ANEXO

Lista de Resultados
da Actividade

A1 Unidade de Engenharia de Sistemas de Produção

A1.1 Resultados da actividade de investigação dos membros da Unidade (Results of the research activities of the team members)

A1.1.1 Lista de Publicações (List of Publications)

Teses (Theses)	3

Diogo Ferreira, "Workflow Management Systems Supporting the Engineering of Business Networks", PhD Thesis, FEUP, ISBN 972-9051-32-1, February 2004.

Claudia Chituc, "Characterization of the Innovation Process in Collaborative R&D Projects in Portugal: The case of 49 product development innovation projects undertaken by university-enterprise consortia in Portugal", MSc Thesis, FEUP, June 2004.

Ana Viana, "Metaheuristics for the Unit Commitment Problem - The Constraint Oriented Neighbourhoods search strategy", PhD Thesis, FEUP, December 2004.

Livros-Autor (Books-Author)	0

Blank.

Livros-Editor (Books-Editor)	1

Pinto Ferreira, J.J., "E-Manufacturing: Business Paradigms and Supporting Technologies", *Kluwer Academic Publishers*, Boston, ISVN 1-4020-7654-1, 2004.

Capítulos em Livros (Chapter in Books)	5

Soares, A.L., 2004, "E-Manufacturing: the tools we need to deal with relationships and networks, in E-Manufacturing: Business Paradigms and Supporting Technologies", Ferreira, J. (ed.). Kluwer Academic Press, 2004, pp. 11-16.

Soares, A.L., Pinho de Sousa, J.M., "Models and Systems to Manage High Value Socio-technical networks" in Evolution of Supply Chain Management - Symbiosis of Adaptive Value Networks and ICT, editors: Yoon S. Chang, Harris C. Makatsoris e Howard D. Richards, Kluwer Academic Publishers, 2004, pp. 265-286.

Soares, A.L., Pinho de Sousa, J.M., "Modeling Social Aspects of Collaborative Networks", in Collaborative Networked Organizations: A research agenda for emerging business models, editors: Luis M. Camarinha-Matos, Hamideh Afsarmanesh, Kluwer Academic Publishers, 2004, pp. 253-260.

Pinho de Sousa, J.M., "Maggie – managing the daily production of a short TV show" in Collaborative Networked Organizations: A research agenda for emerging business models, editors: Luis M. Camarinha-Matos, Hamideh Afsarmanesh, Kluwer Academic Publishers, 2004, pp. 42-43.

Soares, A.L., Pinho de Sousa, J.M., Barbedo, F., "Modeling the structure of collaborative networks: some contributions", in Processes and Foundations for Virtual Organizations, editors Luís M. Camarinha-Matos e Hamideh Afsarmanesh, Kluwer Academic Publishers, 2004, pp. 23-30.

Artigos em Revistas Internacionais com Revisores (International Journals with scientific referees)	7

Lopes de Azevedo, A., Matos Toscano, C. A., Pinho de Sousa, J.M., Soares, A.L., "Advanced Agent-Based Order Planning System for Dynamic Networked Enterprises", *Production Planning & Control*, The Management of Operations – special issue, vol.15, no.2, 2004, pp.133-144.

Correia, M.H., Oliveira, J.F., Soeiro Ferreira, J.A., "Reel and sheet cutting at a paper mill", *Computers and Operations Research*, vol.31, no.8, pp.1223-1243, 2004.

Ribeiro Ferreira, D.M, Pinto Ferreira, J.J., "Building an e-marketplace on a peer-to-peer infrastructure", *International Journal of Computer Integrated Manufacturing*, vol.17, no.3, pp.254-264, April, 2004.

Ribeiro Ferreira, D.M.; Pinto Ferreira, J.J., "Developing a reusable workflow engine", *Journal of Systems Architecture*, vol.50, no.6, pp.309-324, June, 2004.

Teixeira, J., Antunes, A. P., Pinho de Sousa, J.M., "Recyclable waste collection planning – a case study ", *European Journal of Operational Research*, Volume 158, Issue 3, November 2004, pp. 543-554.

Carravilla, M.A., Oliveira, J.F., "Teaching Logistics without Formal Classes"; *European Journal of Engineering Education*, vol. 29, nº 4, pp 571-580, 2004.

Martins, A., Pinto Ferreira, J.J., Mendonça, J.M., "Quality management and certification in the virtual enterprise", *International Journal of Computer Integrated Manufacturing*, April-May 2004, vol. 17, no. 3, pp. 212-223(12).

Artigos em Revistas Nacionais com Revisores (National Journals with scientific referees)	5

Moura, A., Oliveira, J.F., "Uma heurística composta para a Determinação de Rotas para Veículos com Janelas Temporais", *Investigação Operacional*, vol. 24, no. 1, pp. 45-62, 2004.

Moreira, A.C., "Technology Management and Subsidiary Influence in MNCs: A Research Agenda", *Economia Global e Gestão*, Vol. IX, nº 1, pp. 119-141, 2004.

Moreira, A.C., "As Estratégias Tecnológicas na Cadeia de Valor", *Revista da Universidade Moderna do Porto*, Vol. 7, pp. 35-56, 2004.

Moreira, A.C., Pereira, A.G., "A Contabilidade e a Intangibilidade da Informação: Desafios Presentes e Futuros para a *«Ciência dos Números»*", Cadernos BAD, Vol. 2, pp. 92-105, 2004.

Moreira, A.C., "Na senda das Complementaridades Interempresariais no Relacionamento entre PME Portuguesas e empresas Multinacionais", *Inovação Organizacional*, Vol. 2, pp. 223-261, 2004.

Comunicações em Actas de Conferências com Revisores (Conference Proceedings with scientific referees)	11

Moreira, A.C., "Desafios do Desenvolvimento Colaborativo de Novos Produtos em PMEs Industriais", em Actas da XIV Jornadas Luso-Espanholas de Gestão Científica, Universidade dos Açores, Ponta Delgada, 4 a 7 de Fevereiro de 2004.

Chituc, C.M., Sousa, J.C.C.P.D. et al., "The Role of Strategic Alliances for Sustainable Development – 49 Product Development projects Undertaken in Consortia in Portugal", IAMOT 2004: 13th International Conference on Management of Technology: New Directions in Technology Management: Changing Collaboration Between Government, Industry and University, in Proceedings, Washington DC, USA, April, 2004.

Lopes de Azevedo, A. et al., "Order Planning Decision Support System For Customer Driven Manufacturing: Overview of Main System Requirements", ICEIS 2004 – 6th International Conference on Enterprise Information Systems, Porto, Portugal, April, 2004.

Soares, A.L., Pinho de Sousa, J.M. "Managing Socio-technical Networks: towards new management concepts for networked businesses", IMS 2004 – IMS International Forum 2004, Cernobbio, Lake Como, Itália, May 2004.

Chituc, C.M., Sousa, J.C.C.P.D. et al., "Crucial Factors for Successful Product Development Innovation Projects", ISPIM 2004 – The XV ISPIM Annual Conference: Successfully Creating Innovative Products and Services: Integrating Academia, Business and Consulting, in Proceedings, Oslo, Norway, June, 2004.

Chituc, C.M., Sousa, J.C.C.P.D. et al., "Managing R&D for Successful Product Development Innovation Projects", RADMA 2004 – The R&D Management Conference 2004, in Proceedings, Sesimbra, Portugal, July, 2004.

Barradas, C., Pinto Ferreira, J.J., "P2P infrastructure for tourism e-Marketplace" PRO-VE 04, August 2004.

Ribeiro, N.A., Martins, A., Pinto Ferreira, J.J., "Introducing Time Horizons To Enterprise Networking Architecture" PRO-VE 04, August 2004.

Viana, A.M., Pinho de Sousa, J.M., Matos, M.A.C.D.C., "Constraint Oriented Neighbourhoods – a New Optimization Strategy for the Unit Commitment Problem", MedPower'04 – 4th Mediterranean Conference on Power Generation, Transmission and Distribution, Lemesos, Chipre, 2004.

Simões, D., Soares, A.L., "The Formation and Dissolution of Organizational Networks: A Knowledge Management Perspective". Virtual Enterprises and Collaborative Networks (PROVE'04), Toulouse, France, Kluwer Academic Publishers, 2004.

Ribeiro, M.C., Carravilla, M.A., "A Global Constraint for Nesting Problems. Proceedings of CPAIOR-2004. Lecture Notes in Computer Science 3011, pp. 256-270. 2004.

Outras Publicações (Other Publications)	5

Caldeira, H. D., Soeiro Ferreira, J.A., "Carregamento de Contentores pelo Método GRASP", *IO'2004, 11º Congresso da APDIO*, April 2004.

Lima, J.A., Carravilla, M.A., "Implicações do "11 de Setembro" na cadeia de abastecimento", *IO'2004, 11º Congresso da APDIO*, April 2004.

Ribeiro, M.C., Carravilla, M.A., Oliveira, J.F., "CP e MIP na resolução de problemas combinatórios", *IO'2004, 11º Congresso da APDIO*, April 2004.

Teiga, E., Marques, T., Carravilla, M.A., Oliveira, J.F., "Cleópatra – Um sistema de Apoio à Decisão para o Planeamento da Produção de Cloro-Álcalis na Quimigal", *IO'2004, 11º Congresso da APDIO*, April 2004.

Viana, A.M., Pinho de Sousa, J., Matos, M., "Vizinhanças às Restrições – uma nova estratégia de pesquisa em emta-heurísticas", *IO'2004, 11º Congresso da APDIO*, April 2004.

A1.1.2 Lista de Revistas (List of Journals)

Journal	Number of papers
Computers and Operations Research	1
European Journal of Engineering Education	1
European Journal of Operational Research	1
International Journal of Computer Integrated Manufacturing	2

Journal	Number of papers
Journal of Systems Architecture	1
Production Planning & Control	1
TOTAL	7

A1.1.3 Lista de Patentes (List of Patents)

Name: Distribution and temporary storage system for transport units
Developed under (Project Name): CICLOPE
Demo Place: ITIA, Italy
Development Period: 1 JUNE 2002 to 31 MAY 2004
Type (National or International): National submitted, PCT being Submitted
Submission Date: 22 April 2004

A1.1.4 Lista de Protótipos mais relevantes (List of Most Relevant Prototypes)

Name: CortaBem
Developed under (Project Name): CLPNest and GLOBALNest
Demo Place: INESC Porto (http://192.168.102.63/~globalnest/)
Development Period: October 2001-March 2006

Name: Distributed Agent based Workflow Management System for Inter-enterprise business processes coordination
Developed under (Project Name): BMAN
Demo Place: INESC Porto. (Open source initiative available on the internet)
Development Period: January 2003 to June 2004

Name: Business Coordination and logistic management support for enterprise networks from the fashion industry and made to fit products
Developed under (Project Name): MyFashion
Demo Place: Silva e Sistelo apparel company
Development Period: January 2003 to March 2004

Name: Design and development of an intra-company logistic system for custom made products for stitching in the shoe industry
Developed under (Project Name): CICLOPE
Demo Place: ITIA, Italy
Development Period: 1 JUNE 2002 to 31 MAY 2004

Name: Design and development of several innovative manufacturing equipments and intra-company logistic systems for the shoe industry
Developed under (Project Name): FATEC
Demo Place: Several Portuguese Shoe companies
Development Period: January 2003 to December 2004

Name: First prototype of Optimization Algorithms for Production scheduling using specific heuristics and Metaheuristics

Developed under (Project Name): Softinov

Demo Place: INESC Porto

Development Period: June 2004 to December 2004

A1.1.5 Teses orientadas por membros da Unidade (Theses supervised by members of the team)

Supervisors are affiliated with INESC Porto/FEUP except when indicated otherwise. Theses are submitted to FEUP except when indicated otherwise.

