A Foreword to the Proceedings of the 7th International Conference on Information Society and Technology

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I. INTRODUCTION

Internet of Things (IoT) has attracted attention of major players in industrial landscape and it is currently one of the most expected emerging technologies. According to the 2015's Gartner's Hype Cycle for Internet of Things, IoT is currently at the "peak of inflated expectations". The development of IoT is also driven by the need to facilitate machine-to-machine (M2M) connectivity, which is emerging at unprecedented rate. Machina Research predicts that M2M connections will rise from two billion in 2012 to 12 billion in 2020. Cisco values IoT market to 19 trillion USD. According to the same source, only 0.6% of the physical objects the potential candidates for IoT are currently connected. Different sources refer to estimated 50 billion objects online on 2020.

IoT was selected by the co-chairs as the main topic of the 7th International Conference on Information Society and Technologies. It was organized in Kopaonik, Serbia, 12-15.3.2017. The conference gathered more than 200 participants from all over the world, to discuss the recent research results. Besides a great number of papers directly or indirectly addressing the problems emerging from IoT ecosystem development, the conference maintained its interest in the topics that have been traditionally discussed in the past, namely information systems, software engineering, information society and ICT and social challenges.

This year's edition of the conference was supported by the International Program Committee (IPC), with 80 distinguished researchers from 20 countries, namely Austria, Brazil, Bulgaria, Croatia, Czech Republic, Finland, France, Germany, Greece, Hungary, Italy, Luxembourg, Mexico, Portugal, Romania, Serbia, Slovenia, Sweden, USA and United Kingdom.

II. SCIENTIFIC PROGRAMME OF 7TH INTERNATIONAL CONFERENCE ON INFORMATION SOCIETY AND TECHNOLOGIES

ICIST 2017 received 106 submissions. The number clearly shows the sustainable conference development and significant growth trend, after 80 submissions received last year. The international character of the conference is again demonstrated by the fact that authors or co-authors of the submitted papers were affiliated to the research institutions from 26 countries.

Based on the outcomes of the evaluation process (each submitted extended abstract is reviewed by 1-4 members of IPC), 69 papers were invited to be presented in some of the regular or special sessions. In addition, 30 papers were invited to be presented in two poster sessions.

In Volume 1 of the proceedings book, 63 papers presented in some of the regular or special sessions are published. 28 papers are published in Volume 2. Total number of papers published in ICIST 2017 proceedings book is 91.

The conference hosted two distinguished keynote speakers, namely: Ms Michela Magas, AIOTI (EU Alliance for IoT Innovation) Communication Officer, Stromatolite LTD founder and director, UK and Prof. Theo Kanter, Stockholm University, Sweden.

A. Scientific sessions

During the preparation of the conference, a list of relevant topics was made by the co-chairs and selected researchers were invited to organize the special sessions on these topics. Based on the response, it was decided that ICIST 2017 will host four special sessions, namely:

Model-driven data-intensive Enterprise Information Systems (hosted by Ricardo Jardim-Gonçalves and Milan Zdravkovic) (MDDEIS);

- ICT for health,aging and well-being (Anton Kos, Osiris Canciglieri Junior and Miroslav Trajanović) (HEALTH);
- (Industrial) Internet-of-Things for Smart & Sensing Systems (Hervé Panetto, Paulo C. Stadzisz and Eduardo Rocha Loures) (IIOT) and
- Hydroinformatics (Nikola Milivojević, Miloš Stanić and Boban Stojanović) (HYDRO).

In a double track, IIOT provided interested insights into the use of IoT technologies in food industry, bee-keeping, smart cities, manufacturing, smart homes and buildings. Some horizontal perspectives included the topics of pairing BPM with IoT, data aggregation, stream computing, multi-agent systems, sustainability assessment and PLM for virtual manufacturing. MDDEIS aimed at complementing the main discussion on IoT ecosystems with the recent contributions in IoT platforms

development, including interoperability problem, MDA for IoT platforms, big data analytics, hybrid databases and process execution platforms. HYDRO addressed the topics which are new for ICIST series, with the unexpectedly high number of papers, discussing data quality assessment, management and assimilation, use of machine learning, numerical thermal model calibration, sectorisation of the distribution networks and flow predictions in hydroinformatics systems. HEALTH attracted a lot of attention of researchers and became one of the main topics of the ICIST conference series. This time, it focused on reasoning in clinical decision support, orthopedic surgery, sonic perception, artery pulse signal classification, cognitive load and biofeedback systems.

