P47: University of Essex – UEssex (United Kingdom)

Description of expertise & activities

The Future Networks Group comprises the Photonic Networks and Access Networks Laboratories.. It comprises 4 academics and 27 Research Officers, PhD students and Research Fellows. **The Photonic Networks Lab** specialises in the application of optical technologies to future communication network infrastructures, together with the study of associated issues such as control & signalling, the impact of traffic profiles on network and node architectures, and understanding the network technologies (for example burst and packet switching) best suited for future requirements. Applications include telecommunications and Grid networks. The **Access Lab** focuses on "last-mile" technology. This includes research into wavelength-routed access network architectures, devices for ultra-wideband RoF systems and hybrid copper/optical multiplexing techniques for service area interfaces for 100 Mb/sec DSL. The Group is/has been actively involved in many EU projects (as well as National Projects) including horizontal projects such as BREAD & OPTIMIST and technology and network projects such as MUFINS TRIUMPH, UROOF, MUSE. & PHOSPHOROUS.

Tasks within BONE

WP01	Dissemination and Outreach 24 mmonths (over 5 years)
WP13	Virtual Centre of Excellence on Access Networks (22 months over 5 years)
WP14	Optical Switching Systems (12 mmonths over 5 years)
WP21	Topical Project on Service Oriented Optical Network Architectures(20 mmonths)
WP22	Topical Project on MPLS, GMPLS and Routing (12 mmonths)
WP24	Topical Project on Edge to Node Adaptation for Hybrid Networks(18 mmonths)

Key Personnel

Prof. Dimitra Simeonidou: In 1994 joined Alcatel Submarine Networks to work on the introduction of WDM technologies in submerged photonic networks. Currently the chair of GHPN group in the Global Grid forum and an active member of the Grid and Research Networking community in the UK and Internationally (participation in UKLight TAG, GLIF, Internet2, ITU-T/GGF group). Main current areas of interest are design and control issues for photonic networks and architectural considerations for photonic Grid networks; 150 papers and 11 patents.

Dr Ken Guild Senior Lecturer. Previously worked in: Alcatel Submarine Networks, UK on a variety of projects related to advanced optical transport networks; an optical startup, ilotron, UK (co-founder) and more recently within Marconi, Germany where he was Director of Network Architecture and responsible for multi-layer network modelling and design aspects for next generation opto-electronic network solutions; 40 papers

Prof. Stuart Walker: has been successful in obtaining significant EPSRC, EU and Industrial support. Partner in IST MUSE and in the consortium on Ultra-wideband radio (UROOF). Served as consultant or visiting fellow to Hewlett-Packard, Agilent, IBM, Fujitsu and BT. Currently interested in all aspects of optoelectronics and electronics in the broadband access context as well as carrying out theoretical research into distributed, holographic and band-gap optical devices; 150 papers.

Prof. Mike O'Mahony: Current area of research is in understanding the evolution of communication networks to incorporate optical burst and packet switching, together with understanding the role and impact of optical processing. This research, together with involvement with EU IST project OPTIMIST [continued in FW6 as BREAD], which looks across optical research activities in the EU, Japan and North America, has led to many invited presentations at all the major international conferences; 250 papers, 10 patents.

Mr Reza Nejabati: currently a senior research officer in the Photonic Network Research Group at the Essex University. The main areas of his interest are design and control issues for high-speed electronic and optoelectronic interfaces in photonic packet-based networks as well as architectural considerations for photonic Grid networks. ; 25 papers