Teses de Doutoramento (PhD Dissertations)

Author/Institution	Supervisor/Institution	Title	Conc. Date
Ana Viana	Jorge Pinho de Sousa Manuel Matos	Metaheuristics for the Unit Commitment Problem - The Constraint Oriented Neighbourhoods search strategy	2004
Diogo Ferreira	João José Pinto Ferreira	Workflow infrastructures for Virtual Enterprises	2004
Ana Maria Pinto Moura	José Fernando Oliveira	Heuristic approaches to the vehicle routing and vehicle packing problems	2005
António Miguel Gomes	José Fernando Oliveira	Raw material optimization in irregular cutting processes	2005
Maria Eduarda Cunha e Silva Pinto Ferreira	José Fernando Oliveira	Graph based approach for the n-dimensional Rectangular packing problem	2005
Maria Helena Correia	José Soeiro Ferreira	Optimization in the Paper Industry	2005
Teresa Galvão Dias	Jorge Pinho de Sousa João Falcão e Cunha - FEUP	Interactive Multi-objective Genetic Algorithms for the Bus Driver Scheduling Problem	2005
Dora Simões	António Lucas Soares	Socio-technical Models for the formation and dissolution of Cooperation Networks of Small and Medium Enterprises.	2006
Hugo Ferreira	João José Pinto Ferreira Rui Camacho - FEUP	Self learning Ad-hoc workflow management	2006
João Claro	Jorge Pinho de Sousa	Strategic Planning in Collaborative Commerce Networks	2006
José Crispim	Jorge Pinho de Sousa	Contributions for a multi-criteria model for supporting the creation of collaborative enterprise networks	2006
José Paulo Angeiras de Sousa Santos	Maria Antónia Carravilla Carlos Costa - FEUP	Support system for the evaluation of higher education courses.	2006
Maria Teresa do Valle Moura da Costa	José Fernando Oliveira	New approaches to the periodic placement of irregular shapes	2006
Abailardo Lucilio de Natividade Moreira	Américo Azevedo	Dynamic evaluation of production capacity in Enterprise Networks	2007
Bernardo Simões de Almada-Lobo	José Fernando Oliveira	Scheduling problems in the glass containers industry	2007
Célia Talma Matins	Eugénio Oliveira - FEUP António Lucas Soares	Collaborative Business in Enterprise Networks: Inter-organizational processes.	2007
Claudia M. Chituc	Américo Azevedo	Self-organization in enterprises and business networks and behavior semantics	2007

Author/Institution	Supervisor/Institution	Title	Conc. Date
Henrique José Amorim da Silva	José Fernando Oliveira	Heuristics and Meta-heuristics for rectangular 2D cutting problems	2007
Luís Moreira	José Soeiro Ferreira	Scheduling Methods and Applications	2007
Paulo Veloso Gomes	António Lucas Soares	Meta-processes in Socio-technical Networks	2007
Rosário Moreira	José Soeiro Ferreira	Combinatorial Optimization in Graph Problems	2007

Teses de Mestrado (MSc Dissertations)

Author/Institution	Supervisor/Institution	Title	Conc. Date
Adília Gomes	António Lucas Soares	Strategic options for the adoption of information systems and technologies	2004
Célia Tenente	Américo Azevedo	Enterprise Networks and the requirements for the information systems	2004
Cláudio Barradas	João José Pinto Ferreira	Enterprise Integration in Business Networks	2004
Henrique Proença	Américo Azevedo	Decision Support System for the Production Planning and Scheduling in a Make-to-Order Environment	2004
José Miguel Magalhães EGP (UP)	Jorge Pinho de Sousa	Vehicle routing for pharmaceutical distribution	2004
Nuno Ribeiro	João José Pinto Ferreira	Architectures for Enterprise Integration	2004
Paulo Veloso Gomes	António Lucas Soares	Participation and collaboration between Universities mediated by computer: An Actor-Network approach	2004
Olga Constante	Américo Azevedo	Decision Support System in the Production Planning of Complex Products	2004
José Manuel Costa	António Carrizo Moreira	Innovation in Services. The Case of "Loja do Cidadão" (The Citizen Shop).	2005
Ana Maria Rodrigues	José Soeiro Ferreira	Application of new Meta-heuristics to the Rural Postmen problem (in Portuguese)	2005
Hugo Caldeira	José Soeiro Ferreira	Logistic Pallet and Packing problems	2005
Ana Santos	José Soeiro Ferreira	Parallel Machine Scheduling	2005
João Pinho	António Lucas Soares	Collaborative and multidisciplinary inter-organizational process design	2005
Anabela Pinho	António Lucas Soares	Information Systems and inter-organizational relationship patterns.	2005
Miguel Teixeira	Jorge Pinho de Sousa	Mobility studies in a metropolitan area: information management and support to alternative strategies impact evaluation	2005
José Raúl Luís	Jorge Pinho de Sousa	Distributed component production for the automotive industry: modeling and optimization	2005
Marta Tavares	Jorge Pinho de Sousa	Decoupling points in production systems: strategy evaluation through simulation	2005
José Pedro Fernandes	Jorge Pinho de Sousa António Lucas Soares	The concept of optimization in current industrial environments: perspectives and requirements	2005
Inês Souto e Castro	Jorge Pinho de Sousa Américo Azevedo	Costing systems for the cork industry	2005
Teresa Marques	Maria Antónia Carravilla	Decision Support System for the Production Planning of Quimigal, S.A's Chlorine-alcalis.	2005

Author/Institution	Supervisor/Institution	Title	Conc. Date
Jonas André Lima	Maria Antónia Carravilla	Terrorism impact in the Supply-Chain	2005
Teresa Mota	Américo Azevedo	Information systems' evolution and their relationship with management and organization models.	2005
António Ribeiro	Américo Azevedo	Business Models and processes in the printing industry	2005
Jorge Albuquerque	António Lucas Soares	Collaboration support system in projects management in a bank institution	2005
Tiago Pinto	António Lucas Soares	Contents Management System in a Finance Department.	2005
Cristóvão Sousa	António Lucas Soares	Conceptual Maps and Contents Management	2005
Eduardo Martins Pires Moreira - EGP (UP)	Américo Azevedo	Balanced ScoreCard computer support	2005
João Sabino Vilaça	Américo Azevedo	Balanced ScoreCard application to the definition of organizations' strategic course particularly to the Portuguese model of multi-municipal enterprises.	2005
Ana Patrício Vale	Américo Azevedo	Management Systems integration – according with standard references	2005
Inês Castro – EGP (UP)	Américo Azevedo	Definition of a cost model: application to the cork transforming industry	2005
Zulmira Pinho Teixeira	Américo Azevedo	Enterprise integration based on electronic contracts.	2005
Gil Alexandre Oliveira Vieira – UA	Américo Azevedo	Requirements in the technical support of the implementation of Balanced ScoreCards	2005
João Carlos Gomes da Silva - UA	Américo Azevedo	Evaluation of the organizational performance	2005
Hélder Tiago de Resende Gomes – EGP (UP)	Américo Azevedo	Decision Support system for the management of production activities in a make-to-order of complex products environment	2006
Pedro Cruz	José Soeiro Ferreira	Task Scheduling in a Paint Factory	2006

A1.1.6 Organização de Eventos Científicos Internacionais (Organization of International Scientific Events)

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A1.1.7 Formação Avançada (Advanced Training)

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A2   Unidade de Optoelectrónica e Sistemas Electrónicos

A2.1   Resultados da actividade de investigação dos membros da Unidade (Results of the research activities of the team members)

A2.1.1 Lista de Publicações (List of Publications)

Teses (Theses)	0

Blank.

Livros-Autor (Books-Author)	0

Blank.

Livros-Editor (Books-Editor)	0

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Capítulos em Livros (Chapter in Books)	0

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Artigos em Revistas Internacionais com Revisores (International Journals with scientific referees)	16

Gomes, L. A. D. A. O., et al., "Picosecond SESAM-Based Ytterbium Mode-Locked Fiber Lasers", *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS*, January 2004, vol.10, no.1, p.129-136.

Pereira, D. C. A., Frazão, O. J. D. R., Santos, J. L. C. D. O., "Fibre Bragg Grating Sensor for Simultaneous Measurement of Salinity and Temperature", *Optical Engineering*, February 2004, vol.43, no.2, p.299-304.

Baptista, J. M. R. T., Abad, S., Rego, G. M. D., Ferreira, L. A. D. A., et al., "Wavelength Multiplexing of Frequency Based Self-Referenced Fiber Optic Intensity Sensors", *Optical Engineering*, March 2004, vol.43, no.3, p.702-707.

Orsila, L., Gomes, L. A. D. A. O., Xiang, N. , Jouhti, T. Okhotnikov, O.G., "Mode-locked ytterbium fiber lasers", Applied Optics, 43, (9) March, 2004.

Mardare, A. I., Mardare, C. C., Joanni, E., "Bottom Electrode Crystallization of PZT Thin Films Deposited by Laser Ablation", *Japanese Journal of Applied Physics*, April 2004, vol.43, no.4, p.1527-1531.

Nunes, F., Mukhamedzhanov, A., Rosa, C. S. S. C., Irgaziev, B., "Insight into continuum couplings", *Nuclear Physics A*, May 2004, vol.736, no.3, p.255-268.

Frazão, O. J. D. R., Santos, J. L. C. D. O., "Simultaneous Measurement of Strain and Temperature Using a Bragg Grating Structure Written in Germanosilicate Fibres", *Journal of Optics A: Pure and Applied Optics*, June 2004, vol.6, p.553-556.

Frazão, O. J. D. R., Santos, J. L. C. D. O., et al., "Optical Fibre Sensor for Real Time Damage Detection in Smart Composite", *Computers and Structures*, July 2004, vol.82, no.17, p.1315-1321.

Frazão, O. J. D. R., Santos, J. L. C. D. O., et al., "Superimposed bragg gratings in high-birefringence fibre optics: simultaneous measurements of three parameters", *Journal of Measurement Science and Technology*, August 2004, vol.15, no.8, p.1453-1457.

Rego, G. M. D., Santos, J. L. C. D. O., Salgado, H. M. D. C. F., et al., "In Situ temperature measurement of an optical fibre submitted to electric arc discharges", *Photonics Technology Letters*, September 2004, vol.16, no.9, p.2111-2113.

Joanni, E., Mardare, A. I., Mardare, C. C., Marques, M. J. B., "Bottom electrode crystallization method for heat treatments on thin films ", *Review of Scientific Instruments*, September 2004, vol.75, no.9, p.2950-2954.

Rosa, C. S. S. C., et al., "Limitation of the Achievable Signal-to-Noise Ratio in Optical Coherence Tomography Due to Mismatch of the Balanced Receiver", APPLIED OPTICS , September 2004, vol.43, no.25, p.4802-4815.

Mardare, C. C., Mardare, A. I., Joanni, E., Fernandes, J. R. A., et al., "Pulsed laser deposition of SiO2-P2O5-CaO-MgO glass coatings on titanium substrates", Journal of Materials Research, September 2004, vol.7, no.3, p.431-436.

Mardare, C. C., Mardare, A. I., Joanni, E., "Effect of deposition conditions of platinum electrodes on their performance as resistive heating elements", *Journal of Materials Research*, September 2004, vol.7, no.3, p.427-430.

Jorge, P. A. D. S., Caldas, P. S. D. A., Rosa, C. S. S. C., Oliva, A., Santos, J. L. C. D. O., "Optical fiber probes for fluorescence based oxygen sensing", *SENSORS AND ACTUATORS B-CHEMICAL*, September 2004, vol.103, no.1, p.290-299.

Frazão, O. J. D. R., Muniz, R. M. R., Marques, P. V. D. S., Salgado, H. M. D. . C. F., "Ring chirped fibre bragg grating for dynamic dispersion compensation", *OPTICS COMMUNICATIONS*, November 2004, vol.242, no.11, p.417-423

Artigos em Revistas Nacionais com Revisores (National Journals with scientific referees)	0

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Comunicações em Actas de Conferências com Revisores (Conference Proceedings with scientific referees)	42

Pereira, D. C. A., Frazão, O. J. D. R., Santos, J. L. C. D. O., "Sensores de Bragg em Fibra Óptica para monitorização e controlo de trafego em estruturas civis", *5º ENAETME - 5º Encontro Nacional de Análise Experimental de Tensões e Mecânica Experimental*, January 2004, Coimbra, Portugal.