Other papers, submitted and accepted for presentation in the regular program were classified in the following regular tracks:

- Modeling, analysis, simulation and optimization (MASO);
- Social, smart IS in the cloud (SISC);
- Model-driven software engineering (MDSE); and
- Next generation IS (NGEIS).

MASO explored cases in different domains to provide methodologies and approaches for forecasting, recommending, text classification, image tagging and video content analysis. SISC delivered interesting presentations focused on social media data and other cloud-based applications. MDSE is traditionally one of the most addressed topics in ICIST conference series and this year's edition was focused at front-end, REST, control logic and database schema development. NGEIS explored the need for using IS in resolving new class of problems, such as e-business continuity management in insurance industries and automation of power theft detection for power utilities, as well as new technologies for their implementation.

The papers presented at the poster sessions were classified in the topics of:

- IoT and big data (BIGDATA),
- Software design and development (SDD),
- ICT Case studies (ICTCS) and
- Next generation ICT (NGICT).

BIGDATA collected technical solutions in different problems related to big data approaches for IoT in the areas of smart cities, social networks and supply chain management, including some general topics, such as communication standards, microcontrollers, protocols and others. SDD encompassed the recent contributions in model-based software engineering, distributed systems, business process modelling, stream processing and e-learning technologies. ICTCS addressed different case studies in the domains of digital libraries, hydroinformatics, green IT, supply chain management and service helpdesks. NGICT explored the opportunities for new, original use of ICT in the traffic engineering, social networking, production engineering and others.

B. Invited Keynotes

The scientific program was also supported by the exciting keynotes from the distinguished speakers.

Michela Magas has a track record of over 20 years of innovation working with companies such as Apple, Nike and Nokia. She is the founder of MusicTechFest.net, an ecosystem of over 5000 creative innovators and scientific researchers, and is the author of #MusicBricks, a project that places exclusive tools from research into the hands of creative developers and makers, and takes them to market. Her initiatives have created over 5M impacts on social media and yielded multiple patents and productisations in a very short time, generating their own innovation ecosystems. Michela is on the CAF Advisory Board of the European Commission's Horizon2020 programme, both at meta level regarding future directions for the ICT research programme, and more specifically on Innovation, the Internet of Things and the Creative Industries. She has been awarded Innovation Luminary 2016 by the European Commission and Intel Labs Europe, and is currently leading Innovation Ecosystems for the European Alliance of Internet of Things Innovation.

During his career, Theo Kanter has held a number of leading positions in telecommunications research, earlier at Ellemtel AB, Sweden (1996-1999), where he led research in agent-based service architectures for context-aware voice services on the Internet. Between 1999 and 2007, Theo was a senior scientist at Ericsson Research in the area of Service Layer Technologies focusing on Adaptive Mobile Services and Mobile Presence. In September 2007, Theo was appointed full Professor of Computer Science in the area of Distributed Systems within the Department of Information Technology and Media at the Mid Sweden University. In this position, he was the driving force of a new research group focused on Sensor-Based Services and co-leader of the Sensible Things that Think (STC) center at the Mid Sweden University. As a member of the Acreo National (fiber-optic) Testbed he established a platform for supporting and creating applications that utilize ad-hoc Context Networks via heterogeneous networks, and selected in several IoT & Cloud related testbeds in EU projects. As of 2012, he was appointed Unit Director within DSV and successfully applied to the position of Senior Lecturer. Theo was promoted to Professor of Computer Science at SU in January 2013. His research activities and research group are organized within the Immersive Participation research area initiated by Theo and in international research networks pivotal to the formation of new FP7 projects, building upon the strengths of national and international collaboration.

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