

5 Technical Program

5.1 Program Overview

Thursday, 11 September 2014

	Argento Plenaria	Oro Plenaria	Plenaria delle divinità
8.15–8.30		Welcome	
8.30–9.20		Industrial Keynote Address	
9.20–10.00		O1: Education I	
10.00–10.30		Coffee	
10.30–12.00	O2: Sensor Networks I	O3: Multicore	
12.00–14.30		Lunch	
12.00–14.30			P1: Poster I S1: Show & Tell I
13.30–14.30		Tut1	
14.30–15.30	O4: Power I	O5: Video	
15.30–16.00		Coffee and Poster I	
16.00–17.00	Tut2	Tut3	
19.30–22.00		EDERC Banquet	

Friday, 12 September 2014

	Argento Plenaria	Oro Plenaria	Plenaria delle divinità
8.30–9.20		Academic Keynote Address	
9.20–10.00		O6: Education II	
10.00–10.30		Coffee	
10.30–12.00	O8: Power II	O7: Sensor Networks II	
12.00–14.30		Lunch	
12.00–14.30			P2: Poster II S2: Show & Tell II
13.30–14.30		Invited Industrial Talk	
14.30–15.30	O9: Applications I	O10: Applications II	
15.30–16.00		Coffee and Poster II	
16.00–17.00		Forum	
17.00–17.30		Prize Giving and Close	

5.2 Programme Details — Thursday, 11 September 2014

Opening Remarks and Industrial Keynote Address

Thursday, 11 September 2014, 8:15–9:20

Room: Oro Plenaria

Chair: Djordje Marinkovic (Texas Instruments, Germany), John J. Soraghan (University of Strathclyde, United Kingdom)

8:15 **Welcome**

Djordje Marinkovic, John J. Soraghan (Conference Chairs)

8:30 **Industrial Keynote Address**

Dr. Ahmad Bahai (CTO of Analog Business at Texas Instruments)

O1: Education I

Thursday, 11 September 2014, 9:20–10:00

Room: Oro Plenaria

Chair: Djordje Marinkovic (Texas Instruments, Germany), John J. Soraghan (University of Strathclyde, United Kingdom)

9:20 **Texas Instruments MSP430 Microcontroller Based Portable Multi-Purpose Instrument for Android Platforms**

Robert Katona (University of Pannon, Hungary); Dénes Fodor (University of Pannonia, Hungary) p.1

9:40 **Teaching Embedded Software Development Utilising QNX and Qt with an Automotive-Themed Coursework Application**

Peter Barrie (Glasgow Caledonian University, United Kingdom); Gordon Morison (Glasgow Caledonian University, United Kingdom) p.6

Refreshments

Thursday, 11 September 2014, 10:00 –10:30

O2: Sensor Networks I

Thursday, 11 September 2014, 10:30–12:00

Room: Argento Plenaria

Chair: Ralf Gessler (Heilbronn University, Germany)

10:30 **Development of a Low Power Wireless Network to Support Elderly People Based on Ez430-Chronos and SimpliciTI**

Bruno Ribeiro (University of Beira Interior & Dep. Eng. Electromecanica, Portugal); António Espírito Santo (University of Beira Interior, Portugal); Weber S Calixto (UFPR - Universidade Federal do Parana, Brazil); Nuno M. Garcia (Universidade da Beira Interior & Instituto de Telecomunicações, Universidade Lusófona de Humanidades e Tecnologias, Portugal) p.11

10:50 **Design and Implementation of a Multi Sensors Self Sustainable Wearable Device**

Danilo Porcarelli (University of Bologna, Italy); Irene Donati (University of Bologna, Italy); Jetmir Nehani (University of Bologna, Italy); Davide Brunelli (University of Trento, Italy); Michele Magno (ETH Zurich and University of Bologna, Switzerland); Luca Benini (University of Bologna, Italy) p.16

11:10 **A Novel Pulseoximeter for Bluetooth Synchronized Measurements in a Body Sensor Network**

Maik Pflugradt (TU Berlin, Germany); Igor Fritzsich (TU Berlin, Germany); Steffen Mann (Technische Universität Berlin, Germany); Timo Tigges (Technische Universität Berlin, Germany); Reinhold Orglmeister (TU Berlin, Germany) **p.21**