Frazão, O. J. D. R., et al., "Sensores Bragg em Fibra óptica para Substituir Extensómetros na Determinação de Extensões em Problemas Biomecânicos", *5º ENAETME - 5º Encontro Nacional de Análise Experimental de Tensões e Mecânica Experimental*, January 2004, Coimbra, Portugal.

Marques, M. J. B., et al., "Síntese e propriedades ópticas não lineares de 3ª ordem de complexos de niquel (II) com bases de Schiff", *XIX ENSPQ - XIX Encontro Nacional da Sociedade Portuguesa de Química*, April 2004, Coimbra, Portugal.

Moreira, P. J. B., Marques, P. V. D. S., et al., "Hybrid silica sol-gel symmetric buried channel waveguide on silicon", *PE - SPIE's Photonics Europe*, April 2004, Strasbourg, France.

Moreira, P. J. B., Marques, P. V. D. S., et al., "Advanced hybrid sol-gel material processing for higher transparency at 1.5 m", *PE - SPIE's Photonics Europe*, April 2004, Strasbourg, France.

Frazão, O. J. D. R., Dias, I. M. S., et al., "Smart Composite Plates for Health Monitoring of a Boat Structure", *Sampe Europe - 25th International Sampe Europe Conference*, April 2004, Portes des Versailles, France.

Frazão, O. J. D. R., Dias, I. M. S., et al., "Smart Composite Plates for Health Monitoring of a Boat Structure", *11CM - 11th European Conference on Composite Materials*, 2004, Rhodes, Greece.

Rosa, C. S. S. C., et al., "Optimization of OCT signal-to-noise ratio, when excess photon noise increases due to mismatch of the balanced receive", *SPIE - SPIE 2nd International Symposium on Fluctuations and Noise*, May 2004, Gran Canaria, Espanha.

Marques, P. V. D. S., et al., "Optical Waveguides Fabricated by Electron-beam Irradiation of Ge-doped Flame-Hydrolysis Silica", *CLEO/IQEC 2004 - CLEO/IQEC 2004*, May 2004, San Francisco, USA.

Rego, G. M. D., Marques, P. V. D. S., Santos, J. L. C. D. O., Salgado, H. M. D. C. F., "Measurement of the temperature of an optical fiber submitted to an electric arc discharge", *EWOFS'04 - Second European Workshop on Optical Fibre Sensors*, June 2004, Santander, Espanha.

Jorge, P. A. D., Caldas, P. S. D. A., Rosa, C. S. S. C., Oliva, A.G., Marques, M. J. B., Santos, J. L. C. D. O., "Optical temperature measurement configuration for fluorescence based oxygen sensors", *EWOFS'04 - Second European Workshop on Optical Fibre Sensors*, 9-11 June, Santander, Espanha, 2004.

Fernandez, A. F. Rego, G. M. D., Gusarov,A., Brichard, B, Santos, J. L. C. D. O., Salgado, H. M. D. C. F., Berghmans, F, "Evaluation of Long-Period Fiber Grating Temperature Sensors in Nuclear Environments", *EWOFS'04 - Second European Workshop on Optical Fibre Sensors*, 9-11 June, Santander, Espanha, 2004.

Muniz, R. M. R., Frazão, O. J. D. R., Pereira, D. C. A., Salgado, H. M. D. C. F., et al., "Intensity-referenced temperature-independent curvature sensing concept based on chirped gratings embedded in a composite laminate", *EWOFS'04 - Second European Workshop on Optical Fibre Sensors*, June 2004, Santander, Espanha, vol.5502, p.164-167.

Frazão, O. J. D. R., Ferreira, L. A. D. A., Araújo, F. M. M., Santos, J. L. C. D. O., "High-Resolution Absolute-Distance Measurements Using Multiple Tunable Fiber Bragg Gratings", *EWOFS'04 - Second European Workshop on Optical Fibre Sensors*, June 2004, Santander, Espanha.

Frazão, O. J. D. R., Muniz, R. M. R., Araújo, F. M. M., Ferreira, L. A. D. A., Santos, J. L. C. D. O., "Simultaneous Measurement of Temperature and Strain Using a Step Spectrum Profile Fibre Bragg Grating Arrangement", *EWOFS'04 - Second European Workshop on Optical Fibre Sensors*, June 2004, Santander, Espanha.

Frazão, O. J. D. R., Rego, G. M. D., Araújo, F. M. M., Ferreira, L. A. D. A., Salgado, H. M. D. . C. F., "Simultaneous Measurement of Strain and Temperature Based on Polarization Loss Properties of Arc-Induced Long Period Gratings", *EWOFS'04 - Second European Workshop on Optical Fibre Sensors*, June 2004, Santander, Espanha.

Caldas, P. S. D. A., Jorge, P. A. D. S., Santos, J. L. C. D. O., et al., "Fluorescent Optical Fiber Sensor for Remote Determination of pH", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal.

Frazão, O. J. D. R., Carvalho, J. P. P. D., Salgado, H. M. D. C. F., et al., "Wavelength Conversion Efficiency in a Dispersion Shifted Fibre", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal.

Frazão, O. J. D. R., Carvalho, J. P. P. D., Salgado, H. M. D. C. F., et al., "Non-linear Effects in Photonic Crystal Fibres", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal.

Frazão, O. J. D. R., Costa, A. J. A. D., et al., "Evaluation of Polarization Dependent Loss in WDM Fused Couplers", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal.

Frazão, O. J. D. R., Ferreira, L. A. D. A., Araújo, F. M. M., Santos, J. L. C. D. O., et al., "Simultaneous Measurement of Transverse Load and Temperature using Bragg Gratings in Twisted Configuration", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal.

Frazão, O. J. D. R., Muniz, R. M. R., Marques, P. V. D. S., Salgado, H. M. D. . C. F., "Tunable Linear Dispersion Compensation Using Selective Stretching in Chirped Fibre Bragg Gratings", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal.

Frazão, O. J. D. R., Pereira, D. C. A., Santos, J. L. C. D. O., "Optical fiber sensing network for temperature and salinity measurement", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal.

Frazão, O. J. D. R., Rosa, C. S. S. C., Santos, J. L. C. D. O., et al., "Bragg Wavelength Interrogation Using Hilbert Transform Processing", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal.

Jorge, P. A. D. S., Caldas, P. S. D. A., Santos, J. L. C. D. O., et al., "Potential Applications of Quantum Dots in Fluorescence Based Optical Oxygen sensors", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal.

Marques, P. V. D. S., Alexandre, D. M. L., Moreira, P. J. B., et al., "Fabrication of integrated devices in hybrid sol-gel silica using a laser direct writing machine", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal.

Marques, P. V. D. S., Moreira, P. J. B., "Sol-Gel Ormosil-on-Silicon for 1.3 m Integrated Optics Applications", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal.

Marques, P. V. D. S., Rego, G. M. D., Santos, J. L. C. D. O., Salgado, H. M. D. . C. F., "Temperature Measurement of an Optical Fiber Submitted to Electric Arc Discharges", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal.

Santos, J. L. C. D. O., Marques, M. J. B., et al., "UV-Poling in Twin-Hole Fibers using 248 nm light", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal.

Santos, J. L. C. D. O., "Fibre Optic Sensors in Portugal: a Personal Overview", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal.

Santos, J. L. C. D. O., Rego, G. M. D., Marques, P. V. D. S., Salgado, H. M. D. C. F., "Simultaneous Measurement of Temperature and Strain based on Long-period Gratings written in Standard Fibers using the Arc-discharge Technique", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal.

Frazão, O. J. D. R., et al., "Fiber grating sensors for strain measurements in biomechanics Applications", *ESB2004 - 14th European Society of Biomechanics Conference*, July 2004, s-Hertogenbosch, Netherlands.

Moreira, P. J. B., Marques, P. V. D. S., et al., "Optimized hybrid sol-gel formulations for optical devices operating at 1550 nm", *MACRO 2004 - 40th IUPAC World Polymer Congress*, July 2004, Paris, France.

Muniz, R. M. R., Frazão, O. J. D. R., Marques, P. V. D. S., Salgado, H. M. D. . C. F., et al., "Chirped fibre Bragg grating based multiplexer and demultiplexer for DWDM applications", *CSN 2004 - The IASTED International Conference on Communication Systems and Networks*, September 2004, Marbella, Espanha.

Marques, P. V. D. S., et al., "Infrared and Raman Spectroscopic Study of Hybrid Materials Containing Rare Earth Metal Salts", *EUCMOS'04 - XXVII European Congress on Molecular Spectroscopy*, September 2004, Krakow, Poland.

Rosa, C. S. S. C., et al., "Avenues opened by en-face OCT in imaging the eye", *EVER 2004 - EVER 2004*, September 2004, Vilamoura, Portugal.

Salgado, H. M. D. . C. F., Carvalho, J. P. P. D., Frazão, O. J. D. R., "Four-Wave Mixing in Photonic Crystal Fibres for Wavelength Conversion in Optical Networks", *LCS 2004 - London communication Symposium 2004*, September 2004, London, England.

Marques, P. V. D. S., et al., "Sol-gel Derived Poly(-caprolactone)/siloxane Biohybrids with Application in Electrochemistry and Optics", *SSC2004 - Solid State Chemistry 2004*, September 2004, Praga, Republica Checa.

Jorge, P. A. D. S., Caldas, P. S. D. A., Santos, J. L. C. D. O., et al., "Applications of Nano-particles in Optical Chemical and Biological Sensors", *OE 2004 - Optics East 2004*, October 2004, Philadelphia, Pennsylvani, USA.

Rego, G. M. D., Marques, P. V. D. S., Salgado, H. M. D. C. F., Santos, J. L. C. D. O., et al., "Arc-Induced Long-Period Gratings", *ISATFOA - International Symposium on Advances and Trends in Fiber Optics and Applications*, October 2004, Chongqing, China.

Baptista, J. M. R. T., Rego, G. M. D., Santos, J. L. C. D. O., et al., "Micro-Displacement Measurement using a Long Period Fiber Grating in a Self-Referenced Fiber Optic Intensity Sensor", *LEOS 2004 - 17th Annual Meeting of the IEEE Lasers and Electro-Optics Society*, November 2004, Rio Grande, Puerto Rico.

Marques, P. V. D. S., et al., "Er3+-doped Polyether/siloxane Hybrid Materials for Optoelectronics", *MRS2004 - MRS Fall Meeting2004*, December 2004, Boston, USA.

Outras Publicações (Other Publications)	1

Dias, I. M. S., Pereira, D. C. A., et al., "Sistema de monitorização de obras de arte aplicado à ponte sobre o Rio Sorraia" *[Sorraia River bridge monitoring system], BE2004 - Betão Estrutural 2004*, November 2004, Porto, Portugal.

A2.1.2 Lista de Revistas (List of Journals)

Journal	Number of papers
Applied Optics	2
Computers and Structures	1
IEEE Journal of Selected Topics in Quantum Electronics	1
Japanese Journal of Applied Physics	1
Journal of Materials Research	2
Journal of Measurement Science and Technology	1
Journal of Optics A: Pure and Applied Optics	1
Nuclear Physics A	1
Optical Communications	1
Optical Engineering	2
Photonics Technology Letters	1
Review of Scientific Instruments	1
Sensors and Actuators B – Chemical	1
TOTAL	16

A2.1.3 Lista de Patentes (List of Patents)

Temperature micro-sensor electrically isolated
Developed under (Project Name)
Demo Place:
Development Period: 2002-2004
Type (National or International): National, INPI 103160 D
Submission Date: 6 July 2004

Optical fibre device based on a Bragg grating in a ring configuration
Developed under (Project Name)
Demo Place:
Development Period: 2003-2004
Type (National or International): National, INPI 103094
Submission Date: 18 March 2004

A2.1.4 Lista de Protótipos mais relevantes (List of Most Relevant Prototypes)

Blank.

