EU TUD COST Action TU1102

AUTONOMIC ROAD TRANSPORT SUPPORT SYSTEMS (ARTS)

Annual Meeting

On the 27th and 28th of February 2014 the annual meeting of the EU COST Action TU1102 "Autonomic Road Transport Support Systems (ARTS)" with workgroup workshops took place. The host of this meeting was the Faculdade de Ciencias e Tecnologia (FCT campus), Universidade Nova de Lisboa / NOVA University, Portugal. The aim of the ARTS Action is to unite and align groups across Europe from computer science, engineering, and transport studies into a world leading research community that will develop new ways of designing Road Transportation Support (RTS) systems based on the ideas of autonomic systems. If used as a platform on which to implement the leading edge RTS technologies, such systems have the potential to deliver savings in the cost of system configuration, maintenance, and infrastructure, while potentially improving network efficiency and reducing the chances of human error. Using an autonomic approach to RTS is a novel and very ambitious idea requiring interdisciplinary community building; hence the need for COST, and a European dimension. This Action will bring together disparate strands of research into an integrated discipline, putting Europe at the leading edge of autonomic transportation system development. Additionally, it will have the wider benefit of producing a transformative change within the field of autonomic systems itself, that will translate to other application areas such as energy management. Embedded software support systems such as those in transportation are now so complex that the need for a step change in the way they are engineered is apparent. In addition to aiming for conventional properties such as dependability, future systems need to be embedded with self-managing properties. Technologies and research expertise exist to underpin this step change, but are distributed throughout several disciplines. Launching the network will immediately bring attention to this issue through these disciplines, and forge a new community with the capability to meet this challenge. Croatia has been a member of the ARTS Action since December 2012 with Professors Edouard Ivanjko and Sadko Mandžuka from the Faculty of Transport and Traffic Sciences University of Zagreb as local management committee members. The Croatian ARTS Action members are participating with their respective research work in the working groups WG1 and WG2.

The ARTS Action activities are divided into four workgroups:

WG1: Architectures, Methods, and Models for ARTS;

WG2: Exploiting the results of previous research and technological development;

WG3: External Factors, Environmental Benefits and Application Scope;

WG4: Human Interaction and Human Factors.

In the WG2-related special session, Prof. Ivanjko presented the latest results obtained on the FP7 project "Intelligent Cooperative Sensing for Improved Traffic Efficiency – (ICSI)" related to the "Definition of novel traffic and travel management strategies". The title of the presentation was "Urban Highway Autonomic Control System (Ramp Metering and Speed Limit Control as Autonomic System)". The proposed ANFIS-based learning framework for ramp metering was presented with future work description including the newest research results. The ICSI project scope and objectives were presented as well. During the presentation a live discussion evolved enabling all researchers to develop new ideas and collaboration opportunities.

The expected, tangible outcomes of the Action will be a sound foundation for ARTS technical infrastructure (common vocabularies, subject area classifica-

The participants of the meeting

tions, shared technical platforms, new advanced algorithms, benchmarks, etc.) which will be produced through network activities such as workshops and short-term scientific missions. Thus, the ARTS Action is initially aimed at scientific and technological advances, but these are seen as key to the delivery of satisfying economic and societal needs in the future.

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