11:30 **Application of MSP430 and DSP C5000 in Mobile Patient and Environmental Monitoring**

Dinko Oletic (University of Zagreb & Faculty of Electrical Engineering and Computing, Croatia); Vedran Bilas (University of Zagreb, Croatia) **p.26**

O3: Multicore

Thursday, 11 September 2014, 10:30–12:00

Room: Oro Plenaria

Chair: Gordon Morison (Glasgow Caledonian University, United Kingdom)

10:30 **Improving Performance and Productivity for Software Development on TI Multicore DSP Platforms**

Miguel Aguilar (RWTH Aachen University & Institute for Communication Technologies and Embedded Systems, Germany); Ronny Jimenez (RWTH Aachen University, Germany); Rainer Leupers (RWTH Aachen University, Germany); Gerd H. Ascheid (RWTH Aachen University, Germany) **p.31**

10:50 **PREESM: A Dataflow-Based Rapid Prototyping Framework for Simplifying Multicore DSP Programming**

Maxime Pelcat (INSA Rennes, France); Karol Desnos (INSA Rennes, France); Julien Heulot (IETR, INSA Rennes & CNRS UMR 6164, UEB, France); Clément Guy (INSA Rennes, France); Jean-François Nezan (IETR, France); Slaheddine Aridhi (Texas Instruments, France) **p.36**

11:10 **Open Event Machine: A Multi-Core Run-Time Designed for Performance**

Filip Moerman (Texas Instruments, France) **p.41**

11:30 **Parallel FFT Implementation on TMS320C66x Multicore DSP**

Aleksei Kharin (Ryazan State Radio Engineering University, Russia); Sergey Vityazev (Ryazan State Radio Engineering University, Russia); Vladimir Vityazev (Ryazan State Radio Engineering University, Russia); Naim Dahnoun (University of Bristol, United Kingdom) **p.46**

P1: Poster I

Thursday, 11 September 2014, 12:00–14:30

Room: Plenaria delle divinità

Chair: Carmine Clemente (University of Strathclyde, United Kingdom), Gaetano Di Caterina (University of Strathclyde, United Kingdom)

P1.1 **3D Video Streaming From a Remotely Operated Vehicle**

David Scaradozzi (Università Politecnica delle Marche, Italy); Laura Sorbi (Università Politecnica delle Marche, Italy); Francesco Zoppini (Università Politecnica delle Marche, Italy) **p.50**

P1.2 **An ARM Neon Optimised Image Abstraction Method Utilising the Cosine Integral Image Method**

Ryan Gibson (Glasgow Caledonian University, United Kingdom); David Round (Glasgow Caledonian University, United Kingdom); Mark Jenkins (Glasgow Caledonian University, United Kingdom); Peter Barrie (Glasgow Caledonian University, United Kingdom); Gordon Morison (Glasgow Caledonian University, United Kingdom) **p.55**

P1.3 **Audio-Communication Subsystem Module for Yrobot - A Modular Educational Robotic Platform**

Juraj Miček (University of Žilina & Faculty of Management Science and Informatics, Slovakia);

Ondrej Karpíš (University of Žilina & Faculty of Management Science and Informatics, Slovakia); Michal Kochláň (University of Žilina & Faculty of Management Science and Informatics, Slovakia) p.60

P1.4 Processor Virtualization on Embedded Linux Systems

Geoffrey Papaux (University of Applied Sciences and Arts Western Switzerland, Fribourg, Switzerland); Daniel Gachet (University of Applied Sciences of Western Switzerland, Fribourg, Switzerland); Wolfram Luithardt (University of Applied Sciences of Western Switzerland, Fribourg, Switzerland) p.65

P1.5 Efficient Implementation of Sliding Mode Control for BLDC PM Motor Using TMS320F28335 Microcontroller

Mirela Dobra (TU of Cluj-Napoca, Romania); Ioan Valentin Sita (Technical University of Cluj Napoca, Romania); Petru Dobra (Technical University of Cluj-Napoca, Romania) p.70

