

ANEXO A

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 (Thesis)	3
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Cardoso, João Francisco de Sousa, *Information Interpretation and Intelligent Diagnosis in Manufacturing Process Monitoring* (in Portuguese), Ph.D. Thesis, 2001.

Sousa, João Paulo Filipe, *Information Security in Industrial environments* (in Portuguese), Ph.D. Thesis, 2001.

Ferreira, Hugo, *An architecture for supporting the inter-enterprise integration, infrastructure for business process integration* (in Portuguese), MSc Thesis, 2001.

Livros-Autor (Books-Author)	1
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Azevedo, Américo Lopes de: *Novos Modelos de Negócio*, Livro da colecção Comércio Electrónico, Editor SPI - Sociedade Portuguesa de Inovação, 1ª edição ISBN 972-8589-17-4, 2001.

Livros-Editor (Books-Editor)	1
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Editor Jorge Pinho de Sousa: *O impacto da inovação tecnológica na organização das empresas e do trabalho*, Colecção Colectânea, FEUP edições, 1ª edição 2001, ISBN 972-752-044-8.

Capítulos em Livros (Chapter in Books)	1
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Sousa, Jorge Pinho de, Azevedo, Américo Lopes de: *Globalização, Inovação Tecnológica e Redes de Empresas*, in “O impacto da inovação tecnológica na organização das empresas e do trabalho”, FEUP edições, Porto 2001.

Artigos em Revistas Internacionais com Revisores (International Journals with scientific referees)	2
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Correia, M. Helena, Oliveira, José F., Ferreira, J. Soeiro: *A new upper bound for the cylinder packing problem*, International Transactions in Operational Reserach, Vol. 8, nº 5, 2001.

Correia, M. Helena, Oliveira, J. Fernando, Ferreira, J. Soeiro: *Cylinder Packing by Simulated Annealing*, Pesquisa Operacional (Brasil), vol. 20-2, pp. 269-285, 2001.

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)
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14

Ribeiro, Lígia Maria, Carravilla, Maria Antónia, David, Gabriel, *How the FEUP Removal to the New Premises Was Facilitated by the Internal Information System*, EUNIS2001 Conference, Berlim, March 2001.

Ferreira, J. J. Pinto, *The Extended Enterprise Integration: New Approaches to Workflow Enactment*, CARs&FOF'2001 17th ISPE/IFAC International Conference on CAD/CAM, Robotics and Factories of the Future, Durban, South Africa, 10, 11 e 12 Julho 2001.

Ferreira, Hugo, Ferreira, J. J. Pinto, *Integration Infrastructures: Bridging the Gap to the Extended Enterprise*, CARs&FOF'2001 17th ISPE/IFAC International Conference on CAD/CAM, Robotics and Factories of the Future, Durban, South Africa, 10, 11 e 12 Julho 2001.

Ferreira, J. J. Pinto, *The Workflow Enabled Extended Enterprise*, International Conference on Industrial Engineering and Production Management, QUEBEC CITY, Canada 20 - 22 Agosto 2001.

Ferreira, Diogo, Ferreira, J. J. Pinto, *Designing Workflow-enabled Business-to-business Infrastructures*, 7 th International Conference on Concurrent Enterprising, ICE2001, Bremen, Germany 27 - 29 Junho 2001 (ISBN 0 85358 098 7).

Sousa, Jorge P., Soares, António L., Toscano, César, Azevedo, Américo L., *Architectures and Methods for Information Systems Promoting Co-operation and Innovative Business Processes in Enterprise Networks*, eBeW 2001 - eBusiness and eWork Conference, 17-19 October 2001, Venice, Italy.

Azevedo, Américo L., Toscano, César, Bastos, João, *An Intelligent Agent-based Order Planning for Dynamic Networked Enterprises*, ICEIS 2001 - International Conference on Enterprise Information Systems, Setúbal, Portugal 7-10 July, 2001.

Rodrigues, Ana Maria, Ferreira, José Soeiro, *Solving the Rural Postman Problem by Memetic Algorithms*, Proceedings of MIC - Metaheuristics International Conference, Porto, Portugal, July 16-20, 2001.

Gomes, A. Miguel, Oliveira, José F., *A GRASP approach to the nesting problem*, MIC2001 - 4th Metaheuristics International Conference, July 16-20, Porto, Portugal, 2001.

Viana, Ana, Sousa, Jorge P., Matos, Manuel A., *Influence of Solution Coding on Solving the Unit Commitment Problem with Metaheuristics*, MIC 2001 - 4th Metaheuristics International Conference, Porto, Jul. 2001.

Claro, João, Sousa, Jorge P., *An Object-Oriented Framework for Multiobjective Local Search*, MIC 2001 - 4th Metaheuristics International Conference, Porto, Jul. 2001.

Viana, Ana, Sousa, J. Pinho de, Matos, Manuel A., *Simulated Annealing for the Unit Commitment Problem*, 2001 IEEE Porto PowerTech, Porto, Setembro 2001.

Soares, António Lucas, Toscano, César Augusto, Sousa, Jorge Pinho de, *A social actors network approach for the design of networked and virtual enterprises*, PROLAMAT 2001, Budapeste, November 2001.

Carneiro, Luis, Alves, António, Carneiro, Diana, Held, Hans, Wolf, Christian, Macey, Jim, San Martim, Fernando, Ballester, Frederic, *Methodology for the Implementation of e-Business solutions in SME's*, eBeW 2001 - eBusiness and eWork Conference, 17-19 October 2001, Venice, Italy.

Outras Publicações (Other Publications)
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4

Marques, Juan Aires, Ferreira, José Soeiro, *A Simulation-based Scheduler for the Footwear Industry*, EURO 2001 Conference, Rotterdam, The Netherlands, July 9-11, 2001, FEUP/INESC Porto, 2001.

Rodrigues, Ana Maria, Ferreira, José Soeiro, *Solving the Rural Postman Problem by Memetic Algorithms*, Optimization 2001, Aveiro, Portugal, July 23-26, 2001.

Ferreira, J. Soeiro, *Aproveitamento de Materiais em Processos Industriais de Corte*, Invited presentation - XXXIII Simpósio Brasileiro de Pesquisa Operacional, Campos de Jordão, Nov. 2001, Brasil, 2001.

J. Soeiro Ferreira: "Industrial Applications of Operations Research and the Environment", Fórum no XXXIII Simpósio Brasileiro de Pesquisa Operacional, Campos de Jordão, Nov. 2001, Brasil, 2001.

A1.1.2 Lista de Revistas (List of Journals)

Journal	Number of papers
International Transactions in Operational Reserach	1
Pesquisa Operacional (Brasil)	1

A1.1.3 Lista de Patentes (List of Patents)

N/A

A1.1.4 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

Order management and planning for Engineer to Order products

Developed under the ICPME DISPLAN project.

Demo Place: FREZITE and DURIT

Development Period: Sep-1998 to Jun-2001

An integrated system for internal logistics, team work management and integration with legacy systems for the metalworking industry

Developed under the ICPME AUTOFLOW project.

Demo Place: FREZITE

Development Period: Oct-1999 to Dec-2001

A simulation based system for production lines scheduling and balancing

Developed under the ICPME SABE project.

Demo Place: JEFAR

Development Period: Mar-1998 to Jun-2001

A system for tele-maintenance of critical production equipments was finalized

Developed under the ICPME STEPE project.

