

CURRICULUM VITAE

Dolors Sala

November 2003

Contact Information:

Dolors Sala
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CURRICULUM VITAE

Full Name: Dolors Sala Batlle
National Identification Number DNI: 90.002.089F
Date of Birth: 6 October 1967
Gender: Female

CURRENT PROFESSIONAL POSITION

Institution: Universitat Pompeu Fabra
School: Polytechnic School, Telecommunication Engineering Studies
Department: Technology
Address: Pg. de Circumval·lació, 8, 08003 Barcelona
Professional Category: Research Professor (Ramón y Cajal Program 2003)

Specialization (UNESCO Code): Telematics (332599)
Dedication: Full time

EDUCATION

Ph.D., School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta GA, USA, March 1998. Thesis Title: "Design and Evaluation of MAC Protocols for Hybrid Fiber/Coaxial Systems".

Master of Science, School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta GA USA, June 1995. Specialization: Telecommunications.

Ph.D. Courses, School of Telecommunications Engineering, University Polytechnic of Catalonia (UPC), September 1990 - June 1993. (Ph.D Program: Discrete Mathematics and Telematics.)

B.S. Computer Science, Autonomous University of Barcelona (UAB), June 1990.

SUMMARY OF PROFESSIONAL EXPERIENCE

Title	Institution	Date
Research Professor	Universitat Pompeu Fabra	2003-present
Senior Staff Scientist	Broadcom, Atlanta GA USA	2000-2002
Senior Research Engineer	Digital Furnace, Atlanta, GA ,USA	1999-2000
Staff Software Engineer	Motorola, Mansfield, MA USA	1998-1999
Research Assistant	Georgia Institute of Technology, USA	1993-1998
Post-graduate Internship	Nortel Networks, Alpharetta GA, USA	Summer 1996
Assistant Professor	Universitat Autònoma de Barcelona	1990-1993

ACADEMIC EXPERIENCE

Teaching Courses

1. "Access Technologies", Post-graduate course Electrical Engineering School, Georgia Institute of Technology, Atlanta GA, USA. Academic year 2001-2002. Course taught in cooperation with other industry and university colleagues.
2. "Computer Networks", Third year undergraduate course in computer science, School computer Engineering, Sabadell. Taught academic year 1992-1993.
3. "Algorithms and Programs", First year undergraduate course in Computer Science, School of computer, Sabadell. Taught academic years: 1990-1991, and 1991-1992.
4. "Laboratory Course in Computer Networks", Laboratory course of third year undergraduate in computer science, School of Computer Engineering, Sabadell. Taught academic years: 1990-1991, 1991-1992, and 1992-1993.

Other Responsibilities

- ?? Member of Industry Advisory Board of the Georgia Tech Broadband Institute, Georgia Institute of Technology, Atlanta, GA USA. 2001-2002.
- ?? Member of board of directors of the Computer Engineering School, Sabadell. Academic year: 1992-1993.

Other Teaching Activities

Network administrator of the laboratory networks of the Computer Science School (Combinatorics and Digital Communication Unit, CCD) in Bellaterra and Computer Engineering School in Sabadell both part of the Autonomous University of Barcelona (UAB). Academic years: 1990-1993.

GOVERNMENT FUNDED R&D PROJECTS

Project Title: "Fiber-to-the-Home: Access Technologies and Services"
Financing Entity: Program Ramón Y Cajal 2003, Spanish Ministry of Science and Technology (MCYT).
Period: 5 years. Contract Pending.
(Eligible candidates published on July 10, 2003)
Principal Investigador: Dra. Dolors Sala Battle
Budgeted: 164.356,00 EUR

Project Title: "Distribution of Secure Information with QoS in Telematic Environments (DISQET)"
Financing Entity: Spanish Ministry of Science and Technology (MCYT), (TIC2002-00818)
Period: From 2003 to 2005
Principal Investigador: Prof. Miquel Soriano Ibáñez
Budgeted: 178.250,00 EUR

