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Tibor Csöndes · Gábor Kovács  
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# SDL 2017: Model-Driven Engineering for Future Internet

18th International SDL Forum  
Budapest, Hungary, October 9–11, 2017  
Proceedings

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# Preface

The System Design Languages Forum (SDL Forum) is an international conference held every two years and is one of the most important open events in the calendar for anyone from industry and academia involved in system design languages and modelling technologies. Originally focusing on the Specification and Description Language – standardized and further developed by the International Telecommunications Union (ITU) over a period of nearly four decades – the SDL Forum has broadened its topics in the course of time. It is a primary conference for the presentation and discussion of the most recent innovations, trends, experiences, and concerns in system and software modelling, specification, and analysis of distributed systems, embedded systems, communication systems, and real-time systems.

The SDL Forum Society that runs the SDL Forum conferences series is a non-profit organization established in 1995 by language users and tool providers to promote the ITU Specification and Description Language (SDL) and related system design languages including, for instance, Message Sequence Charts (MSC), Abstract Syntax Notation One (ASN.1), Testing and Test Control Notation (TTCN-3), Systems Modeling Language (SysML), Unified Modeling Language (UML), and User Requirements Notation (URN). The aim of the society is to provide and disseminate information on the development and use of the languages, to support education on the languages, and to plan and organize the “SDL Forum” series and events to promote the languages.

The 18th edition of the SDL Forum conference (SDL 2017) was held in Budapest, Hungary, October 9–11, 2017. The co-organizers of conference were the Budapest University of Technology and Economics, Ericsson Hungary Ltd., and the Scientific Association for Infocommunications Hungary (HTE). The special focus of SDL 2017 was on the model-driven engineering for the future Internet. In the past few years, we have witnessed a new level of convergence in the networked digital ecosystem. A large variety of embedded devices are becoming connected. The ever-growing number of heterogeneous devices connected demands highly available, scalable, secure, and mobile services from the telecommunications and computer networks side. The complexity of network services on the other side is increasing at the same time. There are several emerging standards on this field, followed by numerous implementations. This results in time pressure both in standard implementations and product development cycles. Therefore, specification, design, validation, configuration, deployment, and maintenance of such products are complex tasks, and thus high-quality modeling of these new systems with system design languages is essential.

This volume contains the papers selected for presentation at SDL 2017: 10 high-quality papers selected from 17 submissions. Each paper was peer reviewed by at least three Program Committee members and discussed during the online Program Committee meeting. The selected papers cover a wide spectrum of topics related to system design languages ranging from: the System Design Language usage to UML

and GRL models; model-driven engineering of database queries, network service design and regression testing; and modelling for Internet of Things (IoT) data processing. The papers are grouped into four technical sessions. The first section focuses on software technology aspects, the second section targets IoT, the third section provides an insight into model-driven engineering, and the fourth section discusses system design language development.

The 18th edition of the SDL Forum was made possible by the dedicated work and contributions of many people and organizations. We thank the authors of submitted papers, the 41 members of the Program Committee, and the members of the SDL Forum Society Board. We are grateful for the organization and conference services of HTE and the infrastructure and information technology services of Ericsson. The submission and review process was run with the EasyChair conference system (<http://www.easychair.org>). We thank the sponsors of SDL 2017, the Budapest University of Technology and Economics, Ericsson, and HTE.

October 2017

Tibor Csöndes  
Gábor Kovács  
György Réthy

## **SDL Forum Society**

The SDL Forum society is a nonprofit organization that in addition to running the System Design Languages Forum (SDL Forum) conference series of events once in every two years also:

- Runs the System Analysis and Modelling (SAM) workshop series, organized every two years between SDL Forum years
- Is a body recognized by ITU-T as co-developing System Design Languages in the Z.100 series (Specification and Description Language), Z.120 series (Message Sequence Chart), Z.150 series (User Requirements Notation), and other language standards
- Promotes the ITU-T System Design Languages

For more information on the SDL Forum Society, please visit <http://www.sdl-forum.org>.

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# Contents

Interactive Visualization of Software . . . . .	1
<i>Markus Scheidgen, Nils Goldammer, and Joachim Fischer</i>	
Static Syntax Validation for Code Generation with String Templates . . . . .	18
<i>Dorian Weber and Joachim Fischer</i>	
On the Impact of the SDL Forum Society Conferences on Academic Research . . . . .	30
<i>Daniel Amyot, Abdelwahab Hamou-Lhadj, and Jameleddine Hassine</i>	
Intelligent Resilience in the IoT . . . . .	46
<i>Edel Sherratt</i>	
An Ontology-Based Approach for IoT Data Processing Using Semantic Rules . . . . .	61
<i>Ahmed Bali, Mahmud Al-Osta, and Gherbi Abdelouahed</i>	
Model-Driven Engineering of an OpenCypher Engine: Using Graph Queries to Compile Graph Queries . . . . .	80
<i>József Marton, Gábor Szárnyas, and Márton Búr</i>	
A Model-Driven Process Enactment Approach for Network Service Design . . . . .	99
<i>Sadaf Mustafiz, Navid Nazarzadeoghaz, Guillaume Dupont, Ferhat Khendek, and Maria Toeroe</i>	
Model-Based Regression Testing of Autonomous Robots . . . . .	119
<i>Dávid Honfı, Gábor Molnár, Zoltán Micskei, and István Majzik</i>	
Automated Tooling for the Evolving SDL Standard: From Metamodels to UML Profiles . . . . .	136
<i>Alexander Kraas</i>	
An Automated Change Impact Analysis Approach to GRL Models . . . . .	157
<i>Hasan Salim Alkaf, Jameleddine Hassine, Abdelwahab Hamou-Lhadj, and Luay Alawneh</i>	
<b>Author Index</b> . . . . .	173