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PF-009105 pg. 1042	BCL: a compositional contract language for embedded systems Orlando Ferrante, Roberto Passerone, Alberto Ferrari, Leonardo Mangeruca, Christos Sofronis
PF-009288 pg. 1048	Application of an Intelligent Network Architecture on a Cooperative Cyber-Physical System: An Experience Report Uwe Pohlmann, Henning Trsek, Lars Dürkop, Stefan Dziwok, Felix Oestersötebier
PF-009318 pg. 1054	D-RES: Correct Transitive Distributed Service Sharing Augusto Born de Oliveira, Akramul Azim, Sebastian Fischmeister, Ricardo Marau, Luis Almeida
PF-009377 pg. 1060	A parallel fuzzy scheme to improve power consumption management in Wireless Sensor Networks Mario Collotta, Gianfranco Scatà, Salvatore Tirrito, Renato Ferrero, Maurizio Rebaudengo
WiP.2	Information Technology in Automation I <i>Alexander Fay, Helmut-Schmidt-University, Germany</i> <i>Georg Frey, Saarland University, Germany</i> Time: Thursday 18th September, 8:30 Room: 102
PF-004758 pg. 1064	Dynamic Collection of Data in Complex, Physical Environments Philippe Lalanda, Stéphanie Chollet, Clément Escoffier, Denis Morand
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PF-006297 pg. 1072	Offloading Industrial Human-Machine Interaction Tasks to Mobile Devices and the Cloud Lingyun Wang, Arquimedes Canedo
PF-006335 pg. 1076	Augmented Reality in the Smart Factory Supporting Workers in an Industry 4.0. Environment Volker Paelke
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PF-006688 pg. 1096	Automated Reengineering of Industrial HMI Screens by Static Analysis Bernhard Dorninger, Wolfgang Beer, Rene Zeilinger, Michael Moser, Albin Kern
PF-006718 pg. 1100	An ontology-driven communication architecture for spontaneous interoperability in Home Automation systems Javier Juárez, José Antonio Rodríguez-Mondéjar, Raúl García-Castro

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PF-007196 pg. 1129	A Descriptive Engineering Approach for Cyber-Physical Systems Steffen Henning, Jens Otto, Sebastian Schriegel, Oliver Niggemann
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PF-007307 pg. 1138	Energy Efficient Indoor Localization utilizing BT 4.0 Strapdown Inertial Navigation System Anastasios Arvanitopoulos, John Gialelis, Stavros Koubias
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WiP.3	Industrial Control, Sensors and Actuators <i>Nikolaos D. Kouvakas, Halkis Institute of Technology, Greece</i> <i>Jordi Palacin, University of Lleida, Spain</i> Time: Thursday 18th September, 8:30 Room: 103
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PF-006904 pg. 1155	Vibration-Based Wireless Machine Condition Monitoring System Waqas Ikram, Su-Liang Chen, Trygve Harvei, Thomas Olsen, Espen Mikalsen, Geir Svoen, Sverre Froystein, Bård Myhre
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PF-007315 pg. 1169	Development of Camber and Steering Control System in Hot Strip Mill Jonghyun Lee, Yong Joon Choi
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PF-008443 pg. 1190	Towards Wireless Control for a Permanent Magnet Synchronous Motor Nikolaos D. Kouvakas, Fotis N. Koumboulis, Georgios L. Giannaris, Demosthenes Vouyioukas
PF-008834 pg. 1194	Robust fiber optic sensors for vibration diagnostics Just Agbodjan Prince, Franz Kohl, Thomas Voglhuber-brunnmaier, Thilo Sauter, Franz Keplinger, Zoran Djinovic, Marijana Stojkovic
PF-008672 pg. 1198	Fault Propagation Analysis by Combining Data-Driven Causal Analysis and Plant Connectivity Rinat Landman, Jukka Kortela, Sirkka-Liisa Jämsä-Jounela
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PF-008729 pg. 1206	Towards an L1 PID Controller Design for Ride Comfort Improvement Fotis N. Koumboulis, Nikolaos D. Kouvakas
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WiP.4	Intelligent Robots & Systems <i>Christian Schlegel, University of Applied Sciences Ulm, Germany</i> <i>Antoni Burguera, Halkis Institute of Technology, Greece</i> Time: Thursday 18th September, 15:00 Room: S01
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PF-006661 pg. 1258	Towards an interoperable framework for mixed real-time simulations of industrial embedded systems Amir Soltani Nezhad, Luis F.B. Ferreira, Martijn M.H.P. Van den Heuvel, Richard Verhoeven, Johan J. Lukkien, Rudolf H. Mak, Eric Korff de Gidts
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PF-007951 pg. 1270	Trajectory-dependent safe distances in human-robot interaction Federico Vicentini, Matteo Giussani, Lorenzo Molinari Tosatti
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WiP.5	Dependable Communication <i>Roman Obermaisser, University of Siegen, Germany</i> <i>Julián Proenza, University of the Balearic Islands, Spain</i> Time: Thursday 18th September, 15:00 Room: S05
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PF-009342 pg. 1282	Comparing Scheduling Policies for a Message Transient Error Recovery Server in a Time-Triggered Setting Luis Marques, Verónica Vasconcelos, Paulo Pedreiras, Luís Almeida

