Smart water management has become a key policy for the 21st century. Towards this direction, recent advances in ICT and Cyber Physical Systems (CPS) are faced with the challenge of transitioning from episodic sampling of water resources to truly pervasive, self-adaptive, and fast-responsive architectures. To yield pragmatic CPS solutions tailored to the complexity of Water Networks (WN), numerous technical and research challenges must be jointly addressed. The front end of sensing requires the support of smart, scalable, and secure heterogeneous network architectures, capable of robust, long-term, and unattended operation in RF-harsh underground and underwater environments. Considering the massive volumes of information generated and the need for timely failure detection, the necessity of transiting from centralized to hierarchical and distributed approaches for data processing, estimation, learning and storage intensifies. In addition, privacy preserving high-level data analytics is required to empower end-users and allow highly interactive and real-time water treatment and quality management.

The objective of this workshop on Cyber-physical Systems for Smart Water Networks (CySWater) (http://www.ics.forth.gr/spl/cyswater2015/) is to bring together researchers and engineers from the fields of Communications, Networking, Processing, and Learning, and practitioners from the Water Industry to both share their experiences, as well as to formulate novel CPS paradigms that are tailored to the needs of Smart Water Management. Emphasis will be given to CPS-based approaches targeted at the optimization of water treatment and distribution for urban centers, promoting early-warning, situation awareness, and actionable intelligence.

Topics of interest include, but are not limited to:

**Acquisition, Processing & Learning:** Hardware, infrastructure, and smart devices, including alternatives on power aspects (e.g., energy harvesting); Signal sampling, distributed inference (e.g., classification, estimation, learning) and anomaly detection in WN; Decentralized multi-sensor fusion and data analytics.

**Communications & Networking:** Underground and underwater CPS; Mobile underground and underwater agents for large-scale CPS; Heterogeneous networks and systems architecture; Networked control and cyber-physical security for WN.

**Analysis, Performance & Applications:** Testbeds, simulations, and field studies; Performance, including energy efficiency, quality of service and quality of sensing; Standardization of CPS for smart WN.

The workshop will only consider papers that contain original material, which have not been previously published nor are currently under review by other conferences or journals. Papers must be written in English, submitted as PDF files, using the IEEE format. A double-blind, peer-review process will be adopted. CySWater will consider for publication: (a) Full Research Papers (max 6 pages, double column ACM format), and (b) Short Papers (max 2 pages, double column ACM format) focusing on practical realizations, testbeds and applications of CPS architectures for Water Networks.

**Accepted papers will be published at the ACM Digital Library and included at the CPS Week USB Proceedings**

For further information, please contact tsakalid@ics.forth.gr

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**Invited Speakers**

TBC

**Organizing Committee (OC)**

Prof. Panagiotis Tsakalides, University of Crete and FORTH-ICS, Greece.

Prof. Baltasar Beferull-Lozano, Universitetet i Agder, Norway.

**Technical Program Committee (TPC)**

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**Important Dates**

Paper Submission: 01/31/2015
Notification: 02/14/2015
Camera-ready due: 02/21/2015
Workshop Dates: 04/13/2015
Short Biographies of Organizing Committee (OC)

Prof. Panagiotis Tsakalides obtained the Ph.D. degree in Electrical Engineering from the University of Southern California (USC), Los Angeles, in 1995. From 1996 to 1999, he was a Research Assistant Professor with the Signal & Image Processing Institute at USC and he consulted for the US Navy and Air Force. In September 2002, he joined the Computer Science Department at the University of Crete, Greece, as an Associate Professor and FORTH-ICS as a Researcher. In March 2010, he was promoted to a Professor. He is currently the Chair of the Computer Science Department and the Head of the Signal Processing Laboratory at FORTH-ICS. His research interests lie in the field of statistical signal processing with emphasis in non-Gaussian estimation and detection theory and applications in sensor networks, remote sensing, audio, imaging, and multimedia systems. He has coauthored over 150 technical publications in these areas (Google scholar: 2500 citations, h-index = 22, i10-index = 44).

Prof. Baltasar Beferull-Lozano received the PhD degree in Electrical Engineering from the University of Southern California (USC), Los Angeles, in 2002, receiving the best PhD Thesis paper award. In October 2002, he joined the AudioVisual Communications Laboratory, Department of Communication Systems, at EPFL, as a Research Associate. In December 2005, he joined the School of Engineering at the University of Valencia as an Associate Professor, being also the holder of a Telefónica Chair. Since August 2014, he is a Professor at the Department of Information and Communication Technology, University of Agder, and a Senior Researcher within the CIEM Centre, Norway. His research interests include de-centralized communications and in-network processing for wireless sensor and communication networks; signal processing for multi-sensor data analytics and inference; information theory and cross-disciplinary tools. His work is highly interdisciplinary, covering theory, algorithms, and testbed implementation for various applications, such as condition-based monitoring of industrial plants and natural resources, ambient intelligence, environmental monitoring, smart energy grids, and 4G/5G wireless networks. He received the Best Paper Award at IEEE DCOSS, 2012.