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## Technical Program

### Track 1. Information Technology in Automation

Track1 - S1. Engineering Approaches		
		<b>Chairs:</b> Rainer Drath and Dacfeý Dzung
PSA3 – 9:30-11:00 – Monday, September 13 <sup>rd</sup> , 2010		
Order	ETFA Ref	Title/Authors
1	<a href="#">MF-001333</a>	<b>Model-driven engineering of industrial process control applications</b> <i>Tomaz Lukman, Giovanni Godena, Jeff Gray, Stanko Strmcnik</i>
;	<a href="#">MF-001651</a>	<b>Engineering of manufacturing systems within engineering networks</b> <i>Lorenz Hundt, Arndt Lüder, Elisabeth Estévez Estévez</i>
39	<a href="#">MF-002917</a>	<b>Towards a model driven Approach for development of Visualization Applications in Industrial Automation</b> <i>Siefan Hennig, Annerose Braune, Evelina Koycheva</i>
45	<a href="#">MF-002437</a>	<b>A Business Process Management Approach for RFID Enabled Supply Chain Management</b> <i>Yintai Ao, Wei He, Xuejian Xiao, Engwah Lee</i>

Track1 – S2. Knowledge Engineering / Ontologies		
		<b>Chairs:</b> Alexander Fay and Thilo Sauter
PSA3– 11:30-13:00 – Monday, September 13 <sup>rd</sup> , 2010		
Order	ETFA Ref	Title/Authors
52	<a href="#">MF-000892</a>	<b>A Fuzzy Ontology Based Approach for Mobilising Industrial Plant Knowledge</b> <i>Antti Pakonen, Teemu Tommila, Juhani Hirvonen</i>
5:	<a href="#">MF-003794</a>	<b>Discovery and integration of information in a heterogeneous environment</b> <i>Thomas Hadlich, Mathias Muehlhause, Christian Diedrich</i>
68	<a href="#">MF-001821</a>	<b>Ontology Based Device Descriptions and Triple Store Based Device Repository for Automation Devices</b> <i>Henrik Dibowski, Klaus Kabitzsch</i>
77	<a href="#">MF-003522</a>	<b>Enforcing Trust in Home Automation Platforms</b> <i>Sarah Majoul, Marc Richard-Foy, Aitor Agirre, Antonio Pérez, Antonio Kung</i>

<b>Track1 – S3. Service Oriented Systems</b>		
<b>Chairs:</b> Wolfgang Kastner and Martin Wollschläger		
<b>PSA3– 09:00-10:30 – Tuesday, September 14<sup>th</sup>, 2010</b>		
<b>Order</b>	<b>ETFA Ref</b>	<b>Title/Authors</b>
83	<a href="#">MF-000027</a>	<b>Invoking Web Services from Programmable Logic Controllers</b> <i>Christoph Stoidner, Bernd Freisleben</i>
88	<a href="#">MF-000051</a>	<b>Towards Common Concepts of Remote Services</b> <i>Ingmar Kühl, Alexander Fay</i>
96	<a href="#">MF-000256</a>	<b>Classifying Services for the Automation Environment</b> <i>Henning Mersch, Markus Schluetter, Ulrich Epple</i>
: 3	<a href="#">MF-002399</a>	<b>SOA-Based Integration for Batch Process Management with OPC UA and ISA-88/95</b> <i>Jouko Virta, Ilkka Seilonen, Antti Tuomi, Kari Koskinen</i>
: ;	<a href="#">MF-003026</a>	<b>Service-Oriented Process Control for Complex Multifunctional Plants: Concept and Case Study</b> <i>Liyong Yu, Gustavo Quiros, Ulrich Epple</i>

<b>Track1 – S4. Distributed System Architectures</b>		
<b>Chairs:</b> Kleanthis Thramboulidis and Valeriy Vyatkin		
<b>PSA3– 09:00-11:00 – Wednesday, September 15<sup>th</sup>, 2010</b>		
<b>Order</b>	<b>ETFA Ref</b>	<b>Title/Authors</b>
: 9	<a href="#">MF-000396</a>	<b>A neutral Architecture for Distributed Real-Time Java based on RMI and RTSJ</b> <i>Pablo Basanta-Val, Marisol García-Valls, Iria Estévez-Ayres</i>
327	<a href="#">MF-000574</a>	<b>Integrating Wireless Systems into Process Industry and Business Management</b> <i>Federico Ciccozzi, Antonio Cicchetti, Tiberiu Seceleanu, Johan Åkerberg, Jerker Delsing, Lars Eric Carlsson</i>
335	<a href="#">MF-001813</a>	<b>IEC 61499 Execution Model Based on Life Cycle of Function Blocks</b> <i>Carlos Catalan, Felix Serna, Alfonso Blesa, Josep M. Rams</i>
343	<a href="#">MF-002003</a>	<b>Bridging the Gap between Centralized and Distributed Manufacturing Execution Planning</b> <i>Aleksey Bratukhin, Thilo Sauter</i>
34;	<a href="#">MF-000507</a>	<b>Performance Evaluation of OPC UA</b> <i>Salvatore Cavalieri, Giovanni Cutuli</i>

## Track 2. Industrial Communication Systems

### Track2 – S1. Software and System Integration

**Chairs:** Wolfgang Kastner and Stefano Vitturi

**Sala TV** – 09:30-11:00 – Monday, September 13<sup>rd</sup>, 2010

Order	ETFA Ref	Title/Authors
159	<a href="#">MF-002488</a>	<b>New container services for the integration of Component-based Applications on Complex Industrial Platforms</b> <i>Laura Barros, Ángela del Barrio, Patricia López Martínez, José M. Drake</i>
367	<a href="#">MF-003204</a>	<b>Programming abstractions and middleware for building control systems as networks of smart sensors and actuators</b> <i>Sebastian Zug, Michael Schulze, Andre Dietrich, Jörg Kaiser</i>
375	<a href="#">MF-003662</a>	<b>A Software Implementation of IEEE 1588 on RTAI/RTnet Platforms</b> <i>Adriano Valenzano, Claudio Zunino</i>

### Track2 – S2. Reliability and Safety

**Chairs:** Julian Proenza and Joerg Kaiser

**Sala TV** – 16:30-18:30 – Tuesday, September 14<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
183	<a href="#">MF-000981</a>	<b>Redundancy enhancements for Industrial Ethernet ring protocols</b> <i>Oliver Kleineberg, Markus Rentschler</i>
38;	<a href="#">MF-001686</a>	<b>Samovar : An evaluation framework for safety critical applications deployment over WSANs</b> <i>Lionel Havet, Adrien Guenard, Françoise Simonot-Lion</i>
399	<a href="#">MF-002054</a>	<b>Switched FlexRay: Increasing the Effective Data-rate and Safety of FlexRay Networks</b> <i>Paul Milbredt, Bart Vermeulen, Gökhan Tabanoglu, Martin Lukasiewicz</i>
3: 7	<a href="#">MF-003107</a>	<b>System Identification and Extraction of Timing Properties from Controller Area Network (CAN) Message Traces</b> <i>Marco Di Natale, Haibo Zeng</i>
3; 5	<a href="#">MF-004103</a>	<b>First prototype and experimental assessment of media management in ReCANcentrate</b> <i>Manuel Barranco, David Gessner, Julián Proenza, Luís Almeida</i>

**Track2 – S3. Industrial Wireless Communications****Chairs:** Elisabeth Uhlemann and Jose Alberto Fonseca**Sala TV** – 14:00-16:00 – Wednesday, September 15<sup>th</sup>, 2010

<b>Order</b>	<b>ETFA Ref</b>	<b>Title/Authors</b>
423	<a href="#">MF-003182</a>	<b>A TDMA-based Mechanism for Real-Time Communication in IEEE 802.11e Networks</b> <i>Robson Costa, Paulo Portugal, Francisco Vasques, Ricardo Moraes</i>
432	<a href="#">MF-003344</a>	<b>Exploiting time and frequency diversity in IEEE 802.15.4 industrial networks for enhanced reliability and throughput</b> <i>Kristina Kunert, Magnus Jonsson, Elisabeth Uhlemann</i>
43;	<a href="#">MF-003395</a>	<b>A novel approach for data forwarding in Industrial Wireless Sensor Networks</b> <i>Emanuele Toscano, Lucia Lo Bello</i>
44;	<a href="#">MF-004073</a>	<b>Theoretical and experimental evaluation of polling times for wireless industrial networks using commercially available components</b> <i>Stefano Vitturi, Giovanni Gamba, Lucia Seno</i>

