2013 Forum on Specification & Design Languages

(FDL 2013)

Paris, France 24-26 September 2013



IEEE Catalog Number: ISBN:

CFP1326E-POD 978-1-4799-0576-8

Welcome
General Chairs
Keynote Speakers
Invited Speaker
Industrial Special Session Chair
Technical Area Chairs
Program Committee
Technical Area Overview
Conference Papers
AFM: Application of Formal Methods for Design Space Exploration and Refinement %
<i>Optimal Component Selection for Energy-Efficient Systems Ä</i> G Matthias Sauppe, Thomas Horn, Erik Markert, Ulrich Heinkel, Hans-Werner Sahm, and Klaus-Holger Otto
Assisting Refinement in System-on-Chip Design ᠱ € Mokrani Hocine, Ameur-Boulifa Rabéa, and Emmanuelle Encrenaz
Design Space Exploration for Cyber Physical System Design using Constraint Solving ÁFÎ Benny Höckner, Petra Hofstedt, Sascha Kaltschmidt, Peter Sauer, and Thilo Voertler
AFM/EAMS: Verification of Heterogeneous Systems: Theory and Industrial Experiences **
A New Assertion Property Language for Analog/Mixed-Signal Circuits AGF Dhanashree Kulkarni, Andrew Fisher, and Chris Myers
Integrating Circuit Analyses for Assertion-based Verification of Programmable AMS CircuitsÁG Dogan Ulus, Alper Sen, and Faik Baskaya

How to Survive the Verification of the Latest Generation of Automotive System on Chip Ari Arnaud Laroche and Jerome Kirscher

A Novel Approach for Assertion Based Verification of DDR Memory Protocols A I Moustafa Kassem, Mohamed Abdelsalam, Marianne Michel, and Ashraf Salem

EAMS 1: Modeling Communication and Circuit's Behavior "(,

Hybrid Dynamical Systems for Memristor Modelling A J Joachim Haase and André Lange

Event-Driven (RN) Modeling for AMS Circuits Á Í Serge Garcia Sabiro

Modeling of Signal Integrity in Bus Communications with Timed Data Flow SystemC-AMS Á H Ruomin Wang, Julien Denoulet, Sylvain Feruglio, Farouk Vallette, and Patrick Garda

EAMS 2: Model Generation for Embedded Analog/Mixed-Signal Systems "*-

Multi-Paradigm Semantics for Simulating SysML Models using SystemC-AMS Á €

Daniel Chaves Café, Filipe Vinci Dos Santos, Cécile Hardebolle, Christophe Jacquet, and Frédéric Boulanger

Code Generation Alternatives to Reduce Heterogeneous Embedded Systems to Homogeneity Á Ì Franco Fummi, Michele Lora, Francesco Stefanni, and Sara Vinco

Modeling the Analog Circuit Design Feature Variety Á G Cristian Ferent and Alex Doboli

MDE 1: Modeling Languages Extensions and Best Practices", -

Fine-grain Adaptation for Real Time Embedded Systems using UML/MARTE Profile A € Mouna Ben Said, Yessine Hadj Kacem, Nader Ben Amor, and Mickaël Kerboeuf

Performance Analysis Method for RT Systems: ProMARTES for Autonomous RobotA) Konstantinos Triantafyllidis, Egor Bondarev, and Peter H. De With

Split of Composite Components for Distributed Applications F€Î Ansgar Radermacher, Arnaud Cuccuru, Sebastien Gerard, and Brahim Hamid

MDE 2: Model Driven Engineering at Work "%&

A Formal Verification Framework for BlueSpec System Verilog ÄFFH Samir Ouchani, Otmane Aït Mohamed, and Mourad Debbabi

A Function Approach for Simple Wireless Sensor Node Energy Consumption Modeling Á € G € Aina Andriamampianina Randrianarisaina, Olivier Pasquier and Pascal Chargé

Model-Driven Design for the Development of Multi-Platform Smartphone Applications/#FG Giulio Botturi, Emad Samuel Malki Ebeid, Franco Fummi, and Davide Quaglia

