

ANEXO

Lista de Resultados da Actividade

1 Unidade de Engenharia de Sistemas de Produção

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

1.1.1 Lista de Publicações (List of Publications)

Teses (Thesis)	2
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Juan Marques, "Production Lines Balancing (In Portuguese)", PhD Thesis, FEUP, 2002.

João Alberto Claro, "Planeamento estratégico em redes de comércio colaborativo: modelos e métodos quantitativos para apoio à decisão", PhD Thesis, FEUP, 2002.

Livros-Autor (Books-Author)	0
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N/A.

Livros-Editor (Books-Editor)	1
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Editor of the proceedings of the 18th ISPE "International Conference on CAD/CAM, Robotics and Factories of the Future" CARs&FOF'2002 no Porto. ISBN 972-95194-5-5.

Capítulos em Livros (Chapter in Books)	2
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Soares, António L., Gaida, W., Schmidt, C., 2002, Experiences in the development of information systems in an industrial innovation context, in Filipe, J. et al. (Eds.) Enterprise Information Systems III. Kluwer Academic Press, Amsterdam.

Azevedo, A., Toscano, C., Bastos, J: "AN INTELLIGENT AGENT-BASED ORDER PLANNING FOR DYNAMIC NETWORKED ENTERPRISES, In Joaquim Filipe et al. (eds), Enterprise Information Systems III. Kluwer Academic Publishers ISBN 1-4020-0563-6, pp124-131, 2002.

Artigos em Revistas Internacionais com Revisores (International Journals with scientific referees)	2
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Soares, António L., 2002, A tool to support the shared understanding of manufacturing systems organisation in innovation processes. International Journal of Computer Integrated Manufacturing Vol. 15, No.5, 394-412.

A. Miguel Gomes, José F. Oliveira: "A 2-exchange heuristic for nesting problems", European Journal of Operational Research, vol. 141, pp 359-370, 2002.

Artigos em Revistas Nacionais com Revisores (National Journals with scientific referees)	0
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N/A.

Comunicações em Actas de Conferências com Revisores (Conference Proceedings with scientific referees)	11
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Silva, Paula A., Soares, António L., 2002, The Importance of Remote Maintenance for Equipment Manufacturers Competitiveness and their Customer Satisfaction, in Proceedings of 6th International Scientific Conference on Work With Display Units, WWDU 2002, Berchtesgaden - Germany.

Soares, António L., Carneiro, Luis M., Carneiro, Diana, 2002, MAKING eFFECTIVE THE INTRODUCTION OF E-BUSINESS IN sme: A REFERENCE MODEL APPROACH, Proceedings of the CARs&FOF International Conference, Porto, Portugal.

Soares, António L., Sousa, Jorge P., 2002, Multiple Perspective Configuration of Virtual Enterprises Using Social Actors Networks, in Luis M. Camarinha-Matos (Ed.) Collaborative Business Ecosystems and Virtual Enterprises, pp. , Kluwer Academic Publishers, Boston.

Azevedo, A., Toscano, C., Sousa, J.: "ADVANCED ORDER PLANNING IN NETWORKED SUPPLY CHAINS", Digital Enterprise Technology DET 02, Proceedings of the 1st CIRP(UK) Seminar - Durham UK 2002

Azevedo, A., Toscano, C., Sousa, J.: "CO-OPERATIVE PLANNING IN DYNAMIC SUPPLY-CHAINS", CAR&FOF 2002 Porto - Portugal, ISBN: 972-95194-5-5

Azevedo, A., Toscano, C., Sousa, J.: "AN ORDER PLANNING SYSTEM TO SUPPORT NETWORKED SUPPLY CHAINS", In Luis M. Camarinha-Matos (ed.), Collaborative Business Ecosystems and Virtual Enterprises. Kluwer Academic Publishers ISBN 1-4020-7020-9, pp237-244, 2002 (IFIP TC5/WG5.5 Third Working Conference on Infrastructures for Virtual Enterprises (PRO-VE'02) May 1-3, 2002, Sesimbra, Portugal)

Diogo Ferreira, J. J. Pinto Ferreira: "Essential Services for P2P e-marketplaces", CARs&FOF'2002 18th ISPE International Conference on CAD/CAM, Robotics and Factories of the Future, Porto, Portugal, 3-5 July 2002.

Álvaro Nunes, João J. Pinto Ferreira, José M. Mendonça: "Distributed Business Process co-ordination: a functionality oriented infra-structure", CARs&FOF'2002 18th ISPE International Conference on CAD/CAM, Robotics and Factories of the Future, Porto, Portugal, 3-5 July 2002.

Ângelo Martins, J. J. Pinto Ferreira, J.M. Mendonça: " Quality Certification in the Virtual Enterprise", CARs&FOF'2002 18th ISPE International Conference on CAD/CAM, Robotics and Factories of the Future, Porto, Portugal, 3-5 July 2002.

Patricia M R Loureiro, Paulo Leitão, J. J. Pinto Ferreira: "Implementing a workflow-based corrective actions manager", CARs&FOF'2002 18th ISPE International Conference on CAD/CAM, Robotics and Factories of the Future, Porto, Portugal, 3-5 July 2002.

Ana Rodrigues, Luís Moreira, J. Soeiro Ferreira, Components Cutting Optimisation by Memetic Algorithms, XI CLAIO - XI Latin-Ibero-American-Congress on Operations Research and Systems, October 2002, Concepción, Chile, 2002.

Outras Publicações (Other Publications)	0
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N/A.

1.1.2 Lista de Revistas (List of Journals)

Journal	Number of papers
International Journal of Computer Integrated Manufacturing	1
European Journal of Operational Research	1
Total	2

1.1.3 Lista de Patentes (List of Patents)

N/A.

1.1.4 Lista de Protótipos mais relevantes (List of Most Relevant Prototypes)

Agent Based Co-operative Planning system for Enterprise Networks

Developed under the European IST Co-operate project. Developed and tested for Semiconductor and Automotive enterprises.

Demo Place: INESC Porto

Development Period: Jan-2000 to Mar-2002

Workflow backbone for Inter-enterprise business processes coordination

Developed under the European IST DAMASCOS project. Tested in Textile and Shoe companies.

Demo Place: Kyaia (P), ATECA (I).

Development Period: Jan-2000 to Mar-2002

Methodology for the efficient introduction of e-Business solutions in SME's

Developed under the European IST MEDIAT-SME project. Tested in Shoe machine manufacturers, construction material retailers and Internet companies.

Demo Place: INESC Porto, ATB (D), BMT (UK), CARSA (E)

Development Period: Jan-2000 to Jun-2002

Order management system for networks of textile companies based in XML messages

Developed under the European IST SMART-SME project. Developed and tested for a network of 4 Portuguese textile companies.

Demo Place: Sampedro

Development Period: Feb-2001 to Jun-2002

System for the optimisation of Steel bars cutting

Developed and tested for Portuguese company.

Demo Place: FRamada

Development Period: Mar-2002 to Jun-2003

1.1.5 Teses orientadas por membros da Unidade (Thesis supervised by members of the team)

Teses de Doutoramento (PhD Dissertations)

Author	Supervisor/Institution	Title	Conclusion Date
Maria Helena Correia	José Soeiro Ferreira INESC Porto-FEUP	Methodologies for the decision Support in production planning	2003
António Miguel Gomes	José Fernando Oliveira INESC Porto-FEUP	Raw material optimization in irregular cutting processes	2003
Diogo Ferreira	João José Pinto Ferreira INESC Porto-FEUP	Workflow infrastructures for Virtual Enterprises	2003
Angelo Martins	José Manuel Mendonça, João José Pinto Ferreira INESC Porto-FEUP	Operational Support to the Virtual Enterprise	2003
Ana Viana	Jorge Pinho de Sousa, Manuel Matos INESC Porto-FEUP	Multi-objective heuristics for the project and management of production, transportation and delivery of goods and services in market deregulation processes	2003
Ana Maria Pinto Moura	José Fernando Oliveira INESC Porto-FEUP	Heuristic approaches to the vehicle routing and vehicle packing problems	2004
Maria Eduarda Cunha e Silva Pinto Ferreira	José Fernando Oliveira INESC Porto-FEUP	Algorithms for the n-dimensional Rectangular packing problem	2005
Maria Teresa do Valle Moura da Costa	José Fernando Oliveira INESC Porto-FEUP	The influence of shapes geometry in the resolution of nesting problems	2005

Author	Supervisor/Institution	Title	Conclusion Date
José Paulo Angeiras de Sousa Santos	Maria Antónia Carravilla, Carlos Costa INESC Porto-FEUP, FEUP	Sistema de Apoio à Avaliação de Cursos do Ensino Superior	2006
Dora Simões	António Lucas Soares INESC Porto-FEUP	Inter-organizational Knowledge Management	2006
Abailardo Lucilio de Natividade Silva Moreira	Américo Azevedo INESC Porto-FEUP	Avaliação Dinâmica da Capacidade Produtiva em Redes de Empresas	2004

Teses de Mestrado (MSc Dissertations)

Author	Supervisor/Institution	Title	Conclusion Date
Dora Simões	António Lucas Soares INESC Porto-FEUP	Information systems for project management and quality assurance in R&D organizations (in Portuguese)	2002
Juan Marques	José Soeiro Ferreira INESC Porto-FEUP	Production Lines Balancing (in Portuguese)	2002
João Alberto Claro	Jorge Pinho de Sousa INESC Porto-FEUP	Planeamento estratégico em redes de comércio colaborativo: modelos e métodos quantitativos para apoio à decisão	2002
Ana Maria Rodrigues	José Soeiro Ferreira INESC Porto-FEUP	Application of new Meta-heuristics to the Rural Postmen problem (in Portuguese)	2003
Francisco Barbedo	António Lucas Soares INESC Porto-FEUP	Technical and Organizational requirements of archive networks using a social actors networks approach (in Portuguese)	2003
João Vieira	António Lucas Soares INESC Porto-FEUP	Information society in city libraries: New services for the citizens (in Portuguese)	2003
João Pinho	António Lucas Soares INESC Porto-FEUP	Implementation of information systems supporting e-business in SME's (in Portuguese)	2003
Fernando Branco	António Lucas Soares INESC Porto-FEUP	Management trends and information systems trends in networks of enterprises and virtual enterprises (in Portuguese)	2003
Pedro Neves	João José Pinto Ferreira INESC Porto-FEUP	Consumer Integration in the Business Processes	2003
Paulo Veloso Gomes	António Lucas Soares INESC Porto-FEUP	Participação e colaboração mediada por computador em instituições universitárias: uma abordagem através da teoria Actor-Network.	2003
Anabela Pinho	António Lucas Soares INESC Porto-FEUP	Sistemas de informação e padrões de relacionamento inter-organizacional	2003
Adília Gomes	António Lucas Soares INESC Porto-FEUP	Opções estratégicas para a adopção de sistemas e tecnologias de informação	2003
Cristina Malafaya Batista	Maria Antónia Carravilla INESC Porto-FEUP	Integração de Heurísticas na resolução com CLP de Problemas de Posicionamento de Figuras Irregulares	2003
Avelino Jorge Pereira de Oliveira	Manuel Matos, José Fernando Oliveira INESC Porto - FEUP	A methodology for the selection of steel blocks in a metallomechanics industry	2002