### Track 3. Real-Time and (Networked) Embedded Systems

#### Track3 – S1. Scheduling and Resource Management

**Chairs:** Stefan M. Petters and Paul Pettersson

**Aula de Grados** – 09:30-11:00 – Monday, September 13<sup>rd</sup>, 2010

Order	ETFA Ref	Title/Authors
459	<a href="#">MF-002135</a>	<b>Protocol Transparent Resource Sharing in Hierarchically Scheduled Real-Time Systems</b> <i>Martijn M. H. P. van den Heuvel, Reinder J. Bril, Johan J. Lukkien</i>
467	<a href="#">MF-004081</a>	<b>On Optimal Real-time Subsystem-Interface Generation in the Presence of Shared Resources</b> <i>Moris Behnam, Thomas Nolte, Nathan Fisher</i>
475	<a href="#">MF-003816</a>	<b>The Implicit Deadline Synchronization Protocol for Distributed Real-Time Systems Scheduled by EDF</b> <i>Nicola Serreli, Giuseppe Lipari, Enrico Bini</i>
483	<a href="#">MF-003719</a>	<b>A Constant-Time Region-Based Memory Allocator for Embedded Systems with Unpredictable Length Array Generation</b> <i>Jordi Sánchez, Ginés Benet, José Enrique Simó</i>

#### Track3 – S2. Scheduling II

**Chairs:** Giuseppe Lipari and Roberto Passerone

**Aula de Grados** – 11:30-13:00 – Monday, September 13<sup>rd</sup>, 2010

Order	ETFA Ref	Title/Authors
48:	<a href="#">MF-002178</a>	<b>Scheduling Multi-Mode Real-Time Systems upon Uniform Multiprocessor Platforms</b> <i>Patrick Meumeu Yomsi, Vincent Nelis, Joel Goossens</i>
298	<a href="#">MF-000884</a>	<b>Comparative evaluation of limited preemptive methods</b> <i>Gang Yao, Giorgio Buttazzo, Marko Bertogna</i>
4: 6	<a href="#">MF-001244</a>	<b>Multi-Criteria Evaluation of Partitioning Schemes for Real-Time Systems</b> <i>Irina Lupu, Pierre Courbin, Laurent George, Joël Goossens</i>
4; 4	<a href="#">MF-004138</a>	<b>Efficient Fault Tolerant Scheduling on Controller Area Network (CAN)</b> <i>Hüseyin Aysan, Abhilash Thekkilakattil, Radu Dobrin, Sasikumar Punnekkat</i>

**Track3 – S3. Model Checking****Chairs:** Marko Bertogna and Elisabet Estévez**Aula de Grados** – 09:00-10:30 – Tuesday, September 14<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
522	<a href="#">MF-000817</a>	<b>Optimal Model Checking of Safe Control Embedded Software Components</b> <i>Atef Gharbi, Mohamed Khalgui, Samir Ben Ahmed</i>
52:	<a href="#">MF-001538</a>	<b>Model-Driven Design of Real-time Component-Based Applications</b> <i>Patricia López Martínez, César Cuevas, José M. Drake</i>
338	<a href="#">MF-004146</a>	<b>Parametric Analysis of Distributed Firm Real-Time Systems: A Case Study</b> <i>Thi Thieu Hoa Le, Luigi Palopoli, Roberto Passerone, Yusi Ramadian, Alessandro Cimatti</i>
546	<a href="#">MF-003875</a>	<b>Verification and Controller Synthesis for Resource-Constrained Real-Time Systems: Case Study of an Autonomous Truck</b> <i>Shuhao Li, Paul Pettersson</i>

**Track3 – S4. Distributed and Networked****Chairs:** Luis Almeida and Thomas Nolte**Aula de Grados** – 16:30-18:30 – Tuesday, September 14<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
554	<a href="#">MF-000442</a>	<b>Improving end-to-end delay upper bounds on an AFDX network by integrating offsets in worst-case analysis</b> <i>Xiaoting Li, Jean-Luc Scharbarg, Christian Fraboul</i>
562	<a href="#">MF-002364</a>	<b>Design procedure to minimize power consumption and delays in WSN</b> <i>Diego Martínez, Patricia Balbastre, Francisco Blanes, José Simó, Alfons Crespo</i>
36:	<a href="#">MF-004049</a>	<b>Towards component orientation in embedded web service environments</b> <i>Elmar Zeeb, Guido Moritz, Frank Golasowski, Dirk Timmermann</i>
578	<a href="#">MF-001899</a>	<b>Optimal Networked Control of a 2 Degree-of-Freedom Direct Drive Robot Manipulator</b> <i>Luis Orihuela, Pablo Millán, Guillermo Bejarano, Carlos Vivas, Francisco R. Rubio</i>
586	<a href="#">MF-002747</a>	<b>Synchronizing Sampling and Actuation in the Absence of Global Time in Networked Control Systems</b> <i>Pau Martí, Antonio Camacho, Manel Velasco, Pere Mares, Josep M. Fuertes</i>

## Track 4. Automated Manufacturing Systems

### Track4 – S1. System modeling and analysis

**Chairs:** Patrice Bonhomme, Josep M. Fuetes

**PSA1** – 09:00-10:30 – Tuesday, September 14<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
594	<a href="#">MF-000809</a>	<b>Towards a New Exhaustive Simulation Technique for P-Time Petri Nets</b> <i>Patrice Bonhomme</i>
5: 2	<a href="#">MF-001058</a>	<b>Model-Checking based Verification Approach for Advanced Industrial Automation Solutions</b> <i>Mauro Mazzolini, Alessandro Brusaferrri, Emanuele Carpanzano</i>
3: :	<a href="#">MF-003018</a>	<b>Integrated Quality and Production Logistics Analysis of Closed Loop Manufacturing Systems</b> <i>Marcello Colledani, Anteneh Yemane</i>
5; 8	<a href="#">MF-000906</a>	<b>Analysis of Internal Logistic Systems Based on Event Logs</b> <i>Volodymyr Vasyutynskyy, Andre Gellrich, Klaus Kabitzsch, David Wustmann</i>
626	<a href="#">MF-001511</a>	<b>Modeling and Simulation of Malfunctions in Automation Systems</b> <i>Juergen Rossmann, Frank Heinze</i>

### Track4 – S2. Model base control

**Chairs:** Jose Barata, Aitor Alzaga

**PSA1** – 14:00-16:00 – Tuesday, September 14<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
634	<a href="#">MF-003379</a>	<b>Exploring the Network Dimension of Diagnosis in Evolvable Production Systems</b> <i>Luis Ribeiro, Jose Barata, Bruno Alves</i>
63:	<a href="#">MF-003786</a>	<b>A Service Oriented-based System for Real Time Industrial Applications</b> <i>Ioakeim K. Samaras, John V. Gialelis, George D. Hasapis</i>
648	<a href="#">MF-001457</a>	<b>Semantic Processes Modelling Independent of Manufacturing Infrastructures</b> <i>Antonio Ferrández-Colmeiro, Virgilio Gilart-Iglesias, Francisco Maciá-Pérez</i>
456	<a href="#">MF-001783</a>	<b>Modelling the Real-time Behaviour of Machine Controls Using UML Statecharts</b> <i>Stephan Seidel, Thomas Klotz, Ulrich Donath, Jürgen Haufe</i>
664	<a href="#">MF-002895</a>	<b>Modeling of Manufacturing Execution Systems: an Interdisciplinary Challenge</b> <i>Maria Ricken, Birgit Vogel-Heuser</i>



**Track4 – S3. System optimization****Chairs:** Idoia Echave, Marcelo Colledani**PSA1** – 16:30-18:30 – Tuesday, September 14<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
672	<a href="#">MF-001473</a>	<b>Alternative process plans in wire harnesses production</b> <i>Roman Čapek, Přemysl Šúcha, Zdeněk Hanzálek</i>
67:	<a href="#">MF-000205</a>	<b>On the Development of a Novel Resource-Constrained Crossdocking Model for the Truck Scheduling Problem</b> <i>Mojtaba Shakeri, Malcolm Y. H. Low, Eng W. Lee</i>
689	<a href="#">MF-000604</a>	<b>Matrix-based Conflict Resolution Algorithm: Application to Path Selection in PN-based Scheduling Search</b> <i>Corina Popescu, Jose L. Martinez Lastra</i>

