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POSITION

Associate Professor at the Technical University of Catalonia
Director of the Advanced Networks Architectures Lab (CRAAX)

RESEARCH ACTIVITIES

Since July 2006

Participation in the network of excellence: “Content Networks and Services for Home Users” (**CONTENT**), FP6-0384239

Since January 2004

Participation in the Cost Action: “Towards Digital Optical Networks” (**COST 291**)

Since September 2004

Participation in the IST IP: “End-to-end Quality of service support over heterogeneous networks” (**EuQoS**), FP6-004503

Since January 2004

Participation in the network of excellence: “Emerging Networking Experiments and Technologies” (**E-NEXT**), FP6-506869

Since January 2006

Participation in the IST IPt: “Next Generation Optical Network for Broadband European Leadership Phase 2”, (**NOBEL II**), FP6-027305

Since January 2004

Participation in the IST project: “Next Generation Optical Network for Broadband European Leadership”, (**NOBEL**)”, FP6-506760

Since January 2007

Participation in MCyT (Spanish government) project: “Multilayer Networks: IP over Transport Networks”, TEC2006-27651-E.

Since January 2006

Participation in MCyT (Spanish government) project: **CATARO**, TEC2005-08051-C03-01.

Since December 2005

Participation in MCyT (Spanish government) project: “Provisión de servicios de red interdominio”, TSI2005-07520-C03-02.

Since December 2002

Participation in MCyT (Spanish government) project: “Transporte de tráfico IP sobre redes ópticas: diseño y evaluación (**TRIPODE**)”, FEDER-TIC2002-04344-C02-02.

Since December 2002

Participation in MCyT (Spanish government) project: “Servicios avanzados de movilidad, provisión de calidad de servicio, y evaluación de los servicios de red (**SAM**)”, FEDER-TIC2002-04531-C04-02

Since December 2002

Participation in MCyT (Spanish government) project: “Red Temática de gestión de redes IP orientadas a circuitos virtuales (MPLS)”, TIC2002-10150E

December 2002 – December 2003

Participation in the COST 263 Action on “Quality of Future Internet Services”.

December 1999 – December 2002

Participation in the IST project: “Layers Interworking in Optical Networks (**LION**)”, IST-1999-11387.

December 1999 – December 2002

Participation in MCyT (Spanish government) project: “Demonstrator of New services for the Spanish National Research Network – 2 (**SABA-2**)”. TEL99-1117-C03-03.

December 1999 – December 2002

Participation in MCyT (Spanish government) project: “Metodologías para la inspección de tráfico en redes avanzadas (**MIRA**)”. 2FD97-2234-C03-02

December 1999 – December 2002

Participation in MCyT (Spanish government) project: “Evaluación de arquitecturas de conmutación de paquetes para redes ópticas”. TEL99-0572-C02-02.

August 1997 – July 1999

Participation in MCyT (Spanish government) project: “Demonstrator of New services for the Spanish National Research Network (**SABA**)”. TEL97-1054-C03-03.

RESEARCH PUBLICATIONS

BOOKS

“*Optical Network design and Modeling*”, LNCS4534, Springer, I.Tomkos, F.Neri, J.Solé, X.Masip, S.Sánchez, Editors

“*Optical Circuit Switching: RWA and wavelength continuity constraint*”, S.Sánchez, X.Masip, in book “*Optical Burst Switching & Optical Packet Switching*”, Chapter 1, in press.

“*A framework for cooperative inter-domain QoS*”, A.Fonte, E.Monteiro, M.Yannuzzi, X.Masip, J.Domingo, in book “*EUNICE 2005: Networks and Applications Towards a Ubiquitously Connected World*”, IFIP International Federation for Information Processing, Springer, vol.196, March 2006.

“*Quality of Service Routing*”, P. Van Mieghem, F.A. Kuipers, T. Korkmaz, M. Krunz, M. Curado, E. Monteiro, X. Masip-Bruin, J. Solé-Pareta and S. Sánchez-López., chapter 2 of book *QUALITY OF FUTURE INTERNET SERVICES: COST263 FINAL REPORT*, Ed. Springer-Verlag, 2003, ISBN: , ISSN: 0302-9743, October 2003.