Author	Supervisor/Institution	Title	Conclusion Date
Ana Rita Carvalho Pires da Silva Gonçalves Batista	José Fernando Oliveira INESC Porto - FEUP	Operations Scheduling in a Ceramics Industry	2002
José Carlos Sousa Ferreira	José Fernando Oliveira INESC Porto - FEUP	Genetic algorithms for strip packing problems: an asynchronous approach	2002
Henrique José Amorim da Silva	José Fernando Oliveira INESC Porto - FEUP	Level oriented meta-heuristics for strip-packing problems	2002
Alice Marado Torres	José Fernando Oliveira INESC Porto - FEUP	Heuristics for the workforce assignment problem - the post center for the north of Portugal case	2003
Olga Constante	Américo Azevedo INESC Porto-FEUP	Sistema de Informação para Planeamento Agregado da Produção	2003
Rui Miguel Pinheiro	Américo Azevedo INESC Porto-FEUP	Metodologias de Planeamento para a Indústria da Transformação de Cortiça	2003
Teresa Mota	Américo Azevedo INESC Porto-FEUP	A evolução dos sistemas de informação e a sua relação com os modelos de organização e gestão	2003
Célia Tenente	Américo Azevedo INESC Porto-FEUP	As redes de empresas e os requisitos para os sistemas de informação	2003

1.1.6 Organização de Eventos Científicos Internacionais (Organization of International Scientific Events)

CARS&FOF 2002 - 18th Conference on CAD/CAM, Robotics and Factories of the Future (Porto, 3-5 July 2003)

- Chaiman: João José Pinto Ferreira
- Local Organizing Committee: Américo Azevedo, António Lucas Soares, Diogo Ferreira, José Carlos Caldeira, Luís Maia Carneiro, Sónia Pinto.
- Results: Publication of 87 papers in the conference proceedings. Selected papers will be extended for publication in a book from Kluwer Academic and several international journals.

1.1.7 Formação Avançada (Advanced Training)

N/A.

1.1.8 Lista de Projectos (Lists of Projects)

Project Name	Responsible	Type (*)	Intern. (N/E/I)	Funding Program	Starting Date	Conclusion Date (expected)
SONAFI	Paula Silva	D	N	-	-	Renewable
PROFIT	Paula Silva	TT	N	-	-	Renewable
Lirel	Paulo Sá Marques	TT	N	-	-	Renewable
DURIT	A. C. Alves	C	N	-	-	-
FRAMADA	A. C. Alves	C	N	-	-	-
VINOCOR	A. C. Alves	C	N	-	-	-
Mediat-sme	Luís Carneiro	R	E	IST	01/2000	03/2002
Damascos	João J. Ferreira	R	E	IST	01/2000	03/2002

Project Name	Responsible	Type (*)	Intern. (N/E/I)	Funding Program	Starting Date	Conclusion Date (expected)
Cooperate	J. Pinho Sousa	R	E	IST	01/2000	03/2002
IRCPortugal	A. C. Alves	TT	E	Innovation	07/2000	07/2004
CLPNest	M.A. Carravilha	R	N	Praxis	10/2000	10/2002
SETI	J. S. Ferreira	R	N	Praxis	01/2001	03/2002
Smart-SME	A. C. Alves	C	E	IST	02/2001	06/2002
EXPIDE	J. Pinho Sousa	R	E	IST	10/2000	04/2003
Think Creative	J. Pinho Sousa	R	E	IST	06/2001	11/2003
BMAN	João J. Ferreira	R	E	IST	02/2002	07/2004
MyFashion	João J. Ferreira	R	E	IST	02/2002	01/2003
EB	A. C. Alves	C	N	POE	01/2002	12/2002
FATEC	Rui Diogo	R	N	POE	01/2002	12/2005
CICLOP	Rui Diogo	R	E	IST	06/2002	05/2004
CpackMO	José F. Oliveira	R	N	Praxis	09/2002	08/2004
Companion	J. Pinho Sousa	R	E	IST	08/2002	08/2003
CARS&FOF	João J. Ferreira	T	I	-	07/2002	07/2002

(*) Types of activity of INESC Porto: R - Research, D - Development, C - Consulting, T - Training, TT - Technology Transfer, O - Other

2 Unidade de Optoelectrónica e Sistemas Electrónicos

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

2.1.1 Lista de Publicações (List of Publications)

Teses (Thesis)	2
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Baptista, José Manuel, *Concepção, Análise e Desenvolvimento de Sensores de Fibra Óptica de Intensidade Auto-Referenciados*, PhD Thesis, 2002.

Costa, Abel, *Duobinary Codes for Optical Communications*, PhD Thesis, 2002.

Livros-Autor (Books-Author)	0
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N/A.

Livros-Editor (Books-Editor)	0
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N/A.

Capítulos em Livros (Chapter in Books)	0
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N/A.

Artigos em Revistas Internacionais com Revisores (International Journals with scientific referees)	8
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T. Jouhti, C.S. Peng, E. M. Pavelescu, J. Konttinen, L. A. Gomes, O. Okhotnikov, M. Pessa, “Strain-compensated GaInNAs structures for 1.3- μ m lasers”, IEEE Journal of Selected Topics on Quantum Electronics, 8, Julho / Agosto, 2002.

O. Frazão, R. Romero, G. Rego, P.V.S. Marques, H. M. Salgado, J. L. Santos, “Sampled Fibre Bragg Grating Sensors for Simultaneous Strain and Temperature Measurement”, Electronics Letters, 38, 693, 2002.

S. Agathopoulos, R.N. Correia, E. Joanni, J. R. A. Fernandes, “Interactions at Zirconia-Au-Ti Interfaces at High Temperatures”, Key Engineering Materials, 206-213, 487, 2002.

J. R. Fernandes, F. A. de Sá, J. L. Santos, E. Joanni, “Optical fiber interferometer for measuring d_{33} coefficient of piezoelectric thin films with compensation of substrate bending”, Review of Scientific Instruments, 73, 1985, 2002.

P. A. S. Jorge, P. Caldas, L. A. Ferreira, A. B. Lobo Ribeiro, J. L. Santos, F. Farahi “Electrical Current Metering with a Dual Interferometric Configuration and Serrodyne Signal Processing”, Journal of Measurement Science and Technology, 13, 533, 2002.

F. M. Araújo, L. A. Ferreira, J. L. Santos, “Simultaneous Determination of Curvature, Plane of Curvature and Temperature Using a Miniaturized Sensing Head Based on Fiber Bragg Gratings”, Applied Optics, 41, 2401, 2002.

R. H. Heredero, S. Martin, R. Fernandez de Caley, A. B. Lobo Ribeiro, F. M. Araújo, L. A. Ferreira, J. L. Santos, H. Guerrero, “Study of the Optical Properties of Photopolymer Fabry-Pérot Microcavities by a Dual-wavelength Fibre Optic Architecture”, Journal Measurement Science and Technology, 13, 1094, 2002.

S. Abad, F. M. Araújo, L. A. Ferreira, J. L. Santos, M. Lopez-Amo, “*Fiber Bragg Grating Based Self-referencing Technique for Wavelength Multiplexed Intensity Sensors*”, Optics Letters, 27, 222, 2002.

Artigos em Revistas Nacionais com Revisores (National Journals with scientific referees)	1
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M. J. N. Lima, O. Frazão, A. L. J. Teixeira, P. S. B. André, J. R. Ferreira da Rocha, “*Thermally Tunable Bragg Grating Filters for Wavelength-Multiplexed Systems*”, Revista do DETUA, Setembro de 2002.

Comunicações em Actas de Conferências com Revisores (Conference Proceedings with scientific referees)	60
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H. J. Kalinowski, I. Abe, R. Nogueira, J. Lemos Pinto, S.P.A. Osório, O. Frazão, J.L. Santos, “*Characterisation of Bragg Gratings written in High Birefringence Fibre Optic for Sensor Applications*” PHOTONICS 2002- Sixth International Conference on Optoelectronics, Fiber Optics and Photonics, 16-18 December, Mumbai, Maharashtra, India, 2002.

T. Jouhti, J. Konttinen, E. M. Pavelescu, C.S. Peng, L.A. Gomes, S. Karirinne, O. Okhotnikov, M. Pessa “*Diluted Nitride Quantum Well Structures and Lasers for 1,3mm Fiber-optic Networks*”, Challenges in Microelectronics Research and Opportunities in Russia, Moscovo, Rússia, 10-13 September, Moscow, Russia, 2002.

T. Jouhti, C.S. Peng, E.-M. Pavelescu, J. Konttinen, L.A. Gomes, O. Okhotnikov, M. Pessa, N “*Novel Ga-As-Based Nitride and Antimonide Long-Wavelength VCSEL's*”, Challenges in Microelectronics Research and Opportunities in Russia, Moscovo, Rússia, 10-13 September, Moscow, Russia, 2002.

T. Jouhti, C. S. Peng, E. M. Pavelescu, J. Konttinen, W. Li, L. A. Gomes, O. Okhotnikov, M. Pessa, “*Diluted Nitride Edge-emitting and Vertical-cavity Lasers for 1.3-mm Fibre-optic Networks*”, 4th Internacional Conference on Transparent Optical Networks (ICTON), 21 - 25 April, Varsóvia, Polónia, 2002.

A. Teixeira, A. Santos, D. Pereira, M. Lima, P. André, J. da Rocha, M. Melo, O. Frazão, L. Gomes, H. Salgado, “*Effects of Multiple C-Band Pumping on the L-Band EDFA Gain Profile*”, GOWN 2002, Global Optical and Wireless Network 2002, 25-28 September, Skiathos Island, Greece, 2002.

G. Rego, M. Melo, J. L. Santos, H. M. Salgado, “*Optical Filters for Fibre Lasers and Amplifiers*”, London Communications Symposium, 9-10 September, London, UK, 2002.