**Track4 – S4. Control strategies****Chairs:** Francesco Basile, Josep M. Furtés**PSA1** – 14:00-16:00 – Wednesday, September 15<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
693	<a href="#">MF-003328</a>	<b>A novel approach to PLC Programming for Distributed Automation Systems Control</b> <i>Francesco Basile, Pasquale Chiacchio, Diego Gerbasio</i>
69;	<a href="#">MF-001678</a>	<b>A methodology for modular model-building in discrete automation</b> <i>Matteo Sartini, Andrea Paoli, Richard C. Hill, Stéphane Lafortune</i>
6: 9	<a href="#">MF-002879</a>	<b>On the Computation of the Minimal Siphons of S4PR Nets from a Generating Family of Siphons</b> <i>Elia Cano, Carlos Rovetto, José Manuel Colom</i>
4; 7	<a href="#">MF-003514</a>	<b>Models for Stiffness Characterization of the Spindle-chuck System in a CNC Lathe for Prediction of Deflections in CAPP</b> <i>Yago Prado, Gonzalo Valiño, David Blanco, Carlos M. Suárez, Braulio J. Álvarez</i>
524	<a href="#">MF-004065</a>	<b>Comparison of 4 Numerical Solvers for Stiff and Hybrid Systems Simulation</b> <i>Liu Liu, Felix Felgner, Georg Frey</i>

**Track 5. Industrial Control****Track5 – S1. Fault Detection and diagnosis in Industrial control****Chairs:** M. J. Fuente and E. F. Camacho**PSA2** – 09:00-10:30 – Tuesday, September 14<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
732	<a href="#">MF-001422</a>	<b>Fault-tolerant model predictive control</b> <i>Eduardo F. Camacho, Teodoro Alamo, David Muñoz de la Peña</i>
73:	<a href="#">MF-001554</a>	<b>On Using a Simplified Model for Leak Detection Improving in Fluid Filled Pipelines</b> <i>Marllene Daneti</i>
748	<a href="#">MF-002445</a>	<b>Monitoring and Fault Detection in Processes with Multiple Operating Modes, Transitory Phases and Start-ups using Principal Component Analysis</b> <i>Diego Garcia-Alvarez, Maria Jesus Fuente, Gregorio Sainz</i>
756	<a href="#">MF-002615</a>	<b>Adaptive Fuzzy Generalized Predictive Control Based on Discrete-Time T-S Fuzzy Model</b> <i>Jérôme Mendes, Rui Araújo, Francisco Souza</i>

**Track5 – S2. Automation and Robotics****Chairs:** Asier Zubizarreta and Javier Garcia Zubia**PSA2** – 14:00-16:00 – Tuesday, September 14<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
764	<a href="#">MF-000701</a>	<b>Extended CTC Control for Parallel Robots</b> <i>Asier Zubizarreta, Itziar Cabanes, Marga Marcos, Charles Pinto, Eva Portillo</i>
772	<a href="#">MF-002062</a>	<b>Web 2.0 Control architecture for industrial robots</b> <i>Javier Garcia Zubia, Ivan Trueba Parra</i>
77:	<a href="#">MF-002453</a>	<b>Three-degrees-of-freedom Flexible Robot Position Control Robust to Load Changes</b> <i>Gonzalo Partida, Victor Jaramillo, Vicente Feliu</i>
786	<a href="#">MF-000485</a>	<b>An outline of advanced process control and self tuning techniques on PLC background</b> <i>Jiri Kocian, Jiri Koziorek</i>
594	<a href="#">MF-000523</a>	<b>Flexible Manufacturing Control with Autonomous Product Memories</b> <i>Christian Seitz, Christoph Legat, Ziyuan Liu</i>

**Track5 – S3. Advanced Industrial Control techniques****Chairs:** F. Koumboulis and F. Morilla**PSA2** – 16:30-18:30 – Tuesday, September 14<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
7: 2	<a href="#">MF-001643</a>	<b>Anti-windup Schemes Comparison for Digital Repetitive Control</b> <i>Germán Ramos, Ramon Costa, Josep Olm</i>
7: 9	<a href="#">MF-002046</a>	<b>Bumpless switching in control - A comparative study</b> <i>Manuel Pasamontes Romera, José Domingo Álvarez Hervás, José Luis Guzmán Sánchez, Manuel Berenguel Soria</i>
7; 7	<a href="#">MF-002402</a>	<b>Centralized Inverted Decoupling for TITO Processes</b> <i>Juan Garrido, Francisco Vázquez, Fernando Morilla</i>

**Track5 – S4. Industrial Control Applications****Chairs:** Helder Carvalho and Primiano Tucci**PSA2** – 09:00-11:00 – Wednesday, September 15<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
825	<a href="#">MF-002429</a>	<b>Initial validation of a reverse osmosis simulator</b> <i>Luis Gomez Palacin, Fernando Tadeo Rico, Johanna Salazar Salas, Cesar de Prada Moraga</i>
82;	<a href="#">MF-002631</a>	<b>Adaptive Control of an Electromagnetically Presser-Foot for Industrial Sewing</b> <i>Helder Carvalho, Luís Silva, Filomena Soares, Florian Guhr</i>
839	<a href="#">MF-002801</a>	<b>Logic Device Agents: smart and highly reusable components in industrial automation systems</b> <i>Eugenio Faldella, Andrea Tilli, Primiano Tucci</i>
847	<a href="#">MF-003484</a>	<b>Temperature Control of a Neutral Time Delay Central Heating System via a Two Term Disturbance Compensator</b> <i>Fotis Koumboulis, Nikolaos Kouvakas</i>

**Track5 – S5. Automation and Control in Wastewater systems****Chairs:** J.D. Rojas and M. Francisco**PSA2** – 14:00-16:00 – Wednesday, September 15<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
857	<a href="#">MF-001287</a>	<b>Observer based Regulator Problem for WWTP with Constraints on Control</b> <i>Fouad Mesquine, Othman Bakka, Hicham El Bahja, Pastora Vega</i>
863	<a href="#">MF-002704</a>	<b>Expert system of a sewage treatment plant for Wood Industry</b> <i>Javier Bouza-Fernandez, Gerardo Gonzalez-Filgueira, Salvador de las Heras Jimenez, Diego Vazquez-Gonzalez</i>
86;	<a href="#">MF-003476</a>	<b>Triangular decoupling of non square general neutral time delay systems via dynamic measurement output feedback with application to an ASP</b> <i>Fotis Koumboulis, Nikolaos Kouvakas</i>
87;	<a href="#">MF-003891</a>	<b>Application of the Virtual Reference Feedback Tuning on Wastewater Treatment Plants: a Simulation Study</b> <i>José David Rojas, Ramón Vilanova, Víctor M. Alfaro</i>
889	<a href="#">MF-002011</a>	<b>Integrated Design of processes with infinity horizon Model Predictive Controllers</b> <i>Mario Francisco, Pastora Vega, Hicham Elbahja, Hernán Álvarez, Silvana Revollar</i>

## Track 6. Computational Intelligence and Modern Heuristics in Automation

### Track6 – S1. Intelligent technologies in factory automation

**Chairs:** Carlos Alberto Belchior and Francisco Souza

**Aula de Videoconferencia** – 11:30-13:00 – Monday, September 13<sup>rd</sup>, 2010

Order	ETFA Ref	Title/Authors
897	<a href="#">MF-003921</a>	<b>Nonlinear system control based on Neural Networks with Adaptive Predictive strategy</b> <i>Mikel Larrea, Eloy Irigoyen, Vicente Gómez, Fernando Artaza</i>
8: 4	<a href="#">MF-002763</a>	<b>Adaptive Fuzzy Control of the Dissolved Oxygen Concentration in an Activated Sludge Process</b> <i>Carlos Alberto Belchior, Rui Araújo, Jorge Landeck</i>
8: ;	<a href="#">MF-003034</a>	<b>Variable and Delay Selection Using Neural Networks and Mutual Information for Data-Driven Soft Sensors</b> <i>Francisco Alexandre Souza, Pedro Miguel Santos, Rui Alexandre Araújo</i>
8; 9	<a href="#">MF-004219</a>	<b>Data Compression and Query for Large Scale Sensor Data on COTS DBMS</b> <i>Pei-Lun Suei, Che-Wei Kuo, Ren-Shan Luoh, Tei-Wei Kuo, Chi-Sheng Shih, Min-Siong Liang</i>

