



P14: Universidad Politécnica de Cartagena UPCT (Spain)

Description of expertise & activities

The Universidad Politécnica de Cartagena (UPCT) was created in 1998, being the most recent of the 4 Technical Universities in Spain. As a Technical University, it focuses on scientific and technical degrees (roughly 500 teaching staff and 6500 students). The Telematics Engineering Group (GIT), belongs to the Department of Information Technologies and Communications, intensely involved in the teaching of three Telecommunications degrees (B.Sc., M.Sc. and PhD).

The GIT group has participated and is currently involved in several EU, National and Regional projects as well as in contracts with the local and National industry in the frame of R+D+I projects. The GIT group is integrated in the EU COST 293 actions, and collaborates in the EU COST 291, which share research interests with NoE e-Photon/ONe. We are also a Collaborating Institution of the extension of the NoE e-Photon/ONe, the e-Photon/ONe+. Also, we have been recently granted by the Spanish Research Council, funding the National Research Project ARPaq ("Advances in Optical Packet Switching networks", TEC2004-05622-C04-02/TCM). We are also in the National "Thematic Network of Virtual Circuit oriented IP networks" (Plan Nacional I+D+i TEC2004-21061-E (4/2005 - 3/2006), which intends to bring together more than 20 research groups in MPLS/GMPLS in Spain. Our research results are 15 PhDs and more than 250 publications in indexed journals and conference proceedings.

The Telematics Engineering research group staff is formed by more than 20 researchers, including 1 Professor, 5 Associate Professors, and 9 post-docs. Research topics of the group suited to the NoE are the performance evaluation and dimensioning of Optical Packet Switching (OPS) architectures, control and operation of OPS networks, multicasting, quality of service issues, traffic characterization, OPS networks planning and implementation issues of OPS using Network Processors. Our staff is also involved in the definition of new educational curricula in the scope of the Bologna declaration, and is active in the study of the Networks and Optical Communications curricula.

Tasks within BONE

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| WP02 | Development of open teaching tools and generation of teaching material. |
| WP11 | Traffic engineering and GMPLS control plane, focused on OPS/OBS networks.. |
| WP13 | Performance evaluation and traffic engineering in optical access networks. |
| WP14 | Evaluation of OPS and OBS switching architectures. Network-processor (NP) based implementation of control units. |
| WP22 | Control plane and traffic engineering. Integration into Network Processor (NP) based implementation of control units. |
| WP24 | Packetization and shaping in OBS and OPS networks. Traffic models. |
| WP25 | Performance evaluation and traffic characterization of optical interconnect systems. |

Key personnel

Pablo Pavon-Mariño is an Associate Professor at the Universidad Politécnica de Cartagena. He received the PhD. degree from this University in 2004. He is involved in several National and International research projects related to Optical Packet Switching, and performance evaluation issues. His research interests include switching and traffic engineering in optical networks.

Joan Garcia-Haro is a Professor at the Universidad Politécnica de Cartagena, Spain. He is author or co-author of more than 60 journal papers mainly in the fields of switching and performance evaluation. From April 2002 to December 2004 he served as EIC of the IEEE Global Communications Newsletter, included in the IEEE Communications Magazine. He is Technical Editor of the same magazine from March 2001. He also holds an Honorable Mention for the IEEE Communications Society Best Tutorial paper Award (1995).