O. Frazão, J. P. Carvalho, I. Terroso, V. Barbosa, H. M. Salgado, “*A Novel Architecture of an Optical Cross-connect Based on Tuneable Fibre Bragg Gratings and Optical Circulators*”, London Communications Symposium, 9-10 September, London, UK, 2002.

M. Melo, A. Teixeira, O. Frazão, L. Gomes, M. Lima, C. Santos, D. Pereira, F. Rocha, H. M. Salgado, “*Widely Tunable L-band Erbium Doped Fiber Ring Laser by Means of Induced Cavity Loss Control*”, 15th Annual Meeting of the IEEE Lasers and Electro-Optics Society, 10 - 14 November, Glasgow, Scotland, 2002.

I. Abe, M. W. Schiller, R. N. Nogueira, P. Lopes, O. Frazão, J. L. Santos, J. L. Pinto and H. J.

15th Annual Meeting of the IEEE Lasers and Electro-Optics Society, 10 - 14 November, Glasgow, Scotland, 2002.

I. Abe, M. W. Schiller, P. Lopes, R. Nogueira, A. J. Fernandes, O. Frazão, J. L. Pinto e H. J. Kalinowski, W. Acchar “*Sensor a Fibra óptica para Caracterização Simultânea de Deformação Transversal e Temperatura*”, CBECIMAT 2002 Congresso Brasileiro de Engenharia e Ciência dos Materiais, 9-13 de November, Natal, Brasil, 2002.

A.I. Mardare, C.C. Mardare, E. Joanni, J.R.A. Fernandes, P.M. Vilarinho, A.L. Kholkin; "*Barium Metaplumbate Thin Film Electrodes for Ferroelectric Devices*", ECAPD VI, 6th European Conference on Applications of Polar Dielectrics, 2 - 6 September, Aveiro, Portugal, 2002.

I. Abe, M. W. Schiller, R. Nogueira, P. Lopes, O. Frazão, J. L. Santos, J. L. Pinto and H. J. Kalinowski, "*Simultaneous Measurement of Transverse strain and Temperature using FBG Written in HI-BI Fiber*", SOFM 2002 Symposium on Optical Fiber Measurements, 24-26 September, Boulder, Colorado, USA, 2002.

P. J. S Cruz, D. A. Pereira, O. Frazão, J. L. Santos, A. Güemes, "*Fiber Optic Sensing of Steel Bolts*", Eurosteel - 3rd European Conference of Steel Structures, 19-20 September, Coimbra, Portugal, 2002.

I. Abe, R. Nogueira, J. L. Pinto, O. Frazão, J. L. Santos, H. J. Kalinowski, "*Análise Espectral de FBGs Escritas em Fibras HI-BI*", X Simpósio Brasileiro de Microondas e Optoeletrônica, 12-16 August, Recife, Brasil, 2002.

A. Teixeira, M. Melo, C. Santos, D. Pereira, M. Lima, P. André, O. Frazão, H. Salgado, J. Ferreira da Rocha, "*Effects of C Band optical pumping on the performance of L band Erbium Doped Fiber Amplifiers*", TELECOM 2002 - International Conference Telecommunication, Electronics and Control 2002, 17-19 July, Santiago de Cuba, Cuba, 2002.

R. Romero, O. Frazão, G. Rego, P. V. S. Marques, H. M. Salgado, "*Sample Fibre Bragg Gratings Fabrication Using Electric Arc and Their Applications*", Summer School on Photosensitivity in Optical Waveguides and Glasses, 17 - 21 June, Saint-Petersburg, Russia, 2002.

G. Rego, R. Romero, O. Frazão, P. V. S. Marques, H. M. Salgado, "*Apodisation of Uniform Fibre Bragg Grating using Electric Arc Discharges*", IEEE/LEOS Workshop on Fibre and Optical Passive Components, 5-6 June, Glasgow, Scotland, 2002.

M. J. N. Lima, A. L. J. Teixeira, O. Frazão, P. S. B. André, J. R. Ferreira da Rocha, "*Thermal behavior of Bragg gratings formed in germanosilicate fiber*", 4th International Conference on Photonics, Devices and Systems, 26-29 May, Prague, Czech Republic, 2002.

J. M. Baptista, S. Abad, G. Rego, L. A. Ferreira, F. M. Araújo, J. L. Santos, A. S. Lage, "*Multiplexing of Self-Referenced Fibre Optic Intensity Sensors using Fibre Bragg Gratings and Wavelength Division Couplers*", OFS 2002, 6-10 May, Portland, USA, 2002.

P. A. S. Jorge, P. Caldas, L. A. Ferreira, A. B. Lobo Ribeiro, J. L. Santos, F. Farahi, "*Electrical Current Metering With a Dual Interferometric Configuration and Serrodyne Signal Processing*", OFS 2002, 6-10 May, Portland, USA, 2002.

R.L. Heredero, J. L. Santos, R. Fernández de Caleyra, F. M. Araújo, L. A. Ferreira, H. Guerrero, "*Micromachined Low-finesse Fabry-Pérot Interferometer for the Measurement of Low DC Electrical Currents*", OFS 2002, 6-10 May, Portland, USA, 2002.

S. Abad, F.M. Araújo, L.A. Ferreira, J.L. Santos, M. López-Amo, "*Bragg-grating Interrogation Scheme Using Spectral Filtering and Amplitude-to-phase Optical Conversion*", OFS 2002, 6-10 May, Portland, USA, 2002.

C. Novo, A. Nicolau Costa, M. Sousa, A. Vieira, A. Torres Marques, O. Frazão, J. Ferreira, I. Dias, "*Monitoring RTM Process and the Structure in Service Using Fibre Bragg Grating Sensors*", 23rd SAMPE Europe International Conference, 9-11 April, Paris, France, 2002.

L. A. Gomes, T. Jouthi, J. Konttinen, M. B. Marques, O. G. Okhotnikov, "*Lasers de Alta Potência de Cavidade Vertical com Emissão à Superfície em GaInAs/GaAs*", Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

V. Barbosa, J. M. Ferreira, H. M. Salgado, "*Transmissor Óptico Analógico para Comunicações Atmosféricas*", Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

R. Romero, O. Frazão, G. Rego, P. V. S. Marques, H. M. Salgado, "*Multiwavelength Fibre Ring Laser Source Using Sampled Fibre Bragg Gratings*", Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

R. Romero, G. Rego, O. Frazão, P. V. S. Marques, H. M. Salgado, “*New Technique for Sampled Fibre Bragg Gratings Fabrication*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

R. P. Morais, Y. S. Zavorotnii, J. L. Santos, M. J. Marques, “*Estudo e Caracterização de Poling em Fibras Ópticas do tipo Twin-hole*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

P. A. S. Jorge, P. Caldas, L. A. Ferreira, A. B. Lobo Ribeiro, J. L. Santos, F. Farahi, “*Medição de Correntes Eléctricas com um Sensor Óptico Interferométrico Usando Processamento Pseudo-heterodino*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

P. J. Moreira, P. V. S. Marques, M. B. Marques, A. P. Leite, “*Dispositivos Ópticos Integrados em Tecnologia Sol-Gel Híbrido*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

P. Fernandes, C. F. Freitas, V. Barbosa, O. Frazão, H. M. Salgado, “*Demonstração Experimental de OCDMA - Acesso Múltiplo por Divisão de Código no Domínio Óptico*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

O. Frazão, R. Romero, G. Rego, P. V. Marques, H. M. Salgado, J. L. Santos, “*Sensor Óptico para Medição Simultânea de Temperatura e Deformação Usando uma Superestrutura*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

O. Frazão, R. Romero, G. Rego, P. V. Marques, H. M. Salgado, J. L. Santos, “*Aplicações das Redes de Período Longo como Elemento Sensor*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

M. Melo, O. Frazão, L. A. Gomes, A. Teixeira, C. Santos, D. Pereira, M. Lima, J. R. F. Da Rocha, H. M. Salgado, “*Tunable L-Band Erbium Doped Fibre Ring Laser*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

M. Melo, A. Teixeira, L. A. Gomes, C. Santos, D. Pereira, O. Frazão, M. Lima, P. André, J. R. F. Da Rocha, H. M. Salgado, “*L-Band Erbium Doped Fibre Amplifier Design Limitations Due to C-Band Signal Power Injection*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

M. Dahlem, J. L. Santos, L. A. Ferreira, F. M. Araújo, “*Interrogation Scheme for Fabry-Pérot Displacements and Temperature Sensors Based on Fiber Bragg Gratings*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

J. P. Carvalho, I. Terroso, O. Frazão, V. Barbosa, M. Ricardo, H. M. Salgado, “*Comutador Óptico (OXC) Baseado em Circuladores Ópticos e numa Rede de Bragg em Fibra Óptica*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

J. M. Baptista, S. Abad, G. Rego, L. A. Ferreira, F. M. Araújo, J. L. Santos, A. S. Lage, “*Multiplexagem em Comprimento de Onda de Sensores de Intensidade em Fibra Óptica Auto-referenciados*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

I. Terroso, J. P. Carvalho, O. Frazão, M. Ricardo, H. M. Salgado, “*Avaliação de Duas Arquitecturas de OADM Baseadas em Circuladores Ópticos e Redes de Bragg em Fibra Óptica*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

Ireneu M. S. Dias, Nuno Fonseca, H. M. Salgado, Vladimiro Miranda, “*Optical Fibre Bragg Gratings Synthesis by Evolutionary Particle Swarm Optimization*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

G. Rego, R. Romero, P. V. Marques, J. L. Santos, H. M. Salgado, “*Influence of Hydrogen Out-Fibre Diffusion on the Resonances of Arc-Induced Long-Period Fibre Gratings*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

G. Rego, M. Melo, J. L. Santos, H. M. Salgado, “*Filters for Fibre Lasers and Amplifiers*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

G. Rego, H. M. Salgado, J. L. Santos, “*Fiber Sensors for Nuclear Environments: Part I*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

G. Rego, H. M. Salgado, J. L. Santos, “*Fiber Sensors for Nuclear Environments: Part II*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

G. Rego, J. L. Santos, H. M. Salgado, “*Electric Arc Induced Long-period Fiber Gratings for EDFA’s Gain Flattening*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

G. Rego, R. Romero, O. Frazão, M. Lima, J. L. Santos, H. M. Salgado, P. V. Marques “*Apodisation of Fiber Bragg Gratings Through Electric Arc Discharges*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

I. Abe, R. Nogueira, M. W. Schiller, A. J. Fernandes, P. Lopes, O. Frazão, J. L. Santos, J. L. Pinto, H. J. Kalinowski, “*Análise da Deformação Transversal e da Temperatura com Redes de Bragg em Fibras Ópticas de Alta Birrefringência*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