### Track6 – S2. Optimization and prediction in industrial applications

**Chairs:** Joern Phoennig and Eloy Irigoyen

**Aula de Videoconferencia** – 14:00-16:00 – Tuesday, September 14<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
927	<a href="#">MF-002623</a>	<b>SIMPREBAL: An Expert System for Real-Time Fault Diagnosis of Hydrogenerators Machinery</b> <i>Edgar Amaya, Alberto Alvares</i>
935	<a href="#">MF-000108</a>	<b>Hierarchical Planning Method for Product Supply based on Multi Objective Genetic Algorithm</b> <i>Kenzo Kurihara, Hirohito Maruyama, Kazuaki Masuda</i>
943	<a href="#">MF-000272</a>	<b>Sensorial system minimization to estimate the driver activity on the vehicle's pedals</b> <i>Alexander Prieto, Felipe Espinosa, José L. Lázaro, Ahmed Wefky</i>
94;	<a href="#">MF-001236</a>	<b>Improvement of Prediction Performance for Data-Driven Virtual Sensors</b> <i>Alexander Dementjev, Heinz-Dieter Ribbecke, Klaus Kabitzsch</i>
95:	<a href="#">MF-002143</a>	<b>Biogeography-Based Optimization Approach Based on Predator-Prey Concepts Applied to Path Planning of 3-DOF Robot Manipulator</b> <i>Marsil Costa e Silva, Roberto Freire, Leandro Coelho</i>

**Track6 – S3. Knowledge representation in industrial application****Chairs:** Gil Gonzalvez and Andrei Lobov**Aula de Videoconferencia – 16:30-18:30 – Tuesday, September 14<sup>th</sup>, 2010**

Order	ETFA Ref	Title/Authors
968	<a href="#">MF-000671</a>	<b>Language Identification oriented to Multilingual Speech Recognition in the Basque context</b> <i>Nora Barroso, Karmele López de Ipiña, Odei Barroso, Aitzol Ezeiza, Unai Susperregi</i>
976	<a href="#">MF-001708</a>	<b>Formal methods for reconfigurable assembly systems</b> <i>Tiago Ribeiro, Gil Gonçalves</i>
982	<a href="#">MF-002305</a>	<b>Edwards-Venn Diagrams for Knowledge Representation and Reasoning in Industrial Systems</b> <i>Aleksandra Dvoryanchikova, Andrei Lobov, Anna Capanji, Jose Luis Martinez Lastra</i>
989	<a href="#">MF-002798</a>	<b>Topological Design of Industrial Ethernet Networks with a Fast Heuristic</b> <i>Lei Zhang, Mattias Lampe, Zhi Wang</i>
997	<a href="#">MF-003956</a>	<b>Automatic Evaluation of Emotion Elicitation oriented to people with intellectual disabilities</b> <i>Raquel Martínez, Eloy Irigoyen, Karmele López de Ipiña, Nagore Asla</i>

## Track 7. Intelligent Robots & Systems

### Track7 – S1. Robotics I

**Chairs:** Antoni Grau and Yolanda González

Sala TV – 11:30-13:00 – Monday, September 13<sup>rd</sup>, 2010

Order	ETFA Ref	Title/Authors
9: 5	<a href="#">MF-003689</a>	<b>An Application of the Underactuated Nonlinear H-infinity Controller to Two-Wheeled Self-Balanced Vehicles</b> <i>Guilherme Vianna Raffo, Vicente Madero, Manuel Gil Ortega</i>
9: ;	<a href="#">MF-002607</a>	<b>Sampling-based Safe Path Planning for Robotic Manipulators</b> <i>Bakir Lacevic, Paolo Rocco</i>
9; 8	<a href="#">MF-003743</a>	<b>General Environment for Human Interaction with a Robot Hand-Arm System and Associated Elements</b> <i>Jose Fortin, Raul Suarez</i>

### Track7 – S2. Robotics II

**Chairs:** Antoni Burguera and Fabrizio Abrate

Sala TV – 14:00-16:00 – Tuesday, September 14<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
: 26	<a href="#">MF-001449</a>	<b>A Trajectory Based Framework to Perform Underwater SLAM using Imaging Sonar Scans</b> <i>Antoni Burguera, Gabriel Oliver, Yolanda González</i>
: 32	<a href="#">MF-002291</a>	<b>Beyond RatSLAM: Improvements to a Biologically Inspired SLAM System</b> <i>Niko Sünderhauf, Peter Protzel</i>
: 3:	<a href="#">MF-002275</a>	<b>Cooperative Robotic Teams for Supervision and Management of Large Logistic Spaces: Methodology and Applications</b> <i>Fabrizio Abrate, Basilio Bona, Luca Carlone, Marina Indri</i>
: 48	<a href="#">MF-000248</a>	<b>Multi-source Sound Localization using the Competitive K-means Clustering</b> <i>Byoung-gi Lee, JongSuk Choi</i>
: 55	<a href="#">MF-000922</a>	<b>Comparison of Mapping Techniques in Appearance-Based Topological Maps Creation</b> <i>Lorenzo Fernandez Rojo, Luis Paya Castello, Oscar Reinoso Garcia, Jose Maria Marin Lopez, Arturo Gil Aparicio</i>

## Track7 – S3. Robotics III

Chairs: Dietrich Paulus and Alberto Ortiz

Sala TV – 09:00-11:00 – Wednesday, September 15<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
: 62	<a href="#">MF-000361</a>	<b>Fuzzy Decentralized Overlapping Control for Guidance of a Convoy of Robots in Non-linear Trajectories</b> <i>Carlos Santos, Felipe Espinosa, Daniel Pizarro, Fernando Valdes, Enrique Santiso, Isabel Diaz</i>
: 6:	<a href="#">MF-002682</a>	<b>Path Planning and Tracking for Robots Based on Cubic Hermite Splines in Real-Time</b> <i>Petr Wagner, Jiri Kotzian, Jan Kordas, Viktor Michna</i>
: 78	<a href="#">MF-001295</a>	<b>Practical issues and Development of Underwater 3D Laser Scanners</b> <i>Junjie Liu, Anthony Jakas, Ala Al-Obaidi, Yonghuai Liu</i>



## Works in Progress

### WiP 1. Information Technology in Automation

WiP 1. Information Technology in Automation		
		Chairs: Miriam Schleipen and Henrik Dibowski
PSA3 – 14:00-16:00 – Wednesday, September 15 <sup>th</sup> , 2010		
Order	ETFA Ref	Title/Authors
: 86	<a href="#">MF-004537</a>	<b>A concept for conformance testing of AutomationML models by means of formal proof using OCL</b> <i>Miriam Schleipen</i>
: 8;	<a href="#">MF-005452</a>	<b>Service workflow monitoring through complex event processing</b> <i>Pablo Gay Sacristan, Albert Pla Planas, Beatriz López Ibáñez, Joaquim Meléndez Frigola, Regine Meunier</i>
: 95	<a href="#">MF-004448</a>	<b>Generic Specification Toolchain for Ontology-Based Device Descriptions</b> <i>Henrik Dibowski, Klaus Kabitzsch</i>
: 99	<a href="#">MF-004731</a>	<b>A Study on Security Mechanisms in KNX-based Home/Building Automation Networks</b> <i>Salvatore Cavalieri, Giovanni Cutuli, Michele Malgeri</i>
:: 3	<a href="#">MF-005894</a>	<b>Tool Support for the Development of IEC 62390 compliant Fieldbus Profiles</b> <i>Roman Frenzel, Martin Wollschlaeger, Thomas Hadlich, Christian Diedrich</i>
:: 7	<a href="#">MF-005525</a>	<b>Improving Methods and Processes for the Development of Safety-Critical Automotive Embedded Systems</b> <i>Martin Krammer, Nadja Marko, Eric Armengaud, Dirk Geyer, Gerhard Griessnig</i>
::;	<a href="#">MF-004626</a>	<b>Selecting UML Models for Test-Driven Development along the Automation Systems Engineering Process</b> <i>Reinhard Hametner, Dietmar Winkler, Thomas ÖStreicher, Natascha Surnic, Stefan Biffel</i>
8; 5	<a href="#">MF-006173</a>	<b>An agent based middleware imposing intelligence over critical infrastructures utilizing Wireless Sensor Networks</b> <i>Christos Panagiotou, John Gialelis, Stavros Koubias, Dimitrios Serpanos</i>
::; 9	<a href="#">MF-004553</a>	<b>A Framework for Automated Testing of Automation Systems</b> <i>Dietmar Winkler, Reinhard Hametner, Thomas ÖStreicher, Stefan Biffel</i>

