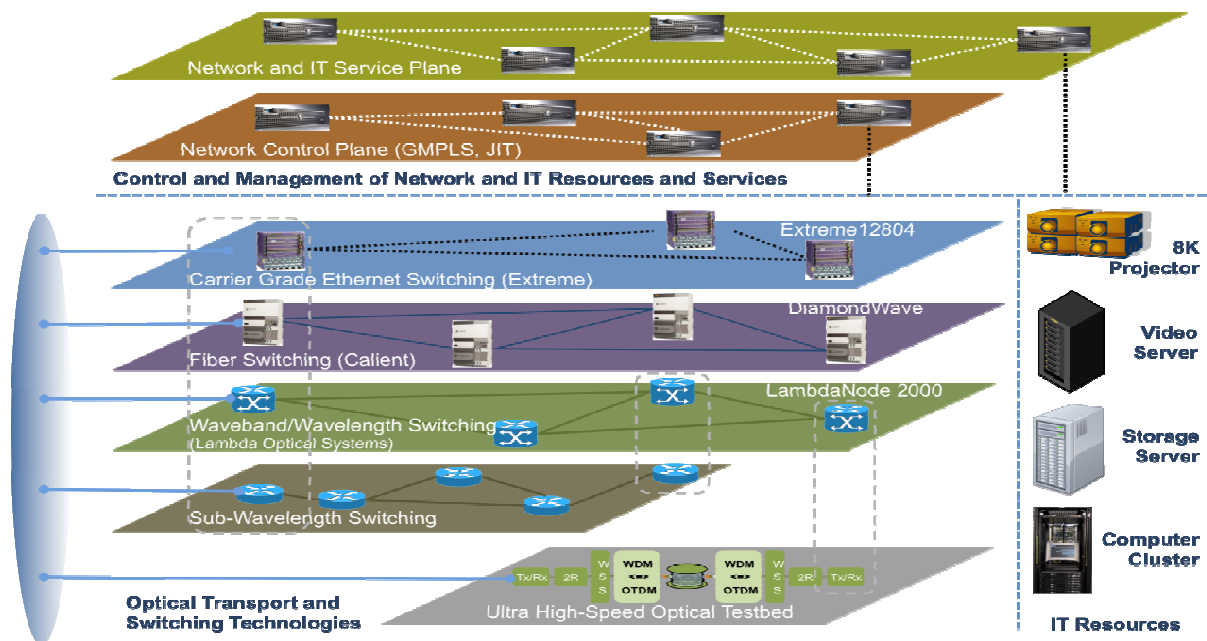


UNIVERSITY OF ESSEX

The High Performance Networks group (HPNG: <http://hpn.essex.ac.uk/>) at the University of Essex specializes in the application of advanced software and hardware technologies to future communication network infrastructures. The group consists of the following labs and experimental facilities:

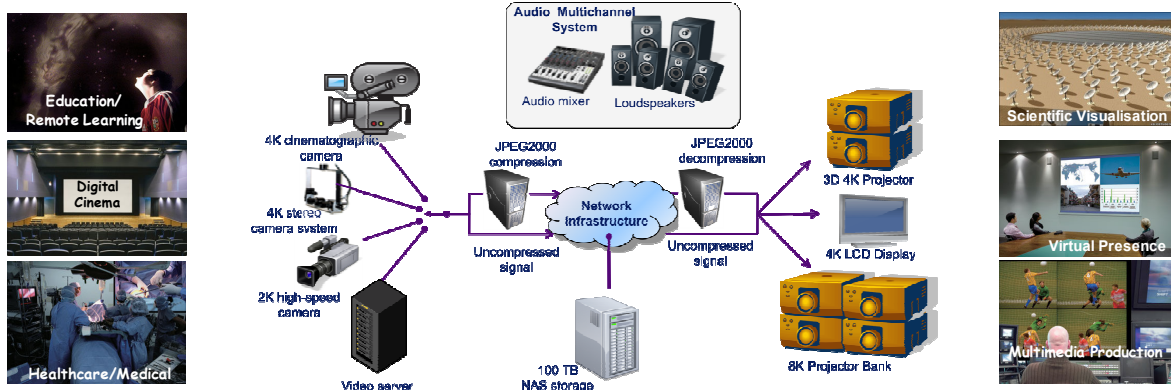
- Photonic Networks Lab (PNL)
- Networked Media Lab (NML)
- High Performance Connectivity Infrastructure

PNL is extremely well equipped with transmission capabilities of up to 320 Gbit/s, full photonic switching and Carrier Grade Ethernet nodes, enabling a full captive network with photonic and electronic switching layers together with management, control and infrastructure virtualisation software. PNL is currently being configured to offer access to L2/L1 openflow infrastructure under the framework of the new FIRE experimental facility project: OFELIA.