O. Frazão, M. Lima, A. Teixeira, P. André, J. R. F. Da Rocha, “*Estabilidade Térmica de Redes de Bragg em Fibra Óptica do Tipo I e do Tipo IIA*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

D. Pereira, O. Frazão, V. Barbosa, J. L. Santos, “*Estudo do Efeito da Hidrogenização em Fibras Ópticas*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

G. Rego, F. Durr, H. G. Limberger, S. L. Semjonov, H. M. Salgado, J. L. Santos, “*Inscription of Long Period Gratings in Nitrogen-Doped Fibres Drawn at Different Tensions*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

G. Rego, V. Sulimov, E. Dianov, J. L. Santos, H. M. Salgado, “*Thermal Behaviour at High Temperatures of Electric Arc Induced Long Period Gratings*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

P. Caldas, J. L. Santos, L. A. Ferreira, “*Estudo do Efeito da Fase de Berry num Interferómetro de Sagnac em Fibra Óptica*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

D. Pereira, J. Ferreira, O. Frazão, I. Dias, J. L. Santos, “*Controlo de Tráfego em Estruturas Cíveis com Recurso a Sensores de Bragg em Fibra Óptica*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

A. I. Mardare, C. C. Mardare, E. Joanni, J. R. A. Fernandes, A. Kholkin, P. M. Vilarinho “*Characterization of Barium Metaplumbate Thin Films Made by Laser Ablation*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

J. R. A. Fernandes, C. C. Mardare, A. I. Mardare, E. Joanni, “*Efeito da Reacção entre Ti/Pt em Filmes Finos de PZT*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

C. C. Mardare, A. I. Mardare, J. R. A. Fernandes, E. Joanni, “*Deposition of PZT Thin Films by RF Magnetron Sputtering*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

C. C. Mardare, A. I. Mardare, J. R. A. Fernandes, E. Joanni, S. C. A. Pina, M. H. V. Fernandes, R. N. Correia, “*Bioactive SiO₂-MgO-P₂O₅ Thin Films Deposited by RF Magnetron Sputtering Technique*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

A. I. Mardare, C. C. Mardare, E. Joanni, J. R. A. Fernandes, “*Pulsed Excimer Laser-Assisted Processing of Pb(Zr,Ti)O₃ Thin Films*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

O. Frazão, J. Ferreira, I. Dias, J. M. Dias, N. Vaz, M. Teixeira, J. F. Lopes, J. L. Santos, “*Monitorização da Ria de Aveiro Usando Cablagens Avançadas*”, Conferência Portuguesa de Física, Física 2002, Évora, 6-10 Setembro 2002.

D. A. Pereira, O. Frazão, J. M. Ferreira, J. L. Santos, “*Tecnologia Óptica para Monitorização de Sistemas Estuarinos e Costeiros*”, XI Seminário Ibérico de Química Marítima, 2-4 Abril, Faro, Portugal, 2002.

Outras Publicações (Other Publications)

0

N/A.

2.1.2 Lista de Revistas (List of Journals)

Journal	Number of papers
Optics Letters	1
Review of Scientific Instruments	1
Journal of measurement Science and Technology	2
Electronics Letters	1
Applied Optics	1
Key Engineering Materials	1
Journal of Selected Topics in Quantum Electronics	1
Total	8

2.1.3 Lista de Patentes (List of Patents)

Foi submetido um pedido de registo nacional de patente (aguarda-se resposta):

Load Cells Based on Optical Fiber Embedded in Composites

No âmbito de um contrato de prestação de serviços foi submetido um pedido de registo de patente nacional que ficou propriedade da empresa contratante: “Sistema de Monitorização e Controlo Automático de Tolerância nas Emendas em Sobreposição de Tela Têxtil”. Uma proporção significativa de autores são membros da Unidade.

2.1.4 Lista de Protótipos mais relevantes (List of Most Relevant Prototypes)

Optical router

Demo place: INESC Porto

Developed under a research contract

Development period: January 2001 to December 2002

Optical CDMA

Demo place: INESC Porto

Developed under a research contract

Development period: January 2001 to December 2002

Large Spectrum Optical Fiber Amplifier

Demo place: INESC Porto

Developed under a research contract

Development period: 2002

2.1.5 Teses orientadas por membros da Unidade (Thesis supervised by members of the team)

Teses de Doutoramento (PhD Dissertations)

Author	Supervisor/Institution	Title	Conclusion Date
José Manuel Baptista	Armindo Lage (FEUP) José Luís Santos (INESC PORTO)	Fibre Optic Intensity Sensors	2002
José Ramiro Afonso Fernandes	José Luís Santos (FCUP) Ednan Joanni (INESC PORTO)	Thin Film Microfabrication	2003

Author	Supervisor/Institution	Title	Conclusion Date
Rosa Romero Muniz	Henrique Salgado / Paulo Marques (INESC PORTO)	Optical fiber devices for communications	2004
Abel Antunes Costa	Pimenta Alves / Henrique Salgado (INESC PORTO)	Duobinary Codes for Optical Communications	2002
Gaspar Mendes Rego	José Luís Santos/Henrique Salgado (INESC PORTO)	Long Period Fibre Gratings	2004
Carla Carmerlo Rosa	José Luís Santos INESC PORTO	Low-coherence interferometry	2004
Paulo Moreira	Paulo Marques INESC PORTO	Integrated optic devices	2004
Pedro Jorge	José Luís Santos INESC PORTO	Fluorescence based optical fibre sensors	2004
Luís Gomes	Manuel Joaquim INESC PORTO	Optical fibre lasers	2004
Andrei Mardare	Manuel Joaquim/Ednan Joanni (INESC Porto)	Thin film microfabrication	2006
Cezarina Mardare	Manuel Joaquim/Ednan Joanni INESC Porto	Thin film microfabrication	2006

Teses de Mestrado (MSc Dissertations)

Author	Supervisor/Institution	Title	Conclusion Date
Paulo Sergio de Amorim Caldas	José Luís Santos INESC PORTO	Oxygen optical fibre sensors	2003
Dionísio Cerqueira Alves Pereira	José Luís Santos INESC PORTO	Salinity and civil engineering optical fibre sensors	2003
Rui Pedro da Silva Moraes	José Luís Santos INESC PORTO	Optical fibre phase modulators	2003
Daniel Alexandre	Paulo Marques INESC PORTO	Direct laser writing of masks for integrated optics	2003

2.1.6 Organização de Eventos Científicos Internacionais (Organization of International Scientific Events)

N/A.

2.1.7 Formação Avançada (Advanced Training)

Realização do Curso “Electrónica Digital Avançada” organizado pelo IEP - Instituto Electrotécnico Português, com um total de 40 horas.

2.1.8 Lista de Projectos (Lists of Projects)

Project Name	Responsible	Type (*)	Intern. (N/E/I)	Funding Program	Starting Date	Conclusion Date (expected)
CATESTT	Alberto Maia	TT	N		2002	2003
BARCO	Orlando Frazão	R	N	FUP	07/2001	06/2002

Project Name	Responsible	Type (*)	Intern. (N/E/I)	Funding Program	Starting Date	Conclusion Date (expected)
BIOSE	Ednan Joanni	R	N	FCT	01/2000	12/2002
CDMA	Henrique Salgado	R	N	FUP	07/2001	06/2002
CIVIL	Ireneu Dias	R	N	FCT	01/2002	12/2002
DWIDCOM	Henrique Salgado	R	N	FCT	01/2001	12/2002
ESMORIZ	Henrique Salgado	R	N	FCT	03/2001	02/2004
FONTE	Henrique Salgado	R	N	FUP	07/2001	06/2003
PHOTO	Paulo Marques	R	N	FCT	11/2000	10/2003
PROTEU	José Luís Santos	R	N	FCT	10/2000	09/2003
WDM	Paulo Marques	R	E	FCT	2002	2003
Q	José Luís Santos	R	N	FUP	07/2001	06/2003
RUMO	Francisco Pereira	R	N	FUP	07/2001	06/2003
SAL	Orlando Frazão	R	N	FUP	07/2001	06/2003
SOM	João Ferreira	R	N	FUP	07/2001	06/2003
WIND	Henrique Salgado	R	N	FCT	04/2000	04/2002
OFILTRO	Francisco Pereira	R	N	FCT	05/2002	04/2004
WONET	Orlando Frazão	R	N	FCT	05/2002	04/2004
DLOAD	Orlando Frazão	R	N	FCT	01/2002	12/2004
FOS-EN	José Luís Santos	T	E	EU	11/1999	2002
ODUPE	Paulo Marques	T	E	EU	10/2000	09/2003
PLATON	Paulo Marques	R	E	EU	10/2002	30/09/04
IEP	Alberto Maia	T	N	-	5/2002	6/2002

(*) Types of activity of INESC Porto: R - Research, D - Development, C - Consulting, T - Training, TT - Technology Transfer, O - Other

3 Unidade de Sistemas de Energia

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

3.1.1 Lista de Publicações (List of Publications)

Teses (Thesis)	1
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Monteiro C., Fuzzy Spatial Load Forecasting, PhD. Thesis, FEUP, 2002.

Livros-Autor (Books-Author)	1
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Saraiva, J.T., Pereira da Silva; J., Ponce de Leão, M. T., Electricity Markets - Regulation and Tariffs for Use of Networks, (in portuguese), FEUP Edições, Porto, Julho de 2002.

Livros-Editor (Books-Editor)	0
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N/A.

Capítulos em Livros (Chapter in Books)	3
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Miranda, V., "Fundamentals of Evolution Strategies and Evolutionary Programming", Chapter 4 in "Modern Heuristic Optimization Techniques with Applications to Power Systems", Tutorial Book, Ed. IEEE #02T160.

Miranda, V., "Operational Planning: Unit Commitment and Economic Dispatch", Chapter 12 in "Modern Heuristic Optimization Techniques with Applications to Power Systems", Tutorial Book, Ed. IEEE #02T160.

Miranda, V., "Hybrid Models and Shades of Lamarckism", Chapter 16 in "Modern Heuristic Optimization Techniques with Applications to Power Systems", Tutorial Book, Ed. IEEE #02T160.

Artigos em Revistas Internacionais com Revisores (International Journals with scientific referees)	0
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N/A.

Artigos em Revistas Nacionais com Revisores (National Journals with scientific referees)	0
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N/A.

