TUTORIAL

Newsletter Issue No. 1
June 2017

Dear Readers,

Welcome to our first issue of the TUTORIAL newsletter, where you will find all the details of recent events and upcoming activities for this exciting project. The aim is to provide you with up-to-date project results and information relevant to our ongoing research collaboration in the field of nanoelectronics based dependable cyber-physical systems (NBDCPS).

TUTORIAL is funded by the European Commission's Horizon 2020 programme, with an overall aim to *boost the scientific excellence and innovation capacity in the trans-disciplinary field of nanoelectronics based dependable cyber-physical systems* (NBDCPS) of Tallinn University of Technology (TUT) and its high-quality Twinning partners.

Over the course of the TUTORIAL project, international collaborations in numerous technology and knowledge-transfer activities will be performed. The consortium partners will attend and encourage participation in events such as staff exchanges, summer schools, international conferences/publications and training workshops.

We hope that you continue to keep up with our updates and success within the project.

TUTORIAL Team

TALLINNA TEHNIKAÜLIKOOL

POLITECNICO DI TORINO

DLR

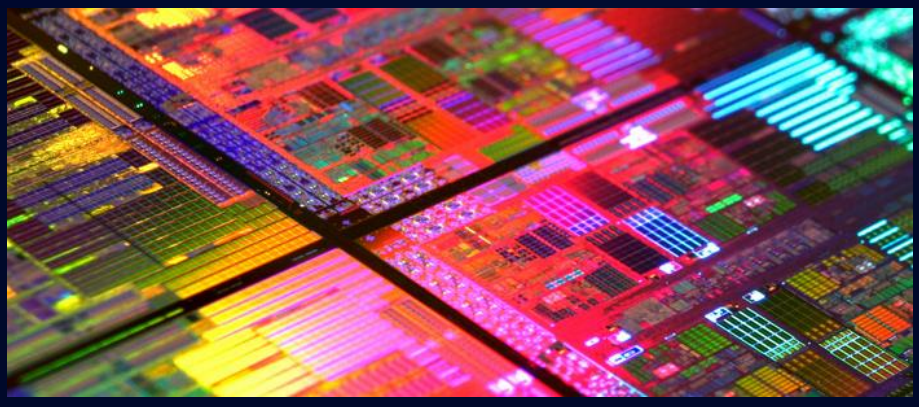
TU Delft Delft University of Technology

Presenting the TUTORIAL Project

Launched on the 1st of January 2016, TUTORIAL is a three-year project coordinated by Tallinn University of Technology (TUT) and its high-quality Twinning partners: Delft University of Technology (TU Delft), Politecnico di Torino (POLITO) and Deutsches Zentrum für Luft- und Raumfahrt (DLR). Together, the consortium strives to building upon their already-existing strong innovation and research base through a number of training, staff exchanges, international conferences and outreach activities.

This project collaboration will focus on the following sub-topics:

1. Reliable nanoelectronics technologies (TUT/TU Delft),
2. In-field test for safety-critical systems (TUT/POLITO),
3. Dependable cyber-physical systems for space applications (TUT/DLR).



Tutorial Summer Schools

BELAS 2016

The first summer school for the TUTORIAL project was successfully held in Turin, Italy from 30th of May to the 1st of June 2016 through the Biannual European - Latin American Summer School on Design, Test and Reliability (BELAS) . This two-day workshop hosted an international audience of students and researchers with training in three crucial areas of electronic circuits. During this session, an array of lectures pertaining to this scientific expertise were also presented by experts from well-respected research institutions in Germany, Mexico, Spain, Brazil and Italy.

For more details regarding the programme and lectures, please visit: www.cad.polito.it/+/belas2016/

BELAS 2017

The TUTORIAL partner TU Delft (Netherlands) is organising the **Biannual European–Latin American Summer School** on Design, Test and Reliability (BELAS 2017) in Rotterdam the 8-10 May 2017. BELAS 2017 offers a 3-day summer school dedicated to M.Sc., Ph.D., and post-doc students, as well as engineers. Experts from academia and industry, from both Latin America and Europe, will give lectures on test, reliability and security of IC and electronic systems and their applications such as automotive and aerospace.

For more details regarding the programme and lectures, please visit: otterdam2017.belas-event.org/

First International Workshop

TUT organised the 1st TUTORIAL workshop on the 28-29 September 2016 in Tallinn (Estonia) and was held in conjunction with the following well-known international conference: IFIP/IEEE International Conference on Very Large Scale Integration (VLSI-SoC 2016).

