POLAR

Case Study: London Metropolitan's Superlab

POLAR Supplies Largest Ever Wyrestorm AV over IP Solution at London Metropolitan's Superlab.

London Metropolitan University, came in to existence in 2002, with the merger of the University of North London and the London Guildhall University. In 2006 as part of an ambitious programme to make the university a leading choice for science students, London Metropolitan University invested more than £30 million developing a state-of-the-art Science Centre. At the time, the 'Superlab' as it has become known, achieved a host of firsts. It was the first open plan laboratory that offered the whole range of science to be carried out simultaneously at 280 work stations, the first educational lab to use advanced AV technology as a central part of teaching and learning, on its completion was the largest single UK investment in science education and was one of only two university labs to achieve a BREEAM excellent rating. This 8000m2 space thus offers exceptional teaching and research facilities and remains the largest and most advanced science teaching facility in Europe.

Ten years after its construction and in order to maintain the excellent standards it had set, the university addressed issues surrounding the Superlab's legacy technology, which had over time, become less than fit for purpose, somewhat unreliable and as a result, very often unavailable. Many elements of the system were simply no longer serviceable. London Metropolitan University engaged with trusted partners Reflex to determine the most effective way to solve the problems and deliver a reliable, high quality system that could meet every requirement of cutting-edge science education.

The university wished to be able to simultaneously route and distribute video content from the Superlab's lecturer stations to any number and combination of its 268 science students. Cont -

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Delivering image-quality of the highest order was essential. Given that science experiments would be at the heart of the content, there could be no room for anything less than crystal clear video. Removing and replacing the lab's existing Cat5 cabling was not an option - the labour costs, time taken and disruption could not be contemplated - and so it was a further essential requirement that any scheme must work successfully using the existing cabling infrastructure. The Reflex team determined that an AV over IP system was the way to proceed and consulted with POLAR Integrated Solutions over provision for a solution using Wyrestorm NetworkHD JPEG2000 4K video over IP technology. This award winning electronics manufacturer produces high quality HD distribution and control systems at the forefront of digital technology.

POLAR Integrated Solutions have worked closely with Reflex on supplying a number of schemes, including a hugely successful project at The University of Hertfordshire, where Wyrestorm products delivered comprehensive video coverage to that institution's science centre. Reflex duly designed a Wyrestorm scheme for the Superlab and then in conjunction with POLAR and Wyrestorm, set about extensive testing to ensure that the existing Cat5 infrastructure would be able to handle the planned installation. Once testing was successfully completed, the scheme was installed.

12 x Wyrestorm NHD-IPTX transmitters (1 for each lecturer station) were installed to carry 4K HDMI signals from the source unit and encode them to JPEG2000 data streams. These streams are transmitted through the (already existing) Cat 5 infrastructure to 268 x Wyrestorm NHD-400RX receivers assigned to each of the display units located at the student work stations. The streams are distributed through a group of Brocade 1Gb managed switches and are visually lossless. At their destinations the streams are decoded by the receivers back to HDMI for output to the display

The compression and decompression involved in the JPEG2000 technology, contrary to some misperceptions, does not degrade the image. Stream traffic is controlled by means of 8 x Wyrestorm NHD-000-CTL controllers, receiving IP commands from an Extron control system.

Stuart Leader, Director of POLAR Integrated Solutions stresses the benefits:

"The Wyrestorm network HD offers a superb, flexible and scaleable solution which is incredibly simple to install and operate. The installation at the Superlab amply demonstrates that there is no requirement for special cabling - it operates on standard Cat 5 and its scaleability means that there is no inherent 'waste' of inputs or outputs as may be the case using a traditional matrix system. In spite of the volume of tasks to complete and certain working restrictions related to the lab's availability, Reflex completed the installation smoothly and to the great satisfaction of the Head of School. As video solutions and the great potential they offer, become more and more an intrinsic part of the wider education process, POLAR is witnessing an upsurge in demand for our products and expertise in this sector and Wyrestorm sits front and centre in what is underpinning an educational revolution."

William Jepps, Managing Director of Reflex added:

"Superlab has been an exciting challenge for us. We worked closely with POLAR and Wyrestorm to come up with an extremely elegant and cost-effective design solution. The project was well managed and we're very happy with the end result. The flexibility and efficiency of this teaching space is now truly fantastic. We have a great relationship with POLAR and it has been good to work together on such an illustrious project."
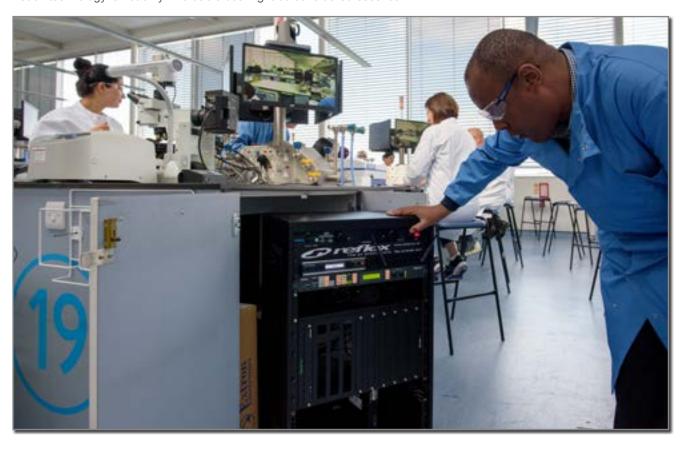
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Oliver Holmes, Deputy Director, Technology and Operations at London Metropolitan University added:

"We knew our requirements would be hard to meet and spent a lot of time researching technologies. With our AV integrator, Reflex, we were really happy to find the Wyrestorm solution delivered by POLAR. POLAR helped deliver a proof of concept that blew us away - the image quality and ultra low latency of Wyrestorm made choosing technology simple. The system is flexible and scalable - already providing a vast number of end points. We felt supported and guided throughout by a knowledgeable, expert team. We have jointly delivered a hugely successful project, which is already improving the student learning and teaching experience and will definitely contribute to successful student outcomes."

Once completed, the scheme at London Metropolitan's Superlab comprised the largest Wyrestorm installation in the world. In a space that is virtually the size of an aircraft hangar, the technology facilitates an incredibly cost-effective, flexible, time-efficient, teaching and learning experience. Whether for a single lecturer addressing every work station in the lab, or up to 12 simultaneously delivering content to any configuration of 280 students, the system is simple to use, reliable and delivers the highest quality of image. For students who will become the scientists of the future, access to such technology is not only invaluable but might be considered essential.