Demo Place: LIREL

Development Period: Jul-1999 to Dec-2001

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

Teses de Doutoramento (PhD Dissertations)

Author	Supervisor/Institution	Title	Conclusion Date
João Francisco de Sousa Cardoso	Manuel Matos /Luís Borges de Almeida/ INESC Porto-FEUP, IST	Interpretação de Informação e Diagnóstico Inteligentes na Monitorização de Processos de Fabrico	2001
João Paulo Filipe de Sousa	José Manuel Mendonça; FEUP	Segurança de Informação em Ambientes Industriais	2001
Maria Helena Correia	José Soeiro Ferreira/ INESC Porto-FEUP	Methodologies for the decision Support in production planning	(2002)
António Miguel Gomes	José Fernando Oliveira/ INESC Porto-FEUP	Raw material optimization in irregular cutting processes	(2003)
João Augusto de Sousa Bastos	Jorge Pinho de Sousa/ INESC Porto-FEUP	Production Planning of distributed companies	(2002)
José Paulo Santos	João José Pinto Ferreira/ INESC Porto-FEUP	Advanced solutions for industrial information systems and business processes reengineering	2001
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	(2002)
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	(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)
António Machado	João José Pinto Ferreira/ INESC Porto-FEUP	Construction of the Analysis Model of the Leixões Port (in Portuguese)	2001
Álvaro Nunes	José Manuel Mendonça, João José Pinto Ferreira/ INESC Porto-FEUP	Electronic Business and digital cooperation networks: Technology and organizational redesign (in Portuguese)	2001
Hugo Ferreira	João José Pinto Ferreira/ INESC Porto-FEUP	An Integration Architecture for Inter-enterprise Integration (in Portuguese)	2001
Juan Marques	José Soeiro Ferreira/ INESC Porto-FEUP	Production Lines Balancing (in Portuguese)	(2002)
Ana Maria Rodrigues	José Soeiro Ferreira/ INESC Porto-FEUP	Application of new Meta-heuristics to the Rural Postmen problem (in Portuguese)	(2002)

Author	Supervisor/Institution	Title	Conclusion Date
Francisco Barbedo	António Lucas Soares/ INESC Porto-FEUP	Technical and Organizational requirements of archive networks using a social actors networks approach (in Portuguese)	(2002)
João Vieira	António Lucas Soares/ INESC Porto-FEUP	Information society in city libraries: New services for the citizens (in Portuguese)	(2002)
João Pinho	António Lucas Soares/ INESC Porto-FEUP	Implementation of information systems supporting e-business in SME's (in Portuguese)	(2002)
Fernando Branco	António Lucas Soares/ INESC Porto-FEUP	Management trends and information systems trends in networks of enterprises and virtual enterprises (in Portuguese)	(2002)

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

MIC' 2001 - 4th Metaheuristics International Conference

Porto, Portugal

July 2001

Jorge Pinho de Sousa - Chairman

Ana Viana - Organizing Committee

A. Miguel Gomes - Organizing Committee

Helena Correia - Organizing Committee

João Claro - Organizing Committee

José F. Oliveira - Organizing Committee and Program Committee

José S. Ferreira - Organizing Committee and Program Committee

M. Antónia Carravilla - Organizing Committee

A1.1.7 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)
Consultoria	António Correia Alves	C	N		On going	On going
EFACEC	Luis Maia Carneiro	D	N		Jan-01	Jun-01
F.Ramada	Jorge Pinho de Sousa	D	N		Jan-01	Jun-02
Lirel	Paulo Sá Marques	D	N		Jul-94	Automatic renewal
OR	José Soeiro Ferreira	D	N		On going	On going

Project Name	Responsible	Type (*)	Intern. (N/E/I)	Funding Program	Starting Date	Conclusion Date (expected)
PROFIT	Paula Silva	D	N		On going	On going
EXPIDE	Jorge Pinho de Sousa	O	E	IST	Sep-2000	Sep-2003
SONAFI	Paula Silva	O	N		Dez-99	Automatic renewal
Think Creative	Jorge Pinho de Sousa	O	E	IST	Sep-2001	Sep-2004
Autoflow	Luis Guardão	R	N	Iniciativa PME	Oct-1999	Dec-2001
CIC-NET	Luis Guardão	R	N	Iniciativa PME	Jan-00	Jun-01
CLP Nest	Maria Antónia Carravilha	R	N	Praxis de I&D	Jul-00	Sep-2002
Cooperate	Jorge Pinho de Sousa	R	E	IST	Jan-99	Apr-2002
Damascos	João José P. Ferreira	R	E	IST	Jan-99	Mar-02
DIESAVE	Luis Guardão	R	N	Iniciativa PME	Sep-1999	Jun-01
FREZITE (Displan)	Luís Guardão	R	N	Iniciativa PME	Set-98	Jun-01
IED	Jorge Pinho de Sousa	R	N	Iniciativa PME	Apr-1999	Sep-2001
MEDIAT-SME	Luis Carneiro	R	E	IST	Jan-99	Jun-02
MULTICOMBO	J. Soeiro Ferreira	R	N	Praxis de I&D	Out-98	Out-01
PRONEGI	João J. Pinto Ferreira	R	N	ICPME	Jan-99	Jun-01
QUALFIT	João Cardoso	R	N	Praxis em Consórcio	Dez-97	Jun-01
SABE	Luís Guardão	R	N	Iniciativa PME	Mar-98	Jun-01
SETI	J. Soeiro Ferreira	R	N	Praxis de I&D	Oct-2000	Apr-2002
SICAPE	Luís Guardão	R	N	Iniciativa PME	Mar-98	Jun-01
SMART SME	António Correia Alves	R	E	IST	Set-00	Jun-02
STEPE	Paula Silva	R	N	Iniciativa PME	Jul-99	Dec-2001
SUPRA	António Correia Alves	R	N	Iniciativa PME	Dez-98	Jun-01
X-PLAN	João Claro	R	N	Iniciativa PME	Dec-1999	Dec-2001
IRC Portugal	António Correia Alves	TT	E	Innovation	Mar-00	Mar-02

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

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 (Thesis)	3
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Madureira, Miguel Ângelo, *Study of Feedback Induced Non-linearities in Laser Diodes for Optical Communications*, MSc Thesis, 2001

Jorge, Pedro Manuel da Silva, *Interferometric Detection of High Electrical Currents*, MSc Thesis, 2001

Gomes, Luís Armando, *High Power Fibre Lasers*, MSc Thesis, 2001

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)	10
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Fernandes, J. R., Sá, F. A., Santos, José Luís and Joanni, Ednan, *Optical fiber interferometer for measuring d33 coefficient of piezoelectric thin films with compensation of substrate bending*, accepted for publication in Review of Scientific Instruments, 2001.

Herederó, R. H., Martín, S., Fernandez de Caleyá, R., Ribeiro, A. B. Lobo, Araújo, F. M., Ferreira, L. A., Santos, José Luís and Guerrero, H., *Study of the Optical Properties of Photopolymer Fabry-Pérot Microcavities by a Dual-wavelength Fibre Optic Architecture*, submitted to Journal Measurement Science and Technology, 2001.

Jorge, P. A. S., Caldas, Paulo, Ferreira, L. A., Ribeiro, António Lobo, Santos, José Luís, Farahi, F., *Electrical Current Metering with a Dual Interferometric Configuration and Serrrodyne Signal Processing*, accepted to publication in Journal of Measurement Science and Technology, 2001.

Araújo, F. M., Ferreira, L. A., Santos, José Luís, *Simultaneous Determination of Curvature, Plane of Curvature and Temperature Using a Minutuarized Sensing Head Based on Fiber Bragg Gratings*, accepted to publication in Applied Optics, 2001.

Rego, Gaspar,, Okhotnikov, Oleg, Dianov, E. M., Sulimov, V. B., *High Temperature Stability of Long Period Gratings Produced Using an Electric Arc*, Journal of Lightwave Technology, 19, 1574-1579, 2001

Dahlem, Marcus, Santos, José Luís, Ferreira, L. A. and Araújo, F. M., *Passive Interrogation of Low-Finesse Fabry-Pérot Cavities Using Fiber Bragg Gratings*, IEEE Photonics Technology Letters, 13, 990-992, 2001.