PUBLICATIONS AND CIENTIFIC DOCUMENTS

Journals, Conferences and Workshops

1. Hyooung-Kee Choi,, Osama Qadan, Dolors Sala, John O. Limb, Jeff Meyers, "Interactive Web Service via Satellite to the Home", IEEE Communications Magazine, Vol. 39, Issue: 3, pp. 182-190, March 2001.
2. Dolors Sala, John O. Limb, Sunil Khaunte, "Adaptive Control Mechanism for Cable Modem MAC Protocols", Proc. INFOCOM'98, San Francisco, CA, Vol. 3, pp. 1392-1399, March 24-28, 1998.
3. Dolors Sala, John O. Limb, "Comparison of Contention Resolution Algorithms for a Cable Modem MAC Protocol", International Zurich Seminar on Broadband Communications, pp. 83-90, Zurich, Switzerland, February 17-19, 1998.
4. John O. Limb, Dolors Sala, "A Protocol for Efficient Transfer of Data over Fiber/Coax Systems", IEEE/ACM Transactions on Networking, Vol. 5, No. 6, pp. 872-88, December 1997.

This paper was translated to the Chinese by F. Gao and published in an IEEE Chinese journal.

5. Dolors Sala, John O. Limb, "A Protocol for Efficient Transfer of Data over Fiber/Cable Systems", Proc. INFOCOM'96, pp. 904-911, vol. 2, San Francisco, CA, March 24-28, 1996.
6. Dolors Sala, John O. Limb, "Scheduling Disciplines for HFC Systems: What can we learn from ATM scheduling?" Third International Workshop in Community Networking, pp. 7-12, May 23-24, Antwerpen, Belgium, May 23-24, 1996.
7. John O. Limb, Dolors Sala "An Access Protocol to Support Multimedia Traffic over Hybrid Fiber/Coax Systems", Second International Workshop in Community Networking, pp. 35-40, June 20-22, Princeton 1995.

Technical Reports

1. Shashidhar Merugu, Ajay Gummalla, Dolores Sala, Ellen Zegura, "Fast packet classification with a varying rule set", College of Computing, Georgia Institute of Technology, ([GIT-CC-01-11](#)), Technical Report 2001.
2. Dolores Sala "Design and Evaluation of MAC Protocols for Hybrid Fiber/Coaxial Systems", Ph.D. Dissertation, Georgia Institute of Technology, Atlanta, GA, USA, March 1998.
3. Dolores Sala, John O. Limb, Sunil U. Khaunte "Adaptive MAC protocol for Cable modems", Georgia Tech Technical Report GIT-CC-97/14, May 1997.
4. Dolores Sala "MAC Protocols for Multimedia Data over HFC Architecture", Georgia Tech Technical Report GIT-CC-95/48, October 27 1995.

*Technical Contributions to the IEEE 802 Link Security Executive Committee Study Group (ECSG)**

1. D. Sala, "[Link Security Scenarios](#)", Dallas, TX, March 2003, Prepared and presented by Dolores Sala. Collaborators: Ali Abaye (Centillum), Charles Cook (Qwest), Norm Finn, (Cisco), Russ Housley (RSA), Marcus Leech (Nortel), M. Mani, (Avaya), Bob Moskowitz (TrueSecure), David Nelson, Antti Peitilainen (Nokia), Allyn Romanow (Cisco), Dan Romascanu, Mick Seaman, Dennis Volpano, Glen Zorn.
2. D. Sala, "[Link Security for IEEE 802 Networks](#)", IEEE802.3 Call for Interest on Link Security, Kauai, November 11, 2002. Project definition. Prepared and presented by Dolores Sala. Collaborators: Charles Cook (Qwest), Franf Effenberger (Quantum Bridge), Norm Finn, David Halasz, Allyn Romanow, Bruce Tolley (Cisco), Brian Ford (BellSouth), Yukihiko Fujimoto (NTT), Bob Gaglianello (Lucent), Onn Haran (Passave), Masoud Khansari (Centillum), Jin Kim (Samsung), Yannick Le Goff (France Telecom), Kent McCammon, Sam Sambasivan (SBC), Mahalingam Mani, Dan Romascanu (Avaya), Richard Michalowski (Sprint), Gerry Pessavento (Teknovus), Antti Pietilainen (Nokia), Dolores Sala (Broadcom),
3. D. Sala, "[Proposed Ethernet Security PAR and 5 Criteria](#)", IEEE802.3ah, Special Session on Security, New Orleans, LA September 2002