“*Circuit Wavelength Switching and Routing*”, R.Inkret, et al., chapter 3 of book “*Advanced Infrastructure for Photonic Networks*”, published by University of Zagreb, October 2003.

JOURNALS

“*The EuQoS System: A solution for QoS Routing in Heterogeneous Networks*”, X.Masip Bruin, M.Yannuzzi, R.Serral Gracia, J.Domingo Pascual, J.Enriquez Gabeiras, M.Callejo, M.Diaz, F.Racaru, G.Stea, E.Mingozzi, A.Beben, W.Burakowski, E.Monteiro, L.Cordeiro, *IEEE Communications Magazine* Feature topic “*Quality of Service based Routing Algorithms for Heterogeneous Networks*”, Vol. 45, n°:2, February 2007

“*Fast Set-up of End-to-end Paths for Bandwidth Constrained Applications in an IP/MPLS-ATM Integrated Environment*”, S.Sánchez López, X.Masip Bruin, J.Solé Pareta, J.Domingo Pascual, *Computer Networks journal*, Elsevier, Vol. 51, n°: 3, pp.835-852, February 2007

“*On the challenges of establishing disjoint QoS IP/MPLS paths across multiple domains*”, M.Yannuzzi, X.Masip Bruin, S.Sánchez López, J.Domingo Pascual, A.Sprintson, A.Orda”, *IEEE Communications Magazine* Special issue on “*Advances in Control and Management of Connection-Oriented Networks*”, vol. 44, n°: 12, pp.26-31, December 2006.

“*The Prediction-Based Routing in Optical Transport Networks*”, E.Marín Tordera, X.Masip Bruin, S.Sánchez López, J.Solé Pareta, J.Domingo Pascual, *Computer Communications Journal*, Elsevier, vol.29, issue 7, pp.865-878, April 2006.

“*Research Challenges in QoS Routing*”, X.Masip Bruin, M.Yannuzzi, J.Domingo Pascual, A.Fonte, M.Curado, E.Monteiro, F.Kuipers, P.Van Mieghem, S.Avallone, G.Ventre, P.Aranda Gutiérrez, M.Hollick, R.Steinmetz, L.Iannone, K.Salamatian, *Computer Communications Journal*, Elsevier, vol. 29, issue 5, pp. 563-581, March 2006.

"*An Open Source Traffic Engineering Toolbox*", G.Leduc, H.Abrahamsson, S.Balon, S.Bessler, M.D'Arienzo, O.Delcourt, J.Domingo Pascual, S.C.Erbas, I.Gojmerac, X.Masip Bruin, A.Pescapè, B.Quoitin, S.P.Romano, E.Salvadori, F.Skivee, H.T.Tran, S.Uhlig, H.Umit, *Computer Communications Journal*, Elsevier, vol. 29, issue 5, pp. 593-610, March 2006.

"*A Hierarchical Routing Approach for Optical Transport Networks*", E.Marín Tordera, X.Masip Bruin, S.Sánchez López, J.Solé Pareta, J.Domingo Pascual, *Computer Networks Journal*, Elsevier, vol.50, issue 2, pp.251-267, February 2006.

"*Open Issues in Interdomain Routing: A Survey*", M.Yannuzzi, X.Masip, O.Bonaventure, *IEEE Network*, Vol.19, n°.6, pp.49-56, December 2005.

LECTURE NOTES IN COMPUTER SCIENCE

"*Optimizing Routing Decisions under Inaccurate Network State Information*" ", X.Masip Bruin, S.Sánchez López, J.Solé Pareta, J.Domingo Pascual, 3th International Workshop on QoS in Multiservice IP Networks, QoS-IP'05, Catania, Italy, LNCS 3375, pp. 445-455, February 2005

"*A Proposal for Inter-Domain QoS Routing based on Distributed Overlay Entities and QBGP*", M.Yannuzzi, A.Fonte, X.Masip Bruin, E.Monteiro, S.Sánchez López, M.Curado, J.Domingo Pascual, WQoS'04, Barcelona, España, LNCS 3266, pp.257-267, October 2004.