André, P.S., Pinto, J. L., Abe, I., Kalinowski, H. J., Frazão, O., Araújo, F. M., *Fibre Bragg Grating for Telecommunications Applications: Tuneable Thermally Stress Enhanced OADM*, Journal of Microwaves and Optoelectronics, 2, 32, 2001.

Araújo, F. M., Ferreira, L. A., Santos, J. L. and Farahi, F., *Temperature and Strain Insensitive Bend Measurements with D-Type Fibre Bragg Gratings*, Journal Measurement Science and Technology, 12, 829, 2001.

Jauregui, C., Araújo, F. M., Ferreira, L. A., Santos, José Luís, López-Higuera, J. M., *Interrogation of Low-Finesse Fabry-Pérot Cavities Based on Modulation of the Transfer Function of a Wavelength Division Multiplexer*, Journal of Lightwave Technology, 19, 673, 2001.

Abad, S., Araújo, F. M., Ferreira, L. A., Santos, José Luís, López-Amo, M., *Multiplexing of Fibre Optic Intensity Sensors Using Fused Biconical Wavelength Selective Couplers*, Electronics Letters, 37, 490, 2001.

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

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N/A

Comunicações em Actas de Conferências com Revisores (Conference Proceedings with scientific referees)
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17

Agathopoulos, S., Correia, R.N., Joanni, Ednan, Fernandes, J. R., *Interactions at Zirconia-Au-Ti Interfaces at High Temperatures*, 7th Conference&Exhibition of the European Ceramic Society, 9-13 September, Brugge, Belgium, 2001.

Baptista, J. M., Santos, José Luís, Lage, A. S., *Measurement of Refractive Index in Oils Using a Self-Referenced Fiber Optic Intensity Sensor*, LEOS 2001, 12-15 November, San Diego, USA, 2001.

Costa, A., Alves, A., O' Reilly, J., *Investigation of Cross-Phase Modulation in WDM Systems with AM-PSK Modulation Format*, submitted to ECOC 2001, 30 September - 5 October, Amsterdam, Holland, 2001.

Baptista, J. M., Frazão, Orlando, Felix, C., Ferreira, L. A., Araújo, F. M., Santos, José Luís, Lage, A., Figueiras, J. A., *Novel Self-Referenced Microbend Optical Fibre Sensor as a Load Cell for Structural Monitoring*, CC2001-Composites in Construction, 10-12 October, Porto, Portugal, 2001.

Frazão, O., Correia, N., Araújo, F. M., Novo, C., Costa, A., Vieira, A., Marques, A. T., *Smart Composite for Monitoring of Structure*, CCC2001-Composites in Construction, 10-12 October, Porto, Portugal, 2001.

Caldas, Paulo, Jorge, P. A. S., Ferreira, L. A., Ribeiro, A. B., Santos, José Luís, *Twin All-Optical Magnetic Probe for Current Metering and Relaying Applications*, Porto Power Tech'2001, 10-13 September, Porto, Portugal, 2001.

Ribeiro, A. B., Motos, A. G., Salcedo, José Ribera, *Optoelectronic Current Transformer Based on Remotely Powered GMR Solid-State Device*, Porto Power Tech'2001, 10-13 September, Porto, Portugal, 2001.

Frazão, Orlando, Rego, Gaspar, Lima. M., Teixeira, A., Araújo, F. M., André, P., Rocha, J. F., Salgado, H. M., *EDFA Gain Flattening Using Long-Period Fibre Gratings Based on the Electric Arc Technique*, London Communications Symposium 2001, 10-11 September, London, UK, 2001.

Rego, Gaspar, Frazão, Orlando, Araújo, F. M., Soulimov, Vladimir, *Long-Period Fiber Grating Produced Using the Electrical Arc Technique for DWDM Communication Systems*, The 5th World Multiconference on Systemics, Cybernetics and Informatics, 22-25 July, Orlando, USA, 2001.

Rego, Gaspar, Okhotnikov, O., Dianov, E., Soulimov V., *Long-period Fiber Gratings Stable at Very High Temperatures*, Bragg Gratings, Photosensitivity, and Poling in Glass Waveguides (BGPP 2001), 4-6 July, Stresa, Italy, 2001.

Teixeira, A., Lima, M., Frazão, O., Rocha, J. Ferreira, *Fibre Bragg Grating for Telecommunications*, 3rd International Conference on Transparent Optical Networks ICTON 2001, 18 - 21 June, Cracaw, Poland, 2001.

Abe, I., Frazão, Orlando, André, P. S., Cardozo da Silva, J. C., Kalinowski, H. J., Fabris, J. L., Pinto, J. L., Araújo, F. M. *Fibre Bragg Gratings in Optical Communications*, ConfTele2001, 23-24 April, Figueira da Foz, Portugal, 2001.

Costa, Abel, Pimenta Alves, Artur, O'Reilly, J., *Evaluation of Optical Fibre Transmission Systems Based on Optical AM-PSK Signalling*, "ConfTele2001, 23-24 April, Figueira da Foz, Portugal, 2001.

Frazão, Orlando, Madureira, M., Salgado, H. M., *Two-Section MQW Semiconductor Laser Modelling*, ConfTele2001, 23-24 April, Figueira da Foz, Portugal, 2001.

Novo, C., Costa, A. N., Vieira, A., Correia, N., Marques, A., Frazão, Orlando, Araújo, F. M., Dias, I., *Flow Front Monitoring in RTM Process Using Fibre Bragg Grating Sensors*, SAMPE Europe, 27-29 March, Paris, França, 2001.

Araújo, F. M., Ferreira, L. A., *Simultaneous determination of curvature, plane of curvature and temperature using a miniaturized sensing head based on fiber Bragg gratings*, Smart Structures and Materials VIII - Sensory Phenomena, 4 - 8 March, Newport Beach, USA, 2001.

Frazão, Orlando, Araújo, F. M., Novo, C., Costa, A. N., Torres, A., *Roseta Extensométrica Óptica Rectangular*, Encontro Nacional da APAET, Bragança, 8-10 Novembro 2001.

Outras Publicações (Other Publications)
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N/A

A2.1.2 Lista de Revistas (List of Journals)

Journal	Number of papers
IEEE Photonics Technology Letters	1
Journal of Microwaves and Optoelectronics	1
Review of Scientific Instruments	1
Journal of measurement Science and Technology	3
Electronics Letters	1
Applied Optics	1
Journal of Lightwave Technology	2

A2.1.3 Lista de Patentes (List of Patents)

N/A

A2.1.4 Lista de Protótipos (List of Prototypes)

Laser pointing system controlled by a multimedia system for historical mockups

GSM enabled sport coaching and monitoring activity system

Optical fibre sensing heads for civil infrastructure applications

A2.1.5 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	António Pereira Leite (FCUP) / Ednan Joanni (INESC PORTO)	Thin Film Microfabrication	(2002)
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 (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		Optical fibre lasers	(2004)

Teses de Mestrado (MSc Dissertations)

Author	Supervisor/Institution	Title	Conclusion Date
Miguel Ângelo Madureira	Henrique Salgado/José Luís Santos (INESC PORTO)	Study of Feedback Induced Non-linearities in Laser Diodes for Optical Communications	2001
Paulo Sergio de Amorim Caldas	José Luís Santos (INESC PORTO)	Oxygen optical fibre sensors	(2002)
Dionísio Cerqueira Alves Pereira	José Luís Santos (INESC PORTO)	Salinity and civil engineering optical fibre sensors	(2002)
Rui Pedro da Silva Morais	José Luís Santos (INESC PORTO)	Optical fibre phase modulators	(2002)

