

## COST Action IC0806: Intelligent Monitoring, Control, and Security of Critical Infrastructure Systems (IntelliCIS)

### First Training School: Intelligent Monitoring of Critical Infrastructure Systems

#### Four-day intensive training school coupled with networking opportunities

**Date: 10-13 October 2011**

**Venue: Resort Albena, Varna, Bulgaria**

#### **Aim of the school:**

Critical infrastructures are large-scale, complex, interconnected, and distributed systems. Examples of such systems are electricity, telecommunication, transportation and water distribution networks. Such systems have many common characteristics and requirements, which naturally point to the need for a common methodological framework. They are large-scale, complex, spatially distributed and data-rich systems. Moreover, they are dynamic and their operation is subject to significant uncertainty, and of course, it is critical in modern societies that the operation of these systems is uninterrupted despite any component failures. The aim of the IntelliCIS Training School is to provide a deep knowledge of the application domains with tools from computational intelligence and adaptive systems to develop smart monitoring and control solutions based on the principles of intelligent data interpretation and decision, self-aware/self-improve/self-healing design, scalability, flexibility, modularity and fault tolerance.

In addition, the school will provide practical courses on the intelligent monitoring of three major critical infrastructures: Water Systems, Electric Power Systems, and Telecommunication Systems.

#### **About COST Action IC0806 (IntelliCIS):**

COST IC0806 (IntelliCIS) is the Action on Intelligent Monitoring, Control and Security of Critical Infrastructure Systems and belongs to the ICT Domain. The main objective of the Action is to develop innovative intelligent monitoring, control and safety methodologies for critical infrastructure systems, such as electric power systems, telecommunication networks, and water distribution systems. A diverse network of researchers in various domains has come together in this Action, forming probably the largest team in the world working on critical infrastructure systems!

#### **About COST:**

COST is an intergovernmental framework for European Cooperation in the field of Scientific and Technical Research. It is organized into scientific and technical domains and its goal is to ensure that Europe holds a strong position in the field of scientific and technical research. COST is based on Actions, which are networks of research projects in fields of interest to participants coming from different COST and non-COST countries. The Actions are defined by a Memorandum of Understanding signed by the Governments of the COST states wishing to participate in the Action. In COST Actions, the initiative comes from the scientists and technical experts and from those with a direct interest in furthering international collaboration.

#### **Important dates:**

Application deadline for participation in training school (with or without financial support): 6 September 2011

Acceptance notification: 9 September 2011

#### **Organizing Committee:**

Kiril Alexiev, Bulgarian Academy of Sciences, Bulgaria (Management Committee Member, Local Organizer)

Cesare Alippi, Politecnico di Milano, Italy (Action Vice-Chair)

Christos Panayiotou, University of Cyprus, Cyprus (Management Committee Member)

Elias Kyriakides, University of Cyprus, Cyprus (Action Chair)

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## Training School Schedule

	<b>Monday 10 October 2011</b>	<b>Tuesday 11 October 2011</b>	<b>Wednesday 12 October 2011</b>	<b>Thursday 13 October 2011</b>
09:00-12:30	<p>Fundamentals of monitoring systems (critical infrastructure systems, sensor networks, architectures, requirements, etc.)</p> <p>Lecturer: Dr. Kim Fowler, President of the IEEE Instrumentation &amp; Measurement Society</p>	<p>Signal/image processing and intelligent data analysis</p> <p>Lecturer: Prof. Ke Chen, University of Manchester, United Kingdom</p>	<p>Engineering Practice: Intelligent monitoring of water systems</p> <p>Lecturer: Prof. Jim Uber, University of Cincinnati, USA</p>	<p>Engineering Practice: Intelligent monitoring of power systems</p> <p>Lecturer: Vladimir Terzija, University of Manchester, United Kingdom</p> <p>Student poster session</p>
12:30-14:00	Lunch	Lunch	Lunch	Lunch and closing ceremony
14:00-17:30	<p>From metrology to Sensor data (accuracy, repeatability, SNR, etc.)</p> <p>Lecturer: Prof. Alessandra Flammini, University of Brescia, Italy</p>	<p>Multisensor information processing for distributed infrastructures (Sensor information fusion, etc.)</p> <p>Lecturer: Prof. Kiril Alexiev, Bulgarian Academy of Sciences, Bulgaria</p>	<p>Engineering Practice: Intelligent monitoring of telecommunication systems</p> <p>Lecturer: Prof. George Ellinas, University of Cyprus, Cyprus</p>	Free evening
19:00-20:00	Dinner	Dinner	Dinner	Dinner

Sunday dinner at 19:00

Coffee breaks at 10:30-10:45 and at 3:30-3:45 Monday to Wednesday

Coffee break at 11:00-11:45 on Thursday