Conference on Control and Fault-Tolerant Systems, SysTol'10

The Conference on Control and Fault-Tolerant Systems, SysTol'10 was held October 6-8, 2010 at the Nice Acropolis Exhibition and Convention Center, France. The focus of the conference was on new developments and applications of Fault Detection (FDI) and Isolation and Fault-Tolerant Control (FTC). Indeed, the development of embedded technologies and the rapid progress in computer science, communication technology and microelectronics enable a wide integration and networking of devices like sensors, actuators, controllers, microprocessors and power computers as well as software systems in automatic control systems. Today's automatic control systems are of high degrees of integration, complexity, embedding and networking of heterogeneous entities. The wide applications of complex automatic systems across the major industrial sectors mark the state of the art. This trend is driven by the industrial needs for achieving new technical performance and meeting additional performance demands. A most critical and important issue surrounding the design and operation of complex automatic systems is the application of FDI/FTC technology, aiming at guaranteeing high system performance over a wide operating range and meeting the requirements on system safety, reliability, availability and dependability.

Sponsored by the Research Center for Automatic Control of Nancy, the conference was initiated by members of one of the research groups of this lab dealing with dependability, diagnosis and fault-tolerant control. The conference general chair was Didier Maquin (Nancy-University, France) and Ron Patton (Hull University, UK) accepted to be honorary chair of this event. Józef Korbicz (University of Zielona Gora, Poland) and Didier Theilliol (Nancy-University, France) did an outstanding job as the program chairs, preparing an exciting and invigorating program.
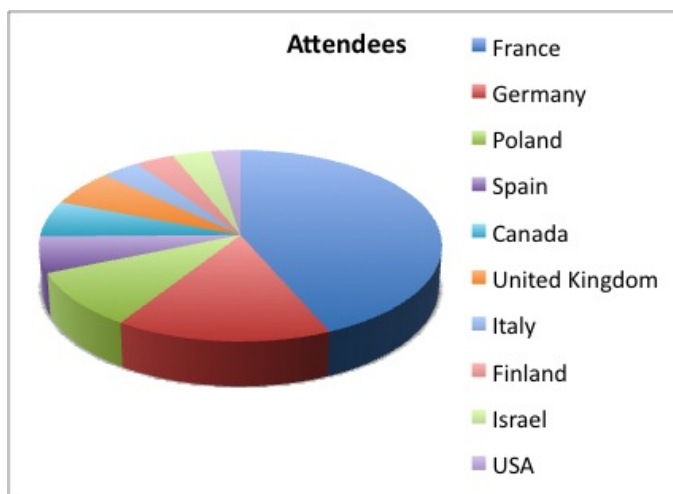
For this event, Nice was chosen because the international accessibility of the city is very good (Nice has the second airport of France) and also because the region is more attractive from a tourist point of view and the weather is better. Nice is a city in southern France located on the Mediterranean coast, between Marseille and Genoa. The city is a major tourist centre a leading resort on the French Riviera (Côte d'Azur).

Technical program

The conference program committee had a very challenging task of choosing high quality submissions. Each paper was peer reviewed by independent referees with an average number of reviews per paper equivalent to 2.6. Based on the recommendation of the reviewers, 143 papers among 208 submissions were finally accepted. These papers were presented in 31 sessions based on 4 parallel tracks. 157 delegates from different countries were attended the conference during these 3 days. The "program at a glance" can still be accessed on the conference website (http://www.systol10.org/).

The key numbers of the conference are gathered in the following tables:

Submitted communications	208
Accepted communications	143
Plenary and semiplenary talks	7
Rejected communications	65
Acceptation rate 143/208	69 %
Requested reviews	1045
Received reviews	545
Average number of reviews per submission	2.6
Number of attendees	157
Number of "no show" papers	6

In addition to the technical session, the conference was honored to have 7 distinguished keynote speakers. During the 3 plenary sessions, Professor Venkat Venkatasubramanian (Laboratory for Intelligent Process Systems, School of Chemical Engineering, Purdue University, W. Lafayette, IN 47907, USA) talked about "Abnormal events management in complex process plants: challenges, opportunities, and emerging trend", Professor Marios Polycarpou (University of Cyprus, Cyprus) addressed "Intelligent monitoring and fault tolerance in large-scale distributed systems" and finally, Dr. Xavier Olive (Thales Alenia Space) described the 2010 situation in the field of space domain with his talk entitled "How to deal with high availability and robustness in space domain? – FDI(R) for satellite at Thales Alenia Space".

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2 semiplenary sessions with 2 speakers in parallel . Thus, during the first one, Professor Christopher Edwards (University of Leicester, UK) delivered a talk about "Sliding mode methods for fault detection and fault tolerant control" while Professor Jin Jiang (The University of Western Ontario, Canada) tried to answer to the question "Why does one need fault-tolerant control systems anyway?". The day after, the semiplenary session gathered Dr. Henrik Niemann (Technical University of Denmark), "A model-based approach for fault-tolerant control" and Professor Dariusz Uciński (University of Zielona Góra, Poland) for "Sensor network scheduling for identification of spatially distributed processes".

The high quality of the program was possible only thanks to the efforts of the program chairs, the members of the international program committees and the organization staff. The official conference proceedings will be published by IEEEE and included in IEEE Xplore.

Sponsors

The SysTol'10 conference was sponsored by the Research Center for Automatic Control of Nancy (CRAN). Founded in 1980, CRAN (Centre de Recherche en Automatique de Nancy) is a joint research unit (Unité Mixte de Recherche UMR 7039) between Université Henri Poincaré, Institut National Polytechnique de Lorraine and CNRS (Institute for Engineering and Systems Sciences and Institute for Computer Sciences).

The conference was technically co-sponsored by IEEE Control System Society (CSS) . Two french research groups also gave its scientific label to the conference. The so-called GdR MACS which is a national research group dealing with modeling, analysis and control of dynamical systems and a second structure the GIS 3SGS, a scientific group gathering research laboratories and government-funded technological research organizations.

Some pictures

More photos on http://www.systol10.org/SysTol10/Photos/Photos.html

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October 19, 2010,
Didier Maquin, General Chair
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