Author	Supervisor/Institution	Title	Conclusion Date
Pedro Manuel da Silva Jorge	José Luís Santos/Luís Alberto Ferreira (INESC PORTO)	Interferometric Detection of High Electrical Currents	2001
Luís Armando Gomes	João Sousa/Francisco Araújo (INESC PORTO)	High Power Fibre Lasers	2001

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

N/A

A2.1.7 Formação Avançada (Advanced Training)

N/A

A2.1.8 Lista de Projectos (List of Projects)

Project Name	Responsible	Type (*)	Intern. (N/E/I)	Funding Program	Starting Date	Conclusion Date (expected)
Maquete	Alberto Maia	D	N		12-12-00	31-12-01
Remo	Alberto Maia	D	N		1-3-01	31-12-01
BARCO	Francisco Araújo	R	N	FUP	1-7-01	30-6-02
BIOSE	Ednan Joanni	R	N	FCT	2-1-00	31-12-02
CDMA	Henrique Salgado	R	N	FUP	1-7-01	30-6-02
CIVIL	Ireneu Dias	R	N	FCT	1-1-01	31-12-02
Compósitos	Ireneu Dias	R	N	FCT	1-2-99	31-1-01
DWIDCOM	Henrique Salgado	R	N	FCT	1-1-01	31-12-02
Electrodo	Ednan Joanni	R	N	FCT	1-3-99	2001
ESMORIZ	Henrique Salgado	R	N	FCT	1-3-01	28-2-04
FONTE	Henrique Salgado	R	N	FUP	1-7-01	30-6-03
PHOTO	Paulo Marques	R	N	FCT	1-11-00	31-10-03
PROTEU	José Luís Santos	R	N	FCT	1-10-00	31-9-03
Q	José Luís Santos	R	N	FUP	1-7-01	30-6-03
RUMO	Francisco Pereira	R	N	FUP	1-7-01	30-6-03
SAL	Orlando Frazão	R	N	FUP	1-7-01	30-6-03
SOM	João Ferreira	R	N	FUP	1-7-01	30-6-03
WIND	Henrique Salgado	R	N	FCT	1-4-00	30-4-02
FOS-EN	José Luís Santos	T	E	EU	1-11-99	2002
ODUPE	Paulo Marques	T	E	EU	1-10-00	30-9-03

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

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 (Thesis)	2
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Pereira, J., "A State Estimation Approach for Distribution Networks Considering Uncertainties and Switching", PhD. Thesis, FEUP, July 2001.

Marques, Maria Celeste Pereira, "Análise do Comportamento Dinâmico de Redes Industriais com Co-geração", MSc Thesis, FEUP, 2001

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

Livros-Editor (Books-Editor)	1
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Saraiva, J. T., Matos, M. A. (ed.), Proceedings of 2001 IEEE Porto Power Tech , ISBN 0-7803-7139-9, IEEE Catalogue Number 01EX502, Porto, Portugal, September 2001.

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

Artigos em Revistas Internacionais com Revisores (International Journals with scientific referees)	2
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Faria J.A., Matos M.A., "An analytical methodology for the dependability evaluation of non-Markovian systems with multiple components", RELIAB ENG SYST SAFE 74 (2): 193-210 NOV 2001

Saraiva JT, de Leao MTP, Discussion of "Integration of price cap and yardstick competition schemes in electrical distribution regulation", IEEE T POWER SYST 16 (4): 940-940 NOV 2001

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)	24
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Certo, J., Saraiva, J. T., Evaluation of Target Prices for Transmission Congestion Contracts Using a Monte Carlo Accelerated Approach, in Proceedings of the IEEE 2001 Porto Power Tech, PPT 2001, Porto, Portugal, 10-13 September 2001.

Fernandez, L. A., Monteiro, C., Ramirez-Rosado, I. R., Miranda, V., "Applications Of Geographical Information Systems For The Optimal Locations Of Wind Electric Energy

Generators", MIC'2001 - Modelling, Identification and Control, Innsbruck, Austria, February 2001.

Fidalgo, J. N., Feature Selection Based on ANN Sensitivity Analysis - a Practical Study, 2001 International Conference on Neural Networks and Applications, WSES2001, Tenerife, Feb pp. 206-211, Feb 2001

Fidalgo, J. N., Peças Lopes, J. A., ANN Sensitivity Analysis for Identification of Relevant Features in Security Assessment, Proc. 2001 IEEE Porto Power Tech Conference, Porto, September 2001.

Gomes, M. H., Saraiva, J. T., Congestion Management by Maximizing the Overall Satisfaction Degree of all Participants in the Market, in Proceedings of the IEEE 2001 Porto Power Tech, PPT 2001, Porto, Portugal, 10-13 September 2001.

Hatziaargyriou, N., Contaxis, G., Matos, M., Peças Lopes, et.al., "MORE CARE" Advice for Secure Operation of Isolated Power Systems with Increased Renewable Energy Penetration and Storage, Proc. EWEC' 2001 Conference, June 2001.

Hatziaargyriou, N., G. Contaxis, M. Matos, J. Peças Lopes, M. H. Vasconcelos, G. Kariniotakis, D Meyer, J. Halliday, G. Dutton, P. Dokopoulos, A. Bakirtzis, J. Stefanakis, A. Gigantidou, Philip O'Donnell, Damian McCoy, J. M. Fernandes, J.M. Cotrim, A. P. Figueira, "Preliminary Results From The More Advanced Control Advice Project For Secure Operation Of Isolated Power Systems With Increased Renewable Energy Penetration And Storage - More Care", IEEE Power Tech, vol. 4, paper 317, September 2001, Porto - Portugal.

Miranda, V., Monteiro, C., Konjic, T., "Spatial Offer and demand forecasting with Neuro-Fuzzy Inference Systems in GIS", Proceedings of WM2001 - IEEE PES Winter Meeting, (IEEE CD-ROM 01CH37194C), January, 2001

Miranda, V., Monteiro, C., Konjic, T., et al., "Implementation of a Neuro-Fuzzy system in spatial load forecasting", Proceedings of BPC2001 - 1st Balkan Power Conference, 2001

Miranda, Vladimiro, Oo, Naing Win, Fidalgo, J. N., Experimenting in the Optimal Capacitor Placement and Control Problem with Hybrid Mathematical - Genetic Algorithms, Intelligent Systems Applications to Power, ISAP2001 Conference, Budapest, Hungary, June, 2001

Monteiro C., Miranda, V., Ponce de Leão, M.T., "Merging judgmental and statistical information to build Spatial Load Forecasting knowledge base", ISAP'2001 - Intelligent System Application to Power Systems, Budapest, Hungary, June, 2001

Monteiro, C., Miranda V., Ramírez-Rosado I. J., Morais, C., García-Garrido, E., Mendoza-Villena, M., et. al., " Spatial Decision Support System for Site Permitting of Distributed Generation Facilities", Proceedings IEEE Porto PowerTech'2001, vol.1, September, 2001.

Monteiro, C., Miranda, Vladimiro, Ponce de Leão, Teresa, "Merging Judgmental and Statistical Information to Build Spatial Load Forecasting System Knowledge Bases", ISAP'2001, International Conference on Intelligent System Application To Power Systems, 18-21 June, 2001, Budapest, Hungary, 2001

Monteiro, C., Ramírez-Rosado, I. J., Miranda, V., Sousa, M., Lara-Santillan, P., Zorzano-Alba, P., et. al., " Spatial Analysis Tool to evaluate Spatial Incremental Costs on Electric Distribution", Proceedings of IEEE Porto PowerTech'2001, vol.1, September, 2001.