Comunicações em Actas de Conferências com Revisores (Conference Proceedings with scientific referees)	33
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Castro, A., Miranda, V., "Mapping Neural Networks Into Rule Sets and Making Their Hidden Knowledge Explicit - Application to Spatial Load Forecasting ", Proceedings of PSCC02 - 14th Power Systems Computation Conference, June 2002.

Castronuovo, E. D., et al., "New versions of nonlinear interior point methods applied to the optimal power flow", IEEE T&D 2002 Latin America, São Paulo, Brazil, April 2002.

Costa, P. M., Matos, M., "Loss Allocation in Distribution Networks with Embedded Generation", Proceedings of MedPower2002 - 3rd Mediterranean Conference and Exhibition on Power Generation, Transmission, Distribution and Energy Conversion.

Fonseca, J., Miranda, V., "A Hybrid Meta-Heuristic Algorithm For Transmission Expansion Planning", Proceedings of PMAPS'2002 - International Conference on Probabilistic Methods Applied to Power Systems, September 2002.

Hatziargyriou, N., Matos, M., Peças Lopes, J. A., et al., "MORE CARE Overview", Proceedings of MedPower2002 - 3rd Mediterranean Conference and Exhibition on Power Generation, Transmission, Distribution and Energy Conversion.

Hatziargyriou, N., Peças Lopes, J. A., Matos, M., "Control Functions For Secure Operation Of Isolated Power Systems", Proceedings of PSCC02 - 14th Power Systems Computation Conference.

Hatziargyriou, N.; Contaxis, G.; Matos, M.; Lopes, J.A.P et al, "Energy management and control of island power systems with increased penetration from renewable sources", Power Engineering Society Winter Meeting, 2002. IEEE , Volume: 1 , 2002 Page(s): 335 -339.

Matos, M., "Formal Requirements for Utility and Value Functions for Security-Related Decisions", Proceedings of PMAPS'2002 - International Conference on Probabilistic Methods Applied to Power Systems.

Matos, M., et al., "Economic Scheduling Functions in MORE CARE", Proceedings of MedPower2002 - 3rd Mediterranean Conference and Exhibition on Power Generation, Transmission, Distribution and Energy Conversion.

Miranda, V., Calisto, P., "A Fuzzy Inference System to Voltage/Var Control in DMS - Distribution Management System", Proceedings of PSCC02 - 14th Power Systems Computation Conference, June 2002.

Miranda, V., Fonseca, N., "EPSO - Best-Of-Two-Worlds Meta-Heuristic Applied To Power System Problems", Proceedings of WCCI'2002 - CEC - World Congress on Computational Intelligence - Conference on Evolutionary Computing, May 2002.

Miranda, V., Fonseca, N., "EPSO - Evolutionary Particle Swarm Optimization, a New Algorithm with Applications in Power Systems", Proceedings of IEEE T&D AsiaPacific 2002 - IEEE/PES Transmission and Distribution Conference and Exhibition 2002: Asia Pacific, October 2002, vol.2, p.745-750.

Miranda, V., Fonseca, N., "New Evolutionary Particle Swarm Algorithm (EpsO) Applied to Voltage/Var Control", Proceedings of PSCC02 - 14th Power Systems Computation Conference, June 2002.

Miranda, V., Fonseca, N., "Reactive Power Dispatch with EPSO - Evolutionary Particle Swarm Optimization", Proceedings of PMAPS'2002 - International Conference on Probabilistic Methods Applied to Power Systems, September 2002.

Miranda, V., Monteiro, C., Ramirez-Rosado, I., "Negotiation Aid System For Promotion of Distributed Generation and Renewables", Proceedings of IEEE T&D AsiaPacific 2002 - IEEE/PES Transmission and Distribution Conference and Exhibition 2002: Asia Pacific, October 2002, vol.1, p.568-573.

Monteiro, C., Miranda, V., Ponce de Leão, M. T., "Validation Process for Fuzzy Spatial Load Forecasting", Proceedings of PMAPS'2002 - International Conference on Probabilistic Methods Applied to Power Systems, September 2002.

Monteiro, C., Miranda, V., Ramirez-Rosado, I., "A Negotiation Aid System for the Development of Distributed Renewable Generation", Proceedings of PSCC02 - 14th Power Systems Computation Conference, June 2002.

Nunes, E., Faria, J. A., Matos, M., "A comparative analysis of dependability assessment methodologies for markovian and non-markovian systems", Proc. ESREL 2002.

Peças Lopes, J. A., "Integration of Dispersed Generation on Distribution Network - Impact Studies", Proceedings of IEEE Winter Power Meeting, February 2002.

Peças Lopes, J. A., Hatziargyriou, N., Vasconcelos, H., Fidalgo, J. N., Karapidakis, E., "Dynamic security evaluation functions in the morecare project", Proceedings of MedPower2002 - 3rd

Mediterranean Conference and Exhibition on Power Generation, Transmission, Distribution and Energy Conversion, November 2002, vol.1, no.1.

Peças Lopes, J. A., Matos, M., Saraiva, J. T., Pereira da Silva, J. L. P., Ponce de Leão, M. T., "The Iberian Electricity Market - Merging Two Commercial Operation Models Into An Integrated Market Structure", Proceedings of MedPower2002 - 3rd Mediterranean Conference and Exhibition on Power Generation, Transmission, Distribution and Energy Conversion, November 2002.

Pereira, J., Miranda, V., Saraiva, J. T., "Fuzzy Control of State Estimation Robustness", Proceedings of PSCC02 - 14th Power Systems Computation Conference, June 2002.

Ponce de Leão, M. T., "Decision support for distribution network planning", Proceedings of PMAPS'2002 - International Conference on Probabilistic Methods Applied to Power Systems, September 2002.

Ponce de Leão, M. T., Saraiva, J. T., "An Integrated Approach To Address The Expansion Planning Problem Of Distribution Networks Under Competition", Proceedings of PSCC02 - 14th Power Systems Computation Conference, June 2002.

Ramirez-Rosado, I., Miranda, V., Fernández-Jiménez, L. A., García-Garrido, E., Monteiro, C., "Competitiveness Between Small Wind Energy Conversion Systems and Power Distribution Networks Expansions", International Conference on Modelling, Identification and Control (2002).

Ramirez-Rosado, I., Miranda, V., Zorzano-Santamaría, P. J., García-Garrido, E., Monteiro, C., "Photovoltaic Power Systems Planning in Distribution Networks Based on GIS", International Conference on Modelling, Identification and Control (2002), April 2002, vol.1, no.1.

Ramirez-Rosado, I., Monteiro, C., Miranda, V., García-Garrido, E., Fernández-Jiménez, L. A., "Electrical Power Generation Plants using Biomass Resources: A GIS Tool for the Best Geographical Location", International Conference on Modelling, Identification and Control (2002), vol.1, no.1.

Rodrigues Gomes, M. H., Saraiva, J. T., "A Simulated Annealing Approach To Deal With Congestion Problems In Transmission Networks", Proceedings of the VIII SEPOPE, May 2002.

Saraiva, J. T., Pereira da Silva, J. L. P., Ponce de Leão, M. T., "The Portuguese Tariffs For Use Of Transmission Network - Study On The Implementation Of A Marginal Based Term", Proceedings of the VIII SEPOPE, May 2002.

Schweikardt, G., Andreoni, A., Miranda, V., "Evaluation of risk bounded distribution expansion costs with a Fuzzy Dynamic Programming approach", Proceedings of PSCC02 - 14th Power Systems Computation Conference, June 2002.

Silvestre Braga, A., Saraiva, J. T., "From Short To Long Term Marginal Prices - Advantages And Drawbacks", Proceedings of MedPower2002 - 3rd Mediterranean Conference and Exhibition on Power Generation, Transmission, Distribution and Energy Conversion, November 2002.

Vasconcelos, H., Fidalgo, J. N., Peças Lopes, J. A., "A general approach for security monitoring and preventive control of networks with large wind power production", Proceedings of PSCC02 - 14th Power Systems Computation Conference, June 2002.

Viana, A., Pinho Sousa, J., Matos, M., "A new metaheuristic approach to the Unit Commitment Problem", Proceedings of PSCC02 - 14th Power Systems Computation Conference.

Outras Publicações (Other Publications)	8
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Ponce de Leão, M. T., Aguiar M. J., Disperse Generation - Barriers, Legislation and Support (in portuguese), OPET project edition, 2002

Matos, M., "Aggregation procedures in multicriteria problems using fuzzy inference" [Procedimentos de agregação em problemas multicritério usando inferência difusa], IO'2002 - 11º Congresso da APDIO.

Matos, M., "Eliciting and aggregating preferences with fuzzy inference systems", 56th MCDA, Coimbra, 2002.

Monteiro, C., Miranda, V., "Plataforma de Ajuda à Negociação para o Desenvolvimento de Geração Eólica" [Negotiation Aid Platform for the Development of Wind Generation], Actas de APE Norte/Galiza'02 - II Jornadas de Energias Renováveis Norte de Portugal - Galiza, May 2002.

Nunes, E., Faria, J. A., Matos, M., "Hierarchical approach to evaluate the reliability of complex production systems with non-Markov behavior" [Abordagem Hierárquica para avaliação da confiabilidade de sistemas de produção complexos com comportamento não-markoviano], IO'2002 - 11º Congresso da APDIO.

Viana A., Pinho Sousa, J., Matos, M., "A Local Search Based Approach to the Unit Commitment Problem" - Local Search Two day workshop - OR Society (UK): Local Search Study Group - 16-17 Abril de 2002, City University, Londres, UK.

Viana A., Pinho Sousa, J., Matos, M., "Hydro-scheduling: The Portuguese case and some ideas for the future" - Hydro scheduling in competitive electricity markets workshop - 27-28 Maio de 2002, Trondheim, Norway.

Viana, A., Pinho Sousa, J., Matos, M., "Using GRASP to address the Unit Commitment Problem" [Utilização de GRASP na resolução do problema de Unit Commitment], IO'2002 - 11º Congresso da APDIO.

3.1.2 Lista de Revistas (List of Journals)

N/A.

3.1.3 Lista de Patentes (List of Patents)

N/A.