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PF-007064 pg. 1292	Network Fabric Redundancy in NCS Hassan H. Halawa, Yara K. Hilal, Gina H. Aziz, Christine H. Alfi, Tarek K. Refaat, Ramez M. Daoud, Hassanein H. Amer, Hany M. ElSayed
PF-007471 pg. 1296	Towards a reliability analysis of the design space for the communication subsystem of FT4FTT David Gessner, Paulo Portugal, Julian Proenza, Manuel Barranco
PF-008087 pg. 1300	Towards an Experimental Assessment of the Slave Elementary Cycle Synchronization in the Flexible Time-Triggered Replicated Star for Ethernet David Gessner, Ines Alvarez, Alberto Ballesteros, Manuel Barranco, Julian Proenza
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PF-008141 pg. 1316	Using FTT-Ethernet for the coordinated dispatching of tasks and messages for node replication Sinisa Derasevic, Julián Proenza, Manuel Barranco
PF-008168 pg. 1320	Design of an Arduino based low-cost error generator for PROFIBUS DP Philippe Saey, Ward Hauspie, Hendrik Derre, Thomas De Landsheer, Annemarie Kokosy, Jos Knockaert
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PF-007838 pg. 1328	Towards Secure Wireless TTEthernet for Industrial Process Automation Applications Elena Lisova, Elisabeth Uhlemann, Johan Akerberg, Mats Bjorkman
PF-007536 pg. 1332	Identifying unsecured building automation installations Friedrich Praus, Wolfgang Kastner
PF-009245 pg. 1336	Challenges when Securing Manufacturing Message Service in Legacy Industrial Control Systems Mohammad M. R. Chowdhury, Hannes Raddatz, Judith E. Y. Rossebo
WiP.6	Information Technology in Automation II <i>Lluís Ribas Xirgo, Universitat Autònoma de Barcelona, Spain</i> <i>Alexander Fay, Helmut-Schmidt-University, Germany</i> Time: Friday 19th September, 8:30 Room: 102
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PF-006262 pg. 1346	Infinitesimal perturbation analysis for optimal production control in a reverse logistic system with different demands Sadok Turki, Olivier Bistorin, Nidhal Rezg
PF-007382 pg. 1352	Automatic Generation of Automation Applications Based on Ontology Transformations Victor Dubinin, Valeriy Vyatkin, Chen-Wei Yang, Cheng Pang
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PF-007439 pg. 1360	Automatic configuration of a powertrain assembly line layout based on a KBE approach Andrea Ascheri, Giorgio Colombo, Francesco Furini, Massimo Ippolito, Eleonora Atzeni
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PF-007161 pg. 1368	Modelling and Orchestration of Service-Based Manufacturing Systems via Skills Julius Pfrommer, Denis Stogl, Kiril Aleksandrov, Viktor Schubert, Björn Hein
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PF-007226 pg. 1381	Automated implementation of Petri Nets on PLCs with OOP Francesco Basile, Pasquale Chiacchio, Jolanda Coppola, Diego Gerbasio
PF-007854 pg. 1385	Resource Management Support for SCA Based Distributed Applications Aitor Aguirre, Elisabet Estévez, Marga Marcos
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PF-008915 pg. 1407	An adaptive image processing system based on incremental learning for industrial applications Yongheng Wang, Michael Weyrich
PF-009024 pg. 1411	A Novel Domain-Specific Language for the Robot Welding Automation Domain Michael Moser, Michael Pfeiffer, Josef Pichler

