



The customer's issue: The University of Rennes 1 would like to implement a Virtual Learning Environment in its facilities as well as a new computing centre accessible from all buildings spread over 60 ha [148 acres].

The OM2 fibre link, between the core server and a laboratory building, is 457 meters long. Limited at 1 Gb/s, the link does not support sufficient bandwidth and requires an upgrade. However, the university is concerned about disrupting the students and staff and cannot afford a new fibre deployment.

The AROONA solution

CAILabs' passive solution AROONA enables a retrofit of the university's existing fibre link, satisfying its need for minimal disruption and the absence of construction work. This favorably differentiates AROONA from new fibre deployment.

Network innovation to support new

working tools in universities Founded in 1969, the University of Rennes 1 is spread out over 3 campuses in Rennes, France, with 26,000 enrolled students and 40 research laboratories, making Rennes the "University capital" of western France.

To live up to this image, the University is working on two axes of improvement. The first is the **deployment of a Virtual Learning Environment**, an advanced portal for e-learning, lecture webcasting and remote collaboration tools for students. The second axis consists of implementing a **new computing centre with a larger computing capacity** for better productivity tools for research labs.

The campus is spread over 60 hectares [148 acres] and scattered across remote buildings, with OM2 (50/125 um) fibre links in between. These fibres have an intrinsically limited capacity and cannot support the bandwidth required for the deployment of the two projects.

Fibres going across campus, through parking lots, recreational areas and laboratories are difficult to upgrade and also require construction work. Even if downtime is not an issue, the university is concerned about causing a disruption. In addition, new fibre deployment may prove too costly for the university which is currently suffering from funding pressure.

"Deployment on our premises clearly demonstrates very interesting potential to meet the ever-increasing need for higher bandwidths. AROONA's ease of implementation is key to avoiding new fibre deployment"

Arnaud Mérel, Infrastructure manager
University of Rennes 1

Complexity of new fibre deployment on a university campus

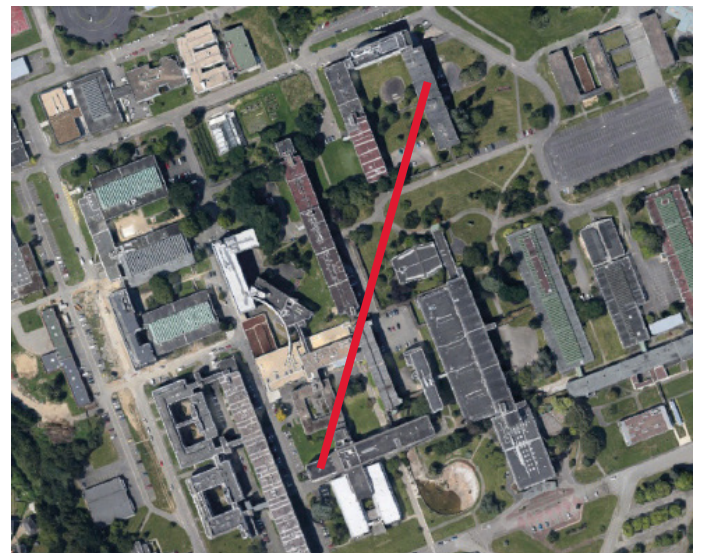
The core server is located in the main building of the campus and connected with the most limiting fibre link to a laboratory located 457 meters away in a **remote building**. This OM2 fibre

link can only support 1 Gb/s, which is insufficient for the Virtual Learning Environment as well as for the new computing centre that the University would like to implement.

Deploying a new single-mode optical fibre is a solution. However, given the **size of the site and the distance between the buildings**, the IT managers at the University of Rennes prefer avoiding this arduous work.

The deployment of new fibres for this 457 meter-long link would definitely cause a **significant disruption**. CAILabs has a **research partnership with the Institute of Physics of Rennes**, which is located at the university's Beaulieu campus.

In addition, CAILabs is supported by the Rennes 1 Foundation, whose goal it is to connect the university with the business world. When CAILabs launched the AROONA solution for LAN, it was a natural decision to promote it to the IT managers of the university.



Upgraded multimode fibres 250 meters [820 ft]

Facilitation of the digitization project

The installation took place during the annual conference of the French Optical Society, an important conference for the French photonics community, which is held at the University of Rennes 1. The deployment of the solution during the conference demonstrated the university's ability to integrate innovative solutions on its campus.




Only 3 hours were needed to upgrade the limited fibre links with the passive AROONA solution, without any disruption to the students and staff. The investment costs were 3x less than what the deployment of a new generation optical fibres would have cost. The AROONA solution enabled sufficient bandwidth to bring ENT and access to the computing centre.

The fibre capacity has been increased by 40 thanks to the multimode fibre upgrade. They can now transport 4 x 10 Gbit/s on fibre links as opposed to the previous 1 Gb/s. With the capacity having thus been increased, the University of Rennes 1 now has the liberty to deploy other services in the future, such as the video conference tool or higher-bandwidth Wi-Fi across campus.

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!

Project Scope Overview	
Sector:	Education
Equipment:	Aroona 
The Benefits of the Solution:	<ul style="list-style-type: none"> • 4 x 10 Gb/s throughput instead of being limited at 1 Gb/s • Easy installation, no construction work necessary • 3 times less expensive than new fibre deployment