

IEEE Summit on Reliability, Availability and Serviceability

RAS in automotive



Advance Technical Program

Thursday 5 December

8:00 - 9:00 REGISTRATION AND BREAKFAST

9:00 - 9:40 Opening Session

Steering Co-Chair	Jyotika Athavale	<i>IEEE Computer Society President</i>
Steering Co-Chair	Yervant Zorian	<i>Synopsys</i>
General Co-Chair	Stefano Di Carlo	<i>Politecnico di Torino</i>
Program Co-Chair	Paolo Bernardi	<i>Politecnico di Torino</i>

9:40 - 10:20 Keynote 1 **Pete Harrod** *Retired - ARM founder*

Moderator: **Matteo Sonza Reorda** *Politecnico di Torino*

10:20 - 11:00 COFFEE BREAK + POSTERS

Poster 1 - Toward Flexible and Reliable Automotive SoCs: The Role of Chiplet and UCIe Standardization

Ericles SOUSA (*Cadence - UCIe*)

Poster 2 - Fault Tolerance and Self-Healing Mechanism with Memory RAS Capabilities in Automotive Subsystems

Ravi Kumar SIADRI, Sagar PAWAR, Pir OVAIS (*Microsoft Corporation*)

11:00 - 12:00 Invited Talks 1 **Silicon Lifecycle Management**

Moderator: **Hans-Joachim Wunderlich** *Stuttgart University*

Speakers:

Yervant Zorian *Synopsys*

Daniel Tille *Siemens EDA*

Juergen Alt *Infineon Technologies*

12:00 - 13:30 LUNCH

13:30 - 14:10 Keynote 2 **Phil Koopman** *Carnegie Mellon University*

Moderator: **Wim Dobbeleare** *onsemi*

14:10 - 15:10 Invited Talks 2 **Functional Safety Standards**

Moderator: **Sybille Hellebrand** *Paderborn University*

Speakers:

Jyotika Athavale and Wei-Ren Chen *Synposys and Tenstorrent*

Bala Chavali and Ericles SOUSA *AMD and Cadence - UCle*

Giuseppe Capodanno *Intel*

15:10 - 15:50 COFFEE BREAK

15:50 - 17:10 Invited Talks 3 **Automotive RAS Visionary talks**

Moderator: **Cecilia Metra** *University of Bologna*

Speakers:

Francesco Rossi *Resiltech*

Axel Deicke

Consultant

Antonino Armato

Bosch

Avi Braun

Synopsys

17:10 - 17:20 SHORT BREAK

17:20 - 18:00 Keynote 3

Ramesh S

General Motors

Moderator: **Jyotika Athavale**

IEEE Computer Society President

20:00 GALA DINNER

Friday 6 December

8:00 - 8:30 BREAKFAST

8:30 - 9:50 Technical Session 1

Analog, Mixed-Signal and Technology-oriented Test and Reliability strategies

Moderator: **Wei-Ren Chen**

Tenstorrent

Dependability Risks due to Faults and Aging Affecting Microprocessors' Fully Integrated Voltage Regulators

Martin OMANA (University of Bologna), Alex MENGHI (Hera Group), Alessandro STEFANI (Zivan SRL), Enrico VICINI (Micron Technology), Cecilia METRA (University of Bologna), Giuseppe FROIO (Marvell Technology), Stefano PETRUCCI (Intel Corp.)

Testing of a Bandgap Circuit using Analog Scan

Wim DOBBELAERE, Anthony COYETTE, Doina DIMA (onsemi), Stephen SUNTER, Krzysztof JURGA (Siemens EDA)

Silicon Data Analytics from In-field Measurements for Extended Lifetimes and Improved Reliability

Lorin KENNEDY, Jyotika ATHAVALE, Dan ALEXANDRESCU (Synopsys, Inc.)

Low Cost Error Control for Streaming Data in Automotive Systems

Somayeh SADEGHI KOHAN (Paderborn University), Sybille HELLEBRAND (University of Paderborn), Hans-Joachim WUNDERLICH (Universitat Stuttgart)

9:50 - 10:20 COFFEE BREAK

10:20 - 11:40 Technical Session 2

Solutions for digital circuits Testing and Reliability

Moderator: **Juergen Alt**

Infineon Technologies

BIST Based Detection and Reconfiguration Strategy for Fail-Operational Multicore Microcontrollers

Matteo NALDI, Martin Eugenio OMANA, Cecilia METRA (University of Bologna), Ivano SHIVANANDA TROJA (STMicroelectronics), Vivek SHARMA (STMicroelectronics Pvt. Ltd.)

Robust Logic Built-In Self-Test for Automotive Electronics under PVT Variations

Hanieh JAFARZADEH (University of Stuttgart), Sybille HELLEBRAND (University of Paderborn), Hans-Joachim WUNDERLICH (Universitat Stuttgart)

Early Reliability Estimation in Automotive Systems

Dinesh Cyril SELVARAJ, Shailesh Sudhakara HEGDE, Josie RODRIGUEZ CONDIA, Nicola AMATI, Carla fabiana CHIASSERINI, Francesco Paolo DE FLORIO, Matteo SONZA REORDA (Politecnico di Torino)

Intelligent Electric Power Steering: Artificial Intelligence Integration Enhances Vehicle Safety and Performance

Vikas VYAS (Mercedes Benz Research and Developemnt NA), Sneha Sudhir SHETIYA (IEEE)

11:40 - 11:50 SHORT BREAK

11:50 - 12:30 Invited Talks 4 **Automotive RAS Visionary talks**

Moderator: **Annachiara Ruospo**

Politecnico di Torino

Speakers:

Thomas Zettler

Infineon Technologies

Michele De Tomasi

STMicroelectronics

12:30 - 13:30 LUNCH

13:30 - 14:30 panel **ATE Vision 2040**

Organizer and moderator: **Davide Appello**

Technoprobe

Panelists:

Giuseppe Amelio

Microtest

Fabio Marino

Advantest

Emanuele Bardo

Spea

Thomas Koehler

Teradyne

Claudia Bertani

STMicroelectronics

14:30 - 15:10 Keynote 4

François Guichard

United Nations Economic Commission for Europe

Moderator: **Paolo Bernardi**

Politecnico di Torino

15:10 CLOSING REMARKS