A2.1.5 Teses orientadas por membros da Unidade (Theses supervised by members of the team)
Supervisors are affiliated with INESC Porto/FCUP except when indicated otherwise. Theses are submitted to FCUP except when indicated otherwise.

Teses de Doutoramento (PhD Dissertations)

Author/Institution	Supervisor/Institution	Title	Conc. Date
Carla Carmerlo Rosa	José Luís Santos	Low-coherence interferometry	2005
Gaspar Mendes Rego	José Luís Santos Henrique Salgado-FEUP	Long Period Fibre Gratings	2005
José Ramiro Fernandes	José Luís Santos Ednan Joanni - UTAD	Micro-Actuadores Piezoeléctricos	2005
Luís Gomes	Manuel J. Marques	Optical fibre lasers	2005
Paulo Moreira	Paulo Marques	Integrated optic devices	2005
Pedro Jorge	José Luís Santos	Fluorescence based optical fibre sensors	2005
Rosa R. Muniz - FEUP	Henrique Salgado-FEUP Paulo Marques	Fibre Bragg Grating Structures: Applications in Optical Communications and Sensor Technology	2005
Andrei Mardare	Manuel J. Marques Ednan Joanni - UTAD	Thin film microfabrication	2006
Cezarina Mardare	Manuel J. Marques Ednan Joanni - UTAD	Thin film microfabrication	2006
Daniel Alexandre	Paulo Marques	Fabrication of integrated optics devices by laser direct writing	2007
Dionísio Pereira	José Luís Santos	Optical fiber technologies	2007
Jaime Ribeiro Viegas	Paulo Marques	Integrated optics	2007

Teses de Mestrado (MSc Dissertations)

Author/Institution	Supervisor/Institution	Title	Conc. Date
Paulo Sérgio Caldas	José Luís Santos	Oxygen optical fibre sensors	2004
Dionisio Pereira	José Luís Santos	Salinity and civil engineering optical fibre sensors	2004
Daniel Alexandre	Paulo Marques	Direct laser writing of masks for integrated optics	2004
Joel P. Carvalho - FEUP	Henrique Salgado-FEUP	Optical and packet switching	2005
Miguel Melo - FEUP	Paulo Marques	Fiber Bragg fabrication	2005
Diana Viegas	José Luís Santos	Sensors of biological interest	2005

A2.1.6 Organização de Eventos Científicos Internacionais (Organization of International Scientific Events)

SEON 2004 - II SYMPOSIUM ON ENABLING OPTICAL NETWORKS

"Celebrating Ten Years of Fibre Bragg Gratings in Portugal"

Porto, Portugal

14 June 2004

José Luis Santos – Co-Chair and member of Organizing Committee

Alberto Maia, Ireneu Dias, Joel Carvalho, Orlando Frazão – Members of Organizing Committee

Manuel Joaquim Marques, Paulo Marques – Members of Scientific Committee

A2.1.7 Formação Avançada (Advanced Training)

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A3 Unidade de Sistemas de Energia

A3.1 Resultados da actividade de investigação dos membros da Unidade (Results of the research activities of the team members)

A3.1.1 Lista de Publicações (List of Publications)

| Teses (Theses) | 1 |

Adriana Castro, "Intelligent systems for equipment failure preventive diagnosis", PhD Thesis, FEUP, 2004.

| Livros-Autor (Books-Author) | 0 |

Blank.

| Livros-Editor (Books-Editor) | 0 |

Blank.

| Capítulos em Livros (Chapter in Books) | 2 |

Matos, M., "Eliciting and aggregating preferences with fuzzy inference systems", in Multiple Criteria Decision Making, C.H. Antunes, J. Figueira, J. Clímaco (ed.), pp 213-227, CCDRC/FEUC, Coimbra, 2004.

Peças Lopes, J.A., Matos, M., "Portugal – waiting for MIBEL", in European Electricity Review 2004, H. Edwardes-Evans, M. Burdett (ed.), pp 60-61, Platts, McGraw-Hill, 2004.

| Artigos em Revistas Internacionais com Revisores (International Journals with scientific referees) | 13 |

Fidalgo, J. N., "Neural Networks Applied to Spatial Load Forecasting in GIS", *WSEAS Transactions on Circuits and Systems*, January 2004, vol.3, no.1, p.183-188.

Fonseka, J., Miranda, V., "A hybrid meta-heuristic algorithm for transmission expansion planning (in PMAPS 2002)", *The International Journal for Computation and Mathematics in Electrical and Electronic Engineering*, January 2004, vol.23, no.1, p.250-262.

Miranda, V., Monteiro, C., Ponce de Leão, M. T., "Validation Process for Fuzzy Spatial Load Forecasting", *The International Journal for Computation and Mathematics in Electrical and Electronic Engineering*, January 2004, vol.23, no.1, p.197-208.

Matos, M., Costa P. M., "Loss Allocation in distribution networks with embedded generation", *IEEE Transactions on Power Systems*, vol.19, no.1, pp.384-389, February, 2004.

Manso, L. A., Leite da Silva, A., "Probabilistic criteria for power system expansion planning", *Electric Power Systems Research*, April 2004, vol.69, no.1, p.51-58.

Gomez, J. F., Khodr, H. M., Jesus, P. M., Yusta Loyo, J. M., et al., "Ant colony system algorithm for the planning of primary distribution circuits", *IEEE Transactions on Power Systems*, May 2004, vol.19, no.2, p.996-1004.

Castronuovo, E. D., Peças Lopes, J. A., "On the Optimization of the Daily Operation of a Wind-Hydro Power Plant", *IEEE Transactions on Power Systems*, August 2004, vol.19, no.3.

Leite da Silva, A., Manso, L. A., Anders, G. J., "Evaluation of generation and transmission maintenance strategies based on reliability worth", *Electric Power Systems Research*, October, 2004, vol.71, no.2, pp.99-107.

Almeida, R., Peças Lopes, J. A., Barreiros, J. A. L., "Improving Power System Dynamic Behavior Through Doubly Fed Induction Machines Controlled by Static Converter using Fuzzy Control", *IEEE Transactions on Power Systems*, November 2004, vol.19, no.4, p.1942-1950.

Leite da Silva, A., C. Resende, L., Manso, L. A., Billinton, R., "Well-Being Analysis for Composite Generation and Transmission Systems", *IEEE Transactions on Power Systems*, November 2004, vol.19, no.4, p.1763-1770.

Castronuovo, E. D., Peças Lopes, J. A., "Optimal operation and hydro storage sizing of a wind-hydro power plant", *International Journal of Electrical Power & Energy Systems*, December 2004, vol.26, no.10, p.771-778.

Vinícius, M., Peças Lopes, J. A., Bezerra, U., Zürn, H., Almeida, R., "Influence of the Variable Speed Wind Generators in Transient Stability Margin of the Conventional Generators Integrated in Electrical Grids", *IEEE Transactions on Energy Conversion*, IEEE Trans. on Energy Conversion, December 2004, vol.19, no.4, p.692-701.

Matos, M., "Formal requirements for utility and value functions for security-related decisions", *The International Journal for Computation and Mathematics in Electrical and Electronic Engineering*, vol.23, no.1, p.225-236, 2004.

Artigos em Revistas Nacionais com Revisores (National Journals with scientific referees)	0

Blank.

Comunicações em Actas de Conferências com Revisores (Conference Proceedings with scientific referees)	33+1(*)

Lucus, B. G., Pereira, J., "Component Technology for Modeling Power Networks in an Integrated DMS", Presented in AC2004 - IADIS International Conference Applied Computing 2004, March 2004.

Cassula, A. M., Leite da Silva, A., Esteves Sacramento, C., "Uma Nova Proposta para a Incidência de Multas Devido ao Não-Cumprimento das Metas de Continuidade em Sistemas de Distribuição", *Proceedings of the IX SEPOPE - IX Symposium of Specialists in Electric Operational and Expansion Planning*, Rio de Janeiro, Brazil , May 2004.

Castro, A., Miranda, V., "An Interpretation of Neural Networks as Inference Engines with application to Transformer Failure Diagnosis", *Proceedings of PMAPS'2004 - 8th International Conference on Probability Methods Applied to Power Systems*, Ames, Iowa, USA, May 2004.

Castronuovo, E. D., Peças Lopes, J. A., "Bounding Active Power Generation of a Wind-Hydro Power Plant", *Proceedings of PMAPS'2004 - 8th International Conference on Probability Methods Applied to Power Systems*, 2004, Ames, Iowa, USA, May 2004.

Leite da Silva, A., Falcão, D. M., Miranda, V., Rosa, M. A., "Impacto de Novas Tecnologias em Sistemas Elétricos de Potência" [Impact of New Technologies on Power Systems], *Proceedings of the IX SEPOPE - IX Symposium of Specialists in Electric Operational and Expansion Planning*, Rio de Janeiro, Brazil, May 2004.

Costa, J. G., Leite da Silva, A., "Mercados de Energia Elétrica: Uma Proposta para a Alocação dos Custos de Perdas em Sistemas de Transmissão", *Proceedings of the IX SEPOPE - IX Symposium of Specialists in Electric Operational and Expansion Planning*, Rio de Janeiro, Brazil, May 2004.

Manso, L. A., Leite da Silva, A., Resende, L., et al., "Avaliação da Confiabilidade Preventiva de Sistemas de Potência", *Proceedings of the IX SEPOPE - IX Symposium of Specialists in Electric Operational and Expansion Planning*, Rio de Janeiro, Brazil, May 2004.

Saraiva, J. T., Ponce de Leão, M. T., Sá, A., Aguiar, M. J., "Calculation of Nodal and Zonal Coefficients to incorporate in the Portuguese Tariffs for use of the transmission Network", *Proceedings of the IX SEPOPE - IX Symposium of Specialists in Electric Operational and Expansion Planning*, Rio de Janeiro, Brazil, May 2004.

Saraiva, J. T., Sá, A., "Evolution of the Marginal Based Remuneration of the Portuguese Transmission Network from 1998 to 2001", *Proceedings of the IX SEPOPE - IX Symposium of Specialists in Electric Operational and Expansion Planning*, Rio de Janeiro, Brazil, May 2004.

Castronuovo, E. D., Peças Lopes, J. A., "Improving Wind Park Output Control Though Hydro Storage", *Proceedings of MedPower'04 - 4th Mediterranean IEE Conference and Exhibition on Power Generation, Transmission and Distribution*, 2004, Lemesos, Cyprus.

Castronuovo, E. D., Peças Lopes, J. A., "Mixed-Integer Optimization of the Operation of a Wind Park with Storage Ability by an Interior Point Method", *Actas de Optimization2004 - Optimization 2004*, Lisboa, Portugal, July 2004.

Saraiva, J. T., Fonseca, N., Matos, M., "Fuzzy Power Flow - An AC Model Addressing Correlated Data ", *Proceedings of PMAPS'2004 - 8th International Conference on Probability Methods Applied to Power Systems*, Ames, Iowa, USA, August 2004.

Braga, A. S., Saraiva, J. T., "Long Term Transmission Expansion Planning - A Simulated Annealing Based Multiyear Algorithm Including Long Term Marginal Prices ", *Proceedings of PMAPS'2004 - 8th International Conference on Probability Methods Applied to Power Systems*, Ames, Iowa, USA, September 2004.

Costa, J. G., Leite da Silva, A., "Alocação Incremental de Perdas: Metodologia e Análise", *CBA2004 - XV Congresso Brasileiro de Automática*, Gramado, RS, Brasil, September 2004.

Gouveia, E., Matos, M., "Operational Reserve of a Power System with a Large Amount of Wind Power", Proceedings of PMAPS'2004 - 8th International Conference on Probability Methods Applied to Power Systems, Ames, Iowa, USA, September 2004.