P1.6 Low Power Network Node for Ambient Monitoring and Heart Rate Measurement

Thomas Tetzlaff (South Westphalia University of Applied Sciences, Germany); Michael Boor (South Westphalia University of Applied Sciences, Germany); Ulf Witkowski (South Westphalia University of Applied Sciences, Germany); Reza Zandian (South Westphalia University of Applied Sciences, Germany) p.75

P1.7 Multichannel Airborne Ultrasonic Ranging System Based on the Piccolo C2000 MCU

Claudio Cambini (University of Florence, Italy); Lorenzo Giuseppi (University of Florence, Italy); Marco Calzolari (University of Florence, Italy); Pietro Giannelli (University of Florence, Italy); Lorenzo Capineri (University of Florence, Italy) p.80

P1.8 Hybrid Artificial Neural Network for Induction Motor Parameter Estimation

Jose Gutierrez-Villalobos (Universidad Autónoma de Querétaro, Mexico); Moisés Agustín Martínez (Universidad Autónoma de Querétaro, Mexico); Fortino Mendoza (Universidad Autónoma de Querétaro, Mexico); Juvenal Rodríguez Reséndiz (Universidad Autónoma de Querétaro, Mexico); Rafael Rodríguez (Universidad Autónoma de Querétaro, Mexico) p.85

P1.9 Compressive Sampling Experiments

Carsten Roppel (University of Applied Sciences Schmalkalden, Germany); Martin Danz (University of Applied Sciences Schmalkalden, Germany) p.90

P1.10 Deployment of 5GHz Real-Time Simplex Wireless SISO- And MISO-OFDM Transmission Using Matlab and the TMS320C6713 DSKs

Sotiris Karabetsos (Technological Educational Institute (TEI) of Athens & Institute for Language and Speech Processing (ILSP) / RC Athena, Greece); Georgios Stoumpis (National and Kapodistrian University of Athens, Greece); Evangelos Pikasis (National and Kapodistrian University of Athens, Greece); Thomas Nikas (Technological Educational Institution of Athens, Greece); John Papanikolaou (Technological Educational Institute (TEI) of Athens, Greece); Grigorios Koulouras (Technological Educational Institute (TEI) of Athens, Greece); Athanasse Nassiopoulos (Technological Educational Institution of Athens, Greece) p.95

P1.11 Toys as Tools in Embedded Engineering Education

Josif Kjosev (University SS Cyril and Methodius - Skopje, Macedonia, the former Yugoslav Republic of); Aleksandar Lazarov (University SS Cyril and Methodius - Skopje, Macedonia, the former Yugoslav Republic of); Martin Stojanovski (University SS Cyril and Methodius - Skopje, Macedonia, the former Yugoslav Republic of); Mario Makraduli (University SS Cyril and Methodius - Skopje, Macedonia, the former Yugoslav Republic of) p.100

P1.12 The Study of Microcontroller Based Embedded System for Smart Lighting Applications

Ilya Galkin (Riga Technical University, Latvia); Olegs Tetervenoks (Riga Technical University, Latvia) p.105

- P1.13 REPTAR: A Universal Platform for Codesign Applications**
 Alberto Dassatti (University of Applied Sciences Western Switzerland & HEIG-VD, Switzerland); Olivier Auberson (University of Applied Sciences Western Switzerland & HEIG-VD, Switzerland); Romain Bornet (University of Applied Sciences Western Switzerland & HEIG-VD, Switzerland); Etienne Messerli (University of Applied Sciences Western Switzerland & HEIG-VD & Institute REDS, Switzerland); Jérôme Stadelmann (University of Applied Sciences Western Switzerland & HEIG-VD, Switzerland); Yann Thoma (University of Applied Sciences Western Switzerland & HEIG-VD, Switzerland) **p.109**
- P1.14 Implementing Physical Models of Musical Instruments in the TMS320C6748**
 Roy Saar (Tel Aviv University, Israel); Gal Levy (Tel-Aviv University, Israel); Jacob Fainguelernt (Tel-Aviv University, Israel) **p.114**
- P1.15 Implementation of Extended Kalman Filtering Algorithm with Improved Flux Estimator on TMS320F28335 Processor for Induction Sensorless Drive**
 Michael Talanov (Ogarev Mordovia State University, Russia); Alexander Karasev (Ogarev Mordovia State University, Russia); Viktor Talanov (Ogarev Mordovia State University, Russia) **p.119**
- P1.16 Automatic Remote Correcting System for MOOCs**
 Pierre-Yves Rochat (EPFL, Switzerland) **p.124**
- P1.17 Implementation of Morse Decoder on the TMS320C6748 DSP Development Kit**
 Pavel Zahradnik (University of Technology Prague, Czech Republic); Boris Simak (Czech Technical University in Prague & Faculty of Electrical Engineering, Czech Republic) **p.128**

