CISTER Quicknews

OCTOBER, 2017

CISTER - Research Centre in Real-Time & Embedded Computing Systems

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activities in the centre

PORTUGUESE AERONAUTICS, SPACE AND DEFENCE CLUSTER VISITS CISTER

Members of the Aeronautics, Space and Defence Cluster (AED), of which CISTER is a member, visited our premises in October, as part of the activities included in the AED Days event which took place in TAGUSPARK.

During the visit, the members got to know the output of CISTER researchers along the years in the various projects that address the domains of interest of AED. This included demonstration of some prototypes that resulted from projects such as SENODs, DEWI, and Smartskin, among others. Also showcased were the long term effort of CISTER in supporting a national ecosystem of companies with interest in embedded real-time systems.

CISTER WELCOMES DSR CORPORATION TO PORTO

In the month of October, DSR Corporation representatives Anatoly Pechkov and Roman Lavlinskiy visited CISTER premises.

DSR Corporation is a US-based company providing high-quality software product development, project management, quality assurance and application systems integration services to companies that range from start-ups to Fortune 500. DSR Corporation has been in business since 1998 and in several markets including USA, Europe, and Japan. DSR Corporation has engineering offices in USA and Russia, and has recently opened an office in Porto.

During the visit, CISTER researchers David Pereira and Ricardo Severino took the chance to explain the goals and mission of CISTER as a prominent research unit in real-time embedded computing working on fundamental research, industry-driven projects and with capability of performing technology transfer to the industry. Several topics were discussed that were relevant to both CISTER and DSR Corporation and that can lead to future collaborations.

achievements in the academia

BEST PAPER AWARD AT REAL-TIME CONFERENCE

We are proud to announce that CISTER researchers José Carlos Fonseca, Geoffrey Nelissen, and Vincent Nélis, authors of the paper "Improved Response Time Analysis of Sporadic DAG Tasks for Global FP Scheduling", were granted the Best Paper Award at the 25th International Conference on Real-Time Networks and Systems (RTNS), in Grenoble, France. RTNS is a reputed conference with a great sense of community in the field of real-time systems and networks. The award recognizes the achievements and leading position of CISTER in this field.

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progress in projects

CISTER HOLDS GENERAL ASSEMBLY OF PROJECT ON SECURITY, TRUST AND PRIVACY OF INDUSTRIAL IOT

CISTER hosted the 1st General Assembly and F2F meeting of the ECSEL European project SCOTT (Secure Connected Trustable Things). SCOTT is one of the largest European research projects focusing on trustiness, dependability, security, privacy, and safety of the Industrial Internet of Things (IIoT). SCOTT has a consortium of industrial partners like Volvo, INDRA, Ericsson, AVL, NXP, Nokia, and Phillips that together with a core team of leading academic partners aim to leverage the IIoT and related technologies across European industries. Such technologies include: wireless sensor networks, RFID, machine to machine communications, cloud computing, Big data, software-defined networks, and 5G.

The meeting was attended by 85 partner representatives. The forum was used to present the advances in all the technology lines, building blocks and use cases of the project. Some of the main results of this meeting were the definition of the high level objectives of the project related to the link between security and safety for IIoT in different domains of the project: automotive, aeronautics, railway, building and healthcare. Another important aspect was the discussion of the concepts of security classes, privacy labels and the trustiness framework that will form the main axis of the proposal. The project also saw the proposal of the first draft of the reference architecture for alignment of use cases and design of secure, trustable and safe industrial IoT applications based on the SCOTT/DEWI bubble and the new paradigm based on security/safety classes and privacy labeling.

PT2020 PROJECT ON SMARTGRID MOVES AHEAD

CISTER met with EFACEC associates to discuss the status and future steps of the DSGrid project. DSGrid, part of the PT2020 program, aims to develop technical knowledge, engineering skills and products towards the establishment of third generation automation systems for substations, and similar smart-grid applications. It works on smarter transmission and distribution grids to deliver answer to the challenges of operational optimization of grid assets and systems.

The project is owned by EFACEC with contributions by EDP Distribuição, ISEP (through CISTER) and the University of Minho (through HASLab). CISTER is central to the innovations related to embedded systems and to provide tools and analysis related to the systems' temporal properties.

The meetings, attended by Rui Dias Jorge and Fernando Gomes from EFACEC along with CISTER researchers Eduardo Tovar, Raghuraman Rangarajan, David Pereira, and Pedro Santos, evaluated the current progress and discussed potential future work based on the issues arising from the prototyping by EFACEC. This includes analysis of network architectures for timing synchronization in digital substations, analysis of task separation in multicore processors and development of a toolchain.