; 23	<a href="#">MF-004529</a>	<b>Modeling and analysing ubiquitous systems</b> <i>Amara Touil, Jean Vareille, Fred L'Herminier, Philippe Le Parc</i>
; 27	<a href="#">MF-006149</a>	<b>MIOOP. An Object Oriented Programming Paradigm Approach on the IEC 61131 Standard</b> <i>Victor Manuel Gonzalez Suarez, Angel Luis Sierra Diaz, Alejandro Fernández Junquera, Pablo García Fernández, Ricardo Mayo Bayón</i>
; 2;	<a href="#">MF-004928</a>	<b>Redundant Structures for a Generic Real-time Ethernet System</b> <i>Jahanzaib Imtiaz, Juergen Jasperneite, Karl Weber</i>
; 35	<a href="#">MF-005118</a>	<b>Automatic Robot Software Design Tool: Open Platform for Robotics Services</b> <i>Mi-sook Kim, Soohee Han, Hong Seong Park</i>
; 39	<a href="#">MF-004391</a>	<b>Transport with Automatic Guided Vehicles in the Factory of the Future</b> <i>Fernando Almeida, Bruno Terra, Paulo Dias, Gil Gonçalves</i>
; 43	<a href="#">MF-005142</a>	<b>A gateway concept for visual exploration and control of building services</b> <i>Stefan Knauth</i>
; 47	<a href="#">MF-005444</a>	<b>Ontology-based Fault Diagnosis for Industrial Control Applications</b> <i>Martin Melik-Merkumians, Thomas Moser, Alois Zoitl</i>
; 4;	<a href="#">MF-004901</a>	<b>Using Service Challenge-based Evaluations for the Systematic Innovation of Proactive Remote Services – An Industry Case Study</b> <i>Timo Holm, Peter Wiener, Stefan Horn</i>
; 55	<a href="#">MF-004669</a>	<b>Increasing Portability and Reuseability of Distributed Control Programs by I/O Access Abstraction</b> <i>Martin Melik-Merkumians, Monika Wenger, Reinhard Hametner, Alois Zoitl</i>

## WiP 2. Industrial Communication Systems

WiP 2. Industrial Communication Systems		
		<b>Chairs:</b> Paulo Portugal and Max Felser
PSA1 – 09:00-11:00 – Wednesday, September 15 <sup>th</sup> , 2010		
Order	ETFA Ref	Title/Authors
; 59	<a href="#">MF-005479</a>	<b>Performance Analysis of Switched EtherCAT Networks</b> <i>Gianluca Cena, Stefano Scanzio, Adriano Valenzano, Claudio Zunino</i>
; 63	<a href="#">MF-006041</a>	<b>Identification of Traffic Flows in Ethernet-based Industrial Fieldbuses</b> <i>Iván Domínguez-Jaimes, Lukasz Wisniewski, Henning Trsek</i>
; 67	<a href="#">MF-004804</a>	<b>Distributed Monitoring for Component-based Traffic Management Systems</b> <i>Christoph Stoegerer, Wolfgang Kastner</i>
; 6;	<a href="#">MF-005819</a>	<b>Modeling End-to-End Reliability in Best-Effort Networked Embedded Systems</b> <i>Marek Miskowicz, Dariusz Koscielnik</i>
; 75	<a href="#">MF-005886</a>	<b>OPC UA for Vertical Communication in Logistic Informatics Systems</b> <i>Rafal Cupek, Aldona Maka</i>
; 79	<a href="#">MF-006033</a>	<b>JasUA: A JavaScript Stack enabling Web Browsers to support OPC Unified Architecture's Binary Mapping natively</b> <i>Stefan Hennig, Annerose Braune, Matthias Damm</i>
; 83	<a href="#">MF-005657</a>	<b>Coexistence Optimized Cognitive Engine (COCE)</b> <i>Kaleem Ahmad, Ganesh m. Shrestha, Uwe Meier</i>
; 87	<a href="#">MF-006386</a>	<b>An assessment of the IEEE 802.15.4 PHY immunity to WiFi interference</b> <i>Paulo Bartolomeu, José Fonseca</i>
98;	<a href="#">MF-005967</a>	<b>Effects of elaboration delays on the polling time of IEEE 802.11 networks for industrial applications</b> <i>Stefano Vitturi, Giovanni Gamba, Lucia Seno</i>
; 95	<a href="#">MF-006068</a>	<b>Towards a WirelessHART module for the Ns-3 Simulator</b> <i>Marcelo Nobre, Ivanovitch Silva, Luiz Affonso Guedes, Paulo Portugal</i>
; 99	<a href="#">MF-005622</a>	<b>Towards a Radio-Controlled Time Synchronized Wireless Sensor Network: A Work in-Progress Paper</b> <i>Waqas Ikram, Ivan Stoianov, Nina Thornhill</i>
; : 3	<a href="#">MF-005983</a>	<b>Analysis of Control and Multimedia Real-Time Traffic over SIP and RTP on</b>

		<b>802.11n Wireless Links for Utilities Networks</b> <i>Salvador Santonja-Climent, David Todoli-Ferrandiz, Teresa Albero-Albero, Víctor M. Sempere-Payá, Javier Silvestre-Blanes, Jesus Alcober</i>
::7	<a href="#">MF-004456</a>	<b>Monitoring Electromagnetic Pollution Using Wireless Sensor Networks</b> <i>Dalia Abou El Seoud, Sara Nouh, Rana Abbass, Ramez Daoud, Hassanein Amer, Hany ElSayed</i>
::;	<a href="#">MF-005134</a>	<b>Control Communications with DDS using IEC61499 Service Interface Function Blocks</b> <i>Isidro Calvo, Federico Perez, Ismael Etxeberria, Guadalupe Moran</i>

**WiP 3. Real-time (and networked) embedded systems track**

**WiP 3. Real-time (and networked) embedded systems track**  
**Chairs:** Roberto Passerone and Thomas Nolte  
**Aula de Grados – 14:00-16:00 – Tuesday, September 14<sup>th</sup>, 2010**

Order	ETFA Ref	Title/Authors
::5	<a href="#">MF-005606</a>	<b>Exploiting Harmonic Periods to Improve Linearly Approximated Response-Time Upper Bounds</b> <i>Chidiebere G. U. Okwudire, Martijn M. H. P. van den Heuvel, Reinder J. Bril, Johan J. Lukkien</i>
::9	<a href="#">MF-004715</a>	<b>Schedulability Analysis in Partitioned Systems for Aerospace Avionics</b> <i>João Craveiro, José Rufino</i>
3223	<a href="#">MF-005584</a>	<b>On Validation of Simulation Models in Timing Analysis of Complex Real-Time Embedded Systems</b> <i>Yue Lu, Johan Kraft, Thomas Nolte, Christer Norström</i>
3227	<a href="#">MF-005916</a>	<b>Exact response-time analysis for fixed-priority preemption-threshold scheduling</b> <i>Ugur Keskin, Reinder J. Bril, Johan J. Lukkien</i>
322;	<a href="#">MF-006343</a>	<b>On Hierarchical Server-based Communication with Switched Ethernet</b> <i>Rui Santos, Farahnaz Yekeh, Thomas Nolte, Paulo Pedreiras, Luís Almeida</i>
3235	<a href="#">MF-006165</a>	<b>A run-time memory management approach for scratch-pad-based embedded systems</b> <i>Tiago Rogério Mück, Antônio Augusto Fröhlich</i>
3239	<a href="#">MF-004405</a>	<b>Model-Based Diagnosis of Induction Motor Failure Modes</b> <i>William Bradley, John Victory, Kambiz Ebrahimi, Alastair Wood, Charles Pestell</i>
3243	<a href="#">MF-005215</a>	<b>An Efficient Design Methodology for Hybrid Avionic Test Systems</b> <i>George Afonso, Rabie Ben Atitallah, Nicolas Belanger, Martial Rubio, Jean-Luc Dekeyser</i>
3247	<a href="#">MF-005789</a>	<b>Mapping Complex Timing Constraints to Simple Real-Time Scheduling Parameters</b> <i>Damir Isovici, Radu Dobrin</i>
10 4;	<a href="#">MF-004472</a>	<b>A Flexible Tool for Evaluating Scheduling, Synchronization and Partitioning Algorithms on Multiprocessors</b>

