FMTV Challenge 2015

Formal Methods for Timing Verification Challenge (FMTV)
http://waters2015.inria.fr/challenge

July 7, 2015. Lund, Sweden. Held as part of WATERS'15.

The purpose of the **Formal Methods for Timing Verification (FMTV)** challenge is to share ideas, experiences and solutions to a concrete timing verification problem issued from real industrial case studies. It also aims at promoting discussions, closer interactions, cross fertilization of ideas and synergies across the breadth of the real-time research community, as well as attracting industrial practitioners from different domains having a specific interest in timing verification.

The 2015 FMTV Challenge is an industrial case study proposed by THALES, consisting of an aerial video tracking system used in intelligence, surveillance, reconnaissance, tactical and security applications. The challenge was presented to the research community at the FMTV'14 workshop. The system is characterized by strict and less strict constraints on timing. Two timing verification problems are proposed to the community. The first timing problem is related to a video frame processing chain in the aerial video tracking system and consists in calculating the timing latencies for the frame processing as well as the timing distance separating two successive frame losses. The second timing problem is related to a tracking and camera control subsystem of the aerial video tracking system and consists in calculating the timing latencies for the camera control function and optimizing the priorities assignment. More information is available on the WATERS'15 website: **http://waters2015.inria.fr/challenge**. A mailing list has been set up so that prospective participants can ask questions, e.g. for clarification.

FMTV@WATERS. A session of WATERS'15 (**http://waters2015.inria.fr**) will be devoted to the presentation of the solutions to the challenge. The goal of the WATERS workshop series is to create a common ground and a community to share methodologies, software tools, best practices, data sets, application models, benchmarks and any other way to improve comparability of results in the current practice of research in real-time and embedded systems. Authors of accepted submissions will have the opportunity to give a short talk and present their solution to the audience in an interactive demo session. Depending on the participation, a joint publication of the challenge solutions will be considered. We aim at a collaborative reviewing process: participants will contribute to the (light-weight) evaluation of contributions submitted by others.

Submission instructions. Papers must describe a (possibly partial) solution to the challenge and present the strengths and limitations of the used approach. Authors are strongly encouraged to implement their solution in a tool and make it available along with the submission. They will be able to present it at the interactive demo session. Each paper should also discuss how long it took the authors to understand the challenge and how much effort it took to solve it.

Submitted solutions should follow the IEEE conference format (2 columns, 10 pt, single-line spacing) and should not exceed 6 pages in length. Papers must be submitted in PDF format. The papers will be reviewed by the FMTV challenge committee. All accepted solutions will be made available to the participants one week before the workshop so that contributions can be examined prior to the event. Solutions should be submitted via *EasyChair* using the link provided on the workshop website.

By submitting a paper, the authors agree and confirm that, if accepted, at least one author will register for WATERS 2015 by the special registration deadline set in the notification of acceptance, and present the solution at the workshop in person. In addition, your submission implies that you agree to participate as a reviewer to the (light-weight) evaluation of contributions submitted by others. The copyright remains with the authors. Depending on the participation, a joint publication of the challenge solutions will be considered.

WATERS 2015 is a satellite workshop of the 27th Euromicro Conference on Real-Time Systems (ECRTS 2015, **http://control.lth.se/ecrts2015/)**, *the premier European venue for presenting research into the broad area of real-time and embedded systems.*