S1: Show & Tell I**Thursday, 11 September 2014, 12:00–14:30**

Room: Plenaria delle divinità

Chair: Nuria Llin (Texas Instruments, Germany), Keith Thompson (University of Strathclyde, United Kingdom)

Tut1: “The BeagleBone and its Application in Engineering Education”**Thursday, 11 September 2014, 13:30 –14:30**

Room: Oro Plenaria

Instructor: Dr. Derek Molloy (Dublin City University, Ireland)

O4: Power I**Thursday, 11 September 2014, 14:30–15:30**

Room: Argento Plenaria

Chair: Gianluca Ippoliti (Università Politecnica delle Marche, Italy)

14:30 Evaluation of a New Microcontroller Based Solution for Sensorless Control of Electrical DrivesMatthias Blank (Georg-Simon-Ohm University of Applied Sciences Nuremberg, Germany); Philipp Löhdefink (Technische Hochschule Nürnberg Georg Simon Ohm, Germany); Benjamin Reinhardt (Georg-Simon-Ohm University of Applied Sciences Nuremberg, Germany); Armin Dietz (Georg-Simon-Ohm University of Applied Sciences Nuremberg, Germany) **p.132****14:50 A Study of Regenerative Energy Systems and Pump Applications in Distributed DC-Microgrids**

Stefan Oberlander-Hörath (Technische Hochschule Nürnberg Georg Simon Ohm, Germany); Philipp Löhdefink (Technische Hochschule Nürnberg Georg Simon Ohm, Germany); Michael Grillenberger (Technische Hochschule Nürnberg Georg Simon Ohm, Germany); Johannes Fürst

(Technische Hochschule Nürnberg Georg Simon Ohm, Germany); Armin Dietz (Georg-Simon-Ohm Hochschule Nürnberg, Germany); Sebastian Hörlin (Technische Hochschule Nürnberg Georg Simon Ohm, Germany); Andreas Gröger (Siemens, Germany) p.137

15:10 **Design of an Embedded Battery Management System with Passive Balancing**
Kristaps Vitols (Riga Technical University, Latvia) p.142

O5: Video

Thursday, 11 September 2014, 14:30–15:30

Room: Oro Plenaria

Chair: Iain Hunter (Texas Instruments, United Kingdom)

14:30 **An Extended Real-Time Compressive Tracking Method Using Weighted Multi-Frame Cosine Similarity Metric**

Mark Jenkins (Glasgow Caledonian University, United Kingdom); Peter Barrie (Glasgow Caledonian University, United Kingdom); Tom Buggy (Glasgow Caledonian University, United Kingdom); Gordon Morison (Glasgow Caledonian University, United Kingdom) p.147

14:50 **GOP Level Parallelism Implementation for Real-Time H264/AVC Video Encoder on Multicore DSP TMS320C6472**

Nejmeddine Bahri (National School of Engineers of Sfax, Tunisia); Thierry Grandpierre (ESIEE, France); Mohamed Ali Ben Ayed (ISECS Sfax Tunisia, Tunisia); Nouri Massmoudi (University of Sfax, Tunisia); Mohamed Akil (ESIEE Paris, France) p.152

15:10 **Real-Time Motion Classification of HD Video Sequences on Embedded Systems**

Dominic Springer (University of Erlangen-Nuremberg, Germany); Christian Herglotz (University of Erlangen-Nuremberg, Germany); Franz Simmet (AUDI AG, Germany); Dieter Niederkorn (AUDI AG, Germany); Andre Kaup (University of Erlangen-Nuremberg, Germany) p.157