		<i>Farhang Nemati, Thomas Nolte</i>
3255	<a href="#">MF-005959</a>	<b>Generation of schedulable real-time component implementations</b> <i>Ansgar Radermacher, Chokri Mraidha, Sara Tucci-Piergiovanni, Sébastien Gérard</i>
3259	<a href="#">MF-006394</a>	<b>Towards a middleware architecture for deterministic reconfiguration of service-based networked applications</b> <i>Marisol García-Valls, Iago Rodríguez-López, Laura Fernández-Villar, Iria Estévez-Ayres, Pablo Basanta-Val</i>
3263	<a href="#">MF-006459</a>	<b>Reducing Development Costs in Industrial Safety Projects with CESAR</b> <i>Tormod Wien, Frank Reichenbach, Erik Carlson, Tor Stålhane</i>
3267	<a href="#">MF-004693</a>	<b>Real-Time Modeling for Industrial Control Systems</b> <i>Elisabet Estevez, Marga Marcos, Edurne Irisarri</i>
326;	<a href="#">MF-004812</a>	<b>Quantity of Resource aggregation for heterogeneous resource reservation for multimedia applications</b> <i>Maxime Louvel, Jacques Pulou, Alain Plantec, Jean-Philippe Babau</i>
3275	<a href="#">MF-005754</a>	<b>Model for Worst Case Delay Analysis of an AFDX Network using Timed Automata</b> <i>Muhammad Adnan, Jean-Luc Scharbarg, Jerome Ermont, Christian Fraboul</i>
3279	<a href="#">MF-005991</a>	<b>Towards Hierarchical Scheduling in Linux/Multi-core Platform</b> <i>Mikael Åsberg, Thomas Nolte, Shinpei Kato</i>
3283	<a href="#">MF-005665</a>	<b>Energy optimization at the MAC layer for a forest fire monitoring Wireless Sensor Network</b> <i>Anwar Al-Khateeb, Jun Kyoung Kim, Luiciano Lavagno, Mihai T. Lazarescu</i>
3287	<a href="#">MF-005835</a>	<b>Swell effect in shallow underwater acoustic communications</b> <i>Joaquín Aparicio, Fernando J. Álvarez, Jesús Ureña, Ana Jiménez, Cristina Diego, Enrique García</i>

**WiP 4. Automated Manufacturing Systems****WiP 4. Automated Manufacturing Systems****Chairs:** Josep M. Fuertes and Aitor Alzaga**PSA1** – 09:30-11:00 – Monday, September 13<sup>rd</sup>, 2010

Order	ETFA Ref	Title/Authors
328;	<a href="#">MF-006114</a>	<b>Distributed repository to support the development of manufacturing applications</b> <i>Arantzazu Burgos, Aintzane Armentina, Elisabet Estévez, Isabel Sarachaga, Marga Marcos</i>
3295	<a href="#">MF-004464</a>	<b>Motion in Industrial Wireless Networked Control Systems Using 802.11b</b> <i>Abdel Aziz Shalaby, Esraa Makled, Ramez Daoud, Mai Hassan, Tarek Refaat, Hassanein Amer</i>
3299	<a href="#">MF-006254</a>	<b>Towards Reconfigurable Body Framing Systems for Automotive Manufacturing</b> <i>Zbigniew J. Pasek, Abdo AlZaher</i>
32: 3	<a href="#">MF-006246</a>	<b>Identifying Flows in the Long Cycle Manufacturing Process</b> <i>Zbigniew J. Pasek, Pawel Pawlewski</i>
32: 8	<a href="#">MF-004596</a>	<b>Automatic Reconfiguration of flexible Robot Gripping System</b> <i>Torsten Felsch, Christian Herker</i>
32; 2	<a href="#">MF-005495</a>	<b>An automatic procedure to identify the areas of interest for the automated inspection of headlamp lenses</b> <i>Silvia Satorres Martínez, Juan Gómez Ortega, Javier Gámez García, Alejandro Sánchez García</i>
32; 6	<a href="#">MF-005207</a>	<b>SOPRO - Advancements in the Self-organising Production</b> <i>Moritz Chemnitz, Marcel Patzlaff, Erdene-Ochir Tuguldur, Joerg Krueger</i>
32; :	<a href="#">MF-005878</a>	<b>High Performance Computing Methods for Automation</b> <i>Petra Piochacz, Thomas Pototschnig, Georg Acher, Udo Lang, Werner Leeb</i>

**WiP 5. Industrial control**

<b>WiP 5. Industrial control</b>		
		<b>Chairs:</b> Juan Gude and Luis Filipe Figueira
<b>Aula de Videoconferencias – 09:30-11:00 – Monday, September 13<sup>rd</sup>, 2010</b>		
<b>Order</b>	<b>ETFA Ref</b>	<b>Title/Authors</b>
3324	<a href="#">MF-000582</a>	<b>Modeling of a hybrid renewable/fossil hot water production system</b> <i>Amalia Luque, Teodoro Alamo, Manuel Arahall, Daniel Limón, Agustín Consegliere</i>
3329	<a href="#">MF-004723</a>	<b>Online Identification and Compensation of the Force Estimating Error in Sensor-less Bilateral Control System</b> <i>Dapeng Tian, Kouhei Ohnishi</i>
3333	<a href="#">MF-004871</a>	<b>Simulation of Power Plant Superheater by Simulink S-functions</b> <i>Stepan Ozana, Martin Pies</i>
3337	<a href="#">MF-005541</a>	<b>The Complex System for the Rock Massif Measurement of Temperature Parameters</b> <i>Jiri Koziorek, Radovan Hajovsky, Jiri Kocian</i>
333;	<a href="#">MF-006203</a>	<b>Process Control based on PCA Models</b> <i>Luis Brito Palma, Fernando Vieira Coito, Paulo Sousa Gil, Rui Neves-Silva</i>
3345	<a href="#">MF-006319</a>	<b>Modified Ziegler-Nichols method for fractional PI controllers</b> <i>Juan Gude, Evaristo Kahoraho</i>



## **WiP 6. Computational intelligence and modern heuristics in automation**

### **WiP 6. Computational intelligence and modern heuristics in automation**

**Chairs:** Juan Gude and Luis Filipe Figueira

**Aula de Videoconferencias – 09:30-11:00 – Monday, September 13<sup>rd</sup>, 2010**

<b>Order</b>	<b>ETFA Ref</b>	<b>Title/Authors</b>
334:	<a href="#">MF-005487</a>	<b>Collaborative Dynamic Scheduling Approach in the Extended Enterprise</b> <i>Esther Alvarez, Fernando Díaz</i>
3354	<a href="#">MF-004642</a>	<b>Simulation and Analysis of Buying Behavior in Supermarkets</b> <i>Clemens Schwenke, Volodymyr Vasyutynskyy, Klaus Kabitzsch</i>
3358	<a href="#">MF-005975</a>	<b>A Generic Framework for Synthesis and Optimization of System Designs in the Example of Building Automation Systems</b> <i>A. Cemal Oezluek, Joern Ploennigs, Klaus Kabitzsch</i>
3362	<a href="#">MF-006475</a>	<b>3D machine vision and Artificial Neural Networks for quality inspection in mass production pieces</b> <i>Alberto Tellaeche, Beatriz Robles</i>
3366	<a href="#">MF-004863</a>	<b>Automatic Slag Characterization based on Hyperspectral Image Processing</b> <i>Sergio Rodriguez-Vaamonde, Artzai Picon, Jose Angel Gutierrez, Arantza Bereciartua, Pedro Iriondo</i>
336:	<a href="#">MF-005169</a>	<b>Automation of waste recycling using hyperspectral image analysis</b> <i>Artzai Picon, Ovidiu Ghita, Pedro Iriondo, Arantza Bereciartua, Paul Whelan</i>