*Contributions accessible at: <http://www.ieee802.org/linksec/meetings>

*Technical Contributions to the IEEE802.3ah Ethernet in the First Mile Task Force***

1. A. Gummalla, "[Efficiency Considerations for EFM](#)", Vancouver, Canada, July 2002. Prepared and presented by Ajay Gummalla. Collaborators: Ajay Gummalla, Dolores Sala, Kent McKammon, Frank Effenberger, Mark Sankey
2. D. Sala, "[EPON Layering](#)", Vancouver, Canada, July 2002
3. D. Sala, "[An Efficient System Solution for Compliance](#)", Edinburgh, Scotland, May 20, 2002. Prepared and presented by Dolores Sala. Collaborators: Bob Gaglianello, Ajay Gummalla, Yannick Le Goff, John Limb, Erwan Nedellec, Carlos Ribeiro, Gaurav Rishi, Dolores Sala
4. "[MPCP Baseline Proposal: Architecture and Layering II](#)", Edinburgh, Scotland, 20 May 2002. Prepared and presented by Dolores Sala. Collaborators: Bob Gaglianello, Ajay Gummalla, Onn Haran, Lior Khernosh, John Limb, Carlos Ribeiro, Dolores Sala
5. "[MPCP Baseline Proposal: Architecture and Layering](#)", Edinburgh, Scotland, 20 May 2002. Prepared and presented by Dolores Sala. Collaborators: Glenn Algie, Vincent Bemmell, Richard Brand, Raymond Chen, Bob Gaglianello, Ajay Gummalla, Onn Haran, Ryan Hirth, David Horne, Lior Khernosh, Hiroshi Suzuki, John Limb, Ariel Maislos, Dolores Sala, Jian Song, Jim Stiscia, Osamu Yoshihara
6. "[MPCP Compliance Layering: Baseline Proposal](#)", St. Louis MO, March 2002, Prepared and presented by Dolores Sala. Collaborators: Bob Gaglianello, Ajay Gummalla, David Horne, John Limb, Dolores Sala

7. "[MPCP: Architecture and Layering Model](#)", St. Louis MO, March 2002. Prepared and presented by Dolores Sala. Collaborators: Glenn Algie, Vincent Bemmell, Richard Brand, Bob Gaglianella, Ajay Gummalla, Onn Haran, Ryan Hirth, David Horne, Lior Khermosh, Hiroshi Suzuki, John Limb, Ariel Maislos, Dolores Sala, Jian Song, Osamu Yoshihara
8. D. Sala, A. Gummalla "[EPON Compliance Architecture](#)", Raleigh NC, 14 January, 2002
9. A. Gummalla, D. Sala, J. Limb, "[MPCP: A Timing Approach](#)", Austin TX, 12-15 November, 2001
10. A. Gummalla, J. Limb, D. Sala "[MPCP: A Simple Protocol Design](#)", Austin TX, 12-15 November 2001. Prepared and presented by Dolores Sala.
11. G. Kramer, "[MPCP: Common Framework](#)", Austin TX, 12-15 November 2001. Prepared by Dolores Sala. Presented by Glen Kramer. Collaborators: Ajay Gummalla, Ariel Maislos, Bruce Tolley, Dolores Sala, Ed Boyd, Glen Kramer, Harald Kaaja, Hiroshi Suzuki, John Limb, Lior Khermosh, Olli-Pekka Hironen, Onn Haran, Oasamu Yoshihara, Ryan Hirth, Vincent Bemmell, Yukihiro Fujimoto
12. D. Sala, "[EPON Protocol Requirements II](#)", Austin TX, November 12-15, 2001. Collaborators: Tony Anderson, Ed Boyd, Vincent Bemmell, Charles Cook, John George, Ajay Gummalla, Onn Haran, Ryan Hirth, Lior Khermosh, Glen Kramer, Glen Koziuk, JC Kuo, John Limb, Ariel Maislos, Barry O'Mahony, John Pickens, Carlos Ribeiro, Dolores Sala, Walt Soto
13. D. Sala, "[A Flexible Architecture for EPON](#)", Los Angeles CA, September 2001. Prepared and presented by Dolores Sala. Contributors: Ajay Gummalla, Harry Hvosrov, Curtis Knittle, John Limb, Jean Charles Point, Hal Roberts, Dolores Sala
14. D. Sala, "[EPON System Requirements](#)", Los Angeles CA, September 2001. Led, prepared and presented by Dolores Sala. Collaborators: Tony Anderson, Vincent Bemmell, Charles Cook, John George, Ajay Gummalla, Onn Haran, Ryan Hirth, Glen Kramer, Glen Koziuk, JC Kuo, John Limb, Ariel Maislos, John Pickens, Carlos Ribeiro, Dolores Sala
15. D. Sala, A. Gummalla, "[PON Functional Requirements: Services and Performance](#)", Portland OR, July 10-12, 2001