Oo, Naing Win, Fidalgo, J. N., Peças Lopes, J. A., Planning System Robustness Regarding Voltage Stability Using of Genetic Algorithm Based Approach, Porto Power Tech 2001, Porto, Portugal, Sept 2001

Pereira, J., Saraiva, J. T., Miranda, V., Simões Costa, A., Lourenço, E. M., Clements, K. A., "Comparison of Approaches to Identify Topology Errors in the Scope of State Estimation Studies", Proceedings of 2001 IEEE Porto PowerTech, Vol. 3, Porto, Portugal, September 2001.

Ponce de Leão, M.T., Morais, A., Sousa, M., "Demand Side Management Using Fuzzy Inference", *Proceedings of FUZZ-IEEE'01, Melbourne, Australia* 2001

Quelhas, A. M., Ni, M., McCalley, J. D., Schlumberger, Y., Peças Lopes, J. A., Risk Management through Unit Commitment, Proc. RIMAPS'2001 Conference, Porto, September, 2001.

Resende, F. O., Peças Lopes, J. A., Optimization of the Internal Electric Network Configuration of Wind Parks Using Evolutionary Programming Techniques, Proc. ISAP'2001 Conference, Budapest, June, 2001.

Saraiva, J. T., Silva, J. L, Ponce De Leão, M. T., Evaluation of the Marginal Based Remuneration - A Case Study Using the Portuguese Transmission Company, in Proceedings of the IEEE 2001 Porto Power Tech, PPT 2001, Porto, Portugal, 10-13 September 2001.

Silva, J. L, Saraiva, J. T., Ponce de Leão, M. T., Use of Power Flow Based Embedded Methods to Set Tariffs for Use of Networks - A Case Study Using the Portuguese Transmission Company, in Proceedings of the IEEE 2001 Porto Power Tech, PPT 2001, Porto, Portugal, 10-13 September 2001.

Silva, M. P., Saraiva, J. T., Sousa, A. V., PREORD - A Prototype of an Object Oriented WEB Browser Based DMS System, in Proceedings of the IEEE 2001 Porto Power Tech, PPT 2001, Porto, Portugal, 10-13 September 2001.

Viana, A., Sousa, J.P., Matos, M.A. - "Simulated Annealing for the Unit Commitment Problem" - 2001 IEEE Porto PowerTech - 10-13 Setembro de 2001, Porto, Portugal.

Zorzano, P., Monteiro, C., Ramirez-Rosado, I. R., Miranda, V., "A Geographical Information System applied to the Optimization of the Photovoltaic Power Resources Selection", MIC'2001 - Modeling, Identification and Control, Innsbruck, Austria, February 2001.

Outras Publicações (Other Publications)	6
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Gomes, M. H., Saraiva, J. T., Technical Validation of Buying/Selling Electricity Contracts, (in portuguese), in Proceedings of 7ª Jornadas Hispano-Lusas de Ingenieria Electrica, Madrid, 4-6 July 2001.

Matos, M. A., Ponce Leão, M. T., Saraiva, J. T., Fidalgo, J. N., Miranda, V., Proença, L. M., Pinto, J. L., Peças Lopes, J., Ferreira, J. R., Pereira, J., "Meta-heuristics Applied to Power Systems", Proceedings of MIC'2001 - 4th Metaheuristics International Conference, Vol. 2, pp. 483-488, Porto, Portugal, July 2001.

Peças Lopes, J. A., "Impact of the integration of special production in the public electric power system" (in portuguese), Actas do Encontro Nacional do Colégio de Eng. Electrotécnica da Ordem dos Engenheiros, Porto, April 2001.

Resende F., Lopes, J.A, "Optimização de Configurações das Redes Eléctricas de Parques Eólicos", Actas das Jornadas Hispano-Lusas 2001, Madrid, Junho de 2001.

Teixeira, C. J. Coelho, Peças Lopes, J. A., Dias Pinto, J. A., "Study and analysis of overvoltages in wind parks following the disconnection of interconnection switchgear" (in portuguese), Actas das Jornadas Hispano-Lusas 2001, Madrid, June, 2001.

Viana, A., Sousa, J.P., Matos, M.A. - "Influence of solution coding on solving the Unit Commitment Problem with Metaheuristics" - MIC'2001 - IV Metaheuristics International Conference - 16-20 Julho de 2001, Porto, Portugal.

A3.1.2 Lista de Revistas (List of Journals)

Journal	Number of papers
Reliability Engineering and System Safety	1
IEEE Transactions on Power Systems	1

A3.1.3 Lista de Patentes (List of Patents)

N/A

A3.1.4 Lista de Protótipos (List of Prototypes)

DMS (Distribution Management System), with new modules

Owner: EFACEC

Demo place: EFACEC

Development Period: 1999-2001

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: 2000-2001

ENERGIS

GIS based platform for decision and negotiation support in energy planning of the autonomous region of La Rioja (Spain).

Demo: University of La Rioja

Development Period: 1999-2001

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

Teses de Doutoramento (PhD Dissertations)

Author	Supervisor/Institution	Title	Conclusion Date
João Cardoso	M.A. Matos J.N. Fidalgo	Automatic Classification Using Artificial Neural Networks	2001
F. M. Domingues Fernandes	J. A. Peças Lopes	Contributions for the real time evaluation of voltage stability in power systems	2001
Jorge Pereira	V. Miranda J.T. Saraiva	State estimation in electric power distribution networks	2001
António Silvestre Dias Braga	J.T. Saraiva	Methodologies for electricity tariffs in a market environment including uncertainty	(2002)
Cláudio Monteiro	V. Miranda M. T. Ponce de Leão	Risk Analysis in Distribution Systems Planning with Renewable Dispersed Generation	(2002)
Carlos de Sousa Nascimento	E. Maldonado (FEUP) M.A. Matos	Optimization of Air-Conditioning Systems with Chill Storage	(2003)
Ana Viana	Jorge Pinho de Sousa (INESC P - UESP) Manuel Matos	Multi-objective heuristics for the project and management of production, transportation and delivery of goods and services in market deregulation processes	(2003)
Eusébio Nunes	Manuel Matos José Faria (FEUP)	Reliability evaluation of non-markovian engineering systems with uncertain parameters	(2003)
António José Ferreira da Silva	J.N. Fidalgo F. Aristides 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 preventive control procedures for dynamic security in Power Systems	(2004)

Teses de Mestrado (MSc Dissertations)

Author	Supervisor/Institution	Title	Conclusion Date
Manuel Pedro dos Santos Reis Pinto da Silva	João Paulo Tomé Saraiva, FEUP	Development of a DMS Using Object Oriented Programming	2001
Maria Celeste Pereira Marques	J. A. Peças Lopes FEUP	Analysis of the dynamic behaviour of industrial power system with cogeneration units	2001
Paulo Moisés	Manuel Matos	Loss allocation in distribution networks	(2002)
Eduardo Gouveia	Manuel Matos	Generation system expansion in a market environment	(2002)
Paulo Alexandre Melo	Manuel. Matos	Reconfiguration in distribution systems using simulated annealing	(2002)
Vítor Figueiredo Basto	Manuel Matos <i>Ana Azevedo (FEUP)</i>	Knowledge Mangement and Competitive Advantadge	(2002)
Maria do Rosário Trindade	Manuel Matos <i>Ana Azevedo (FEUP)</i>	Development of an evaluation tool for Enterprise Web Information Support Services	(2002)
João Luís Pinto	<i>Eugénio Oliveira (FEUP)</i> Manuel Matos	Multi-agent system for the implementation of an electricity market	(2002)

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

2001 IEEE Porto Power Tech Conference

Porto, Portugal

September 2001

J. A. Peças Lopes - Conference Chair and Chair of the Local Organizing Committee.

João Paulo Tomé Saraiva - Vice Chair of the Local Organizing Committee

Vladimiro Miranda - Chair of the Scientific Steering Committee

Manuel Matos - Chair of the Programme Committee;

