



Centre for Integrated Photonics

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New optical monitoring project to plug a major gap in the global data security armoury

** photonic 'firewall on a chip' to provide high speed data security for optical networks*

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EU funding of 2 million Euros has been announced for a major new three-year project to develop a re-configurable photonic 'firewall on a chip'. Called WISDOM, (WIrespeed Security Domains Using Optical Monitoring), the new system will plug a major gap in the global data network security armoury – the lack of tools to implement security checks and algorithms directly at high optical data communications rates.

WISDOM will complement current electronic security techniques with optical information filtering operating at wirespeed, and is being developed by a consortium led by the UK's CIP.

"Optical technology lies at the heart of the global electronic and computer-based communications systems on which we are all increasingly reliant," says Graeme Maxwell of project co-ordinator CIP. "It's the key to very high data speeds and very large information handling capacity. But we are still reliant on conventional electronic tools for key functions such as legal intercept, flow classification and performance monitoring. WISDOM technology will provide a scaleable and robust solution to key issues of next generation network security by allowing close inspection of optical data directly in the optical domain."

The WISDOM project brings together a consortium that spans the optical networks supply chain, ensuring that the technology under development can be realised commercially, and will satisfy a real application need. Consortium partners are research institutions the Tyndall Institute (Ireland), the Foundation for Research and Technology, FORTH (Greece); optical component and sub-system fabricator CIP (UK), OEM system supplier Avanex (France), and network operator BT (UK).

The optical sub-systems that are being developed under WISDOM will take state-of-the-art hybrid integrated photonic technology and extend it to meet the performance requirements of a photonic firewall. The sub-systems will be based on the world-leading research on high-speed (greater than 40 Gigabits/second) optical logic gates and optical processing circuits provided by project partners Avanex, CIP and Tyndall.

In addition, this technical and scientific excellence is reinforced by the inclusion of the security application designers and end users of this technology, FORTH and BT, who are themselves pioneering the techniques used to provide network security and resilience.

The Centre for Integrated Photonics (CIP) is a leading supplier of advanced photonic hybrid integrated circuits and InP based optoelectronic chips, devices and modules for communications, biomedical, defence and industrial markets. CIP is also a major provider of technical services and consultancy in the photonics field. With 500 years of combined expertise in photonics, CIP refines research into viable products based on leading edge technologies, thus helping customers develop the photonic products of tomorrow. CIP's wide range of competencies is based on world-renowned research and is uniquely broad, incorporating III-V photonic materials, silicon micromachining, planar silica waveguides and systems measurements expertise. Together with state-of-the-art, ISO9001:2000 registered, co-located fabrication and pilot production facilities, CIP is able to help customers realise new exciting product ideas based on these technologies.

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BT is one of the world's leading providers of communications solutions and services, operating in 170 countries. Its principal activities include networked IT services, local, national and international telecommunications services, and higher-value broadband and internet products and services. BT consists principally of four lines of business: BT Global Services, Openreach, BT Retail and BT Wholesale. In the year ended 31 March 2006, BT Group's revenue was £19,514 million with profit before taxation of £2,040 million. British Telecommunications plc (BT) is a wholly-owned subsidiary of BT Group and encompasses virtually all businesses and assets of the BT Group. BT Group plc is listed on stock exchanges in London and New York. For more information, visit www.bt.com/aboutbt BT contact for WISDOM project: Dr. Carla Di Cairano-Gilfedder.

Avanex Corporation (AVNX) is a leading global provider of Intelligent Photonic Solutions™ to meet the needs of fiber optic communications networks for greater capacity, longer distance transmissions, improved connectivity, higher speeds and lower costs. These solutions enable or enhance optical wavelength multiplexing, dispersion compensation, switching and routing, transmission, amplification, and include network-managed subsystems. Avanex was incorporated in 1997 and is headquartered in Fremont, California. Avanex also maintains facilities in Elmira, NY; Shanghai, China; Nozay, France; San Donato, Italy; and Bangkok, Thailand. To learn more, visit: www.avanex.com Avanex contact for WISDOM: Francis Doukhan.

The Tyndall National Institute is the largest multidisciplinary research centre in Ireland and is recognised as a world-class Centre of Excellence in selected ICT fields. A critical mass of over 300 staff and postgraduate students is in place with access to core technologies and state-of-the-art ICT research facilities. The centre has recently received major funding from the HEA Programme for Research in Third Level Institutions to establish a world-class national nanofabrication facility. Tyndall contact for WISDOM: Bob Manning.

The Foundation for Research and Technology (FORTH) - Hellas - is the largest state research and development centre in Greece. It consists of seven institutes; the Institute of Computer Science (ICS) is one. In its 20-year history, ICS-FORTH has established itself as an internationally known and highly competitive research institute, with modern infrastructure and a broad range of research, development, and educational activities in computer science and engineering and in communications. FORTH contact for WISDOM: Prof. Evangelos Markatos.