"*A New Prediction-based Routing and Wavelength Assignment Mechanism for Optical Transport Networks*", E.Marín Tordera, X.Masip Bruin, S.Sánchez López, J.Solé Pareta, J.Domingo Pascual, QofIS'04, Barcelona, España, LNCS 3266, pp. 154-163, Septiembre 2004.

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"*A QoS Routing Mechanism for Reducing the Routing Inaccuracy Effects*", X.Masip Bruin, S.Sánchez López, J.Solé Pareta, J.Domingo Pascual, QoS-IP, Milan, Italy, LNCS 2601, pp.90-102, February 2003.

"*Providing QoS in MPLS-ATM Integrated Environments*", S.Sánchez López, X.Masip Bruin, J.Solé Pareta, J.Domingo Pascual, QofIS'02, Zürich, Switzerland, LNCS 2511, pp. 215-226, October 2002.

CONFERENCES

"*Maximum Coverage at Minimum Cost for Multi-Domain IP/MPLS Networks*", M.Yannuzzi, X.Masip, R.Serral, E.Marín, A.Sprintson, A.Orda, IEEE INFOCOM2008, Phoenix, USA, April 2008

"*OBGP+: A Simple Approach to drastically Improve OBGP*", M.Yannuzzi, X.Masip, G.Fabregó, S.Sánchez, J.Solé, IFIP ONDM2008, Vilanova i la Geltrú, Spain, March 2008

"*MINCOD_MTD: A RWA Algorithm in Semi-Transparent Optical Networks*", E.Marin, S.Sánchez, X.Masip, J.Solé, G.Maier, M.Quagliotti, W.Erangoli, S.Santoni, IEEE ECOC, Berlin, Germany, September 2008.

"Applying Prediction Concepts to Routing on Semi-Transparent Optical Transport Networks", E.Marin, S.Sánchez, X.Masip, J.Solé, G.Maier, M.Quagliotti, W.Erangoli, S.Santoni, ICTON, Roma, Italy, July 2007

"Reliable Routing with QoS Guarantees for Multi-Domain IP/MPLS Networks", A.Sprintson, M.Yannuzzi, A.Orda, X.Masip, IEEE INFOCOM 2007, Anchorage, Alaska, USA, May 2007.

"Inter-domain RWA based on stochastic estimations methods and adaptive filtering for optical networks", M.Yannuzzi, X.Masip Bruin, S.Sánchez López, J.Solé Pareta, J.Domingo Pascual, IEEE Globecom, San Francisco, USA, November 2006.

"On the advantages of Cooperative and Social Smart Route Control", M.Yannuzzi, A.Fonte, X.Masip Bruin, E.Monteiro, S.Sánchez López, M.Curado, J.Domingo Pascual, IEEE ICCCN, Washington, USA, October 2006

"The PBR Approach: Analysis, Performance and Perspective", X.Masip Bruin, S.Sánchez López, E.Marín Tordera, J.Solé Pareta, 8th International Conference on Transparent Optical Networks, ICTON 2006, Nottingham, UK, June 2006.

"The Prediction Approach in QoS Routing", E.Marín-Tordera, X.Masip-Bruin, S.Sánchez-López, J.Domingo-Pascual, A.Orda, IEEE ICC 2006, Istanbul, Turkey, May 2006

"Efficient Routing Algorithms for Hierarchical Optical Transport Networks", Eva Marín Tordera, Xavi Masip Bruin, Sergio Sánchez López, Josep Solé Pareta, ECOC 2005, Glasgow, Scotland, September 2005.

"Multi-domain G/MPLS recovery paths using PCE", R.Romeral, M.Yannuzzi, D.Larrabeiti, X.Masip, M.Ureña, 10th European Conference on Networks & Optical Communications, NOC 2005, London, UK, July 2005

"A Hierarchical Routing Approach for GMPLS-based Control Plane for ASON", S.Sánchez López, X.Masip Bruin, E. Marín Tordera, J.Solé Pareta, J.Domingo Pascual, IEEE ICC, Seoul, Korea, May 2005

"A Combined Intra-Domain and Inter-Domain QoS Routing Model for Optical Networks", M.Yannuzzi, S.Sánchez López, X.Masip Bruin, J.Solé Pareta, J.Domingo Pascual, 7th IFIP Working Conference on Optical Network Design & Modelling, ONDM'05, Milan, February, 2005.