Refreshments

Thursday, 11 September 2014, 15:30–16:00

Tut2: “InstaSPIN sensorless electrical drive solutions”

Thursday, 11 September 2014, 16:00–17:00

Room: Argento Plenaria

Instructor: Prof. Dr. ir. Duco W. J. Pulle (Director Emsynergy. RWTH Aachen, Germany)

Tut3: “PREESM - Dataflow Programming of Multicore DSPs”

Thursday, 11 September 2014, 16:00–17:00

Room: Oro Plenaria

Instructor: Maxime Pelcat, Clément Guy, Karol Desnos (IETR/INSA Rennes, France)

EDERC Banquet

Thursday, 11 September 2014, 19:30–22:00

5.3 Programme Details — Friday, 12 September 2014

Academic Keynote Address

Friday, 12 September 2014, 8:30–9:20

Room: Oro Plenaria

Chair: John J. Soraghan (University of Strathclyde, United Kingdom), Djordje Marinkovic (Texas Instruments, Germany)

8:30 **Academic Keynote Address: “Embedding Communication Systems in Power Lines”**
Prof. Andrea M. Tonello (University of Udine and WiTiKee s.r.l., Italy)

O6: Education II

Friday, 12 September 2014, 9:20–10:00

Room: Oro Plenaria

Chair: John J. Soraghan (University of Strathclyde, United Kingdom), Djordje Marinkovic (Texas Instruments, Germany)

9:20 **Revamping a Lab Course for the Education of Students in Electronic Engineering**
Miguel A. Garcia Perez (Polytech’Nice-Sophia, Université de Nice, France); Yves Leduc (Polytech’Nice-Sophia, Université de Nice & Former TI Fellow, Texas Instruments, France); Fabien Ferrero (CREMANT, Université Nice-Sophia Antipolis & CREMANT CNRS, France) **p.162**

9:40 **SPIDER: A Synchronous Parameterized and Interfaced Dataflow-Based RTOS for Multicore DSPs**
Julien Heulot (IETR, INSA Rennes & CNRS UMR 6164, UEB, France); Maxime Pelcat (INSA Rennes, France); Karol Desnos (INSA Rennes, France); Jean-François Nezan (IETR, France); Slaheddine Aridhi (Texas Instruments, France) **p.167**

Refreshments

Friday, 12 September 2014, 10:00–10:30

O7: Sensor Networks II

Friday, 12 September 2014, 10:30–12:00

Room: Oro Plenaria

Chair: Sivan Toledo (Tel-Aviv University, Israel)

10:30 **Tree Network Based on Bluetooth 4.0 for Wireless Sensor Network Applications**
Bishnu Kumar Maharjan (South Westphalia University of Applied Sciences, Germany); Ulf Witkowski (South Westphalia University of Applied Sciences, Germany); Reza Zandian (South Westphalia University of Applied Sciences, Germany) **p.172**

10:50 **ToLHnet: A Low-Complexity Protocol for Mixed Wired and Wireless Low-Rate Control Networks**
Giorgio Biagetti (Università Politecnica delle Marche, Italy); Paolo Crippa (Università Politecnica delle Marche, Italy); Alessandro Curzi (Università Politecnica delle Marche, Italy); Simone Orcioni (Università Politecnica delle Marche, Italy); Claudio Turchetti (Università Politecnica delle Marche, Italy) **p.177**

11:10 **Implementation of an IEEE 802.15.4 Compliant Multi-hop Wireless Sensor Network for Energy-efficient Sensor Data and Progressive Image Transmission**
Volker Delpert (University of Applied Sciences Mittweida, Germany); Jan Kuhnert (University of Applied Sciences Mittweida, Germany); Silvio Roessler (University of Applied Sciences Mittweida, Germany) **p.182**

- 11:30 **FRAM Evaluation as Unified Memory for Convex Optimization Algorithms**
Gionata Cimini (Università Politecnica delle Marche, Italy); Alberto Bemporad (IMT Institute for Advanced Studies Lucca, Italy); Gianluca Ippoliti (Università Politecnica delle Marche, Italy); Sauro Longhi (Università Politecnica delle Marche, Italy) p.187