Jesus, P. M., Ponce de Leão, M. T., "Impact of uncertainty and elastic response of demand in short term marginal prices", *Proceedings of PMAPS'2004 - 8th International Conference on Probability Methods Applied to Power Systems*, Ames, Iowa, USA, September 2004.

Jesus, P. M., Ponce de Leão, M. T., "Optimal Power Flow Analysis using Fuzzy Supply and Fuzzy Demand Functions", *Proc. MUDSM 2004 - Managing Uncertainty in Decision Support Models*, Coimbra, Portugal, September 2004.

Leite da Silva, A., Cassula, A. M., C. Resende, L., Almeida, R., et al., "Reliability Evaluation of Distribution Systems Considering Automatic Reclosers", *Proceedings of PMAPS'2004 - 8th International Conference on Probability Methods Applied to Power Systems* Ames, Iowa, USA, September 2004.

Leite da Silva, A., Manso, L. A., Resende, L., Aguiar, M. J., et al., "Application of Monte Carlo Simulation to Generating System Well-Being Analysis Considering Renewable Sources", *Proceedings of PMAPS'2004 - 8th International Conference on Probability Methods Applied to Power Systems*, Ames, Iowa, USA, September 2004.

Leite da Silva, A., Manso, L. A., Sales, W.S., Resende, L.C., Aguiar, M. J., Matos, M., Peças Lopes, J.A., Miranda, V., " Application of Monte Carlo Simulation to Generating System Well-Being Analysis Considering Renewable Sources", Proceedings of PMAPS'2004 - 8th International Conference on Probability Methods Applied to Power Systems, Ames, Iowa, USA, September 2004.

Manso, L. A., Leite da Silva, A., "Avaliação da Confiabilidade Composta de Sistemas de Grande Porte", *CBA2004 - XV Congresso Brasileiro de Automática*, Gramado, RS, Brasil, September 2004.

Matos, M.A., "Decision under risk as a multicriteria problem", Proc. 15th Mini-EURO Conference – MUDSM 2004 - Managing Uncertainty in Decision Support Models, Coimbra, September 2004.

Nunes, E., Matos, M., Faria, J., Silva, J. P., "Non-markovian estimation of the reliability costs of power distribution systems", Proceedings of PMAPS'2004 - 8th International Conference on Probability Methods Applied to Power Systems, Ames, Iowa, USA, September 2004.

Paes de Barros, J. R., Melo, A. C. G., Leite da Silva, A., "VAr Sources Planning Based on Marginal Costs of Reliability Indices", *Proceedings of PMAPS'2004 - 8th International Conference on Probability Methods Applied to Power Systems*, Ames, Iowa, USA, September 2004.

Paes de Barros, J. R., Melo, A. C. G.., M. Leite da Silva, A., "An Approach to the Explicit Consideration of Unreliability Costs in Transmission Expansion Planning", *Proceedings of PMAPS'2004 - 8th International Conference on Probability Methods Applied to Power Systems*, Ames, Iowa, USA, September 2004.

Papadogiannis, K. A., Hatziargyriou, N., Saraiva, J. T., "Short Term Active/Reactive Operation Planning in Market Environment Using Simulated Annealing", *ISAP'2003 - Intelligent Systems Applications to Power Systems*, Lemnos island, Greece, September 2004.

Pereira, J., Saraiva, J. T., Miranda, V., "An integrated Load Allocation/State Estimation Approach for Distribution Networks", *Proceedings of PMAPS'2004 - 8th International Conference on Probability Methods Applied to Power Systems*, Ames, Iowa, USA, September 2004.

Saraiva, J. T., Fonseca, N., Matos, M., "Fuzzy Tools for Power System Analysis – Fuzzy Power Flow and Fuzzy Optimal Power Flow", Proc. 15th Mini-EURO Conference – MUDSM 2004 - Managing Uncertainty in Decision Support Models, Coimbra, September 2004.

Yu, W., Sheblé, G., Matos, M., "Application of Markov Chain Models for Short Term Generation Assets Valuation", Proceedings of PMAPS'2004 - 8th International Conference on Probability Methods Applied to Power Systems, Ames, Iowa, USA, September 2004.

Mendonça, Â., Matos, M., Peças Lopes, J. A., "A Multicriteria Approach to Identify the Adequate Wind Power Penetration in Isolated Grids", *Proceedings of MedPower'04 - 4th Mediterranean IEE Conference and Exhibition on Power Generation, Transmission and Distribution*, Lemesos, Cyprus, November 2004.

Jesus, P. M., Ponce de Leão, M. T., "Cost Loss Allocation in Distribution Networks with Embedded Generation: A Fuzzy Approach", *Proceedings of MedPower'04 - 4th Mediterranean IEE Conference and Exhibition on Power Generation, Transmission and Distribution* , Lemesos, Cyprus, November 2004.

Fidalgo, J.N., Matos, M., Jorge, H., Martins, A.G., "Conditioned Stratified Sampling for Consumer Characterization", *Proceedings of MedPower'04 - 4th Mediterranean IEE Conference and Exhibition on Power Generation, Transmission and Distribution*, Lemesos, Cyprus, November, 2004.

Viana, A., Pinho de Sousa, J., Matos, M. A., "Constraint Oriented Neighbourhoods – A New Optimisation Strategy for The Unit Commitment Problem", *Proceedings of MedPower'04 - 4th Mediterranean IEE Conference and Exhibition on Power Generation, Transmission and Distribution*, Lemesos, Cyprus, November, 2004. (*)

Braga, A. S., Saraiva, J. T., "A Dynamic Multiyear Algorithm for Transmission Expansion Planning Including the Computation of Long Term Marginal Prices ", *Proceedings of MedPower'04 - 4th Mediterranean IEE Conference and Exhibition on Power Generation, Transmission and Distribution*, Lemesos, Cyprus, November 2004.

(*) Publication to be counted in UESP.

Outras Publicações (Other Publications)	10+1(*)

Jesus, P. M., Ponce de Leão, M. T., "Fuzzy Modelling of Elasticity of Demand to Evaluate the Impact on Short Term Marginal Prices", *IO'2004 - 11° Congresso da APDIO*, Porto, Portugal, April 2004.

Viana, A., Pinho de Sousa, J., Matos, M., "Vizinhanças Orientadas às Restrições - uma nova estratégia de pesquisa em meta-heurísticas", *IO'2004 - 11° Congresso da APDIO*, Porto, April 2004. (*)

Nunes, E., Faria, J., Matos, M., "Modelo de avaliação de custos da infiabilidade de sistemas de produção", *IO'2004 - 11° Congresso da APDIO*, Porto, April 2004.

Castronuovo, E. D., Peças Lopes, J. A., "Optimização da Operação Combinada de um Parque Eólico e uma Central Hidroeléctrica Reversível " [Combined Optimization of a Wind Park and a Reversible Hydro Generation Facility], Actas do *ENER'04 - Simpósio sobre Energias Renováveis em Portugal*, , Figueira da Foz, Portugal, vol.1, p.103-108, May 2004.

Leite da Silva, A., Manso, L. A., Resende, L., Miranda, V., et al., "Análise de Bem Estar de Sistemas com Elevada Penetração de Renováveis – o Caso Português" [Well-being Analysis of Power Systems with High Penetration of Renewables - The Portuguese Case], Actas do *ENER'04 - Simpósio sobre Energias Renováveis em Portugal*, Figueira da Foz, Portugal, May 2004.

Miranda, V., Calisto, P., "Regulação de tensão com controladores difusos em redes de distribuição com geração dispersa", Actas do *ENER'04 - Simpósio sobre Energias Renováveis em Portugal*, Figueira da Foz, Portugal, May 2004.

Monteiro, C., Miranda, V., "Provedor de serviço de Internet para avaliação geográfica de pequenos projectos de Energias Renováveis", Actas do *ENER'04 - Simpósio sobre Energias Renováveis em Portugal*, Figueira da Foz, Portugal, May, 2004.

Monteiro, C., Miranda, V., "Utilização de Sistemas de Informação Geográfica para avaliação do potencial de aproveitamentos de Biomassa para a produção de electricidade", Actas do *ENER'04 - Simpósio sobre Energias Renováveis em Portugal*, Figueira da Foz, Portugal, May 2004.

Matos, M., "Caracterização de Consumidores e Redes", Actas *IST Forum Energia*, Vol.1., No.1, Instituto Superior Técnico, Lisboa, 2004.

Matos, M., Mendonça, Â., Peças Lopes, J. A., "Deciding about wind power penetration levels – a case study", *60th meeting of the Euro Working Group on Multiple Criteria Decision Aid*, Tilburg, October 2004.

Peças Lopes, J. A., Moreira, C., Seca, L. M., Resende, F., Madureira, A.G, "Islanding de Redes AT/MT e BT com Produção Distribuída", *Inovação na Produção e Transporte de Energia Eléctrica IST Forum Energia* — Outono 04, November 2004.

(*) Publication to be counted in UESP.

A3.1.2 Lista de Revistas (List of Journals)

Journal	Number of papers
Electric Power Systems Research	2
IEEE Transactions on Energy Conversion	1
IEEE Transactions on Power Systems	5
International Journal of Electrical Power & Energy Systems	1
WSEAS Transactions on Circuits and Systems	1
The International Journal for Computation and Mathematics in Electrical and	3
TOTAL	13

A3.1.3 Lista de Patentes (List of Patents)

Blank.

A3.1.4 Lista de Protótipos mais relevantes (List of Most Relevant Prototypes)

DSM modules
Developed under EFACEC-DMS
Demo Place: EFACEC
Development Period: 1999-2004

Micro-Grid simulation platform
Developed under Micro-Grids
Demo Place: INESC Porto
Development Period: 2003-2004

Transformer failure diagnosis system
Developed within a PhD dissertation
Demo Place: INESC Porto
Development Period: 2002-2004

A3.1.5 Teses orientadas por membros da Unidade (Theses supervised by members of the team)

Supervisors are affiliated with INESC Porto/FEUP except when indicated otherwise. Theses are submitted to FEUP except when indicated otherwise.

Teses de Doutoramento (PhD Dissertations)

Author/Institution	Supervisor/Institution	Title	Conc. Date
Adriana Castro	Vladimiro Miranda	Knowledge extraction from Artificial Neural Networks - Application to Transformer Incipient Fault Diagnosis	2004
Ana Viana	Jorge Pinho de Sousa Manuel Matos	Multi-objective heuristics for the project and management of production, transportation and delivery of goods and services in market deregulation processes	2004
António Silvestre Dias Braga	João Tomé Saraiva	Methodologies for building electricity tariffs in a market environment including uncertainty	2004
João Ricardo Paes de Barros	Armando Leite da Silva	Power Transmission System Expansion Planning under Uncertainties	2004
António José Camacho Ferreira da Silva	José Nuno Fidalgo Aristides Castro - ISEP	Application Techniques of Adaptive Control and Artificial Intelligence	2005
Eusébio Nunes	Manuel Matos José Faria - FEUP	Reliability evaluation of non-markovian engineering systems with uncertain parameters	2005
Leonidas Chaves de Resende	Armando Leite da Silva	Power System Planning Based on a Well-Being Analysis	2005