PF-009326 pg. 1417	Task scheduling for multiple forklift AGVs in distribution warehouses Davide Giglio
PF-009083 pg. 1423	Service Orchestration with OPC UA in a Graphical Control Language Alfred Theorin, Johan Hagsund, Charlotta Johnsson
PF-009113 pg. 1429	OPC UA Server Aggregation – The Foundation for an Internet of Portals Daniel Grossmann, Markus Bregulla, Suprateek Banerjee, Dirk Schulz, Roland Braun
WiP.7	Communication, Computational Intelligence and Modern Heuristics in Automation <i>Dong-Seung Kim, Kumoh National Institute of Technology, Korea</i> <i>Takao Sato, University of Hyogo, Japan</i> Time: Friday 19th September, 8:30 Room: 103
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PF-006637 pg. 1439	A novel design for a comprehensive smart automation system for the office environment Hang Li
PF-009253 pg. 1443	New Approach for Improvements and Comparison of High Performance Real-Time Ethernet Networks Ralf Schlesinger, Andreas Springer, Thilo Sauter
PF-007528 pg. 1447	Light pole localization in a Smart City Mike Holenderski, Richard Verhoeven, Tanir Ozcelebi, Johan Lukkien
PF-008176 pg. 1451	Improving IEEE 802.15.4e LLDN Performance by Relaying and Extension of Combinatorial Testing Achim Berger, Alexander Entinger, Albert Pötsch, Andreas Springer
PF-007595 pg. 1455	Alarm processing for predictive fault diagnosis Gustavo Leitão, Luiz Affonso Guedes, Allan Venceslau
PF-009334 pg. 1459	FPGA-based Wideband Channel Emulator for Evaluation of Wireless Sensor Networks in Industrial Environments Iñaki Val, Felix Casado, Pedro Manuel Rodriguez, Aitor Arriola
PF-008125 pg. 1466	BR-PlantExpert: A Rule-Based Expert System for Operation Support in Industrial Processes Danilo Souza, Adrião Duarte, Luiz Affonso Guedes
PF-007447 pg. 1470	On the Effectiveness of Medium Access with Predictive Collision Avoidance Ahmad Saad, Barbara Staehle, Yun Chen
PF-008133 pg. 1474	Trend-Weighted Rule-Based Expert System for Process Diagnosis Danilo Souza, Adrião Duarte, Luiz Affonso Guedes
PF-008362 pg. 1478	A Testbed for Developing, Simulating and Experimenting Multipath Aggregation Algorithms Fábio Rico, Pedro Fonseca, Amaro Sousa
PF-008354 pg. 1482	Verification of Diagnosability Based on Compositional Branching Bisimulation Mona Noori Hosseini, Bengt Lennartson