J. Pereira da Silva - Local Organizing Committee and Programme Committee.

Teresa Ponce de Leão, José Nuno Fidalgo, José Rui Ferreira, Jorge Pereira, Miguel Proença, Claudio Monteiro (Local Organizing Committee)

RIMAPS 2001 - Euro Conference in Risk Management in Power Systems Planning and Operation in Market Environment

Porto, Portugal

September 2001

Teresa Ponce de Leão - Chair and Organizing Committee

A3.1.7 Formação Avançada (Advanced Training)

In 2001, the Power Systems Unit promoted tutorials in the framework of the IEEE Porto Power Tech 2001 and RIMAPS 2001:

"Electricity Markets"

Instructors: Gerald Sheble, Marcelino Madrigal, Victor Quintana

"Integration of Dispersed Generation on Distribution Networks"

Instructors: Nick Jenkins, Nikos Hatziargyriou, J. P. Lopes

"Applications of AI Techniques to DMS Systems"

Instructors: J.T. Saraiva, M.T. Ponce Leão

A3.1.8 Lista de Projectos (List of Projects)

Project Name	Responsible	Type (*)	Intern. (N/E/I)	Funding Program	Starting Date	Conclusion Date (expected)
ERSE Lig	Pereira da Silva	C	N		2000	2001
Int. PRE (GAMESA)	J. Peças Lopes	C	N		2001	2001
Int. PRE (EEVM)	J. Peças Lopes	C	N		2001	2001
Int. PRE (ENGIL)	J. Peças Lopes	C	N		2001	2001
DYNAMIC	J. Peças Lopes	C	N		2000	2001
REN/EDP	J. Peças Lopes	C	N		2001	2002
STCP	Manuel Matos	C	N		2001	2001
ADPaiva	Manuel Matos	C	N		2001	2002
Rede Celpa	Manuel Matos	D	I		2001	2002
ERNERGIS	V. Miranda	D	I		2000	2001
EFACEC	J. Peças Lopes	D	N		1997	2002
PPT'2001	J. Peças Lopes	O	I		2001	2001
RIMAPS	M.T.P. Leão	O	E	HPC	2000	2001
Dispos. Distribuídos	J. N. Fidalgo	R	N	PRAXIS	1998	2001
INTELECTOOL	V. Miranda	R	N	PRAXIS	2000	2002
Winner-Up	J. Peças Lopes	RD	N	ADI	2000	2001
MORE CARE	Manuel Matos	RD	E	NNE	1999	2002
OPET	M. T. P. Leão	TT	E	OPET	2000	2002

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

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 (Thesis)	1
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Carvalho, Alexandre; Síntese interactiva de imagens baseada na técnica de Rendercache, Maio 2001

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)	1
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Silva, Lígia - Cadastres in the 21 st Century (6). *A Model for the Information System of the Portuguese Land Register*, Revista GIM International, pp 61-63 ,2001.

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)	0
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N/A

Outras Publicações (Other Publications)	2
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Carvalho, Alexandre; Henriques, Ricardo; Oliveira, Marco Amaro, *SINUP 2001 - Sistema de Informação Urbana do Porto 2001*, *ESIG 2001 - VI Encontro de Utilizadores de Informação Geográfica*, 2001.

Aguiar, Ademar; Sousa, Alexandre; Pinto, Alexandre; *Use-Case Controller*, Proceedings at the 6º European Conference on Pattern Languages of Programmes - EUROLOP 2001.

A4.1.2 Lista de Revistas (List of Journals)

N/A

A4.1.3 Lista de Patentes (List of Patents)

N/A

A4.1.4 Lista de Protótipos (List of Prototypes)

N/A

A4.1.5 Teses orientadas por membros da Unidade (Thesis supervised by members of the team)

Teses de Doutoramento (PhD Dissertations)

N/A

Teses de Mestrado (MSc Dissertations)

N/A

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

N/A

A4.1.7 Formação Avançada (Advanced Training)

N/A

A4.1.8 Lista de Projectos (List of Projects)

Project Name	Responsible	Type (*)	Intern. (N/E/I)	Funding Program	Starting Date	Conclusion Date (expected)
AEP	Paulo Monteiro	C	N		2000	2001
CMF	Artur Rocha	C	N		2001	2002
CMMaia	Artur Rocha	C	N		1998	2002
CMP	Paulo Monteiro	C	N		1998	NA
CMSJM	António Gaspar	C	N		2001	2001
RUP	Paulo Monteiro	C	E		2001	2001
SIGA METRO	Artur Rocha	C	N		2001	NA
Site DGI	António Gaspar	C	N		2001	2001
TVTEL	Artur Rocha	C	N		2000	2002
CIFIAL	José Correia	D	N		2000	2001
CIMERTEX	José Correia	D	N		2000	NA
CRO	José Correia	D	N		2000	2001
EFACEC SE	José Correia	D	N		2001	2001
ENT	José Correia	D	N		2001	2002
NORTE VIDA	José Correia	D	N		2001	2001

Project Name	Responsible	Type (*)	Intern. (N/E/I)	Funding Program	Starting Date	Conclusion Date (expected)
P907	José Correia	D	N		2000	2001
RTP wap	José Correia	D	N		2001	2002
SICCE	José Correia	D	N		1999	2002
SINUP	Artur Rocha	D	N		2000	2002
SIOP II	José Correia	D	N		1998	2001
TELEMIL	António Gaspar	TT	N		1998	2001

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

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 (Thesis)	4
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Ferreira, João Paulo Castro Canas, *Automatic Synthesis for Dynamically Reconfigurable Digital Systems* (in Portuguese), Ph.D. Thesis, November 2001.

Ferreira, Pedro Miguel Vieira Alves, *An open architecture to support distributed services in a digital television studio environment*, MSc Thesis, April 2001.

Moura, José André Rocha Sá, *Design and development of a tele-maintenance distributed system* (in Portuguese), MSc Thesis, March 2001.

Prior, Rui Pedro Magalhães Claro, *Quality of Service in Packet Switched Networks* (in Portuguese), MSc Thesis, July 2001.

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)	2
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Mendonça, Hélio S., Silva, J. Machado, Matos, José S., *ADC Testing Using Joint Time-Frequency Analysis*, Journal of Computer Standards and Interfaces, Vol. 23, pp. 129-135, 2001.

Silva, J. Machado, Duarte, Jorge S., Matos, J. S., *Functional In-Circuit Characterisation Sigma/Delta Modulators*, MEASUREMENT, Journal of the International Measurement Confederation IMEKO, Special Issue on ADC Modelling and Testing, accepted for publication.

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)	19
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Agusti, R., Sallent, O., Perez-Romero, J., Ruela, J., Guerrini, C., *ARROWS Strategies for RRM*, IST Mobile Summit, Sitges-Barcelona, September 2001.

Andrade, Maria Teresa, Alves, Artur Pimenta, *New perspectives for Digital Television*, Proceedings International Conference on Media Futures, Florence, Italy, May 8-9, 2001.

Cardoso, Pedro, *ORBIT - Object Reconfigurable Broadcast using IT*, DASE2001, NIST, Gaithersburg, MD, USA, June 19-20, 2001.

Ferreira, Aníbal, *Accurate Estimation in the ODFT Domain of the Frequency, Phase and Magnitude of Stationary Sinusoids*, Proc. 2001 IEEE Workshop on Applications of Signal Processing to Audio and Acoustics, New Paltz, NY, USA, October 2001, pp. 47-50.

Ferreira, Aníbal, *Combined Spectral Envelope Normalization and Subtraction of Sinusoidal Components in the ODFT and MDCT Frequency Domains*, Proc. 2001 IEEE Workshop on Applications of Signal Processing to Audio and Acoustics, New Paltz, NY, USA, October 2001, pp. 51-54.