3.1.4 Lista de Protótipos mais relevantes (List of Most Relevant Prototypes)

DMS (Distribution Management System), with new modules for contingency analysis

Owner: EFACEC

Demo place: EFACEC

Development Period: 1999-2002

MORE CARE - More advanced control advice for secure operation of isolated power systems with increased renewable energy penetration and storage

Owner: International consortium of project MORE CARE

Demo Place (June 2002): PPC (Public Power Corporation) - Crete (gr), EEM (Empresa de Electricidade da Madeira) - Madeira (pt)

Development period: 2000-2002

Loss reduction software modules

Owner: Rede Celpa (Brazil)

Demo Place: Rede Celpa

Development period: 2001-2002

3.1.5 Teses orientadas por membros da Unidade (Thesis supervised by members of the team)

Teses de Doutoramento (PhD Dissertations)

Author	Supervisor/Institution	Title	Conclusion Date
Gustavo Schweickardt	A. Andreoni (Un. San Juan, Argentina) V. Miranda	Methodology for cost allocation in the technical function of transmission for a distribution market	2002
Cláudio Monteiro	Vladimiro Miranda Teresa Ponce de Leão	Fuzzy Spatial Load Forecasting	2002
Carlos de Sousa Nascimento	E. Maldonado (FEUP) Manuel Matos	Optimization of Air-Conditioning Systems with Chill Storage	2003
Eusébio Nunes	Manuel Matos José Faria (FEUP)	Reliability evaluation of non-markovian engineering systems with uncertain parameters	2003
Ana Viana	Jorge Pinho de Sousa (INESC Porto - UESP) 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	J.T. Saraiva	Methodologies for electricity tariffs in a market environment including uncertainty	2004
António José Ferreira da Silva	J.N. Fidalgo F. A. Castro (ISEP)	Artificial intelligence techniques applied to the adaptive control of wind turbine blades	2004
Maria Helena Osório Pestana de Vasconcelos	J. A. Peças Lopes J. N. Fidalgo	Identification of Efficient Preventive Control Procedures Exploiting Security Evaluation Structures Derived using Machine Learning Techniques	2004
Adriana Castro	V. Miranda	Neural Network Applications	2004
Rogério Almeida	J. A. Peças Lopes	Evaluation of the Capability of Ancillary Services Delivery by Dispersed Generation Units using Different Technologies	2005
Naing Win Oo	V. Miranda / J. Fidalgo	Evolving agents in Energy Market Simulation	2006
Fernanda Resende	V. Miranda / J. Fidalgo	Identification of Control Procedures in Micro-Generation Islanding Conditions	2006

Teses de Mestrado (MSc Dissertations)

Author	Supervisor/Institution	Title	Conclusion Date
António Silveira Dias Pinto Alberto	J. Tomé Saraiva	Computation of the Marginal Based Remuneration Using Short Term Nodal Marginal Prices and the Monte Carlo Simulation Method	2002
Paulo Moisés	Manuel Matos	Loss allocation in distribution networks	2002
Eduardo Gouveia	Manuel Matos	Generation system expansion in a market environment	2002
Henrique Rendall Évora	Vladimiro Miranda	Fuzzy Controller to stabilize isolated networks	2002
Betina Baere Campos Neves	Vladimiro Miranda	Comparison of Probabilistic and Fuzzy models when modelling uncertainties in Power Flow Studies	2003
Angelo Mendonça	J. A. Peças Lopes	Definition of Parameters of PSS for Robust and Efficient Damping in Power Systems	2003

Author	Supervisor/Institution	Title	Conclusion Date
Nuno Gil	J. A. Peças Lopes	Definition of Criteria for the Identification of Eligibility Limits of Renewable Dispersed Generation in Isolated Grids	2003
André Ribeiro Sá	J. Tomé Saraiva	Market and system operator modeling in electricity markets	2003
Vítor Figueiredo Basto	Manuel Matos Ana Azevedo (FEUP)	Knowledge Management and Competitive Advantage	2003
Maria do Rosário Trindade	Manuel Matos Ana Azevedo (FEUP)	Development of an evaluation tool for Enterprise Web Information Support Services	2003
João Luís Pinto	Eugénio Oliveira (FEUP) Manuel Matos	Multi-agent system for the implementation of an electricity market	2003
Margarida Lima	J. A. Peças Lopes	Study of Black Start Strategies in Systems with a Large Component of Distributed Generation	2004

3.1.6 Organização de Eventos Científicos Internacionais (Organization of International Scientific Events)

Panel on Electricity Markets topics, organized with the collaboration of the IEEE PES Chapter, in 19 November 2002:

- Dr-Ing. Jorge Vasconcelos (President of the Portuguese Regulatory Authority for the Energy Sector) - “International Commerce of Electricity”.
- Prof. Gerald Sheblé (Iowa State University, on sabbatical leave in FEUP) - “New Solutions for Competitive Environment: Your Creative Thinking is Needed”.

3.1.7 Formação Avançada (Advanced Training)

Integration of Renewables and CHP, Guarantee of Supply and Ancillary Services in Electricity Markets, in the framework of the EES-UETP (Electric Energy Systems - University Enterprise Training Partnership). This course took place in Porto from November 26 to 29, 2002

Technical and Scientific Coordinator - J. Tomé Saraiva.

Electricity Market Issues, short course to EEM - Empresa de Electricidade da Madeira, Funchal, Madeira, Portugal, September 2002.

Instructors - J.A. Peças Lopes, J. Pereira da Silva, J.T. Saraiva

Participation on a technical course that took place in the National Technical University of Athens, Greece, in the scope of the 3rd Mediterranean Conference and Exhibition on Power Generation, Transmission, Distribution and Energy Conversion, MED POWER 2002. The sessions of this course were devoted to “The New Era of the Electricity Industry - Justification and General Trends”, “Regulatory Policies” and “Transmission Pricing: Tariffs Based on Embedded Methods, Incremental and Marginal Prices”.

Instructor - J. T. Saraiva

3.1.8 Lista de Projectos (Lists of Projects)

Project Name	Responsible	Type (*)	Intern. (N/E/I)	Funding Program	Starting Date	Conclusion Date (expected)
EFACEC	Jorge Pereira	D	N		1997	2002

Project Name	Responsible	Type (*)	Intern. (N/E/I)	Funding Program	Starting Date	Conclusion Date (expected)
ERSE-LR	Pereira da Silva	C	N		2000	2002
INTELECTOOL	V. Miranda	R	N	PRAXIS	2000	2002
MORE CARE	Manuel Matos	RD	E	NNE	2000	2003
OPET	M. T. Ponce de Leão	TT	E	OPET	2000	2002
Int. PRE (ENGIL)	J. Peças Lopes	C	N		2001	2002
FPOT	J. Peças Lopes	C	N		2001	2002
Rede CELPA	Manuel Matos	RDTT	I		2001	2002
ERSE-Plan	Manuel Matos	CD	N		2001	2004
Int. PRE (ENERSIS)	J. Peças Lopes	C	N		2002	2003
Consultoria MIBEL	J. Peças Lopes	C	N		2002	2002
ERSE-Coef	J. T. Saraiva	CD	N		2002	2003
ERSE-Qos	Pereira da Silva	C	N		2002	2003
EDP-CCR	Manuel Matos	CD	N		2002	2004
EDIS-PRE	J. Peças Lopes	C	N		2002	2003
RAA	J. Peças Lopes	C	N		2002	2002
COMPETE	Jorge Pereira	R	N	PRAXIS	2002	2004
EEM	J. Peças Lopes	CT	N		2002	2003
DIPTUNE	J. Peças Lopes	R	N	PRAXIS	2002	2004
ReTMU	Manuel Matos	R	N	PRAXIS	2002	2004
MORECARE-EDA	J. Peças Lopes	D	N		2002	2003
ERA-ISLA	M. T. Ponce Leão	TT	E	EESD	2002	2003

(*) Types of activity of INESC Porto: R - Research, D - Development, C - Consulting, T - Training, TT - Technology Transfer, O - Other

4 Unidade de Sistemas de Informação e Comunicação

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

4.1.1 Lista de Publicações (List of Publications)

Teses (Thesis)	0
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N/A.

Livros-Autor (Books-Author)	0
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N/A.

Livros-Editor (Books-Editor)	0
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N/A.

Capítulos em Livros (Chapter in Books)	1
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José Moreira, Cristina Ribeiro, Jean-Marc Saglio, Michel Scholl, "Issues in Spatio-temporal Database Systems: Data Models, Languages and Moving Objects", Chapter in "The encyclopedia of life support systems, UNESCO-EOLSS", ed. UNESCO, 2002 {Available online <http://www.eolss.com/>}.

Artigos em Revistas Internacionais com Revisores (International Journals with scientific referees)	0
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N/A.

Artigos em Revistas Nacionais com Revisores (National Journals with scientific referees)	0
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N/A.

Comunicações em Actas de Conferências com Revisores (Conference Proceedings with scientific referees)	2
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MariaAntónia Carravilha, Cristina Ribeiro, J. Fernando Oliveira, "How CLP can help solving Nesting Problems", Proceeding of IFORS 2002, Edimburgo, Scotland, UK, Jul 2002.

Cristina Ribeiro, Maria Antónia Carravilha, J. Fernando Oliveira, "CLP - Uma ferramenta flexível para resolução de Problemas de Posicionamento de Figuras Irregulares", Proceedings of IO2002, Guimarães, Portugal, Mar 2002.

Outras Publicações (Other Publications)	1
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J. Moreira, Cristina Ribeiro, "Representação de Objectos Móveis em Sistemas de Informação Geográfica", Proceedings do VII Encontro de Utilizadores de Informação Geográfica, Porto, Portugal, Nov 2002.

4.1.2 Lista de Revistas (List of Journals)

N/A.

4.1.3 Lista de Patentes (List of Patents)

N/A.

4.1.4 Lista de Protótipos mais relevantes (List of Most Relevant Prototypes)

SIGEM - Sistema informático que está a ser usado/testado na Cimertex.

SINUP- O SINUP produziu uma Base Geográfica contendo vários níveis de informação geográfica de base de uma forma coerente e estruturada, à qual estão já associados alguns níveis de informação temática (proveniente de estudos diversos). Este trabalho de modelização, servirá de base a outra informação que seja necessário associar e serviu concretamente de base a aplicações de carácter sectorial, das quais é exemplo a aplicação SAGIU (Sistema de Acompanhamento e Gestão de Intervenções Urbanas), também desenvolvidas no âmbito deste projecto.

Este sistema está já em exploração pela CMP.

SIIGA Metro - O projecto SIIGA Metro produziu já uma Base Geográfica à escala da Área Metropolitana do Porto, que serve de suporte a diversas actividades da empresa Metro do Porto, S.A. Esta base geográfica pode ser consultada através de um browser na intranet da empresa. No âmbito deste projecto foram ainda produzidas aplicações específicas de suporte a equipas de determinadas especialidades, como o GExp (Sistema de Gestão de Expropriações) e ainda alguns indicadores de suporte à decisão consultáveis directamente de páginas web.