PF-007706 pg. 1488	Node Discovery Scheme of DDS using Dynamic Bloom Filters Muhammad Rizal Khaefi, Dong-Seong Kim
PF-008419 pg. 1492	Ontology for computer-aided fault tree synthesis Allan Venceslau, Raphaela Lima, Luiz Affonso Guedes, Ivanovitch Silva
PF-009075 pg. 1496	System-Level Performance of an Automation Solution Based on Industry Standards Andrea Ballarino, Alessandro Brusafferri, Marco Cereia, Ivan Cibrario Bertolotti, Luca Durante, Tingting Hu, Egidio Leo, Leonardo Nicolosi, Lucia Seno, Stefano Spinelli, Federico Tramarin, Adriano Valenzano, Stefano Vitturi
PF-009091 pg. 1502	Performance-Adaptive Control System for a Hammerstein System Using GPGPU Takao Sato, Daiki Kurahashi, Toru Yamamoto, Nozomu Araki, Yasuo Konishi
PF-006343 pg. 1508	Towards Implementation of IEC 61850 GOOSE Messaging in Event-Driven IEC 61499 Environment Chen Yang, Jiang Xu, Valeriy Vyatkin
PF-005231 pg. 1512	A Cross Platform Mobile Application Approach for Supporting Harvesting Process Execution in Agricultural Production Julian Quindt, Clemens Westerkamp
PF-007641 pg. 1518	Performance assessment of an IEEE 802.11-based protocol for real-time communication in agriculture Federico Tramarin, Stefano Vitturi, Michele Luvisotto, Raffaele Parrozzani
PF-002542 pg. 1524	Beyond Instrumentation - FDI for Modular Subsystems with Proprietary Protocols Dirk Schulz, Roland Braun, Ulrich Topp, Martin Stöckl

SS01. Engineering Approaches For Cyber-Physical Systems

SS01.1	Engineering Approaches For Cyber-Physical Systems I Chairs: Uwe Mönks, Lukasz Wisniewski Time: Thursday 18th September, 16:50 Room: S03
PF-004138 pg. 1531	A Comparison of Modeling Approaches for Planning in Cyber Physical Production Systems Anas Anis, Wilhelm Schäfer, Oliver Niggemann
PF-002003 pg. 1539	Identifying automation components in modular manufacturing systems Tobias Helbig, Engelbert Westkämper, Johannes Hoos
PF-004383 pg. 1547	CPS-based hierarchical and self-similar automation architecture for the control and verification of reconfigurable manufacturing systems Alessandro Brusafferri, Andrea Ballarino, Franco Antonio Cavadini, Diego Manzocchi, Mauro Mazzolini
SS01.2	Engineering Approaches For Cyber-Physical Systems II Chairs: Steffen Henning, Alois Zoitl Time: Friday 19th September, 15:00 Room: Sala de Juntas
PF-005061 pg. 1555	Increasing the Adaptability of Manufacturing Systems by using Data-centric Communication Nadine Keddis, Jonathan Burdalo, Gerd Kainz, Alois Zoitl
PF-000639 pg. 1563	Towards the Automatic Generation and Management of Plant Models for the Validation of Highly Configurable Cyber-Physical Systems Aitor Arrieta, Goiuria Sagardui, Leire Etxeberria
PF-002089 pg. 1571	Linear Time, Possibly Disjoint Path Search Approach for Ethernet Based Industrial Automation Networks Lukasz Wisniewski, Markus Schumacher, Juergen Jasperneite, Christian Diedrich

SS02. Big Data And Machine Learning For Automation

SS02	Big Data And Machine Learning For Automation Chairs: Björn Kroll, Helene Dörksen Time: Wednesday 17th September, 16:50 Room: S03
PF-003948 pg. 1580	Big data analysis for sensor time-series in automation Václav Jirkovský, Marek Obitko, Petr Novák, Petr Kadera
PF-004103 pg. 1588	Fast Classification in Industrial Big Data Environments Helene Dörksen, Uwe Mönks, Volker Lohweg
PF-004073 pg. 1595	On the applicability of model based software development to cyber physical production systems Oliver Niggemann, Björn Kroll
PF-004685 pg. 1599	System modeling based on machine learning for anomaly detection and predictive maintenance in industrial plants Björn Kroll, David Schaffranek, Sebastian Schriegel, Oliver Niggemann

