



## P12: University Carlos III of Madrid - UC3M (Spain)

### Description of expertise & activities

University Carlos III of Madrid (UC3M) is a public University with more than 18,000 students and 1,900 professors whose technical expertise is centred in Telecommunications, Computer Science, and Industrial Engineering disciplines. The team participating in BONE gathers the expertise of three research groups at UC3M from two departments involved in optical networking technologies: the Telematics Department of UC3M, focused on broadband networking and telecommunication services, and the Electronics Technology Department of UC3M, specialised on optoelectronics and photonics technologies for broadband networks and services. This team has participated and has led a number of projects in European and National R&D programs. Its members come from multiple research centres, such as Massana Technologies, Teldat, Telefonica I+D, Saint Louis University, Georgia Institute of Technology, International Computer Science Institute (University of California at Berkeley), Technical University of Madrid (UPM).

UC3M's scientific activities cover a wide range of research topics on optical networking technology, such as integration of IP and GMPLS wavelength-routed optical networks, switching systems, integration of these technologies in the public Internet, interdomain fast recovery, etc. Technological aspects are also covered such as reconfigurable switches and OADM, dispersion compensation, broadband access networks: RoF, CWDM, GI-POF. UC3M currently participates in advanced networking projects such as FP6 IST MUSE integrated project, e-Photon/ONe+ together with Spanish projects PREAMBULO, OPTINET6, FOTOCOMIN and CAPITAL, and Technological Platforms such as Fotónica 21, all related to next generation optical networking.

### Tasks within BONE

WP01	Dissemination & Outreach
WP02	Teaching
WP12	VCE Services and Applications
WP13	VCE Access networks
WP14	VCE Optical switching systems
WP15	VCE Transmission techniques
WP21	TP Service aware optical network architectures
WP22	TP MPLS, GMPLS and routing
WP24	TP edge-to-node adaptation for hybrid networks

### Key personnel

**David Larrabeiti** is full professor in Switching and Networking Architectures at UC3M, and co-responsible of the Netcom research group, leading the Advanced Switching and Communications Systems research line. He obtained his Ph.D. in Telecommunications Engineering from the Technical University of Madrid (UPM) in 1996. Since 1991, he has participated in EU research projects related to next generation broadband networks such as BRAIN, IBER, NICE, EXPERT, TECODIS, BTI, BONAPARTE, GCAP, OPIUM, e-Photon/ONe, etc. He has been technical manager of REDIMadrid, the research network of the Community of Madrid, whose backbone infrastructure is based on three regional DWDM optical rings. His publications related to optical networking includes papers at IEEE Communications and IEEE Multimedia magazine.

**Ignacio Soto** received the Telecommunication Engineering degree in 1993, and the Ph.D. in Telecommunications in 2000, both from the University of Vigo, Spain. He has been a research and teaching assistant of Telematics Engineering at Univ. of Valladolid and University Carlos III de Madrid. He is an assistant professor at Univ. Carlos III de Madrid since 2001. He has been involved in international and national research projects related with advanced networking. He was responsible for the design and deployment of the optical backbone of REDIMadrid, and he is leader of the CAPITAL project, targeted at the design of advanced optical switching systems.

**Carmen Vázquez** is Head of the Electronics Technology Department and co-leader of Displays and Photonics Applications Group at UC3M. She received her Ph.D. degree in Photonics Technologies in 1995 from Polytechnic University of Madrid (UPM). In 1991 she got a fellowship at TELECOM (Denmark). In 1992-1995 she worked at the Optoelectronics Division of "Telefónica Investigación y Desarrollo"; she has participated in EU projects such as PLANET, OMAN, HEMIND, LC PHOTONET, SAMPA, e-Photon/ONe+, COST299. Her research activities include optical signal processing, ring resonators, plastic optical fibers (POF), broadband access networks based on GI-POF, RoF systems, filters, switches, fiber sensors. She is a senior member of the IEEE, SPIE and OSA member and has published more than 100 papers in journals and conferences. She won the extraordinary doctorate prize of the Polytechnic University of Madrid in 1995 and biannual prize for young professor at UC3M in 2004.