**WiP 7. Intelligent robots and systems**

WiP 7. Intelligent robots and systems

Chairs: Antoni Burguera and Alberto Ortiz

Sala TV – 09:00-10:30 – Tuesday, September 14<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
1374	<a href="#">MF-006025</a>	<b>On Using Deterministic Models to Design Agent-based, Robotic Systems</b> <i>Lluís Ribas-Xirgo, Joaquín Saiz-Alcaine, Jonatan Trullàs-Ledesma, A. Josep Velasco-González</i>
3378	<a href="#">MF-004502</a>	<b>Constrained Optimization of Robot Trajectory and Obstacle Avoidance</b> <i>Viktor Michna, Petr Wagner, Jindrich Cernohorsky</i>
3382	<a href="#">MF-006262</a>	<b>Integration and Management Model for Robotic Functional Components Inspired by the Human Neuroregulatory System</b> <i>José Vicente Berná Martínez, Francisco Maciá Pérez</i>
3386	<a href="#">MF-005711</a>	<b>Partial Outline Combination and Categorization using 3D-Range Measurements on a Mobile Robot</b> <i>Marko Reimer, Bernardo Wagner</i>
338:	<a href="#">MF-005568</a>	<b>Bearing estimation algorithm based on spectral analysis of the ultrasonic received echoes</b> <i>Cristina Diego, Álvaro Hernández, Ana Jiménez</i>
3394	<a href="#">MF-004421</a>	<b>A Measurement Model for Mobile Robot Localization using Underwater Acoustic Images</b> <i>Antoni Burguera, Gabriel Oliver, Yolanda González</i>
3398	<a href="#">MF-006297</a>	<b>Time Based Correspondences Using Sonar Scan Matching</b> <i>Marti Sales, Yolanda González, Antoni Burguera</i>
33: 2	<a href="#">MF-006289</a>	<b>Range Extraction from Underwater Imaging Sonar Data</b> <i>Antoni Burguera, Gabriel Oliver, Yolanda González</i>
33: 6	<a href="#">MF-004499</a>	<b>Towards Monocular Localization using Ground Points</b> <i>Francisco Bonin-Font, Toni Buguera, Alberto Ortiz, Gabriel Oliver</i>
11: :	<a href="#">MF-004707</a>	<b>First Steps towards a Robotized Visual Inspection System for Vessels</b> <i>Alberto Ortiz, Francisco Bonnin-Pascual, Andrew Gibbins, Panagiota Apostolopoulou, William Bateman, Markus Eich, Francesco Spadoni, Massimo Caccia, Leonidas Drikos</i>
33: 6	<a href="#">MF-004545</a>	<b>Combination of Weak Classifiers for Metallic Corrosion Detection and Guided</b>

		<b>Crack Location</b> <i>Francisco Bonnin-Pascual, Alberto Ortiz</i>
33; :	<a href="#">MF-004766</a>	<b>Incremental Multimodal Interface for Human Robot Interaction</b> <i>Afshin Ameri E., Batu Akan, Baran Çürüklü</i>

## Special Sessions

### SS 1. Safety Critical Embedded Systems

SS 01. Safety Critical Embedded Systems		
		<b>Chairs:</b> Frank Reichenbach and Dominik Sojer
PSA1 – 11:30-13:00 – Monday, September 13 <sup>rd</sup> , 2010		
Order	ETFA Ref	Title/Authors
3424	<a href="#">MF-001104</a>	<b>FTOS: Model-Driven Development of Fault-Tolerant Automation Systems</b> <i>Christian Buckl, Dominik Sojer, Alois Knoll</i>
3432	<a href="#">MF-004227</a>	<b>Automated Fault Tree Generation and Risk-Based Testing of Networked Automation Systems</b> <i>Tanvir Hussain, Robert Eschbach</i>
343:	<a href="#">MF-001775</a>	<b>Enabling Safety-Critical Communication using WirelessHART and PROFI-safe</b> <i>Johan Akerberg, Frank Reichenbach, Mats Bjorkman</i>
3448	<a href="#">MF-001147</a>	<b>Determination of the Quality of Error Detection in Communication by CRC Concatenated with Parity Bits</b> <i>Tina Mattes, Frank Schiller</i>

## SS 2. Building Automation and Smart Homes

### SS 02 – S1. Building Automation and Smart Homes I: Engineering and integration aspects

**Chairs:** Rolf Kistler and Albert Treytl

**PSA2** – 09:30-11:00 – Monday, September 13<sup>rd</sup>, 2010

Order	ETFA Ref	Title/Authors
3455	<a href="#">MF-000299</a>	<b>Engineering of Building Automation Systems - State-of-the-Art, Deficits, Approaches</b> <i>Stefan Runde, Achim Heidemann, Alexander Fay, Peer Schmidt</i>
3463	<a href="#">MF-002992</a>	<b>Semantic Buildings: Goal-driven approach for building automation service allocation and control</b> <i>Aliaksei Andrushevich, Marius Staub, Rolf Kistler, Alexander Klapproth</i>
3469	<a href="#">MF-001007</a>	<b>Embedding Internet Technology for Home Automation</b> <i>Matthias Kovatsch, Markus Weiss, Dominique Guinard</i>
3477	<a href="#">MF-001171</a>	<b>Usage Profiles for Sustainable Buildings</b> <i>Felix Vazquez, Wolfgang Kastner</i>

### SS 02 – S2. Building Automation and Smart Homes II: Wireless Networks

**Chairs:** Wolfgang Kastner and Alexander Klapproth

**PSA2** – 11:30-13:00 – Monday, September 13<sup>rd</sup>, 2010

Order	ETFA Ref	Title/Authors
3485	<a href="#">MF-001546</a>	Challenges of Simulating Robust Wireless Sensor Network Applications in Building Automation Environments <i>Michael Galetzka, Jürgen Haufe, Michael Lindig, Uwe Eichler, Peter Schneider</i>
3493	<a href="#">MF-002771</a>	Performance Analysis of the EnOcean Wireless Sensor Network Protocol <i>Joern Ploennigs, Uwe Ryssel, Klaus Kabitzsch</i>
34: 2	<a href="#">MF-003123</a>	WiiLoc: a Step Towards Efficient Device Identification in Large Office Buildings by Wii-Based Localization <i>Ralf Warmuth, Stefan Goldmann, Ralf Salomon</i>

### **SS 3. Dependable Wireless Networks for Adaptable Industrial Automation Systems**

#### **SS 03. Dependable wireless networks for adaptable industrial automation systems**

**Chairs:** Edgar Nett and Juergen Jasperneite

**PSA3** – 14:00-16:00 – Tuesday, September 14<sup>th</sup>, 2010

<b>Order</b>	<b>ETFA Ref</b>	<b>Title/Authors</b>
34; 8	<a href="#">MF-003387</a>	Implementing the Wireless FTT Protocol: A Feasibility Analysis <i>Paulo Bartolomeu, José Fonseca, Francisco Vasques</i>
34; 8	<a href="#">MF-000973</a>	Fault-tolerant base station planning of wireless mesh networks in dynamic industrial environments <i>Svilen Ivanov, Edgar Nett, Ralf Schumann</i>
3526	<a href="#">MF-002496</a>	Location-based Handover in Cellular IEEE 802.11 Networks for Factory Automation <i>Lukasz Wisniewski, Henning Trsek, Ivan Dominguez-Jaimes, Anetta Nagy, Reinhard Exel, Nikolaus Kerö</i>
3534	<a href="#">MF-003751</a>	A traffic scheduler for real-time wireless communication in adaptable industrial automation systems <i>Emanuele Toscano, Francesco Misenti, Lucia Lo Bello</i>