DES 1: SystemC Infrastructure and Extensions "% *

SystemC Transaction Level Modeling with Transaction Events AFH Bastian Haetzer and Martin Radetzki

SystemC-Clang: An Open-source Framework for Analyzing Mixed-abstraction SystemC Models Á H Anirudh Kaushik and Hiren D. Patel

Advanced Features for Industry-Level Logging and Tracing of C-based Designs Art F Wei Hong, Jyoti Joshi, and Alexander Viehl, Nico Bannow, Angela Kramer, Hendrik Post, Oliver Bringmann, and Wolfgang Rosenstiel

DES 2: Platform Based Design "%) +

Rapid Virtual Prototyping of Real-Time Systems using Predictable Platform Characterizations Art Ì Seyed Hosein Attarzadeh Niaki, Marcus Mikulca, and Ingo Sander

Graph-based Approach for Software Allocation in Automotive Networked Embedded Systems:

a Partition-and-Map Algorithm ÁFÎ Î

Yasser Shoukry, Ajay Kumar, M. Watheq El-Kharashi, Ghada Bahig, and Sherif Hammad

Representing Mapping and Scheduling Decisions within Dataflow Graphs ÁÉÏ G Christian Zebelein and Christian Haubelt, Joachim Falk, Tobias Schwarzer, and Jürgen Teich

DES 3: Simulation, Analysis and Validation "% \$

Fine Grained Adaptive Simulation with Application to NoCs Á

- Combining Analytical and Simulation-based Design Space Exploration for Time-Critical Systems Fi J Fernando Herrera and Ingo Sander
- Bridging Algorithm and ESL Design: Matlab/Simulink Model Transformation and Validation Á

SystemVerilog: the New Standard "&\$)

Why SystemVerilog?#€Î

Peter Flake

The Unique Challenges of Debugging Design and Verification Code Jointly in SystemVerilog AGFG Dave Rich

If SystemVerilog Is So Good, Why Do We Need the UVM? ACT

Jonathan Bromley

Welcome
General Chairs
Keynote Speakers
Invited Speaker
Industrial Special Session Chair
Technical Area Chairs
Program Committee
Technical Area Overview
Conference Papers
AFM: Application of Formal Methods for Design Space Exploration and Refinement %
<i>Optimal Component Selection for Energy-Efficient Systems Ä</i> G Matthias Sauppe, Thomas Horn, Erik Markert, Ulrich Heinkel, Hans-Werner Sahm, and Klaus-Holger Otto
Assisting Refinement in System-on-Chip Design ᠱ € Mokrani Hocine, Ameur-Boulifa Rabéa, and Emmanuelle Encrenaz
Design Space Exploration for Cyber Physical System Design using Constraint Solving ÁFÎ Benny Höckner, Petra Hofstedt, Sascha Kaltschmidt, Peter Sauer, and Thilo Voertler
AFM/EAMS: Verification of Heterogeneous Systems: Theory and Industrial Experiences **
A New Assertion Property Language for Analog/Mixed-Signal Circuits AGF Dhanashree Kulkarni, Andrew Fisher, and Chris Myers
Integrating Circuit Analyses for Assertion-based Verification of Programmable AMS CircuitsÁG Dogan Ulus, Alper Sen, and Faik Baskaya

How to Survive the Verification of the Latest Generation of Automotive System on Chip Ari Arnaud Laroche and Jerome Kirscher

A Novel Approach for Assertion Based Verification of DDR Memory Protocols A I Moustafa Kassem, Mohamed Abdelsalam, Marianne Michel, and Ashraf Salem

EAMS 1: Modeling Communication and Circuit's Behavior "(,

Hybrid Dynamical Systems for Memristor Modelling A J Joachim Haase and André Lange