O8: Power II

Friday, 12 September 2014, 10:30–12:00

Room: Argento Plenaria

Chair: Jacob Fainguelernt (Tel-Aviv University, Israel)

- 10:30 **Rapid Prototyping of Multivariable PI Regulators for AC Drives Using TMS320-F2812**
Marco Santececca (University of L'Aquila, Italy); Lino Di Leonardo (University of L'Aquila, Italy); Marco Tursini (University of L'Aquila, Italy) p.192
- 10:50 **Control Design of a Bearingless Flux-switching Slice Drive**
Karlo Radman (Tehnički Fakultet u Rijeci & Linz Center of Mechatronics GmbH, Croatia); Wolfgang Gruber (Johannes Kepler University Linz & Institute for Electrical Drives and Power Electronics, Austria); Neven Bulic (University of Rijeka Faculty of Engineering, Croatia) p.197
- 11:10 **Fast Prototyping of a Scaled AGV for the Testing of Stability Control for Industrial Vehicles**
Benedetto Allotta (University of Florence, Italy); Riccardo Costanzi (University of Florence, Italy); Niccolò Monni (University of Florence, Italy); Marco Natalini (University of Florence, Italy); Luca Pugi (University of Florence & Dip. Ingegneria Industriale, Italy); Alessandro Ridolfi (University of Florence, Italy) p.202
- 11:30 **Microcontroller Based Maximum Power Point Tracking Through FCC and MLP Neural Networks**
Gabriele Maria Lozito (Roma Tre University, Italy); Ludovica Bozzoli (Università degli Studi di Roma Tre, Italy); Alessandro Salvini (Roma Tre University, Italy) p.207

P2: Poster II

Friday, 12 September 2014, 12:00–14:30

Room: Plenaria delle divinità

Chair: Carmine Clemente (University of Strathclyde, United Kingdom), Gaetano Di Caterina (University of Strathclyde, United Kingdom)

- P2.1 **Acquisition and Processing of the Physiologic Signal to Prevent Driving Accidents**
Mario Malcangi (Università degli Studi di Milano, Italy) p.212
- P2.2 **Accurate Dynamic Characterization of Sine-Waves by Means of the ADS1258EVM-PDK Kit**
Daniel Belega (University of Timisoara, Romania); Dan Stoiciu (Politehnica University of Timisoara, Romania) p.216
- P2.3 **Low-Power Voting Device for Use in Education and Polls Employing TI's CC2530 RF Chip**
Fabian Knutti (HSR - University of Applied Sciences Rapperswil & ICOM Institute for Communication Systems, Switzerland); Nicolas Tobler (University of Applied Sciences Rapperswil, Switzerland); Heinz Mathis (University of Applied Sciences Rapperswil, Switzerland) p.221
- P2.4 **Integrating the Accelerometer of the AM335X SITARA Starter KIT in a Qt Application**

Claudiu Mosneang (Politehnica University of Timisoara, Romania); Septimiu Mischie (Politehnica University of Timisoara, Romania); Robert Pazsitka (Politehnica University of Timisoara, Romania) p.225

P2.5 An Embedded Smart Agile Pixel Imager for Lasers

Juan Pablo La Torre (University College Cork, Ireland); M. Junaid Amin (University College Cork, Ireland); Michele Magno (ETH Zurich and University of Bologna, Switzerland); Nabeel Riza (University College Cork & Tydall National Institute, Ireland) p.230

P2.6 A Motor Controller Using Field Oriented Control and Hall Effect Rotor Position Sensors: Simulation and Implementation

David Arbelaez (Queensland University of Technology, Australia); Kyran Findlater (Queensland University of Technology, Australia); Vinod Chandran (Queensland University of Technology, Australia) p.253

P2.7 An Easy-To-Build Electronic Spintop for Young Engineers

Nicola Ramagnano (University of Applied Sciences of Eastern Switzerland in Rapperswil, Switzerland); Heinz Mathis (University of Applied Sciences Rapperswil, Switzerland) p.240

P2.8 A Level Sensor for Fluids Based on Hydrostatic Deformation with Piezoelectric Generated Sounds in a Low Frequency Range