## SS 4. Interoperability within Engineering of Manufacturing Systems

### SS 04. Interoperability within Engineering of Manufacturing Systems

Chairs: Otto-v. Arndt Lüder and Elisabet Estevez

PSA3 – 16:30-18:30 – Tuesday, September 14<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
3542	<a href="#">MF-000221</a>	<b>Manufacturing System Engineering with Mechatronical Units</b> <i>Arndt Lüder, Lorenz Hundt, Matthias Foehr, Thomas Wagner, Jorgos-Johannes Zaddach</i>
354:	<a href="#">MF-002372</a>	<b>The CAEX-Tool-Suite: User assistance for the use of standardized plant engineering data exchange</b> <i>Miriam Schleipen, Michael Okon</i>
3557	<a href="#">MF-003336</a>	<b>Description of manufacturing processes using AutomationML</b> <i>Arndt Lüder, Lorenz Hundt, Anderas Keibel</i>
3565	<a href="#">MF-003506</a>	<b>PLCopen for achieving interoperability between engineering development phases</b> <i>Elisabet Estevez, Marga Marcos, Arndt Lüder, Lorenz Hundt</i>
3573	<a href="#">MF-003271</a>	<b>Semantic Tool Interoperability for Engineering of Manufacturing Systems</b> <i>Thomas Moser, Stefan Biffel</i>
357;	<a href="#">MF-003468</a>	<b>Design and implementation of an automatic on-line diagnosis with TiDiaM and TiDE</b> <i>Luca Ferrarini, Alessio Dedè, Massimo Allevi</i>

## SS 5. Industrial Automation Systems Development: Trends and challenges in 61499

### SS 05 – S1. Industrial Automation Systems Development: Trends and challenges in 61499 I

**Chairs:** Marga Marcos, Kleanthis Thramboulidis

Aula de Videoconferencias – 09:00-10:30 – Tuesday, September 14<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
3587	<a href="#">MF-001694</a>	<b>Improving Verification and Reliability of Distributed Control Systems Design according to IEC 61499</b> <i>Hans-Christian Lapp, Christian Gerber, Hans-Michael Hanisch</i>
3595	<a href="#">MF-003085</a>	<b>Replication in Distributed Systems using IEC 61499 Standard</b> <i>Adriano A. Santos, Mário de Sousa</i>
35: 3	<a href="#">MF-001279</a>	<b>A Complete Framework for Controller Verification in Manufacturing</b> <i>Christian Gerber, Sebastian Preuße, Hans-Michael Hanisch</i>
35; 2	<a href="#">MF-003638</a>	<b>Usability Evaluation of modeling notations for software engineering in machine and plant automation</b> <i>Steven Braun, Martin Obermeier, Birgit Vogel-Heuser</i>
35; :	<a href="#">MF-001597</a>	<b>Analysis and Validation of IEC 61131-3 Applications using a MDE Approach</b> <i>Marga Marcos, Elisabet Estevez, Nagore Iriondo, Dario Orive</i>

### SS 05 – S2. Industrial Automation Systems Development: Trends and challenges in 61499 II

**Chairs:** Kleanthis Thramboulidis, Marga Marcos

Aula de Videoconferencias – 14:00-16:00 – Wednesday, September 15<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
3628	<a href="#">MF-001716</a>	<b>Design Patterns for Failure Management in IEC 61499 Function Blocks</b> <i>Felix Serna, Carlos Catalan, Alfonso Blesa, Josep M. Rams</i>
3635	<a href="#">MF-001627</a>	<b>Redesign Distributed IEC 61131-3 PLC System in IEC 61499 Function Blocks</b> <i>Wenbin William Dai, Valeriy Vyatkin</i>
3643	<a href="#">MF-003565</a>	<b>IEC 61499 based Simulation Framework for Model-Driven Production Systems Development</b> <i>Ingo Hegny, Monika Wenger, Alois Zoitl</i>
364;	<a href="#">MF-002739</a>	<b>Analyzing the Compatibility Between ISA 88 and IEC 61499</b> <i>Mario de Sousa</i>
3659	<a href="#">MF-003433</a>	<b>Integrating the 3+1 SysML View Model with Safety Engineering</b> <i>Kleanthis Thramboulidis, Sven Scholz</i>



## SS 6. Reconfigurable Distributed Embedded Systems

### SS 06. Reconfigurable Distributed Embedded Systems

Chairs: Marisol García Valls and Alois Zoitl

Aula de Grados – 09:00-11:00 – Wednesday, September 15<sup>th</sup>, 2010

Order	ETFA Ref	Title/Authors
3667	<a href="#">MF-004235</a>	<b>A middleware to support dynamic reconfiguration of real-time networks</b> <i>Ricardo Marau, Luís Almeida, Mário Sousa, Paulo Pedreiras</i>
3677	<a href="#">MF-004022</a>	<b>A Service-Oriented Architecture for QoS Configuration and Management of Wireless Sensor Networks</b> <i>Gaetano F. Anastasi, Enrico Bini, Antonio Romano, Giuseppe Lipari</i>
3685	<a href="#">MF-001872</a>	<b>A Real-Time Reconfiguration Infrastructure for Distributed Embedded Control Systems</b> <i>Alois Zoitl, Wilfried Lepuschitz, Munir Merdan, Mathieu Vallee</i>
3693	<a href="#">MF-003727</a>	<b>Supporting a Reconfigurable Real-Time Service-Oriented Middleware with FTT-CORBA</b> <i>Isidro Calvo, Luis Almeida, Federico Perez, Adrian Noguero, Marga Marcos</i>

## SS 8. QoS and Resource management in adaptable real-time systems

SS 08. QoS and Resource Management in Adaptable Real-Time Systems		
Chairs: Marisol García Valls and Alejandro Alonso		
Aula de Grados – 14:00-16:00 – Wednesday, September 15 <sup>th</sup> , 2010		
Order	ETFA Ref	Title/Authors
369;	<a href="#">MF-003808</a>	<b>Utilization-based Schedulability Analysis for Switched Ethernet aiming Dynamic QoS Management</b> <i>Ricardo Marau, Luís Almeida, Paulo Pedreiras, Karthik Lakshmanan, Raj Rajkumar</i>
36; ;	<a href="#">MF-002968</a>	<b>Memory Management for Multimedia Quality of Service in Resource Constrained Embedded Systems</b> <i>Mike Holenderski, Chidiebere Okwudire, Reinder Bril, Johan Lukkien</i>
36; 9	<a href="#">MF-004006</a>	<b>Resource Management for Enhancing Predictability in Systems with Limited Processing Capabilities</b> <i>Alejandro Alonso, Emilio Salazar, Jorge López</i>
3726	<a href="#">MF-002259</a>	<b>Data Stream Processing in Factory Automation</b> <i>Bernhard Wolf, Philipp Herzig, Ingo Behrens, Anirban Majumdar, Michael Ameling</i>
3734	<a href="#">MF-001228</a>	<b>Using Intelligent Mobile Agents to Dynamically Determine Itineraries with Time Constraints</b> <i>Alex Pinho Magalhães, Luciana de Oliveira Rech, Lau Cheuk Lung, Rômulo Silva de Oliveira</i>

## SS 9. Real-Time and (Networked) Embedded Systems

### SS 09. Real-Time and (Networked) Embedded Systems

**Chairs:** Neil Bergmann and Juan Antonio de la Puente

**Aula de Videoconferencias – 09:00-11:00 – Wednesday, September 15<sup>th</sup>, 2010**

Order	ETFA Ref	Title/Authors
3742	<a href="#">MF-000078</a>	<b>System Requirements for Industrial Wireless Sensor Networks</b> <i>Liqun Hou, Neil W Bergmann</i>
374:	<a href="#">MF-000477</a>	<b>STORM A Simulation Tool for Real-time Multiprocessor Scheduling Evaluation</b> <i>Richard Urunuela, Anne-Marie Deplanche, Yvon Trinquet</i>
3758	<a href="#">MF-001902</a>	<b>Simulation study of energy efficient scheduling for IEEE 802.15.4/ZigBee cluster-tree Wireless Sensor Networks with time-bounded data flows</b> <i>Petr Jurcik, Zdenek Hanzalek</i>
3766	<a href="#">MF-003964</a>	<b>Design and implementation of real-time distributed systems with the ASSERT Virtual Machine</b> <i>Juan Zamorano, Juan Antonio de la Puente</i>