**Contributions accessible at: <http://www.ieee802.org/3/efm/public/>

***Technical Contributions to the IEEE802.14
Cable-TV Based Broadband Communication Network Working Group******

1. D. Sala, J.O. Limb, S. Khaunte "Format of the Request Minislot Allocation Element", IEEE802.14/97-066, Atlanta GA, May 1997.
2. D. Sala, J.O. Limb, S. Khaunte "Performance of Contention Resolution Algorithms using Continuous-Mode Operation", IEEE802.14/97-048, Irvine CA, March 1997.
3. D. Sala, J.O. Limb, S. Khaunte "Performance of Continuous-Mode MAC Protocols", IEEE802.14/96-251, Denver CO, January 1997.
4. D. Sala, D. Hartman, J.O. Limb "Comparison of Algorithms for Station Registration on Power up in an HFC Network", IEEE802.14/96-012, Boulder CO, January 1996.
5. J. O. Limb, D. Sala, J. Collins, D. Hartman, D. Howard "Simulation of the Performance of XDQRAP under a Range of Conditions", IEEE802.14/95-49, Dallas TX, May 1995.

*** Documents accessible at: <http://www.cc.gatech.edu/computing/Telecomm/people/Phd/dolores>.

INDUSTRY AND ADMINISTRATION R&D CONTRACTS

Project/Contract Title: Trend of Link Security Technologies
Funding Entity: Nippon Telegraph and Telephone Corporation, Access Network Systems Labs
Period: from Jan-2003 to March-2003
Principal Investigator: Dra. Dolores Sala Battle
Number of researchers participating: 1

Project/Contract Title: Design of a Two-Way Multiple Access Satellite Link
Funding Entity: Media4, Intelsat and Georgia Institute of Technology
Participating Entities: Media4, Broadband Telecommunications Center (Georgia Institute of Technology)
Period: from Oct-1997 to Oct-1998
Principal Investigator: Mr. Jeff Meyers
Number of researchers participating: 8
Total amount funded: 2,000,000.00 USD

Project/Contract Title: Design and Implementation of a Protocol Testing Framework for HFC MAC Protocols
Funding Entity: Mil3
Participating Entities: CableLabs, Milt3, and Georgia Institute of Technology
Period: from Jan-1996 to Dec-1996
Principal Investigator: Prof. John Limb
Number of researchers participating: 3
Total amount funded: 25,000.00 USD

Project/Contract Title: Evaluation of Station Registration Algorithms for HFC Networks
Funding Entity: Com21
Participating Entities: Broadband Telecommunications Center (Georgia Institute of Technology)
Period: from Jan-1995 to Dec-1995
Principal Investigator: Prof. John Limb
Number of researchers participating: 2
Total amount funded: 10,000.00 USD

Project/Contract Title: Performance Evaluation of XDQRAP Protocol
Funding Entity: Scientific Atlanta
Participating Entities: Broadband Telecommunications Center (BTC) and Georgia Tech Research Institute (GTRI) (Georgia Institute of Technology)
Period: from Jan-1995 to Dec-1995
Principal Investigator: Prof. John Limb
Number of researchers participating: 5
Total amount funded: 80,000.00 USD