Author/Institution	Supervisor/Institution	Title	Conc. Date
Maria Helena Vasconcelos	João Peças Lopes José Nuno Fidalgo	Identification of Efficient Preventive Control Procedures Exploiting Security Evaluation Structures Derived using Machine Learning Techniques	2005
Rogério Almeida	João Peças Lopes	Evaluation of the Capability of Ancillary Services Delivery by Dispersed Generation Units using Different Technologies	2005
Eduardo Gouveia	Manuel Matos	Development and Evaluation of Investment Plans for the Transmission Activity in a Liberalized Environment	2006
Fernanda Resende	João Peças Lopes	Identification of Control Procedures in Micro-Generation Islanding Conditions	2006
Mário Helder Rodrigues Gomes	João Tomé Saraiva	New Mechanisms for Electricity and Ancillary Services Markets	2006
Naing Win Oo	Vladimiro Miranda José Nuno Fidalgo	Evolving agents in Energy Market Simulation	2006
Paulo Manuel de Oliveira de Jesus	Maria Teresa de Ponce Leão	A Decision Help System for the Remuneration of Dispersed Generation	2006
Paulo Moisés	Manuel Matos	Regulation and Planning of Electric Distribution Systems	2006
Pedro Marques	João Peças Lopes	Dynamic security assessment in interconnected power systems with large scale integration of wind generation	2006
Ângelo Mendonça	João Peças Lopes	Development of Robust Control Systems for Stabilizing Power Oscillations in Systems with Large Scale Wind Power Integration	2007
Carlos Moreira	João Peças Lopes	Identifying and Developing Emergency Procedures for the Operation of Micro-Generators in Isolated Grids and Participation in Black-Start Strategies	2007
Paulo Henrique Mendes da Silva	Maria Teresa de Ponce Leão	Integrated Methodologies for Distribution Planning	2007
Mauro da Rosa	Vladimiro Miranda	Reliability of Power Systems with distributed generation	2008

Teses de Mestrado (MSc Dissertations)

Author/Institution	Supervisor/Institution	Title	Conc. Date
Artur Correia	Cristina Ribeiro Manuel Matos	Methodologies based on fuzzy sets and rough sets for information retrieval	2004
Jercemil Roberto Ribeiro	Armando Leite da Silva	The Influence of ITAIPU Generation Plant on the Brazilian Interconnected Power System	2004
Jurema Baptistela Ludwig	Armando Leite da Silva	Planning Networks under Uncertainties - Applications to FURNAS Transmission System	2004
Manuel Mário Correia De Almeida	Vladimiro Miranda Ronald Herman Univ. Stellenbosch, S.A.	Study on Load Models for Distribution Systems	2004
André Madureira	João Peças Lopes	Definition of Control Strategies and Stability Assessment of Low Voltage Networks with Microgeneration in Islanded Mode	2005
Artur Leitão	João Tomé João Peças Lopes	Methodologies for aggregation / desegregation of offers from micro-sources in a market environment	2005

Author/Institution	Supervisor/Institution	Title	Conc. Date
Constantin Ginet	J. Peças Lopes Rachid Charkaoui -EPFL	Operation of Small Isolated Autonomous Systems in Rural Areas	2005
João Luís Pinto - FCUP	Eugénio Oliveira - FEUP Manuel Matos	Multi-agent system for the implementation of an electricity market	2005
Jorge Filipe Gomes Pereira	Manuel Matos	Comparing the efficiency of secondary schools using DEA	2005
Luís Miguel Seca	João Peças Lopes	Defining Operating Strategies and Service Restoration Procedures for Isolated Distribution Networks with Large-scale integration of Dispersed Generation	2005
Manuel João Aguiar	Maria Teresa de Ponce Leão	Models for Distributed Generation	2005
Margarida Lima	João Peças Lopes	Study of Black Start Strategies in Systems with a Large Component of Distributed Generation	2005
Maria do Rosário Trindade	Manuel Matos Ana Azevedo - FEUP	Development of an evaluation tool for Enterprise Web Information Support Services	2005

A3.1.6 Organização de Eventos Científicos Internacionais (Organization of International Scientific Events)

Blank.

A3.1.7 Formação Avançada (Advanced Training)

EES-UETP international course - "Managing Power Systems with large scale integration of wind power generation", 1-3 March, 2004, Porto.

Training Program for the Bulgarian Regulator Staff on Developing and Implementing New Regulations for an Energy Market Environment, October, 2004, Porto.

A4 Unidade de Sistemas de Informação e Comunicação

A4.1 Resultados da actividade de investigação dos membros da Unidade (Results of the research activities of the team members)

A4.1.1 Lista de Publicações (List of Publications)

Teses (Theses)	2

Mário Ricardo Henriques, "pGML - Estudo de um Subconjunto Preciso do GML2.12", MSc. Thesis, FEUP, Universidade do Minho, 2004.

Ademar Manuel Teixeira Aguiar, "A Minimalist Approach to Framework Document", PhD Thesis, FEUP, Junho, 2004.

Livros-Autor (Books-Author)	0

Blank.

Livros-Editor (Books-Editor)	0

Blank.

Capítulos em Livros (Chapter in Books)	2

Amaro Oliveira, M. A., Valle de Carvalho, A., Bártolo, L. M. C., "Public Discussion of Oporto´s Municipal Master Plan: An e-Democracy Service Supported by a Geographical Information System", *Lecture Notes in Computer Science 3183*, LNCS - Electronic Government-EGOV 2004, 2004, no.3183, p.410-413.

Cardoso, J. C. D. S., Rocha, A. J. D. S., Lopes, J. A. C., "M-GIS - Mobile and Interoperable Access to Geographic Information", *Lecture Notes in Computer Science 3183*, LNCS - Electronic Government - EGOV 2004, 2004, no.3183, p.400-405.

Artigos em Revistas Internacionais com Revisores (International Journals with scientific referees)	0

Blank.

Artigos em Revistas Nacionais com Revisores (National Journals with scientific referees)	0

Blank.

Comunicações em Actas de Conferências com Revisores (Conference Proceedings with scientific referees)	4

Faria, J.C.P., et al., "Automated Specification-based Testing of Interactive Components with ASML", Proceedings of the 5th edition of the QUATIC (Quality: the bridge to the future in ICT) international conference, 2004.

Rocha, A. J. D. S., Lopes, J. A. C., "M-GIS - Sistema Móvel Interoperável de Informação Geográfica", XATA 2004-XML: aplicações e tecnologias associadas, Fevereiro, Porto, 2004.

Lopes, J. A. C., et al., "Interacção Independente de Dispositivo e de Localização com uma Arquitectura de Componentes", Actas da XATA 2004, XML: Aplicações e Tecnologias Associadas, Porto, 12 e 13 Fevereiro, 2004.

Aguiar,A., David,G.T., et al., "JavaML 2.0: enriching the markup language for JAVA source code", XATA 2004 - XML: aplicações e tecnologias associadas, Fevereiro, Porto, 2004.

Outras Publicações (Other Publications)	0

Blank.

A4.1.2 Lista de Revistas (List of Journals)

Journal	Number of papers

A4.1.3 Lista de Patentes (List of Patents)

Blank.

A4.1.4 Lista de Protótipos mais relevantes (List of Most Relevant Prototypes)

PMOT Tool (Tool for the creation of Territory Development Plans)
Developed under Maia Digital Project (GIS MAIA)
Demo Place: C. M. Maia
Development Period: 2004

Bom Porto (E-Democracy Forum)
Developed under SINUP II (C.M. Porto)
Demo Place: C. M. Porto
Development Period: 2004

A4.1.5 Teses orientadas por membros da Unidade (Theses supervised by members of the team)
Supervisors are affiliated with INESC Porto/FEUP except when indicated otherwise. Theses are submitted to FEUP except when indicated otherwise.

Teses de Doutoramento (PhD Dissertations)

Author/Institution	Supervisor/Institution	Title	Conc. Date
Maria Clara S. Pinto Silveira	Raúl Vidal - FEUP João Pascoal Faria	A Reutilização de Requisitos no Desenvolvimento e Adaptação de Produto de Software	2005
Ana Cristina Ramada Paiva	Raúl Vidal - FEUP João Pascoal Faria	Aplicação de Métodos Formais ao Desenvolvimento de Interfaces com o Utilizador	2006

Author/Institution	Supervisor/Institution	Title	Conc. Date
Artur Jorge da Silva Rocha	Ademar Aguiar	Enabling Cooperative Distributed Support for GI-based Decision Making	2007

Teses de Mestrado (MSc Dissertations)

Author/Institution	Supervisor/Institution	Title	Conc. Date
Firmino Oliveira da Silva	João Pascoal Faria	Integração de sistemas/plataformas como solução para a gestão da informação de clientes	2004
Miguel Lino Magalhães Silva	João Correia Lopes	Apoio ao teste Concorrente para FPGAs com reconfiguração Parcial Dinâmica	2004
Nuno Honório Rodrigues Flores	Ademar Aguiar	Engenharia Reversa de Padrões em Arquitecturas Reutilizáveis	2005
Paulo Alexandre R. C. Fernandes	João Pascoal Faria	Desenvolvimento de uma ferramenta do tipo 4GL em ambiente JAVA	2006

A4.1.5.1 Teses em curso na Unidade orientadas por membros externos (Theses On-Going in the Unit Supervised by External Members)

Author/Institution	Supervisor/Institution	Title	Conc. Date
Marco Amaro	Maribel Alves Santos Univ. Minho	Utilização de Standards na Extracção e Visualização de Informação Geográfica	2005

A4.1.6 Organização de Eventos Científicos Internacionais (Organization of International Scientific Events)

Blank.

A4.1.7 Formação Avançada (Advanced Training)

Blank.

A5 Unidade de Telecomunicações e Multimédia

A5.1 Resultados da actividade de investigação dos membros da Unidade (Results of the research activities of the team members)

A5.1.1 Lista de Publicações (List of Publications)

Teses (Theses)	6

Hélio Sousa Mendonça, "Teste Dinâmico de Conversores Analógico/Digitais – Novos Métodos de Cálculo de Parâmetros de Caracterização Funcional", PhD Thesis, FEUP, February 2004.

Rui Jorge da Silva Moreira, "FORMAware: Framework of Reflective components for Managing architecture Adaptation", PhD Thesis, Lancaster University, UK, March 2004.

Agostinho Luiz da Silva Castro, "Intelligent Dynamic Channel Allocation for UTRA-TDD Systems", PhD Thesis, FEUP, July 2004.

Pedro Miguel Machado Carvalho, "Multimedia Content Adaptation for Universal Access", MSc Thesis, FEUP, November 2004.

Luís Filipe Almeida Teixeira, "Edition and Description Framework for Video Objects", MSc Thesis, FEUP, November 2004.

Rui Manuel Matos Oliveira, "QoS Routing Component for Emerging IP Network Management Systems", MSc Thesis, FEUP, December 2004.

Livros-Autor (Books-Author)	0

Blank.

Livros-Editor (Books-Editor)	0

Blank.

Capítulos em Livros (Chapter in Books)	1

Published:

Ruela, J., Ricardo, M., "MPLS – Multiprotocol Label Switching", The Industrial Information Technology Handbook, Richard Zurawski (editor), CRC Press, November, 2004.

Accepted, awaiting publication (not counted in 2004):

Freire, M., Monteiro, P., Silva, H., Ruela, J., "Ethernet Passive Optical Networks: A High-Speed and Low-Cost Solution for Residential Access", Encyclopedia of Multimedia Technology and Networking, accepted for publication.

Artigos em Revistas Internacionais com Revisores (International Journals with scientific referees)	3+3(*)

Published:

Carneiro, G., Ruela, J., Ricardo, M., "Cross-Layer Design in 4G Wireless Terminals", *IEEE Wireless Communications Magazine*, April 2004, vol.11, no.2, p.7-13.

Morla, R. S., Davies, N., "Evaluating a Location-Based Application: A Hybrid Test and Simulation Environment ", *IEEE Pervasive Computing*, July 2004, vol.3, no.3, p.48-56.

Cordeiro, M., Viana, P., Ruela, J., et al., "The ASSET Architecture - Integrating Media Applications and Products through a Unified API", *SMPTE Motion Imaging Journal,* September 2004, vol.113, no.9, p.307-312.