"A Simulation Study of Combined Routing and Contention Resolution Algorithms in Connection-Oriented OPS Network Scenario", M. Klinkowski, D.Careglio, X.Masip Bruin, S.Spadero, S.Sánchez López, J.Solé Pareta, IEEE ICTON 2004, Wroclaw, Polonia, June 2004.

"Routing and Wavelength Assignment under Inaccurate Routing Information in Networks with Sparse and Limited Wavelength Conversion", X.Masip Bruin, S.Sánchez López, J.Solé Pareta, J.Domingo Pascual, D.Colle, IEEE GLOBECOM, San Francisco, USA, December 2003.

"Some Open Issues in the Optical Networks Control Plane", J.Solé Pareta, X.Masip Bruin, S.Sánchez López, S.Spadero, D.Careglio, 5th IEEE International Conference on Transparent Optical Networks, ICTON 2003, Varsovia, Polonia, June 2003.

"QoS Routing Algorithms under Inaccurate Routing Information for Bandwidth Constrained Applications", X.Masip Bruin, S.Sánchez López, J.Solé Pareta, J.Domingo Pascual, IEEE ICC, Anchorage, Alaska, May 2003

"An Adaptive Routing Mechanism for Reducing the Routing Inaccuracy Effects in an ASON", X.Masip Bruin, R.Muñoz, S.Sánchez López, J.Solé Pareta, J.Domingo Pascual, G.Junyent, 7th IFIP Working Conference on Optical Network Design & Modelling, ONDM'03, Budapest, Hungary, February 2003

"A Path Establishment Approach in an MPLS-ATM Integrated Environment", S.Sánchez López, X.Masip Bruin, J.Solé Pareta, J.Domingo Pascual, IEEE GLOBECOM, San Antonio, Texas, USA, November 2001

"Evaluation of a Combined Intra- and Inter-domain Constraint-based Routing Model for Optical Networks", M.Yannuzzi, E.Marín Tordera, S.Sánchez López, X.Masip Bruin, J.F.Lobo Poyo, V Workshop in G/MPLS Networks, Girona, España, March 2006

"From standalone to collective intelligent route control", M.Yannuzzi, X.Masip Bruin, S.Sánchez López, J.Domingo Pascual, A.Fonte, M.Curado, E. Monteiro, IEEE INFOCOM Student Workshop, Barcelona, April 2006

"A Cooperative Approach for Coordinated Inter-domain QoSR Decisions", A.Fonte, E.Monteiro, M.Yannuzzi, X.Masip Bruin, J.Domingo Pascual, EUNICE 2005: Networked applications, Madrid, España, July 2005.

"A Self_adaptive QoS Routing Framework for Multi-homed Stub Autonomous Systems", M.Yannuzzi, A.Fonte, X.Masip Bruin, E.Monteiro, S.Sánchez López, J.Domingo Pascual, EUNICE 2005: Networked applications, Madrid, España, July, 2005.

"EuQoS and measurements", M.Dabrowski, A.Beben, P.Owezarski, X.Masip, R.Serral, G.García, 1st European Workshop on End-to-End QoS in the Internet (EEQoS'05), Paris, France, June 2005

"Prediction-Based Routing in IP-MPLS Networks", Eva Marín Tordera, Xavier Masip Bruin, Sergio Sánchez López, Jordi Domingo Pascual, Ariel Orda, IV Workshop in G/MPLS Networks, , Girona, España, April, 2005

"The Minimum Coincidence Routing in Optical Networks", Sergio Sánchez López, Xavier Masip Bruin, Xavier Romero Durán, Helena Pérez Forcada, IV Workshop in G/MPLS Networks, Girona, España, April 2005.

"Towards Self-Adaptive Inter-Domain Edge Routing", Marcelo Yannuzzi, Xavi Masip Bruin, Edmundo Monteiro, IEEE INFOCOM Student Workshop, Miami, USA, March 2005.