Grigore, Ovidiu, Puga, André Teixeira, *Image Segmentation for a Breast Cancer Identification System*, Advances in Signal Processing, Robotics and Communications, edited by V.V. Kluev and N. E. Mastorakis, Electrical and Computer Engineering Series, WSES Press, 2001, pp. 153-158 (and International Conference on Speech, Signal and Image Processing 2001, Malta, September 1-6, 2001.).

Grigore, Ovidiu, Puga, André Teixeira, *Object Localization Procedure for Intratumoral Microvessel Density Estimation*, MCBC2001 International Conference on Mathematics and Computers in Biology and Chemistry, Skiathos, Greece, September 26-30, 2001.

Magnani, N. P., Casadevall, F., Gelonch, A., Mc Grath, S., Ricardo, M., Berberana, I., *Overview of the ARROWS Project*, IST Mobile Summit, Sitges-Barcelona, September 2001.

Mendonça, Hélio S., Silva, J. Machado, Matos, J. S., *Differential Gain and Phase Testing Using Joint Time-Frequency Analysis*, Proceedings of IEEE Instrumentation and Measurement Technology Conference, Budapest, Hungary, May 2001, pp. 2027-2030.

Moreira, Rui Silva, Blair, Gordon S., Carrapatoso, Eurico, *Reflective Component-Based & Architecture Aware Framework to Manage Architecture Composition*, 3rd International Symposium on Distributed Objects & Applications, Rome, Italy, September 17-20, 2001.

Oliveira, José, Roque, Renato, Sedillot, Simone, Carrapatoso, Eurico, *Creation of 3rd Generation Services in the Context of Virtual Home Environment*, International Conference on Networking, Colmar, France, July 9-13, 2001.

Puga, André Teixeira, *A Computational Allegory for V1*, ISPA2001 2nd International Symposium on Image and Signal Processing and Analysis, Pula, Croatia, June 19-21, 2001.

Puga, André Teixeira, *An Iterative Eigen decomposition approach to blind source separation*, ICA2001 3rd International Conference on INDEPENDENT COMPONENT ANALYSIS and BLIND SIGNAL SEPARATION, S. Diego, USA, December 9-12, 2001.

Ribeiro, Maria Cristina, David, Gabriel, *A Metadata Model for Multimedia Databases*, ICHIM2001 - International Cultural Heritage Informatics Meeting, Milan, Italy, September 3-7, 2001.

Roque, Renato, Oliveira, José, Sedillot, Simone, Carrapatoso, Eurico, *3rd Generation Services Provision in Virtual Home Environment*, EURESCOM Summit 2001, 3G Technologies and Applications, Heidelberg, Germany, November 12-15, 2001.

Santos, Ernesto, Veiga, Daniel, *Middleware for the Broadcast Environment*, DMMOS2001, Budapest, Hungary, June 18, 2001.

Silva, J. Machado, Duarte, Jorge S., Matos, J. S., *A Method for the In-Circuit Testing of Sigma/Delta Modulators*, Proceedings of the 11th IMEKO TC-4 Symposium Trends in Electrical

Measurement and Instrumentation and 6th EuroWorkshop on ADC Modelling and Testing, Lisbon, September 2001.

Silva, J. Machado, Duarte, Jorge S., Matos, J. S., *A New BIST Scheme for SD Modulators*, Proceedings of the 16th Conference on Design of Circuits and Integrated Systems, pp. 173-178, Porto, Portugal, November 20-23, 2001, pp. 173-178.

Teixeira, Vítor, *Handling the Material Exchange Format (MXF)*, DASE2001, NIST, Gaithersburg, MD, USA, June 19-20, 2001.

Outras Publicações (Other Publications)
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9

Alves, Paulo, Carrapatoso, Eurico, *Domus - Cursos on-line*, 2ª Conferência Internacional de Tecnologias da Informação e Comunicação na Educação - Desafios 2001, Braga, Portugal, May 2001.

Blair, Gordon S., Coulson, Geoff, Andersen, Anders, Blair, Lynne, Clarke, Michael, Costa, Fabio, Duran-Limon, Hector, Fitzpatrick, Tom, Johnston, Lee, Moreira, Rui, Parlavantzas, Nikos, Saikoski, Katia, *The Design and Implementation of Open ORB 2*, IEEE Distributed Systems Online, Vol. 2, No. 6, 2001.

Carvalho, Alexandre V., Sousa, A. Augusto, Costa, António C., *Síntese de Imagem para Ambientes Virtuais: Experiências com a Técnica RENDERCACHE*, 10º Encontro Português de Computação Gráfica, Lisbon, October 1-3, 2001.

Fonseca, José Benjamim, Carrapatoso, Eurico, *Collaborative Editing of Digital Video*, ConfTele2001, 3ª Conferência Nacional de Telecomunicações, Figueira da Foz, Portugal, April 23-24, 2001.

Moreira, Fernando Ruela, José, *A Method for Traffic Scheduling based on Token Bucket QoS Parameters*, ConfTele2001, 3ª Conferência Nacional de Telecomunicações, Figueira da Foz, Portugal, April 23-24, 2001.

Moreira, Rui, Blair, Gordon, Carrapatoso, Eurico, *A Reflective and Architecture Aware Component Model For Middleware Composition Management*, 4ª Conferência sobre Redes de Computadores, Covilhã, Portugal, November 29-30, 2001.

Moura, José A., Carrapatoso, Eurico, *Sistema Distribuído de Telemanutenção*, 4ª Conferência sobre Redes de Computadores, Covilhã, Portugal, November 29-30, 2001.

Nogueira, Ana C., Sousa, A. Augusto, Costa, António C., *Holodeck: uma Técnica para Armazenamento e Busca Eficientes de Raios Luminosos em Síntese de Imagem*, 10º Encontro Português de Computação Gráfica, Lisbon, October 1-3, 2001.

Roque, Renato, Soares, Teresa, Oliveira, José, *VESPER Project - Validation of VHE Concept*, ConfTele2001, 3ª Conferência Nacional de Telecomunicações, Figueira da Foz, Portugal, April 23-24, 2001.

A5.1.2 Lista de Revistas (List of Journals)

Journal	Number of papers
Journal of Computer Standards and Interfaces	1
MEASUREMENT, Journal of the International Measurement Confederation IMEKO	1

A5.1.3 Lista de Patentes (List of Patents)

Patent filed to the Portuguese patent office (nº 102679): Method and apparatus for the classification of ceramic work.

A5.1.4 Lista de Protótipos (List of Prototypes)

System for the classification of the structural quality of roof tiles

Demo place: INESC Porto

Developed under the project "Methodologies for the Automatic Classification of the Structural Integrity and Quality of Ceramic Work" (PRAXIS); this is a complete SW & HW system for the classification of the structural quality of roof tiles using an acoustically-based approach.

Development Period: October 2000-December 2001

Environment for the non-real-time transcription of polyphonic music

Demo place: INESC Porto

Developed under the project "Advanced Processing Techniques Applied to Digital Audio Signals" (PRAXIS).

Development Period: October 2000-December 2001

System for the automatic equalization of the frequency response of rooms

Demo place: INESC Porto

Developed under the project "Advanced Processing Techniques Applied to Digital Audio Signals" (PRAXIS); this is a complete HW & SW system for the automatic equalization of the frequency response of rooms using a single microphone.

Development Period: October 2000-December 2001

ORBIT - Object Reconfigurable Broadcast using IT

Demo place: INESC PORTO

Developed under contract with BBC; this is a system based on IT for the manipulation of multimedia content in digital television studios. It has been demonstrated at the BBC Open Days (BBC R&D Labs, Kingswood, UK), at NAB'2001 (Pro-MPEG stand) and at IBC'2001 (BBC Technology stand).