SS03. Fault Tolerance Techniques In Distributed Embedded And Automation Systems

SS03.1	Fault Tolerance Techniques In Distributed Embedded And Automation Systems I Chairs: Ramez Daoud, Michael Short Time: Wednesday 17th September, 16:50 Room: Sala de Juntas
PF-004553 pg. 1606	INVITED PAPER: A comparison of Fault-Tolerance Concepts for IEEE 802.1 Time Sensitive Networks (TSN) Stephan Kehrer, Oliver Kleineberg, Donal Heffernan
PF-001279 pg. 1614	Increasing Efficiency of M-out-of-N Redundancy Thomas Gamer, Manuel Oriol, Michael Wahler
PF-005754 pg. 1622	Availability Assessment of Wireless Visual Sensor Networks for Target Coverage Daniel G. Costa, Ivanovitch Silva, Paulo Portugal, Luiz Affonso Guedes, Francisco Vasques
SS03.2	Fault Tolerance Techniques In Distributed Embedded And Automation Systems I Chairs: Ramez Daoud, Michael Short Time: Thursday 18th September, 11:40 Room: 100
PF-005789 pg. 1630	A Model for Quantifying the Reliability of Highly-Reliable Distributed Systems based on Fieldbus Replicated Buses Manuel Barranco, Francisco Pozo, Julián Proenza
PF-004847 pg. 1638	Simple bounds on deadline failure probabilities in fault-tolerant real-time networks Michael Short
PF-003174 pg. 1645	Bounding the Effectiveness of Temporal Redundancy in Fault-tolerant Real-time Scheduling under Error Bursts Abhilash Thekkilakattil, Radu Dobrin, Sasikumar Punnekkat

SS04. Flexible And Interoperable Automation Systems

SS04.1	Architectures and Networks Chairs: David Hästbacka, Wenbin Dai Time: Wednesday 17th September, 9:30 Room: 103
PF-000256 pg. 1653	Towards Location Management for future Industrial Networks Markus Rentschler, Philip Henzler
PF-001988 pg. 1661	Security Vulnerabilities And Risks In Industrial Usage Of Wireless Communication Sándor Plósz, Christian Lesjak, Nuno Pereira, Markus Tauber, Thomas Ruprechter, Arsham Farshad
PF-000566 pg. 1669	A Secure Hardware Module and System Concept for Local and Remote Industrial Embedded System Identification Christian Lesjak, Thomas Ruprechter, Josef Haid, Holger Bock, Eugen Brenner

