# FDL 2010

## Forum for Specification and Design Languages

www.ecsi.org/fdl

## 14-16 September, 2010
## Southampton, UK

**General Chair: Tom Kazmierski, Southampton University, UK**

# Call for Contributions

### IMPORTANT DATES

Paper submission deadline: **6 April 2010**
Special session & embedded tutorial proposal deadline: **30 April 2010**
Notification of acceptance: **14 May 2010**
Final versions of accepted papers and presenters' registration: **2 July 2010**
Proposals for on-site meetings: **20 August 2010**
FDL 2010: **14-16 September 2010**

### CONFERENCE SCOPE

FDL is an international forum to exchange experiences and promote new trends in the application of languages, their associated design methods and tools for the design of electronic systems. The Forum is organized around four Thematic Areas (TA) described below and includes working sessions, poster sessions, embedded tutorials, panels and technical discussions. Industrial Workshops and Fringe Meetings such as user group or standardization meetings are also held in conjunction with the Forum.

### 1. ABD TA: Assertion Based Design, Verification & Debug

**TA Chair:** Dominique Borrione (Dominique.Borrione@imag.fr)

**AMD TA Description:** The ABD Thematic Area welcomes research contributions, tool demonstrations, reports on standardization activities and effective applications in all aspects of innovative property expression and processing, with an emphasis on frontier design levels, verification, automatic synthesis and mechanized debug aids. The assertion of formal properties provides a uniform expression of expected system behaviour, or constraints that are assumed on the environment, for a variety of design tasks: verification of functional correctness, generation of test stimuli, synthesis of observation monitors and on-line tests, model checking on the reachable state space, direct synthesis from assertions, etc. Standardized formalisms such as PSL and SystemVerilog assertions were initially intended for synthesizable RTL; their application is now considered at transaction levels and for mixed system designs.

### 2. LBSD TA: Language-Based System Design

**TA Chair:** Frank Oppenheimer (Frank.Oppenheimer@offis.de)

**LBSD TA Description** The LBSD TA addresses language-based modelling and design techniques for simulation, debugging, transformation, and analysis of hardware/software embedded systems. C/C++ based design methodologies are entering productive industrial design flows especially after the IEEE standardization of SystemC. Hence, the lion's share of contributions to this topic will be based on SystemC and its extensions. However, contributions using other languages, for example UML, functional languages, SystemVerilog are also very welcome, especially if they address interoperability between modelling languages and heterogeneous models of computations. Topics of interest also include embedded software modelling techniques and technology or domain specific approaches, e.g. for signal processing applications or reconfigurable computing platforms. New mechanisms for abstraction like transaction level modelling (TLM) or IP-XACT and their implications on IP-based system design or system synthesis are in the scope of this workshop as well as innovative industrial case studies.

### 3. EAMS TA: Embedded Analog and Mixed-Signal System Design

**TA Chair:** Christoph Grimm (grimm@ict.tuwien.ac.at)

**EAMS TA Description** The EAMS TA addresses design, modelling, and verification of analogue/mixed-signal systems. Topics of interest include specification, modelling, simulation, (symbolic) analysis, verification, design, (virtual) prototyping, and synthesis of analogue, mixed-signal, and mixed-technology systems. Focus should be on languages, models, representations, and tools such as (but not limited to) VHDL-AMS, Verilog-AMS, SystemC-AMS, Modelica, Matlab/Simulink. A new challenge is the tight interaction of analogue components with digital hardware/software systems. Hence, the E-AMS track also welcomes contributions that deal with system-level design of hardware/software systems that include analogue/mixed-signal subsystems, e.g. wireless sensor nets. The EAMS Thematic Area aims at presenting research activities, design experiences, and standardization issues related to these topics.

### 4. UMES TA: UML and MDE for Embedded System Specification & Design

**TA Chair :** Pierre Boulet (Pierre.Boulet@lifl.fr)

**UMES TA Description** Model driven methods, mostly based on the Unified Modelling Language, increasingly support semi-formal methods for system level design of complex embedded systems including highly programmable platforms and heterogeneous Systems-on-Chip. UMES related research topics in this field are Executable UML, model driven development, model transformations, UML semantics, meta-modelling , e.g., for SystemC and other System Description Languages or HDLs, UML profiles, e.g. SysML, MARTE, UML for SoC and formalization of UML towards domain specific languages for simulation and synthesis. Other welcomed topics are standardization work, modelling languages for real-time and embedded systems, model driven techniques for performance analysis, validation and verification, SDL, AADL, OCL, XMI and practical design experiences with UML or model driven engineering (MDE) approaches.

## REQUIREMENTS FOR SUBMISSIONS

**REGULAR AND SHORT PAPERS:**
Regular papers provide comprehensive details on innovative and complete research or applicative work with evidence of experimental results. Regular papers may also include proposals for standardization. Authors are encouraged to outline work in progress, industrial case studies, or user experiences as short papers. Accepted short papers will be presented as posters in dedicated sessions, allowing to present advances achieved since submission. Submitted papers are required to describe original unpublished work and must not be under consideration for publication elsewhere. Accepted papers will be published in the IEEE digital library, thereby indexed and available via IEEExplore. After the conference papers and presentations will be published at the ECSI web page together with the keynote presentations (subject to confidentiality issues) and tutorial documents. In addition, the authors of the best regular papers will be invited to prepare an extended manuscript for publication in an edited book from **Springer Science + Business Media** publisher after the event.

**EMBEDDED TUTORIALS:**
Proposals for half-day (4 hours) embedded tutorials on specific topics around any of the four workshops will be accepted depending on topic relevance and evidence of a comprehensive agenda. A one page description of the tutorial including title, presenters, contents, and the relevant track(s) should be sent to fdl10@ecsi.org. A maximum of three tutorial authors is recommended. Accepted tutorials will get one free registration to the Forum per tutorial.

**PANELS, SPECIAL SESSIONS, WORKING GROUPS, PROJECT MEETINGS, DEMONSTRATIONS:**
Proposal for special sessions (panels, working sessions, standardization or user group meetings, etc.) around any of the four TA tracks are invited and will be accepted depending on their relevance and interest to the audience. They will be embedded in regular workshops. A one page description including title, participants, contents, and the relevant track(s) should be sent to fdl10@ecsi.org. Companies, universities or other organizations wishing to demonstrate innovative tools and environments for the topics described above should send proposals to fdl10@ecsi.org.

## STEERING COMMITTEE

Tom Kazmierski (FDL2010 General Chair), Dominique Borrione, Pierre Boulet, Christoph Grimm, Sorin Huss, Jean Mermet, Adam Morawiec, Martin Radetzki, Wolfgang Rosenstiel, Kari Tiensyrjä, Alain Vachoux, Eugenio Villar,

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