Baptista, J. M. R. T., Abad, S., Rego, G. M. D., Ferreira, L. A. D. A., et al., "Wavelength Multiplexing of Frequency Based Self-Referenced Fiber Optic Intensity Sensors", *Optical Engineering*, March 2004, vol.43, no.3, p.702-707. (*)

Rego, G. M. D., Santos, J. L. C. D. O., Salgado, H. M. D. C. F., et al., "In Situ temperature measurement of an optical fibre submitted to electric arc discharges", *Photonics Technology Letters*, September 2004, vol.16, no.9, p.2111-2113. (*)

Frazão, O. J. D. R., Muniz, R. M. R., Marques, P. V. D. S., Salgado, H. M. D. C. F., "Ring chirped fibre bragg grating for dynamic dispersion compensation", *Optics Communications*, November 2004, vol.242, no.11, p.417-423. (*)

(*) Publication to be counted in UOSE.

Accepted, awaiting publication (not counted in 2004):

Frazão, O. J. D. R., Carvalho, J. P. P., Salgado, H. M. D. C. F., et al., "Low loss splice in a Photonic Crystal Fiber using a conventional fusion splicer", *Optics Express*, 2004. (*)

Frazão, O. J. D. R., Muniz, R. M. R., Pereira, D.C.A., Salgado, H. M. D. C. F., et al., "Intensity-referenced and temperature-independent curvature sensing concept based on chirped fibre bragg gratings", *Applied Optics*, 2004. (*)

Frazão, O. J. D. R., Muniz, R. M. R., Marques, P. V. D. S., Salgado, H. M. D. C. F., et al., "Chirped fibre bragg grating based multiplexer and demultiplexer for DWDM applications", *Optics and Laser in Engineering*, 2004. (*)

Cardoso, J.S., Corte-Real, L., "Towards a Generic Evaluation of Image Segmentation", *IEEE Transactions on Image Processing*, 2004.

Marques, P., Castro, H., Ricardo, M., "Monitoring Emerging IPv6 Wireless Access Networks", *IEEE Wireless Communications Magazine*, 2004.

(*) Publication to be counted in UOSE.

Artigos em Revistas Nacionais com Revisores (National Journals with scientific referees)	1

Coelho, A.C., Sousa, A.A., Ferreira, F. N., "Expeditious Modelling of Urban Scenes", *Revista VIRtual*, 2004.

Comunicações em Actas de Conferências com Revisores (Conference Proceedings with scientific referees)	14+15(*)

Canas Ferreira, J., Silva Matos, J. D., "A Development Support System for Applications that Use Dynamically Reconfigurable Hardware", *FPL 2004 - Field-Programmable Logic and Applications*, 2004, Antwerp, Belgium.

Azevedo Braga, J., Machado da Silva, J., Alves, J. C., Silva Matos, J. D., "A Wrapper for Testing Analogue to Digital Converters Cores in SoCs", *ETS'04 - 9th IEEE European Test Symposium*, 2004, Ajaccio, Corse, France.

Andrade, M. T., et al., "MPEG-21 in broadcasting: the novel digital broadcast item model", *IS&T/SPIE - IS&T/SPIE 16th International Symposium Electronic Imaging: Science and Technology*, January 2004, San Jose, USA.

Carrapatoso, E., et al., "sIPtel - An IPtel architecture based on the SIP protocol", *IADIS'2004 - International Conference Applied Computing 2004*, March 2004, Lisboa, Portugal.

Moreira, R. J., Blair, G., Carrapatoso, E., "Supporting Adaptable Distributed Systems with FORMAware", *ICDCS 2004 - 4th International Workshop on Distributed Auto-adaptive Reconfigurable Systems*, March 2004, Tokyo, Japan.

Torres, J., Parkes, A., Corte-Real, L., "Region-based Relevance Feedback in Concept-based Image Retrieval", *WIAMIS 2004 - 5th International Workshop on Image Analysis for Multimedia Interactive Services*, April 2004, Lisboa, Portugal.

Leitão, J. A. D. R., Falcão Fernandes, G., Sousa Ferreira, A. J. D., "Adaptive Room Equalization in the Frequency Domain", *Proceedings of 116th AES 2004 - 116th Audio Engineering Society Convention*, May 2004, Berlin, Germany.

Sousa Ferreira, A. J. D., "Efficient Intraframe Coding to Monophonic Audio", *Proceedings of 116th AES 2004 - 116th Audio Engineering Society Convention*, May 2004, Berlin, Germany.

Campos, R. L., Pinho, C. N. D. O., Ruela, J., Ricardo, M., "Scenarios for Network Composition in Ambient Networks: a new paradigm for Internetworking", *WWRF - Services and Applications Roadmaps - invigorating the visions*, June 2004, Oslo, Norway.

Rego, G. M. D., Marques, P. V. D. S., Santos, J. L. C. D. O., Salgado, H. M. D. C. F., "Measurement of the temperature of an optical fiber submitted to an electric arc discharge", EWOFS'04 - Second European Workshop on Optical Fibre Sensors, June 2004, Santander, Espanha. (*)

Fernandez, A. F. Rego, G. M. D., Gusarov,A., Brichard, B, Santos, J. L. C. D. O., Salgado, H. M. D. . C. F., Berghmans, F, "*Evaluation of Long-Period Fiber Grating Temperature Sensors in Nuclear Environments*", EWOFS'04 - Second European Workshop on Optical Fibre Sensors, 9-11 June, Santander, Espanha, 2004. (*)

Muniz, R. M. R., Frazão, O. J. D. R., Pereira, D. C. A., Salgado, H. M. D. C. F., et al., "Intensity-referenced temperature-independent curvature sensing concept based on chirped gratings embedded in a composite laminate", *EWOFS'04 - Second European Workshop on Optical Fibre Sensors*, June 2004, Santander, Espanha, vol.5502, p.164-167. (*)

Frazão, O. J. D. R., Ferreira, L. A. D. A., Araújo, F. M. M., Santos, J. L. C. D. O., "High-Resolution Absolute-Distance Measurements Using Multiple Tunable Fiber Bragg Gratings", *EWOFS'04 - Second European Workshop on Optical Fibre Sensors*, June 2004, Santander, Espanha. (*)

Frazão, O. J. D. R., Muniz, R. M. R., Araújo, F. M. M., Ferreira, L. A. D. A., Santos, J. L. C. D. O., "Simultaneous Measurement of Temperature and Strain Using a Step Spectrum Profile Fibre Bragg Grating Arrangement", *EWOFS'04 - Second European Workshop on Optical Fibre Sensors*, June 2004, Santander, Espanha. (*)

Frazão, O. J. D. R., Rego, G. M. D., Araújo, F. M. M., Ferreira, L. A. D. A., Salgado, H. M. D. . C. F., "Simultaneous Measurement of Strain and Temperature Based on Polarization Loss Properties of Arc-Induced Long Period Gratings", *EWOFS'04 - Second European Workshop on Optical Fibre Sensors*, June 2004, Santander, Espanha. (*)

Frazão, O. J. D. R., Carvalho, J. P. P. D., Salgado, H. M. D. C. F., et al., "Wavelength Conversion Efficiency in a Dispersion Shifted Fibre", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal. (*)

Frazão, O. J. D. R., Carvalho, J. P. P. D., Salgado, H. M. D. C. F., et al., "Non-linear Effects in Photonic Crystal Fibres", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal. (*)

Frazão, O. J. D. R., Ferreira, L. A. D. A., Araújo, F. M. M., Santos, J. L. C. D. O., et al., "Simultaneous Measurement of Transverse Load and Temperature using Bragg Gratings in Twisted Configuration", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal. (*)

Frazão, O. J. D. R., Muniz, R. M. R., Marques, P. V. D. S., Salgado, H. M. D. . C. F., "Tunable Linear Dispersion Compensation Using Selective Stretching in Chirped Fibre Bragg Gratings", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal. (*)

Marques, P. V. D. S., Rego, G. M. D., Santos, J. L. C. D. O., Salgado, H. M. D. C. F., "Temperature Measurement of an Optical Fiber Submitted to Electric Arc Discharges", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal. (*)

Santos, J. L. C. D. O., Rego, G. M. D., Marques, P. V. D. S., Salgado, H. M. D. C. F., "Simultaneous Measurement of Temperature and Strain based on Long-period Gratings written in Standard Fibers using the Arc-discharge Technique", *II SEON - II Symposium on Enabling Optical Networks*, June 2004, Porto, Portugal. (*)

Araújo, F. M. M., "Celebrating Ten Years of Fibre Bragg Gratings in Portugal", *II SEON - II Symposium on Enabling Optical Networks*, Porto, Portugal, June, 2004.

Andrade, M. T., et al., "MPEG-21 in broadcasting: the role in the digital transition of broadcasting", *ICETE 2004 - ICETE 2004, International Conference on E-business and Telecommunications Networks*, August 2004, Setúbal, Portugal.

Muniz, R. M. R., Frazão, O. J. D. R., Marques, P. V. D. S., Salgado, H. M. D. . C. F., et al., "Chirped fibre Bragg grating based multiplexer and demultiplexer for DWDM applications", CSN 2004 - The IASTED International Conference on Communication Systems and Networks, September 2004, Marbella, Espanha. (*)

Salgado, H. M. D. C. F., Carvalho, J. P. P. D., Frazão, O. J. D. R., "Four-Wave Mixing in Photonic Crystal Fibres for Wavelength Conversion in Optical Networks", LCS 2004 - London communication Symposium 2004, September 2004, London, England. (*)

Rego, G. M. D., Marques, P. V. D. S., Salgado, H. M. D. C. F., Santos, J. L. C. D. O., et al., "Arc-Induced Long-Period Gratings", ISATFOA - International Symposium on Advances and Trends in Fiber Optics and Applications, October 2004, Chongqing, China. (*)

Duarte, F. X. F., Machado da Silva, J., Alves, J. C., Silva Matos, J. D., "An Infrastructure and Application Specific Processor for Testing Analogue and Mixed-Signal SoCs", *DCIS'2004 - Conference on Design of Circuits and Integrated Systems*, November 2004, Bordeaux, France.

Pinho, A. G., Machado da Silva, J., Sousa Mendonça, H., Silva Matos, J. D., "A Test Methodology to Compute Typical LNA Characterization Parameters", *DCIS'2004 - Conference on Design of Circuits and Integrated Systems*, November 2004, Bordeaux, France.

Ribeiro, M. C., David, G. T., Calistru, C. M., "A Multimedia Database Workbench for Content and Context Retrieval", *MMSP 2004 - IEEE International Workshop on Multimedia Signal Processing*, Siena, Italy, 2004.

(*) Publication to be counted in UOSE.

Outras Publicações (Other Publications)	3

Published

Carrapatoso, E., et al., "Uso de Tecnologias Multimédia no Apoio ao e-Learning e à Auto-aprendizagem de Lógica e Linguagens de Programação ", *eLES´04 - Conferência eLearning no Ensino Superior*, October 2004, Aveiro, Portugal.

Carrapatoso, E., Restivo, M. T., et al., "A Utilização de Projectos Multidisciplinares de Engenharia no Processo de Ensino/Aprendizagem", *eLES´04 - Conferência eLearning no Ensino Superior*, October 2004, Aveiro, Portugal.

Ferreira, L. A. A., Araújo, F. M. M., Maia, A. A. S., Alves, P.A., Santos, J. L. C. O., "Redes de Bragg em Fibra Óptica – Contribuições para o Desenvolvimento de uma Tecnologia Revolucionária em Monitorização Estrutural", *BE2004 - Betão Estrutural 2004*, Porto, Portugal.

Accepted, awaiting publication (not counted in 2004):

Carrapatoso, E., Restivo, M.T., Marques, J.C., Ferreira, A., Cardoso, R.M., Gomes, J.F., "Motivar os jovens para as áreas da Ciência e Tecnologia – Reflexões na Universidade do Porto", *GCETE'2005 – Global Conference on Engineering and Technology Education*, Brasil, 2004.