Event-Driven (RN) Modeling for AMS Circuits Á Í Serge Garcia Sabiro

Modeling of Signal Integrity in Bus Communications with Timed Data Flow SystemC-AMS Á H Ruomin Wang, Julien Denoulet, Sylvain Feruglio, Farouk Vallette, and Patrick Garda

EAMS 2: Model Generation for Embedded Analog/Mixed-Signal Systems "*-

Multi-Paradigm Semantics for Simulating SysML Models using SystemC-AMS Á €

Daniel Chaves Café, Filipe Vinci Dos Santos, Cécile Hardebolle, Christophe Jacquet, and Frédéric Boulanger

Code Generation Alternatives to Reduce Heterogeneous Embedded Systems to Homogeneity Á Ì Franco Fummi, Michele Lora, Francesco Stefanni, and Sara Vinco

Modeling the Analog Circuit Design Feature Variety Á G Cristian Ferent and Alex Doboli

MDE 1: Modeling Languages Extensions and Best Practices", -

Fine-grain Adaptation for Real Time Embedded Systems using UML/MARTE Profile A € Mouna Ben Said, Yessine Hadj Kacem, Nader Ben Amor, and Mickaël Kerboeuf

Performance Analysis Method for RT Systems: ProMARTES for Autonomous RobotA) Konstantinos Triantafyllidis, Egor Bondarev, and Peter H. De With

Split of Composite Components for Distributed Applications F€Î Ansgar Radermacher, Arnaud Cuccuru, Sebastien Gerard, and Brahim Hamid

MDE 2: Model Driven Engineering at Work "%&

A Formal Verification Framework for BlueSpec System Verilog ÄFFH Samir Ouchani, Otmane Aït Mohamed, and Mourad Debbabi

A Function Approach for Simple Wireless Sensor Node Energy Consumption Modeling Á € G € Aina Andriamampianina Randrianarisaina, Olivier Pasquier and Pascal Chargé

Model-Driven Design for the Development of Multi-Platform Smartphone Applications/#FG Giulio Botturi, Emad Samuel Malki Ebeid, Franco Fummi, and Davide Quaglia

DES 1: SystemC Infrastructure and Extensions "% *

SystemC Transaction Level Modeling with Transaction Events AFH Bastian Haetzer and Martin Radetzki

SystemC-Clang: An Open-source Framework for Analyzing Mixed-abstraction SystemC Models Á H Anirudh Kaushik and Hiren D. Patel

Advanced Features for Industry-Level Logging and Tracing of C-based Designs Art F Wei Hong, Jyoti Joshi, and Alexander Viehl, Nico Bannow, Angela Kramer, Hendrik Post, Oliver Bringmann, and Wolfgang Rosenstiel

DES 2: Platform Based Design "%) +

Rapid Virtual Prototyping of Real-Time Systems using Predictable Platform Characterizations Art Ì Seyed Hosein Attarzadeh Niaki, Marcus Mikulca, and Ingo Sander

Graph-based Approach for Software Allocation in Automotive Networked Embedded Systems:

a Partition-and-Map Algorithm ÁFÎ Î

Yasser Shoukry, Ajay Kumar, M. Watheq El-Kharashi, Ghada Bahig, and Sherif Hammad

Representing Mapping and Scheduling Decisions within Dataflow Graphs ÁÉÏ G Christian Zebelein and Christian Haubelt, Joachim Falk, Tobias Schwarzer, and Jürgen Teich

DES 3: Simulation, Analysis and Validation "% \$

Fine Grained Adaptive Simulation with Application to NoCs Á

- Combining Analytical and Simulation-based Design Space Exploration for Time-Critical Systems Fi J Fernando Herrera and Ingo Sander
- Bridging Algorithm and ESL Design: Matlab/Simulink Model Transformation and Validation Á

SystemVerilog: the New Standard "&\$)

Why SystemVerilog?#€Î

Peter Flake

The Unique Challenges of Debugging Design and Verification Code Jointly in SystemVerilog AGFG Dave Rich

If SystemVerilog Is So Good, Why Do We Need the UVM? ACT

Jonathan Bromley