"Prediction Based Routing in IP/MPLS Networks", E.Marín Tordera, X.Masip Bruin, S.Sánchez López, IEEE INFOCOM Student Workshop, Miami, USA, March 2005

"Simulation Model for End-to-end across Heterogeneous Networks", G.Stea, C.Ciconetti, G.García de Blas, X.Masip, J.Sá Silva, G.Santoro, H.Tarasiuk, 3rd International Workshop on Internet Performance, Simulation, Monitoring and Measurement, IPS-MOME 2005, Varsovia, Polonia, March 2005.

"Encaminamiento Inter-Dominio con Calidad de Servicio basada en una Arquitectura Overlay y QBGp", M.Yannuzzi, A.Fonte, X.Masip Bruin, E.Monteiro, S.Sánchez López, M.Curado, J.Domingo Pascual, J.Solé Pareta, Telecom I+D, Madrid, España, November 2004.

"Mecanismo de Encaminamiento y Asignación de Longitud de Onda Basado en Predicción para Redes de Transporte Óptico", E.Marín Tordera, X.Masip Bruin,

S.Sánchez López, J.Solé Pareta, J.Domingo Pascual, Telecom I+D, Madrid, España, November 2004.

"*Evolution of current transport network to ASON/GMPLS*", Eduard Escalona, Salvatore Spadaro, Xavier Masip, Gabriel Junyent, Josep Solé Pareta, Jordi Domingo, Sergi Sánchez, 3th Workshop on MPLS, Girona, España, March 2004.

"*Virtual Private LAN Service: The new challenge for LAN/WAN connectivity*", Marcelo Yannuzzi, Eva Marín Tordera, Xavier Masip Bruin, Jordi Domingo Pascual Sergi Sánchez López, Josep Solé Pareta, 3th Workshop on MPLS, Girona, España, March 2004.

"*Circuit/Wavelength Switching and Routing*", S.De Maesschalck, D.Colle, B.Puype, Q.Yan, M.Pickavet, P.Demeester, S.Sánchez López, X.Masip Bruin, J.Solé Pareta, 7th International Conference on Telecommunications, ConTEL2003, Zagreb, Croacia, June 2003

"*A Mechanism to Reduce the Routing Information Inaccuracy Effects: Application to MPLS*", X.Masip Bruin, S.Sánchez López, J.Solé Pareta, J.Domingo Pascual, 2th Workshop on MPLS, Girona, España, March 2003.

"*Mecanismo de Encaminamiento Dinámico en Redes ASON*", X.Masip Bruin, R.Muñoz, S.Sánchez López, J.Solé Pareta, J.Domingo Pascual, G.Junyent, XII Jornadas Telecom I+D, Barcelona, España, November 2002.

"*PONNI: A Routing Information Exchange Protocol for ASON*", S.Sánchez López, X.Masip Bruin, J.Solé Pareta, J.Domingo Pascual, Eurescom Summit 2002, Heidelberg, Alemania, October 2002.

"*A Solution for Integrating MPLS over ATM*", S.Sánchez López, X.Masip Bruin, J.Solé Pareta, J.Domingo Pascual, 15th International Symposium on Computer and Information Sciences, ISCIS'00, Estambul, Turquía, October 2000.

"*An Alternative Path Fast Rerouting in MPLS*", X.Masip Bruin, S.Sánchez López, J.Solé Pareta, J.Domingo Pascual, 15th International Symposium on Computer and Information Sciences, ISCIS'00, Estambul, Turquía, October 2000.

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"*Protocolo RSVP: Evolución y experiencias*", S.Sánchez-López, X.Masip-Bruin, J.Domingo-Pascual, Jornadas Técnicas RedIRIS 98, Barcelona, Spain, November 1998.

CONFERENCE COMMITTEE MEMBER

General Chair: ONDM 2008

TPC Chair: ONDM 2007

TPC Member: WAOR 2007, 2006, 2005, 2004, GLOBECOM (ONS) 2007, QoS-IP 2008, ICC (ONS) 2008, Networking 2008, 2007, 2006, HPCC 2006, WQoS SR 2004, QoSIS2004, TEMU 2006, 2007, 2008, ICCCN 2008