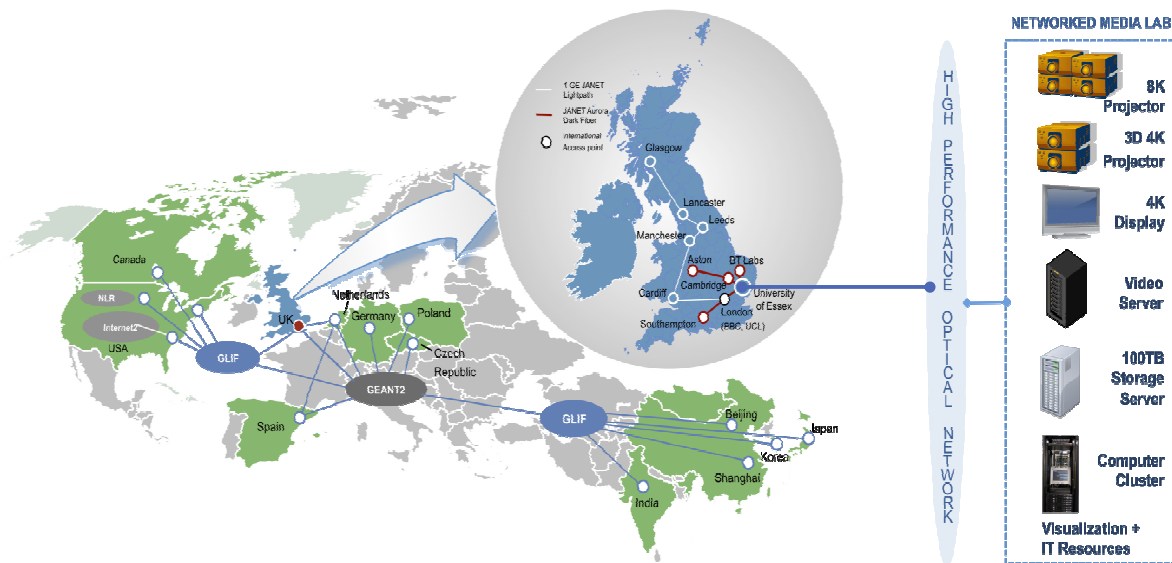
Photonic Networks Laboratory

The University has recently made an investment of more than €2m to extend this activity with a new Networked Media Laboratory (NML) which operates as an interdisciplinary laboratory focused in research & development for efficient deployments of Ultra-High Definition Multimedia Applications over High Performance Networks. The NML comprises infrastructure suitable for developing and implementing international high-performance services specifically created for high-quality, large-scale digital media, including support for extremely high-volume media streams. The services represent a major departure from traditional Internet-based digital media systems, which have limited capabilities for supporting very-high-capacity streams. This is one of the few network connected ultra high definition facilities in the world (first 8k in Europe). The unique capability is offered by the combination of advanced visualisation technologies and network services. Currently the Laboratory offers experimental services to the medical (remote diagnosis) and scientific communities (Radio-astronomy and Biology) where there is the need for real time transfer of ultra high resolution images. The Laboratory also offers support to entertainment and creative industries (digital cinema, broadcasting, performance schools) and is currently constructing an immersive, ultra high definition video conferencing environment for remote teaching/learning applications.



Networked Media Laboratory Infrastructure

The Laboratories are connected with numerous UK, European and international locations through 1 and 10 Gbps lightpath connectivity provided by JANET UK (<http://www.ja.net/>), GEANT (<http://www.geant.net/pages/home.aspx>) and GLIF (<http://www.glif.is/>). Recently a successful bid was made for a dark fibre network (<http://www.ja.net/services/aurora/>) connecting Essex, Cambridge, London and Southampton to allow advanced networking experiments to be undertaken between these centres. This fibre network also supports connectivity with Europe and North America.



National and International Connectivity

The Group has strong links with user groups through EU projects that bring together users and technologists. Current EU funded projects include:
 Future Networks: BONE, EUROFOS, TRIUMPH, DICONET, MAINS, GEYSERS, STRONGEST
 Research Infrastructure: PHOSPHORUS, GEANT3, MANTHYCORE, VISIONAIR.
 FIRE: OFELIA

HPNG has also been core contributor to several nationally (EPSRC/DTI) funded research projects such as: EPSRC PLATFORM grant, OPORON, PROTAGON, HIPNET projects in collaboration with industry and other UK universities.