VISITS TO RESEARCH CENTERS

Key D = Doctorate, P = postdoctoral. Y = invited, C = contracted, O = Other (specify)

Center: Broadcom, Residential Broadband Business Units R&D			
Location: Norcross, GA	Country: USA	Date: 2000-2002	Duration: 3 years
Project: Next Generation Broadband Access Technologies			Key: C

Center: Digital Furnace R&D			
Location: Atlanta, GA	Country: USA	Date: 1999	Duration: 15 months
Project: High Performance HFC Protocols			Key: C

Center: Motorola R&D, Information Systems Group			
Location: Mansfield MA	Country: USA	Date: 1998	Duration: 15 months
Project: Connection Admission Control for ATM Systems			Key: C

Center: Nortel Networks R&D			
Location: Alpharetta, GA	Country: USA	Date: 1996	Duration: 2 months
Project: Design of an Adaptive Mechanism for Data Transmission over Copper			Key: C

Center: Georgia Institute of Technology			
Location: Atlanta GA	Country: USA	Date: 1994-1998	Duration: 4 years
Project: Design and Evaluation of Fiber/Coaxial Systems			Key: D

Center: Georgia Institute of Technology			
Location: Atlanta GA	Country: USA	Date: 1993-1994	Duration: 1 year
Project: Evaluation and Design of MAC Protocols for Indoor Wireless			Key: D

PATENTS

Granted Patents (Accessible at: <http://www.uspto.gov/patft>)

1. J. Limb, D. Sala “[System and method for communicating data in a cable network](#)”, US patent 6,185,224. Filed: 12-Jan-1999. Granted: 6-Feb-2001.

Pending Patents (Publicly accessible at: <http://www.uspto.gov/patft>)

1. Gummalla, D. Sala, “[System, method, and computer program product for optimizing video service in ethernet-based fiber optic TDMA networks](#)”. Filed: 9-Jan-2003. Application Number: [20030007724](#).
2. D. Sala, A. Gummalla, N.Pantelias, “[System and method for bandwidth management in ethernet-based fiber optic TDMA networks](#)”. Filed: 9-Jan-2003. Application Number: [20030007508](#)
3. A. Gummalla, D. Sala “[System for spectrum allocation in ethernet-based fiber optic TDMA networks](#)” Filed: 9-Jan-2003. Application Number: [20030007212](#), [20030007211](#)
4. A. Gummalla, D. Sala, “[System and method for combining requests for data bandwidth by a data provider for transmission of data over an asynchronous communication medium](#)” Filed: 24-Oct-2002. Application Number: [20020154655](#)
5. S. Merugu, A. Gummalla, D. Sala, “[Method, system and computer program product for classifying packet flows with a bit mask](#)”. Filed: 17-Oct-2002. Application Number: [20020152209](#)
6. D. Sala, A. Gummalla, “[System and method for a generalized packet header suppression mechanism](#)”. Filed: 26-Sep-2002. Application Number: [20020136291](#)
7. A. Gummalla, D. Sala, “[System and method for a guaranteed delay jitter bound when scheduling bandwidth grants for voice calls via cable network](#)”. Filed: 18-Jul-2002. Application Number: [20020093912](#)
8. A. Gummalla, D. Sala, “[Voice architecture for transmission over a shared, contention based medium](#)”. Filed: 30-May-2002. Application Number: [20020064169](#)
9. A. Gummalla, D.Sala “[System and method for suppressing silence in voice traffic over an asynchronous communication medium](#)”. Filed: 21-Feb-2002. Application Number: [20020021711](#)
10. D.Sala, J. Limb, A. Gummalla, R. Protus, “[Method, system and computer program product for scheduling upstream communications](#) “. Filed: 20-Dec-2001. Application Number: [20010053152](#)
11. J.Limb, D.Sala, A.Gummalla, F. Bunn, “[Method for opening a proprietary MAC protocol in a non-DOCSIS modem compatibly with a DOCSIS modem](#)”. Filed: 18-Oct-2001. Application Number: [20010030975](#)