IOPGIS - No ano de 2002, o IOPGIS produziu o "módulo cliente" para consulta interoperável de informação geográfica, baseado nos standards definido pelo consórcio OpenGIS.

HotSpots - No ano de 2002, o projecto Hotspots produziu várias versões de um sistema de localização para tráfego GSM. Este projecto continua ainda em evolução e é suportado em tecnologias baseadas em XML.

4.1.5 Teses orientadas por membros da Unidade (Thesis supervised by members of the team)

Teses de Doutoramento (PhD Dissertations)

Author	Supervisor/Institution	Title	Conclusion Date
Ademar Aguiar	Gabriel David U. Porto	A Minimalist Approach to Framework Documentation	2003

Teses de Mestrado orientadas por membros externos da Unidade(MSc Dissertations)

Author	Supervisor/Institution	Title	Conclusion Date
Ricardo Henriques	José Nuno Oliveira Univ. Minho	PGML-Estudo de um Subconjunto Preciso de GML 2.12	2003
Marco Amaro	Maribel Alves Santos Univ. Minho	Utilização de Standards na Extração e Visualização de Informação Geográfica	2003

4.1.6 Organização de Eventos Científicos Internacionais (Organization of International Scientific Events)

N/A.

4.1.7 Formação Avançada (Advanced Training)

N/A.

A1.1.8 Lista de Projectos (Lists of Projects)

Project Name	Responsible	Type (*)	Intern. (N/E/I)	Funding Program	Starting Date	Conclusion Date (expected)
GIS Maia	Artur Rocha	D,C	N		07/1999	12/2003
SIGA Metro	Artur Rocha	D,C	N		09/2001	09/2003
CMPorto	P. Monteiro	C	N		02/1995	12/2003
IOPGIS	Artur Rocha	R	N	FCT	07/2001	06/2003
HSJXXI	José Correia	C	N	POS	06/2002	06/2003
Hotspots	Artur Rocha	R,C	N	Adi	11/2002	07/2003
SCOPE	Rui Barros	R,D,T	N	Adi	10/2002	08/2004
DGI	A. Gaspar	C	N		07/2002	12/2002
ENT	José Correia	D	N		10/2001	12/2002
TVTEL	A. Gaspar	C	N		03/2001	On going
SICCE	A. Gaspar	D	N		01/2001	04/2002
SINUP	Artur Rocha	C,D	N		01/2002	07/2002
CMFelgueiras	Artur Rocha	C	N		10/2001	On going
Cimertex	José Correia	D	N		04/2002	12/2002
SIGEM	José Correia	D	N		01/2002	12/2002
RUP-RTD	P. Monteiro	C	E		01/2002	07/2002
Keelan	A. Gaspar	C	E		02/2002	10/2002
DGEMN	P. Monteiro	C	N		11/2002	On going
ACE	A. Gaspar	C	N		06/2002	10/2002

(*) Types of activity of INESC Porto: R - Research, D - Development, C - Consulting, T - Training, TT - Technology Transfer, O - Other

5 Unidade de Telecomunicações e Multimédia

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

5.1.1 Lista de Publicações (List of Publications)

Teses (Thesis)	6
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Almeida, José Nuno, High-speed wireless mobile LAN communications: improved error control mechanisms for real-time services (in Portuguese), Ph.D. thesis, September 2002.

Brandão, Pedro Alves, A Communications Architecture for Distributed Multimedia Systems, November 2002.

Falcão, Miguel Sousa, Semantic Characterization of Acoustic Signals (in Portuguese), MSc thesis, April 2002.

Fernandes, Gabriel Falcão, DSP implementation of a real-time analyser applied to adaptive equalization (in Portuguese), MSc thesis, June 2002.

Martins, Luís Gustavo, PCM to MIDI Transposition (in Portuguese), MSc thesis, January 2002.

Nogueira, Ana Cláudia, Efficient Storing and Search of Light Rays in Image Synthesis (in Portuguese), MSc thesis, February 2002.

Livros-Autor (Books-Author)	0
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N/A.

Livros-Editor (Books-Editor)	0
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N/A.

Capítulos em Livros (Chapter in Books)	1
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Grigore, Ovidiu, Puga, André, *Object Localization Procedure for Intratumoral Microvessel Density Estimation*, Recent Advances in Simulation, Computational Methods and Soft Computing, WSEAS, 2002, ISBN 960-8052-50-5.

Artigos em Revistas Internacionais com Revisores (International Journals with scientific referees)	1
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Silva, José Machado, Duarte, Jorge S., Matos, José Silva, *Functional in-circuit characterisation of sigma-delta modulators*, MEASUREMENT, Journal of the International Measurement Confederation IMEKO, Special Issue on ADC Modelling and Testing, vol. 32/4 pp. 257-264, November 2002.

Artigos em Revistas Nacionais com Revisores (National Journals with scientific referees)	0
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N/A.

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

16

Andrade, Teresa Andrade, Santos, Ernesto, Livaditi, Júlia, Tsakali, Maria *et al.*, *Managing multimedia content and delivering services across multiple client platforms using XML*, Workshop on Mobile Tourism Support Systems, Pisa, Italy, September 17, 2002.

Costa, António, Sousa, António A., Parracho, Hélder, Cruz, Pedro, *A New Technique for Spherical Radiance Calculation*, SIACG - 1st Ibero-American Symposium in Computer Graphics, Guimarães, Portugal, July 1-5, 2002.

Ferreira, Aníbal J., *Perceptual Coding Using Sinusoidal Modelling in the MDCT Domain*, 112th Audio Engineering Society Convention, Munich, Germany, May 10-13, 2002.

Ferreira, Aníbal J., Restivo, Francisco, *Grasping the potential of digital signal processing through real-time DSP laboratory experiments*, 10th Digital Signal Processing Workshop, 2nd Signal Processing Education Workshop, October 13-16, 2002.

Grigore, Ovidiu, Puga, André, *Some Results Regarding Applying ICA in Breast Cancer Microscopic Imagery*, RECPAD'02 - 12th Portuguese Conf. on Pattern Recognition, Aveiro, Portugal, June 27-28, 2002.

Martins, Luís G., Ferreira, Aníbal J., *PCM to MIDI Transposition*, 112th Audio Engineering Society Convention, Munich, Germany, May 10-13, 2002.

Moreira, Rui, Carrapatoso, Eurico, *FORMAware: framework of reflective components for managing architecture adaptation*, ICSE'02 - International Conference on Software Engineering / SEM'02 - 3rd International Workshop on Software Engineering and Middleware, Orlando, USA, May 19-25, 2002.

Moura, José A., Oliveira, José M., Carrapatoso, Eurico, Roque, Renato, *Service Provision & Resource Discovery in the VESPER VHE*, IEEE ICC 2002 - International Conference on Communications, N.Y., USA, April 2002.

Oliveira, José M., Roque, Renato, Carrapatoso, Eurico, Portschi, Hans, Hovanyi, Danirle, Berenyi, Imre, *Mobile Multimedia in the VESPER Virtual Home Environment*, ICME2002 - IEEE International Conference on Multimedia, Lausanne, Switzerland, August 26-29, 2002.

Ricardo, Manuel, Carneiro, Gustavo, Dias, Jaime, Ruela, José, *Support of IP QoS over UMTS Networks*, 13th IEEE International Symposium on Personal, Indoor and Mobile Radio Communications - PIMRC 2002, Lisbon, Portugal, September 15-18, 2002.

Ricardo, Manuel, Carneiro, Gustavo, Dias, Jaime, Ruela, José, *UMTS Terminal For All-IP Based Communications*, IST Mobile & Wireless Telecommunications Summit 2002, Thessaloniki, Greece, June 16-19, 2002.

Ricardo, Manuel, Soares, Rui, Dias, Jaime, Ruela, José, *IP Traffic Control on UMTS Terminal Equipment*, Workshop on Multiaccess, Mobility and Teletraffic for Wireless Communications - MMT'02, Rennes, France, June 3-5, 2002.

Roque, Renato, Oliveira, José, Carrapatoso, Eurico, Postman, Erwin, *Roaming in a Virtual Home Environment for 3G Services*, EURESCOM Summit 2002 - Powerful Networks for Profitable Services, Heidelberg, Germany, October 21-24, 2002.

Tavares, Luís F., Teixeira, Luís, Corte-Real, Luís, *Generic Framework for Video Analysis*, RECPAD'02 - 12th Portuguese Conf. on Pattern Recognition, Aveiro, Portugal, June 27-28, 2002.

Teixeira, Vítor, *Linking and transporting essence and Metadata over the production chain*, 112th Audio Engineering Society Convention: Metadata Symposium, Munich, Germany, May 10-13, 2002.

Viana, Paula, Alves, Artur P., *Media Asset Management Systems in Broadcast: Resource Management Considerations*, 144th SMPTE Technical Conference, Pasadena, CA, USA, October 23-26, 2002.

Outras Publicações (Other Publications)	2
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Carvalho, J., Terroso, I., Frazão, O., Ricardo, M., Salgado, H., *Comutador Óptico Baseado em Circuladores Ópticos e Redes de Bragg em Fibra Óptica*, Física 2002, Évora, Portugal, September 6-10, 2002, pp. 549-551.

Terroso, I., Carvalho, J., Frazão, O., Ricardo, M., Salgado, H., *Avaliação de duas Arquitecturas de OADM Baseadas em Circuladores Ópticos e Redes de Bragg em Fibra Óptica*, Física 2002, Évora, Portugal, September 6-10, 2002, pp. 545-546.

5.1.2 Lista de Revistas (List of Journals)

Journal	Number of papers
MEASUREMENT, Journal of the International Measurement Confederation IMEKO	1
Total	1

5.1.3 Lista de Patentes (List of Patents)

N/A.

5.1.4 Lista de Protótipos mais relevantes (List of Most Relevant Prototypes)

Didactic demonstrator about the sound and the sense of hearing

Demo place: INESC Porto

Developed under the project "Integrated actions about the sense of hearing" (Ciência Viva); it includes the analysis of speech signals, the hydromechanics of the cochlea, an analogue mini-audiometer and a digital audiometer.

Development Period: January 2001-August 2002

Video analyser framework

Demo place: INESC Porto

Developed under the projects CORAL - Content-aware Resource Allocation for Digital TV Services (PRAXIS) and MOUMIR. It consists of a modular and distributed software for video processing and analysis, includes modules for MPEG7 video description and supports Linux and Windows.

Development period: January 2001-December 2002

Multimedia Database

Demo place: INESC Porto

Developed under the project METAMEDIA2 (PRAXIS); this is a multimedia database with Web interface and search facility for metadata.