PF-002445 pg. 1676	Device Status Information Service Architecture for Condition Monitoring using OPC UA David Hästbacka, Laurentiu Barna, Mika Karaila, Yiqing Liang, Pasi Tuominen, Seppo Kuikka
PF-001724 pg. 1683	Enhance Distributed Automation Systems with Efficiency and Reliability by Applying Autonomic Service Management Wenbin Dai, Valeriy Vyatkin, Victor Dubinin, James H. Christensen
SS04.2	Applications I Chairs: Roberto Uriberrtxeberria, Luís Lino Ferreira Time: Thursday 18th September, 8:30 Room: 100
PF-001368 pg. 1691	Optimal reactive control of hybrid architectures: A case study on complex water transportation systems Lai Nguyen, Laurent Lefevre, Denis Genon-Catalot, Thang Pham, Clement Raievsky
PF-000086 pg. 1699	A Feasibility Study of SOA-enabled Networked Rock Bolts Jens Eliasson, Pablo Pereira, Henrik Mäkitaavola, Jerker Delsing, Joakim Nilsson, Joakim Gebart
PF-002038 pg. 1707	Energy optimisation using analytics and coordination, the example of lifts Véronique Boutin, Chloé Desdouits, Maxime Louvel, François Pacull, Maria Isabel Vergara-Gallego, Oussama Yaakoubi, Cédric Chomel, Quentin Crignon, Christophe Duhoux, Denis Genon-Catalot, Laurent Lefevre, Thanh Hung Pham, Van Thang Pham
PF-002097 pg. 1715	Case Study: From Legacy to Connectivity Migrating industrial devices into the world of Smart Services Peter Priller, Andreas Aldrian, Thomas Ebner
PF-004375 pg. 1723	Arrowhead Compliant Virtual Market of Energy Luis Lino Ferreira, Laurynas Siksnys, Per Pedersen, Petr Stluka, Christos Chrysoulas, Thibaut le Guilly, Michele Albano, Arne Skou, Cesar Teixeira, Torben Pedersen
SS04.3	Applications II Chairs: Arash Mousavi, Cheng Pang Time: Thursday 18th September, 11:40 Room: 101
PF-001317 pg. 1731	On Methodology of Implementing Distributed Function Block Applications using TinyOS WSN nodes Denis Kleyko, Evgeny Osipov, Sandeep Patil, Valeriy Vyatkin, Zhibo Pang
PF-000477 pg. 1738	Energy Efficient Automation Model for Office Buildings based on Ontology, Agents and IEC 61499 Function Blocks Arash Mousavi, Valeriy Vyatkin, Cheng Pang, Cheng-Wei Yang
PF-000582 pg. 1745	IEC 61499 Based Model-Driven Process Control Engineering Cheng Pang, Valeriy Vyatkin, Wenbin Dai
SS04.4	Engineering Chairs: Wenbin Dai, Valeriy Vyatkin Time: Thursday 18th September, 15:00 Room: S03

PF-001813 pg. 1753	Time-Complemented Event-Driven Reconfigurable Systems Jeffrey Yan, Valeriy Vyatkin
PF-001848 pg. 1761	A Scalable Approach for Re-Configuring Evolving Industrial Control Systems Roopak Sinha, Kenneth Johnson, Radu Calinsecu
PF-001805 pg. 1769	WYPIWYE automation systems - an intelligent manufacturing system case study Heejong Park, Avinash Malik, Zoran Salcic
PF-000108 pg. 1777	Competitors or Cousins? Studying the Parallels between Distributed Programming Languages SystemJ and IEC61499 Roopak Sinha, Valeriy Vyatkin, Zoran Salcic, Hee Jong Park

SS05. New Trends And Technologies For Smart Cities

SS05.1	New Trends And Technologies For Smart Cities I Chairs: John Gialelis, Ioakeim Samaras Time: Thursday 18th September, 16:50 Room: S04
PF-001597 pg. 1784	Getting logistics closer to end users Jose Gato Luis, Javier Garcia Hernandez, Wout Hofman, Gonzalo Perez Rodriguez, German Herrero Carcel
PF-002739 pg. 1789	An urban control center for the energy governance of a smart city Raffaele Carli, Paolo Deidda, Mariagrazia Dotoli, Roberta Pellegrino
PF-002909 pg. 1796	Intelligent Streetlight Management in a Smart City Thomas Novak, Klaus Pollhammer, Heimo Zeilinger, Samer Schaat
SS05.2	New Trends And Technologies For Smart Cities II Chairs: John Gialelis, Ioakeim Samaras Time: Friday 19th September, 15:00 Room: S05
PF-003239 pg. 1804	A fuzzy rule-based and energy-efficient method for estimating the free size of parking places in smart cities by using wireless sensor networks Ioakeim Samaras, Anastasios Arvanitopoulos, Nikolaos Evangeliou, John Gialelis, Stavros Koubias
PF-003387 pg. 1812	Efficient and Secure M2M Communications for Smart Metering Andre Riker, Tiago Cruz, Bruno Marques, Marilia Curado, Paulo Simoes, Edmundo Monteiro
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SS06. Advanced Power Electronics For Power Quality Improvement In Distributed Generation Systems

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