Alexander Jahn (University of Applied Sciences Schmalkalden, Germany); Falko Ehrle (University of Applied Sciences Schmalkalden, Germany); Carsten Roppel (University of Applied Sciences Schmalkalden, Germany) p.245

P2.9 HIL Validation of an Embedded System Acting as a Nonlinear Takagi-Sugeno State Observer on an Arduino Board

Maxime Feingesicht (Hautes Etudes d'Ingénieur Lille, France); Severus Olteanu (University of Lille 1, France); Abdelouahab Aitouche (LAGIS - HEI Lille & Hautes Etudes d'Ingénieur (HEI) Lille, France); Lotfi Belkoura (LAGIS/ Univ Lille1, France) p.250

P2.10 Hardware in the Loop Testing of a Steam Turbine Bypass Regulator Using a TI C2000 Micro-Controller

Emanuele Galardi (University of Florence, Italy); Luca Pugi (University of Florence & Dip. Ingegneria Industriale, Italy); Nicola Lucchesi (Vela ABV Spa, Italy); Andrea Rindi (University of Florence, Italy) p.255

P2.11 Capacitance Measurement with MSP430 Microcontrollers

Olev Martens (Tallinn University of Technology & Competence Center ELIKO, Estonia); Siim Pille (Tallinn University of Technology, Estonia); Marko Reidla (Tallinn University of Technology, Estonia) p.260

P2.12 Low-cost Wireless Surface EMG Sensor Using the MSP430 Microcontroller

Armand Beneteau (University of Strathclyde, United Kingdom); Gaetano Di Caterina (University of Strathclyde, United Kingdom); Lykourgos Petropoulakis (University of Strathclyde, United Kingdom); John J. Soraghan (University of Strathclyde, United Kingdom) p.264

P2.13 Fault Prognosis for Rotating Electrical Machines Monitoring Using Recursive Least Square

Matteo Rocchi (Polytechnic University of Marche, Italy); Fernando Mosciaro (Polytechnic University of Marche, Italy); Francesco Grottesi (Polytechnic University of Marche, Italy); Marco Scortichini (Polytechnic University of Marche, Italy); Andrea Giantomassi (Polytechnic University of Marche, Italy); Matteo Pirro (Università Politecnica Delle Marche, Italy); Massimo Grisostomi (Università Politecnica delle Marche, Italy); Gianluca Ippoliti (Università Politecnica delle Marche, Italy) p.269

P2.14 An Implementation Focused Approach to Teaching Image Processing and Machine Vision - From Theory to Beagleboard

Gordon Morison (Glasgow Caledonian University, United Kingdom); Mark Jenkins (Glasgow Caledonian University, United Kingdom); Tom Buggy (Glasgow Caledonian University, United Kingdom); Peter Barrie (Glasgow Caledonian University, United Kingdom) **p.274**

P2.15 Real-Time Bilateral Filtering of Ultrasound Images Through Highly Optimized DSP Implementation

Alessandro Dallai (University of Florence, Italy); Stefano Ricci (University of Florence, Italy) **p.278**

P2.16 Four Axis Digital Readout System with Bluetooth Interface

Rene Rettkowski (Westphalian University of Applied Sciences, Germany); Fredson Phiri (University of Namibia, Namibia); Udo Jorczyk (Westphalian University of Applied Sciences, Germany) **p.282**

P2.17 Interactive Tool for Mechatronic Systems: Two Industrial Robot Cases

Juvenal Rodríguez Reséndiz (Universidad Autónoma de Querétaro, Mexico); Edgar A. Araiza (UAQ, Mexico); Jose Gutierrez-Villalobos (Universidad Autónoma de Querétaro, Mexico); Moisés Agustín Martínez (Universidad Autónoma de Querétaro, Mexico); Fortino Mendoza (Universidad Autónoma de Querétaro, Mexico); Miguel Martínez Prado (Universidad Autónoma de Querétaro, Mexico); Manuel Toledano-Ayala (Universidad Autónoma de Querétaro & Facultad de Ingeniería, Mexico) **p.286**

