P48: Swansea University - USWAN (United Kingdom)

Description of expertise & activities

The Institute of Advanced Telecommunications (IAT) is a fast-growing Research Institute established in 2005. IAT is financially supported by Objective 1 funding through the Welsh European Funding Office and major private sector partners. IAT has had a number of project partner and collaborative industrial partners.

IAT scientists conduct research in several areas of communications, including photonic, digital transmission, wireless and networking. The recently established £2.6m Agilent communications test and measurement lab provides excellent facilities for research. In addition a 64 WDM channels recirculating loop offers a state-of-art transmission testbed. The lab capacity is planned to support ultra-high speed transmission with bit error rate testing up to 100Gb/s enabling very high verification of data fidelity.

In particularly the photonic research group expertise conveys topics from the device to the transmission system. More specific the increase of transmission capacity of broadband, metro and core networks, study of advanced modulation formats, optical impairments compensation and network monitoring, investigation of photonic devices for all-optical processing, development of simulation tools efficient to model optical fibre transmission systems and subsystems.

IAT is involved in several national and European project (COST291, NoE e-Photon/ONe+, IP Phosforus) as well as with industry.

Tasks within BONE

WP02	Teaching
WP13	VCE Access networks
WP15	VCE Transmission techniques
WP24	TP Edge-to-node adaptation for hybrid networks
WP27	TP Physical impairments contrain based routing in packet switching networks

Key personnel

Dr. Karin Ennser is currently Acting Head of Teaching and Senior Lecturer at Institute of Advanced Telecommunications, University of Wales Swansea, U.K. Previously worked over 5 years in industry and few years in Research Centre. Main topics of interest are all-optical processing, amplifier dynamics, metro and long-haul system design and performance issues, nonlinear fiber transmission for WDM networks at 10Gb/s and ultra-high speed. She participates in several private, national and European projects. Her research has produces more than 80 papers in journals and conferences and several patents.

Dr. Donald Govan received a BSc(hons) in Laser Physics and Optoelectronics from the university of Strathclyde in 1995 and a PhD from the photonics research group at Aston University in 1999 where he stayed until 2000 in his role as Contact Research Fellow. Donald joined Marconi in May 2000 as Senior Development Engineer where he was part of the team that developed the UPLx160 product, Marconi's ultra long haul (>3000km) dense wavelength division multiplexed photonic line system. From June 2004 until May 2006 he worked in the George Green Institute for Electromagnetics Research at Nottingham university, in May 2006 he joined the Institute of Advanced Telecommunications at Swansea University as a research assistant where his research interests are the numerical modelling of optical networks, subsystems and components.