The workshop, titled “Resilience in Nanoelectronics Systems”, focused on cutting-edge topics in the area af nanoelectronics systems' resilience. It provided a unique opportunity to collaborate with experts from three on-going European projects as well as researchers working in the area of reliable electronic system design. The topics covered included a wide range of topics, including: Aging modeling, Life-time prediction, Error-checking, Embedded instruments for system health monitoring, Fault management, Resilient many-core architectures, Design validation/verification and Automated debug.

In the framework of the RENS'16 workshop, TUT included keynote and tutorials from other European projects, namely the FP7 BASTION and H2020 IMMORTAL projects.

For more information about: RENS’16: ati.ttu.ee/rens2016/ ; VLSI-SoC 2016: ati.ttu.ee/vlsi-soc2016/

Recent publications

Joint research papers published in international peer-reviewed journals

Jenihhin, Maksim; Squillero, Giovanni; Copetti, Thiago Santos; Tihhomirov, Valentin; Kostin, Sergei; Gaudesi, Marco; Vargas, Fabian; Raik, Jaan; Sonza Reorda, Matteo; Bolzani Poehls, Leticia; Ubar, Raimund; Medeiros, Guilherme Cardoso (2016). Identification and Rejuvenation of NBTI-Critical Logic Paths in Nanoscale Circuits. Journal of Electronic Testing-Theory and Applications, 273−289, 10.1007/s10836-016-5589-x.

Joint research papers presented at international conferences

Pellerey, F.; Jenihhin, M.; Squillero, G.; Raik, J.; Sonza Reorda, M.; Tihhomirov, V.; Ubar, R. (2016). Rejuvenation of NBTI-Impacted Processors Using Evolutionary Generation of Assembler Programs. The 25th Asian Test Symposium (ATS), Hiroshima, November 21-24, 2016.. IEEE, 304−309.

Jutman, Artur; Lotz, Christophe; Larsson, Erik; Sonza Reorda, Matteo; Jenihhin, Maksim; Raik, Jaan; Kerkhoff, Hans; Krenz-Baath, Rene; Engelke, Piet. (2017). BASTION: Board and SoC Test Instrumentation for Ageing and No Failure Found. Design, Automation & Test in Europe Conference & Exhibition (DATE), Lausanne, 2017: Design, Automation & Test in Europe Conference & Exhibition (DATE), Lausanne, 2017.

Bernardi, Paolo; Appello, Davide; Giacopelli, Giampaolo; Motta, Alessandro; Pagani, Alberto; Pollaccia, Giorgio; Rabbi, Christian; Restifo, Marco; Ruberg, Priit; Sanchez, Ernesto; Villa, Claudio Maria; Venini, Federico. *A Comprehensive Methodology for Stress Procedures Evaluation and Comparison for Burn-In of Automotive SoC.* In: Design, Automation & Test in Europe Conference & Exhibition (DATE), Lausanne, 2017: Design, Automation & Test in Europe Conference & Exhibition (DATE), Lausanne, 2017.

Aleksandrowicz, Gadi; Arbel, Eli; Bloem, Roderick; ter Braak, Timon; Devadze, Sergei; Fey, Goerschwin; Jenihhin, Maksim; Jutman, Artur; Kerkhoff, Hans G.; Könighofer, Robert; Malburg, Jan; Moran, Shiri; Raik, Jaan; Rauwerda, Gerard; Riener, Heinz; Röck, Franz; Shibin, Konstantin; Sunesen, Kim; Wan, Jinbo; Zhao, Yong (2016). Designing Reliable Cyber-Physical Systems. In: ECSI FDL 2016 Forum on specification & Design Languages, September 14-16, 2016 Bremen, Germany (1−8). ECSI.

Other project news

In late April 2016, Tallinn University of Technology and consortium partners, submitted a proposal to the H2020 Marie Curie Actions RISE scheme entitled DEEP-TIES, focused on dependable cyber-physical systems in safety-critical and biomedical applications and involving 15 organisations from EU and EPC. At the time, funding for this project was not granted but resubmission is planned for spring 2017.

RESCUE
European Training Network

Tutorial consortium partners TUT, TUD and POLITO have received a successful evaluation for a joint proposal under the European Training Network. The new project, ”Interdependent Challenges of Reliability, Security and Quality on Nanoelectronic System Design” (RESCUE) will run from April 2017 - March 2021. For more information, please visit their project website/ rescue-etn.eu/.

To learn more about the TUTORIAL project and to keep up with its activities and achievements, please visit the website:

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www.h2020-tutorial.net

European Commission

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