S2: Show & Tell II

Friday, 12 September 2014, 12:00–14:30

Room: Plenaria delle divinità

Chair: Nuria Llin (Texas Instruments, Germany), Keith Thompson (University of Strathclyde, United Kingdom)

Invited Industrial Talk

Friday, 12 September 2014, 13:30–14:30

Room: Oro Plenaria

Chair: Doug Phillips (WW Embedded University Marketing, Texas Instruments, USA)

13:30 Invited Industrial Talk: “Microsoft. Connecting embedded systems to the cloud: Data ingress and analysis”

Dr. Holger Kenn (Microsoft DX, Germany)

O9: Applications I

Friday, 12 September 2014, 14:30–15:30

Room: Argento Plenaria

Chair: Yves Leduc (Polytech’Nice-Sophia, Université de Nice & Former TI Fellow, Texas Instruments, France)

14:30 Lightweight Low-Cost Wildlife Tracking Tags Using Integrated Transceivers

Sivan Toledo (Tel-Aviv University, Israel); Oren Kishon (Tel-Aviv University, Israel); Yotam Orchan (The Hebrew University of Jerusalem, Israel); Yoav Bartan (The Hebrew University of Jerusalem, Israel); Nir Sapir (The Hebrew University of Jerusalem, Israel); Yoni Vortman (University of Haifa, Israel); Ran Nathan (The Hebrew University of Jerusalem, Israel) **p.291**

14:50 Real-time Environmental Emission Monitoring on Construction Sites

Tobias Gädeke (Karlsruhe Institute of Technology (KIT), Germany); Frank Hartmann (Karlsruher Institut für Technologie (KIT), Germany); Lukasz Niestoruk (Karlsruhe Institute of Technology, Germany); Markus Reinhardt (Karlsruhe Institute of Technology (KIT), Germany); Wilhelm Stork (Karlsruhe Institute of Technology, Germany) **p.296**

- 15:10 **Implementation and Evaluation of A Pothole Detection System on TI C6678 Digital Signal Processor**
Chee Kin Chan (University of Bristol, United Kingdom); Yuan Gao (University of Bristol, United Kingdom); Zhen Zhang (University of Bristol, United Kingdom); Naim Dahnoun (University of Bristol, United Kingdom) **p.301**

O10: Applications II
Friday, 12 September 2014, 14:30–15:30

Room: Oro Plenaria

Chair: Pavel Zahradnik (University of Technology Prague, Czech Republic)

- 14:30 **Reducing the Latency in Live Music Transmission with the BeagleBoard xM Through Resampling**
Leonardo Gabrielli (Università Politecnica delle Marche, Italy); Michele Bussolotto (Università Politecnica delle Marche, Italy); Stefano Squartini (Università Politecnica delle Marche, Italy) **p.306**
- 14:50 **A Real-Time Implementation of an Acoustic Novelty Detector on the BeagleBoard-xM**
Roberto Bonfigli (Università Politecnica delle Marche, Italy); Giacomo Ferroni (Università Politecnica delle Marche, Italy); Emanuele Principi (Università Politecnica delle Marche & A3Lab, Italy); Stefano Squartini (Università Politecnica delle Marche, Italy); Francesco Piazza (Università Politecnica delle Marche, Italy) **p.311**
- 15:10 **Multicore DSP-Based Front-End Board for a High Channel, Modular, Ultrasound Research System**
Alessandro Dallai (University of Florence, Italy); Enrico Boni (University of Florence, Italy); Luca Bassi (University of Florence, Italy); Stefano Ricci (University of Florence, Italy); Francesco Guidi (University of Florence, Italy); Piero Tortoli (University of Florence, Italy) **p.316**

Refreshments
Friday, 12 September 2014, 15:30–16:00

Forum: Teaching Embedded Design in Universities
Friday, 12 September 2014, 16:00–17:00

Room: Oro Plenaria

Chair: Gordon Morison (Glasgow Caledonian University, United Kingdom)

Prize Giving and Close
Friday, 12 September 2014, 17:00–17:30

Room: Oro Plenaria

Chair: Djordje Marinkovic (Texas Instruments, Germany), John J. Soraghan (University of Strathclyde, United Kingdom)

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