Development period: 1999-2001

LabIP

Demo place: INESC Porto

LabIP is a dynamically reconfigurable IP and Linux based testbed used to evaluate new networking technologies. It includes now experiments on IP based technology, namely, MPLS, DiffServ, IntServ, RSVP, Mobile IP, Cellular IP, IPv6, IPSec, IP Multicast, Voice and Video over IP.

Development period: October 2000-December 2001

Custom Care Service

Demo place: INESC PORTO

This service has been developed in the VESPER (IST) project; it gives support to the clients of a company, allowing the establishment of a session between the client and an operator or accessing multimedia interactive tutorials, which adapt to the characteristics of the access terminal, the network conditions or the preferences of the client.

Development period: December 2000-October 2001

UTRA-TDD Simulator

Demo place: INESC PORTO

The simulator has been developed in the ARROWS (IST) project; it is based on OPNET and is optimised for the simulation of Radio Resource Management algorithms in the UTRA TDD (Time Division Duplex) mode of operation.

Development period: May 2001-December 2001

Components of an UMTS terminal equipment

Demo place: INESC Porto

In the context of the ARROWS (IST) project, a set of components that allow the provision of end-to-end IP QoS over UMTS networks has been developed for an UMTS terminal equipment.

Development period: May 2001-December 2001

IP routing component based on QoS constraints

Demo place: INESC Porto

In the context of the WINMAN (IST) project, a component that implements IP routing based on QoS constraints was developed and included in the project framework.

Development period: October 2000-December 2001

Interactive application for video analysis

Demo place: INESC Porto

Developed under the project "Content-aware Resource Allocation for Digital TV Services" (PRAXIS); this is a framework for the development of video analysis and description systems in an easy and interactive way. Due to the architecture design the developed software can run on different operating systems and on distributed environments.

Development period: 2001

Multimedia Archives

Demo place: INESC Porto

Developed under the project METAMEDIA2 (PRAXIS); this is a database with Web interface for multimedia archives supporting MPEG7 technology.

Development period: 2001 (based on METAMEDIA project prototype developed in 2000).

A5.1.5 Teses orientadas por membros da Unidade (Thesis supervised by members of the team)

Teses de Doutoramento (PhD Dissertations)

Author	Supervisor/ Institution	Title	Conclusion Date
J. Canas Ferreira	J. Silva Matos U. Porto	Automatic Synthesis for Dynamically Reconfigurable Digital Systems	2001
J. Nuno Almeida	A. P. Alves / S. Abrantes U. Porto	High-speed wireless mobile LAN communications: improved error control mechanisms for real-time services	(2002)
Fernando Moreira	José Ruela U. Porto	Traffic control in ATM networks	(2002)
Luís Teixeira	Artur P. Alves U. Porto	Digital video compression	(2002)
António Araújo	J. Silva Matos U. Porto	Implementation of mathematical functions	(2002)
Teresa Andrade	Artur P. Alves U. Porto	Video transmission over ATM networks	(2003)
Paula Viana	Artur P. Alves U. Porto	Digital Television Archives	(2003)
Hélio Mendonça	J. Silva Matos U. Porto	Test of A/D converters	(2003)
Isabel Martins	Luís Corte-Real U. Porto	Video coding based on 3D models	(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)

Author	Supervisor/ Institution	Title	Conclusion Date
Agostinho Castro	José Ruela U. Porto	Resource Management and Quality of Service in UMTS Networks	(2004)
Álvaro Almeida	E. Carrapatoso U. Porto	Creation of Telecommunications Services	(2004)
José Cabral	J. Neves / U. Minho J. Ruela / U. Porto	Multipoint communications in ATM networks	(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)

Teses de Mestrado (MSc Dissertations)

Author	Supervisor/ Institution	Title	Conclusion Date
Pedro Ferreira	José Ruela U. Porto	An open architecture to support distributed services in a digital television studio environment	2001
J. André Moura	E. Carrapatoso U. Porto	Design and development of a tele-maintenance distributed system	2001
Rui Prior	José Ruela U. Porto	Quality of service in packet switched networks	2001
Paulo Vara Alves	E. Carrapatoso U. Porto	Development of a learning system based on the Web	2001
Tito Vieira	José Ruela U. Porto	IPv4 to IPv6 migration strategies	2001
Alexandre V. Carvalho	A. A. Sousa U. Porto	Interactive Image Synthesis based on the RENDERCACHE Technique	2001
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)
Gabriel Falcão Fernandes	Aníbal Ferreira U. Porto	Adaptive Correction of Acoustic Perturbations and Artifacts	(2002)
Miguel Sousa Falcão	Aníbal Ferreira U. Porto	Automatic Classification of Ceramic Work	(2002)
Sérgio Crisóstomo	José Ruela U. Porto	Feasibility study of new equipment for the UMTS access network	(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	(2002)
Hugo Teixeira	José Ruela U. Porto	Video transmission with QoS over packet switched networks	(2002)
António Silva	Manuel Ricardo U. Porto	Development of an IP test system addressing lows, tunneling and IPSec	(2002)
Nuno Torres	Manuel Ricardo U. Porto	Implementation of a simple UMTS GGSN network element	(2002)
Paulo Jorge Marques	A. A. Sousa U. Porto	Virtual reality systems applied to city guides	(2002)
Nuno Ferreira	A. A. Sousa U. Porto	Computational Expression - A Communication Process	(2002)

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

DCIS 2001 - XVI Conference on Design of Circuits and Integrated Systems
Porto, Portugal
November 20-23, 2001
José Silva Matos - General Chair

CEIG - Congresso Espanhol de Informática Gráfica
Girona, Spain
July 4-6, 2001
A. Augusto Sousa - Scientific Committee
EUROGRAPHICS'2001
Manchester, UK
September 3-7, 2001
A. Augusto Sousa - Scientific Committee

A5.1.7 Formação Avançada (Advanced Training)

N/A

A5.1.8 Lista de Projectos (List of Projects)

Project Name	Responsible	Type (*)	Intern. (N/E/I)	Funding Program	Starting Date	Conclusion Date (expected)
4VDO	P. Viana	C	N		12.001	122.002
STAT	Jorge Mamede	C	N	ICPME	111.999	42.001
ORBIT (BBC)	P. Cardoso	D	E		12.002	22.003
P/PITV (IRT/EBU)	V. Teixeira	D	E		122.001	62.002
ABIS	J.M. Silva	R	N	PRAXIS	92.000	82.002
AISA	A. Ferreira	R	N	Ciência Viva	12.001	82.002
ARROWS	J. Ruela	R	E	IST	12.001	122.002
CASSILDE	A.A. Sousa	R	N	PRAXIS	71.999	62.003
CONTESSA	T. Andrade	R	E	IST	62.001	52.003
CORAL	L. Corte-Real	R	N	PRAXIS	92.000	82.002
DYNAD	J. M. Silva	R	E	SM&T	51.998	42.001
G-FORS	V. Teixeira	R	E	IST	12.000	42.002
ICAVIP	A. Puga	R	N	PRAXIS	102.000	92.002
IOpGIS	A.A. Sousa	R	N	PRAXIS	71.999	62.003
METAMEDIA2	G. David	R	N	PRAXIS	102.000	92.002
METAVISION	R. Morla	R	E	IST	102.000	92.003
MOUMIR	L. Corte-Real	R	E	RTN	42.000	32.003
TAPASAD	A. Ferreira	R	N	PRAXIS	102.000	92.003
TELHAS	A. Ferreira	R	N	PRAXIS	102.000	92.002
VESPER	E. Carrapatoso	R	E	IST	72.000	122.002
WINMAN	M. Ricardo	R	E	IST	72.000	32.003

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