A5.1.2 Lista de Revistas (List of Journals)

Journal	Number of papers
IEEE Wireless Communications Magazine	1
IEEE Pervasive Computing	1
SMPTE Motion Imaging Journal	1
Optics Communications	1 (*)
Optical Engineering	1 (*)
Photonics Technology Letters	1 (*)
TOTAL	3 + 3 (*)

(*) Joint publications with researchers of Optoelectronics and Electronic Systems Unit (UOSE)

A5.1.3 Lista de Patentes (List of Patents)

Passive athermal fiber Bragg grating strain gage
Developed under Fibersensing
Demo Place: Fibersensing / INESC Porto
Development Period: April – December 2004
Type: International
Submission Date: December 2004

A5.1.4 Lista de Protótipos mais relevantes (List of Most Relevant Prototypes)

Distributed platform for universal access to multimedia content based on MPEG21
Developed under Enthrone and Visnet
Demo Place: INESC Porto
Development Period: January – December 2004

Software tools for creation, manipulation and consumption of MPEG21 digital items
Developed under Enthrone
Demo Place: INESC Porto
Development Period: January – September 2004

Enhanced version of audio classifier, with segmentation module
Developed under internal project
Demo Place: INESC Porto
Development Period: January – December 2004

Software tools for statistical analysis of MPEG2 video bitstreams
Developed under internal project
Demo Place: INESC Porto
Development Period: February - July 2004

Video annotation tools
Developed under MOUMIR
Demo Place: INESC Porto
Development Period: March 2003 - March 2004

Authoring tools for multimedia objects compatible with MPEG4 and MPEG7
Developed under internal project
Demo Place: INESC Porto
Development Period: January – November 2004

Ambient network testbed
Developed under internal project
Demo Place: INESC Porto
Development Period: February – December 2004

System for the location of terminals in a wireless LAN
Developed under internal project
Demo Place: INESC Porto
Development Period: February – July 2004

IPv6 router based on a conventional mobile phone
Developed under internal project
Demo Place: INESC Porto
Development Period: February – July 2004

Dedicated Test Processor
Developed under ASSOCIATE
Demo Place: Laboratório de Microelectrónica Projecto e Teste (FEUP)
Development Period: January – December 2004

Optical sensor for measurement of strain of composite surfaces
Developed under Fibersensing
Demo Place: Fibersensing / INESC Porto
Development Period: April – December 2004

Optical sensor for measurement of strain of tape surfaces
Developed under Fibersensing
Demo Place: Fibersensing / INESC Porto
Development Period: April – December 2004

Optical sensor for measurement of strain inside concrete (embedded strain)
Developed under Fibersensing
Demo Place: Fibersensing / INESC Porto
Development Period: April – December 2004

Optical sensor for measurement of strain inside concrete (reinforcing bar strain)
Developed under Fibersensing
Demo Place: Fibersensing / INESC Porto
Development Period: April – December 2004

Optical sensor for measurement of temperature (surface)
Developed under Fibersensing
Demo Place: Fibersensing / INESC Porto
Development Period: April – December 2004

Optical sensor for measurement of temperature inside concrete (embedded)
Developed under Fibersensing
Demo Place: Fibersensing / INESC Porto
Development Period: April – December 2004

Optical sensor for measurement of linear position and displacement
Developed under Fibersensing
Demo Place: Fibersensing / INESC Porto
Development Period: April – December 2004

Optical sensor for measurement of linear position and displacement in long ranges
Developed under Fibersensing
Demo Place: Fibersensing / INESC Porto
Development Period: April – December 2004

Laboratory measurement unit for fiber Bragg grating based sensors (quasi static measurements)
Developed under Fibersensing
Demo Place: Fibersensing / INESC Porto
Development Period: April – December 2004

Laboratory measurement unit for fiber Bragg grating based sensors (dynamic measurements)
Developed under Fibersensing
Demo Place: Fibersensing / INESC Porto
Development Period: April – December 2004

Remote measurement units for fiber Bragg grating based sensors
Developed under Fibersensing
Demo Place: Fibersensing / INESC Porto
Development Period: April – December 2004

Portable measurement unit for fiber Bragg grating based sensors (dynamic measurements)
Developed under Fibersensing
Demo Place: Fibersensing / INESC Porto
Development Period: April – December 2004

PXI 1x4 optical multiplexer for fiber Bragg grating based sensors
Developed under Fibersensing
Demo Place: Fibersensing / INESC Porto
Development Period: April – December 2004

PXI 1x16 optical multiplexer for fiber Bragg grating based sensors
Developed under Fibersensing
Demo Place: Fibersensing / INESC Porto
Development Period: April – December 2004

A5.1.5 Teses orientadas por membros da Unidade (Theses supervised by members of the team)
Supervisors are affiliated with INESC Porto/FEUP except when indicated otherwise. Theses are submitted to FEUP except when indicated otherwise.

Teses de Doutoramento (PhD Dissertations)

Author/Institution	Supervisor/Institution	Title	Conc. Date
Ademar Aguiar	Gabriel David	A Minimalist Approach to Framework Documentation	2004
Agostinho Castro	José Ruela	Intelligent Dynamic Channel Allocation For UTRA-TDD Systems	2004
Hélio Mendonça	José Silva Matos José Machado Silva	Dynamical test of A/D converters – new methods for the calculation of functional parameters	2004
António Fernando Castro Coelho	F. N. Ferreira - FEUP A. A. Sousa	Fast Modeling of Three-dimensional Scenes for Virtual Reality	2005
Benjamim Fonseca	E. Carrapatoso	The usage of distributed processing architectures in services of computer supported collaborative work	2005
Jorge Mamede	E. Carrapatoso M. Ricardo	Automatic Generation of Tests for IP Systems	2005
José Oliveira	E. Carrapatoso	Security aspects in telecommunications services	2005
Luís Miguel Teixeira	Artur P. Alves Luís Corte-Real	Statistical multiplexing of video coding	2005
Paula Viana	Artur P. Alves	Digital Television Archives	2005
Paulo Martins	E. Carrapatoso	A model for distance learning in environments that support mobility	2005
Jaime dos Santos Cardoso	Luís Corte-Real	Image segmentation based on depth maps	2006
Teresa Andrade	Artur P. Alves	Quality of service multiplexing and transmission of digital video	2006
Vítor Gonçalves	E. Carrapatoso	Semantic Web in the educational context	2006
Catalin Calistru	Gabriel David M. Cristina Ribeiro	Data organization and search in multimedia databases	2007

Author/Institution	Supervisor/Institution	Title	Conc. Date
Luís Gustavo Martins	Aníbal Ferreira	Analysis and recognition of audio oriented to music applications	2007
Pedro Miguel do Vale Moreira	A. A. Sousa	Management and Visualization of Very Complex 3D Models and Scenes	2007
Tânia Calçada	Manuel Ricardo	Integration of ad-hoc with infrastructured networks	2007
Alexandre Carvalho	A. A. Sousa	Visualization of Spatiotemporal Database Systems	2008
Filipe Lameiro Abrantes	Manuel Ricardo	Congestion control in 4G heterogeneous networks	2008
José Fernando Martins	A. A. Sousa	3D Modeling in Augmented Reality Environments	2008
Luís Filipe Teixeira	Luís Corte-Real Aníbal Ferreira	Automatic description of video based on multimodal analysis	2008
Miguel Magalhães Silva	João Canas Ferreira	Management of dynamically reconfigurable resources in CPU/FPGA systems	2008
Rui Campos	Manuel Ricardo	Creation and composition of Ambient Networks	2008

Teses de Mestrado (MSc Dissertations)

Author/Institution	Supervisor/ Institution	Title	Conc. Date
Luís Filipe Teixeira	Luís Corte-Real	Edition and Description Framework for Video Objects	2004
Manuel José Brito	A. A. Sousa	Hydrological regime of a region – GIS based Web service	2004
Pedro Carvalho	Luís Corte-Real	Multimedia Content Adaptation for Universal Access	2004
Rui Oliveira	Manuel Ricardo	QoS Routing Component for Emerging IP Network Management Systems	2004
Alberto Lírio	E. Carrapatoso	Globalization of the associative relationship - model and implementation	2005
Ana Barroso	E. Carrapatoso	Dissemination of multidisciplinary projects in engineering	2005
André Silva	E. Carrapatoso	Management of plasma displays	2005
António Castro	E. Carrapatoso	The usage of multimedia de technologies in the e-learning of programming languages	2005
António Pinto	Manuel Ricardo	Secure IP multicast	2005
Armindo Dias	E. Carrapatoso	Affective computing	2005
Brígida Faria	A. A. Sousa	Light Field for Image Based Rendering	2005
Eduardo Marques	E. Carrapatoso	WebTV – Audio and video streaming with interactivity	2005
Filipe Aranda de Sá	Henrique Salgado Francisco Araújo – INESC P.	Optical fiber integrated devices based on micro-optical components	2005
Francisco Duarte	José Machado Silva José Carlos Alves	Dedicated processor for in-circuit test of A/D blocks in integrated microsystems	2005
Gabriel Pinho	José Machado Silva	Test methodologies and project for the testability of RF circuits	2005
Gil Coutinho	José Ruela	MPLS support of DiffServ	2005

Author/Institution	Supervisor/ Institution	Title	Conc. Date
Gustavo Carneiro	Manuel Ricardo	QoS Abstraction Layer	2005
Jaime Dias	Manuel Ricardo	Quality of Service in UMTS networks	2005
Joana Gomes Rocha	A. A. Sousa	Segmentation of Virtual Urban Environments for location-based Mobile Services	2005
Joana Lessa	E. Carrapatoso	Human expressions and communication through interactive multimedia systems	2005
Joel Pedro Carvalho	Henrique Salgado	Optical packet switching	2005
José Moreira	E. Carrapatoso	Service oriented software architectures	2005
Luís Miguel Marques	Luís Pinho - ISEP José Ruela	Simulation of temporal behavior of routing protocols in PLC based networks	2005
Nelson Américo Eira	Henrique Salgado A. Lobo - UFP	Wavelength conversion	2005
Paulo Almeida	Manuel Ricardo	Mobile networks	2005
Pedro Fortuna	Manuel Ricardo	Robust Header Compression in 4G Networks	2005
Rui F. Vaz	José Ruela	Service Level Agreement In VoIP services	2005
Sérgio Martins	José Carlos Alves	Automatic generation of RTL code for real-time image acquisition and processing systems	2005
Vasco Santos	Aníbal Ferreira	Quality Assessment of Manufactured Ceramic work using Digital Signal Processing techniques	2005
Vera Moutinho de Almeida	A. A. Sousa	Application of Information and Communication Technologies to a Museum Space	2005
Vítor Calçada	Manuel Ricardo	Traffic characterization in a mobile operator	2005
Vítor Marmelo	E. Carrapatoso	Technologies for interactive educational environments	2005

A5.1.6 Organização de Eventos Científicos Internacionais (Organization of International Scientific Events)

SIACG'04/SIBGRAPI'2004 - 2nd Ibero-American Symposium on Computer Graphics and 7th Brazilian Symposium on Computer Graphics and Image Processing
Curitiba, Brasil
October 17-20, 2004
A. Augusto de Sousa - Co-chair of Program Committee

CEIG'04 - Congreso Español de Informática Gráfica
Sevilla, Spain
June 29 – July 2, 2004
A. Augusto de Sousa - member of Program Committee

CONVR'2004 - 4th Conference on Construction Applications of Virtual Reality
Lisbon, Portugal
September 14-15, 2004
A. Augusto de Sousa - member of Program Committee

VECPAR'2004 - 6th International Meeting on High Performance Computing for Computational Science
Valencia, Spain
June 28-30, 2004
A. Augusto de Sousa - member of Program Committee

WSCAD2004 - Quinto Workshop em Sistemas Computacionais de Alto Desempenho
Foz do Iguaçu, Brasil
October 27-29, 2004
A. Augusto de Sousa - member of Program Committee

ICIAR 2004 - International Conference on Image Analysis and Recognition - ICIAR 2004
Porto, Portugal
September 29 – October 1, 2004
Luís Corte-Real - Local Chair

DCIS 2004 – XIX Conference on Design of Circuits and Integrated Systems
Bordeaux, France
November 24-26, 2004
José Silva Matos – member of Steering Committee

A5.1.7 Formação Avançada (Advanced Training)

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