Development period: January 2001-December 2002.

Software for Illumination Design

Demo place: INESC Porto

Developed under the project CASSILDE - Computer Assisted Illumination Design (PRAXIS). The CASSILDE prototype is software that helps the architect or light designer to define the characteristics of light sources in real environments.

Development period: January 2000-December 2002

Terminal equipment with IP Quality of Service

Demo place: INESC Porto

Developed in the context of the ARROWS IST project. It is based on a PC running Linux and includes a set of modules (RSVP, QoS Manager, shaper and scheduler) for supporting IP QoS over UMTS and GPRS networks in mobile terminals.

Development period: May 2001-December 2002

Network Quality of Service Testbed

Demo place: INESC Porto

Developed in the context of the ARROWS IST project. The testbed allows emulating the transport of IP based services over UMTS access networks and the evaluation of Quality of Service parameters.

Development period: May 2001-December 2002

Automatic generator of functional tests for network elements

Demo place: INESC Porto

A tool developed in the context of a PhD thesis that automatically generates functional tests from formal specifications of network elements. It is oriented towards the generation of tests for an MPLS router and, in particular, its label switching capability.

Development period: January 2001-December 2002

MXF SDK

Demo place: INESC Porto

Developed in the context of the G-FORS (Generic Format for Storage) IST project and the P/PITV (Packetized Interfaces in Television Production) project, under contract with IRT/EBU. This software tool allows the manipulation of MXF (Media eXchange Format) files, now a standard, and has been made available as open source.

Development period: October 2001-September 2002

Test tool for the IEEE 1149.4 infrastructure

Demo place: INESC Porto

Developed in the context of the ABIS - Analogue BIST for Integrated Systems project (PRAXIS). This is a test tool and controller for the IEEE 1149.4 infrastructure, based on a PC on a MatLab environment.

Development period: January 2002-December 2002

5.1.5 Teses orientadas por membros da Unidade (Theses supervised by members of the team)

Teses de Doutoramento (PhD Dissertations)

Author	Supervisor/Institution	Title	Conclusion Date
José Nuno Almeida	Artur P. Alves / Sílvia A. Moreira U. Porto	High-speed wireless mobile LAN communications: improved error control mechanisms for real-time services	2002
Fernando Moreira	José Ruela U. Porto	Resource Management and Traffic Control in Integrated Services Networks	2003
Luís Teixeira	Artur P. Alves / Luís Corte Real U. Porto	Statistical multiplexing of video coding	2003
Paula Viana	Artur P. Alves U. Porto	Digital Television Archives	2003
António Araújo	J. Silva Matos U. Porto	Implementation of mathematical functions	2003
Hélio Mendonça	J. Silva Matos / J. Machado Silva U. Porto	Test methodologies and characterization of A/D converters	2003
Paulo Martins	E. Carrapatoso U. Porto	Distributed environment for distance learning	2003
Teresa Andrade	Artur P. Alves U. Porto	Video transmission over ATM networks	2004

Author	Supervisor/Institution	Title	Conclusion Date
Agostinho Castro	José Ruela U. Porto	Resource Management and Quality of Service in UMTS Networks	2004
José Oliveira	E. Carrapatoso U. Porto	Security aspects in telecommunications services	2004
Jorge Mamede	E. Carrapatoso / M. Ricardo U. Porto	Automatic Generation of Tests for IP Systems	2004
Álvaro Almeida	E. Carrapatoso U. Porto	Creation of Telecommunications Services	2004
Paula Oliveira	E. Carrapatoso U. Porto	Multimedia content search	2004
Benjamim Fonseca	E. Carrapatoso U. Porto	Video edition	2004
António Fernando Castro Coelho	F.N. Ferreira / A. Sousa U. Porto	Fast Modeling of Three-dimensional Scenes for Virtual Reality	2004
José André Moura	E. Carrapatoso U. Porto	Methodologies for Service Discovery in Virtual Home Environments	2005
Jaime dos Santos Cardoso	Luís Corte-Real U. Porto	Video segmentation using metadata	2005

Teses de Mestrado (MSc Dissertations)

Author	Supervisor/Institution	Title	Conclusion Date
Luís Gustavo Martins	Aníbal Ferreira U. Porto	PCM to MIDI Transposition	2002
Ana Cláudia Nogueira	A. A. Sousa U. Porto	Efficient Storing and Search of Light Rays in Image Synthesis	2002
Miguel Sousa Falcão	Aníbal Ferreira U. Porto	Semantic Characterization of Acoustic Signals	2002
Gabriel Falcão Fernandes	Aníbal Ferreira U. Porto	DSP implementation of a real-time analyser applied to adaptive equalization	2002
Pedro Alves Brandão	José Ruela U. Porto	A Communications Architecture for Distributed Multimedia Systems	2002
Fernando Jorge Rufino Ferreira	A. A. Sousa U. Porto	Experiments with IBR - Image Based Rendering	2003
Sérgio Crisóstomo	José Ruela U. Porto	Third generation mobile networks - specification of a switching system for the access network	2003
João Orvalho	José Ruela U. Porto	Security in distributed systems applied to digital television production environments	2003
António Pedro Ferreira	José Ruela U. Porto	VPN Support Technologies	2003
Hugo Teixeira	José Ruela U. Porto	Agent based video distribution platform over packet networks	2003
Pedro Alvarenga	Aníbal Ferreira U. Porto	Life-style factors in the hearing acuity	2003
António Rocha	E. Carrapatoso U. Porto	Business systems based on .NET technology	2003
André Silva	E. Carrapatoso U. Porto	Management of plasma displays	2003
Armando Dias	E. Carrapatoso U. Porto	Wearable computing	2003
Paulo Jorge Marques	A. A. Sousa U. Porto	Virtual reality systems applied to city guides	2003

Author	Supervisor/Institution	Title	Conclusion Date
Manuel José Brito	A. A. Sousa U. Porto	Hydrological regime of a region - GIS based Web service	2003
Ana Cristina Santos	A. A. Sousa U. Porto	Human Animation	2003
Joana Rocha	A. A. Sousa U. Porto	Segmentation of urban virtual environments for location based mobile services	2003
Jorge Meireles	José Ruela U. Porto	New access technologies for the public telecommunications network	2004
Jorge Carloto	Manuel Ricardo U. Porto	Guarantees of QoS in Mobile IPv6	2004
Luís Fiunte	Manuel Ricardo U. Porto	Development of an IP test system, Linux based, addressing Mobile IP, Wireless LAN and GPS	2004
João Pedro Gomes	Manuel Ricardo U. Porto	Measurement and Characterization of IP traffic	2004
António Silva	Manuel Ricardo U. Porto	Development of an IP test system addressing flows, tunneling and IPSec	2004
Nuno Torres	Manuel Ricardo U. Porto	Implementation of a simple UMTS GGSN network element	2004

5.1.6 Organização de Eventos Científicos Internacionais (Organization of International Scientific Events)

Issues on Radio Resource Management for 3rd Generation Systems - Workshop organised by the ARROWS project (IST programme)

Madrid, Spain
February 5, 2002
José Ruela

VECPAR'2002 - 5th International Meeting on High Performance Computing for Computational Science

Porto, Portugal
June 26-28, 2002
A. Augusto de Sousa - Chairman of the Organising Committee

RECPAD'2002 - 12th Portuguese Conference on Pattern Recognition

Aveiro, Portugal
June 27- 28, 2002
A. Augusto de Sousa - Member of the Program Committee

SIACG - 1st Ibero-American Symposium in Computer Graphics

(International Conference promoted by Portuguese, Spanish and Brazilian Computer Graphics Associations and by EUROGRAPHICS)
Guimarães, Portugal
July 1-5, 2002

A. Augusto de Sousa - Member of the Program and Organisation Committees; responsible for the tutorials

EUROGRAPHICS'2002

Saarbrücken, Germany
September 2-6, 2002
A. Augusto de Sousa - Member of the Program Committee

PDCS'2002 - 15th International Conference on Parallel and Distributed Computing Systems,
Louisville, Kentucky, USA

September 19-21, 2002
A. Augusto de Sousa - Member of the Program Committee

DCIS 2002 - XVII Conference on Design of Circuits and Integrated Systems
Santander, Spain
November 19-22, 2002
José Silva Matos - Steering Committee

5.1.7 Formação Avançada (Advanced Training)

N/A.

5.1.8 Lista de Projectos (Lists of Projects)

Project Name	Responsible	Type (*)	Intern. (N/E/I)	Funding Program	Starting Date	Conclusion Date (expected)
CASSILDE	A.A. Sousa	R	N	PRAXIS	07/1999	06/2003
ABIS	J.M. Silva	R	N	PRAXIS	09/2000	08/2003
CORAL	L. Corte-Real	R	N	PRAXIS	09/2000	04/2003
ICAVIP	A. Puga	R	N	PRAXIS	10/2000	09/2003
TELHAS	A. Ferreira	R	N	PRAXIS	10/2000	09/2003
TAPASAD	A. Ferreira	R	N	PRAXIS	10/2000	09/2003
METAMEDIA2	G. David	R	N	PRAXIS	10/2000	03/2003
AISA	A. Ferreira	R	N	Ciência Viva	01/2001	08/2002
ASSOCIATE	J.M. Silva	R	N	POCTI	06/2002	06/2004
MOUMIR	L. Corte-Real	R	E	RTN	04/2000	03/2004
G-FORS	V. Teixeira	R	E	IST	01/2000	04/2002
METAVISION	Jaime Cardoso	R	E	IST	10/2000	09/2003
ARROWS	J. Ruela	R	E	IST	01/2001	12/2002
CONTESSA	T. Andrade	R	E	IST	06/2001	05/2003
NUGGETS	J. Ruela	R	E	IST	04/2002	03/2004
ASSET	P. Viana	R	E	IST	06/2002	05/2003
GENIUS	V. Tavares	T	E	eLearning	11/2001	06/2003
ORBIT (BBC)	P. Cardoso	D	E		09/1999	03/2002
WINMAN (PTIN)	M. Ricardo	D	N		07/2000	03/2003
VESPER (PTIN)	E. Carrapatoso	D	N		07/2000	12/2002
OPIUM (PTIN)	E. Carrapatoso	D	N		06/2002	02/2004
P/PITV (IRT/EBU)	V. Teixeira	D	E		12/2001	06/2002
4VDO	P. Viana	C	N		01/2001	12/2002
MPEG4-PT	L. Corte-Real	D	N		04/2002	03/2003

(*) Types of activity of INESC Porto: R - Research, D - Development, C - Consulting, T - Training, TT - Technology Transfer, O - Other