HARMONIA - Assertion-based Hardware Monitors for Automotive Systems

Project information and challenges

Project Start: 01 September 2014
Project End: 31 August 2017

This project has received funding from the Austrian Research Promotion Agency (FFG) for cooperative R&D Projects.

Addressed challenges:
• Data / Information Evaluation
  • Heterogeneous SoS (SIM & MEAS)
  • Root-cause analysis
• Safety-critical properties monitoring
• Information loss due to different interpretation possibilities
• Requirement formalization using Temporal Logic

Objectives

O1: Assertion-based Monitoring Framework for automotive systems
O2: Synthesize & generation of HW Monitor from Assertions for Runtime Verification
O3: Improving the effectiveness of overall verification activities as well as time-to-market

Automotive case study

Automotive sensor interface runtime monitor case study

Publications

S. Jaksic, E. Bartocci, R. Grosu, R. Klößböhler, T. Nguyen, D. Nickovic,

T. Ferrere, O. Malor, D. Nickovic,

D. Nickovic,

First HARMONIA results

HARMONIA Assertion-based monitoring framework

Hardware Runtime STL Monitor Generation Flow using High-level Synthesis

• Infineon Technologies Austria AG
• AIT Austrian Institute of Technology GmbH
• Technische Universität Wien

Project coordinator:
Infineon Technologies Austria AG
Siemenstrasse 2
9500 Villach
Austria