Additional Patents (Currently not available on the web)

1. D.Sala, A. Gummalla, J. Limb, “Filtering and Forwarding Frames within an Optical Network”. Filed: 11-Dec-2002. Application Number: 60/339,442
2. D. Sala, A. Gummalla, “System Architecture and Design of Ethernet Passive Optical Networks”. Filed: 21-Aug-2002. Application Number: 10/224,474.
3. D. Sala, A. Gummalla, T. Rabenko, “Synchronizing Voice Traffic with Minimum Latency”. Filed: 18-Jul-2002. Application Number: 10/197,436

4. D. Howard, D. Sala, "Detection and Classification of Collisions of an RF Shared Access Network". Filed: 2-Nov-2000. Application Number: 09/704,809
5. J. Limb, D. Howard, D. Sala. R. Protus, A. Gummalla, "Multiplexing Data from Multiple Sources, System and Method for", Filed: 27-Oct-1999. Application Number: 09/427,792

PARTICIPATION IN INTERNATONAL COMMITTEES

Chair, IEEE 802.1ae Link Security Task Force since March 2003 to present.

Founder, Chair and Technical Contributor of IEEE 802 Link Security Executive Committee Study Group, from Nov 2002 to March 2003.

Technical contributor of IEEE 802.3ah Ethernet in The First Mile Task Force, 2001-2003.

Member of Full Service Access Networks (FSAN) Consortium during 2002. Industry consortium to define DSL and Passive Optical Network (PON) technologies.

Member of Metro Ethernet Forum (MEF) during the years 2001-2002. Industry consortium to define Ethernet service specifications.

Technical contributor of the IEEE 802.14 "Cable-TV Based Broadband Communication Network Working Group from 1994 to 1998

Voting member of the committees

IEEE 802.3 Ethernet Working Group from 2001 to present.

IEEE 802.1 Higher Layer LAN Protocols Working Group from 2002 to present.

ORGANIZATION OF R&D ACTIVITIES

Organizer of a Special Technical Session on Link Security at IEEE 802.3ah Ethernet in the First Mile September 2002 meeting in New Orleans, LA USA.

Publicity co-chair, Fourth International Workshop in Community Networking, Atlanta, GA USA, 1997

DIRECTED R&D PROJECTS

Direction of an R&D project on the collection and analysis of traffic from Cable networks, Broadcom 1999-2002. The objective was to characterize the data traffic of real cable networks for the design and optimization of the cable data transmission system and next generation residential optical technologies. Designed an automatic tool eliminating the manual intervention for the data collection and analysis. The traffic characterization was used to design the PROPANE technology currently used in the BROADCOM products.

Direction of an R&D project on the design of a high speed and scalable packet classification algorithm, Broadcom 2001-2002.

Technical direction of the due diligence process of the acquisition of the company Digital Furnace. Directed the due diligence process of the R&D department.

Direction of the R&D project on optimization of the access protocol for the data transmission in HFC networks. Direcció, Digital Furnace 1999-2001. The objective was to design optimize the current standardized protocol DOCSIS. The result was the patent pending PROPANE technology currently incorporated in Broadcom products.

OTHER RELEVANT ACTIVITIES

Professional Activities

Member of the Fiber to the Home Council (FTTHC) during year 2002.

IEEE member since 1993.

Technical Reviewer of international technical journals and conferences since 1993.

Awards

Alfredo Estrada Award to Outstanding Hispanic Students, Georgia Institute of Technology, Atlanta, GA USA. Year 1995 and 1996.

Additional Training

“Managing Technical Professionals and Organizations”, Sloan School of Management, Massachusetts Institute of Technology, Cambridge, MA, USA, December 11-12, 2000. A two-day course for senior managers.

Languages: Fluent in Catalan, Spanish and English and notions of French.

Additional Experience

Software Engineer, C.D.S. SIEMENS, Barcelona, Spain, 1989 - 1990

Participation of the informatization project of the billing system of the RENFE railway company. My responsibilities were: 1) Study and optimization of the routing algorithm (based on graph theory) used in the billing system; 2) Study of the automatic creation of the train schedule guide.