances.

The AROONA solution

CAILabs' AROONA-S-Mux passive solution makes it possible to restore the existing fibre link, all the while respecting the particular constraints of a health facility. The number of links is multiplied by 4: services continue to run as usual and the absence of work prevents dust and various disturbances. All this makes AROONA-S-Mux more advantageous than fibre redeployment.

New digital services for improving quality of care

The Dracy-le-Fort orthopaedic centre is a private medical surgical establishment that has been operating since 1976, specializing in orthopaedics, neurosurgery and ophthalmology. It ranks among the top 20 out of French hospitals and clinics for many surgical specialties.

In an effort to continually improve the quality of care it provides and conserve its image as a leading establishment, the centre has invested in connected medical equipment and services, all of which require high bandwidth. This equipment, as well as the business applications used by the various medical teams and the Digitized Patient File (which centralizes the information of each patient) must be accessible at all times from every service and building in the centre.

The orthopaedic centre is spread out across two buildings, with OM2 (50/125 um) old-generation multi-mode optical fibres that are limited to 1 Gb/s. The IT department is being confronted with a situation in which the speed required to effectively manage this high volume of network traffic and provide new treatment methods is much higher than the maximum bandwidth of the multi-mode optical fibres that make up the network links.

Difficult redeployment in hospitals

The orthopaedic centre's most limited link connects the network core, located in the main building, to a secondary building, 250 meters [820 ft] away, where post-acute care and rehabilitation take place.

An OM2 fibre pair of this length can only support 1 Gb/s, which is not sufficient for use of business applications and instant access to patients' computerized medical records.

Moreover, this pair of limited fibres crosses over a parking lot separating the two buildings. In order to deploy new optical fibres, civil engineering would be required since there aren't any available cable ducts. Therefore, deploying new single-mode optical fibres does not seem to be a viable solution for the centre.

Given the large distance between the two buildings and the parking lot separating them, installing new fibres would have been costly, required several days of long work and caused significant disturbances (noise, dust). This is not an option for the centre, as its services must remain operational all times in order to serve patients.

Upgraded multimode fibres 250 meters [820 ft]

Dematerialization made easy for improved quality of care

Thanks to the AROONA-S-Mux passive solution, the upgrade of the limited fibre links was completed in 3 hours, without disturbances or interrupting services. The budget has been respected for the entire upgrade project, unlike the deployment of new-generation optical fibres.

The AROONA-S-Mux solution helped support the Dracy-le-Fort orthopaedic centre's dematerialization project by falling within the renovation budget and keeping disturbances to a minimum. The multiplexing desired by the client has been realized: the upgraded multi-mode fibres now carry **4 x 10 Gb/s over a pair of old-generation multi-mode fibres that had previously been limited to 1 Gb/s.** The rate at which data can be transmitted has been multiplied by a factor of 40. Patient information is now easily communicated from one building to another 24 hours a day for all types of medical procedures and diagnoses.

The subsequent increase in bit rate meets the current needs of the Dracy-le-Fort orthopaedic centre and will enable other connected services to be installed in the future in the name of continually improving client satisfaction.

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Improved network infrastructure for our partner

Sochaleg, one of the key players in the Saône-et-Loire region for high voltage and low voltage installations for industrial and commercial clients, provides its clients with specific, innovative solutions. Sochaleg contacted CAILabs to see whether AROONA could potentially resolve the issue at the Dracy-le-Fort orthopaedic centre. AROONA-S-Mux ended up being the ideal solution and allowed the multi-mode fibre infrastructure to be recycled by while simultaneously increasing its capacity to carry very high speeds.

Project Scope Overview	
Sector:	Healthcare
Equipment:	Aroona CAILabs Shaping the light
The Benefits of the Solution:	• 4 x 10 Gb/s instead of being limited to 1 Gb/s • Respects the upgrade project budget, as opposed to fibre redeployment • 3-hour installation time, without interrupting services and without dust

Harness the full potential of optical fibres

CAILabs is a leading provider of innovative solutions designed to increase the capacity of optical fibres. We develop and manufacture a large range of light shaping components based on our patented, efficient and flexible Multi-Plane Light Conversion (MPLC) technology. Worldwide telecommunication manufacturers and providers, such as Nokia, Cisco, Huawei and KDDI, trust our products to upgrade today's network infrastructure and create the networks of tomorrow. At CAILabs, we help you make the most of your optical fibres!