Aim

Contributions are invited for a forthcoming special issue of Environmental Modelling and Software (EMS) devoted to “Sensors and the Environment,” discussing Information and Communication (ICT) challenges and forward-looking solutions within the domain of environmental monitoring, modelling and software.

Currently this theme is a hot topic in Europe as well as around the globe. Sensing the world has become a real issue in many areas including agriculture, population, human health and the environment in general. Sensors are everywhere – and people are typically not aware of the huge extent to which sensor(s) are integrated (positively or negatively) into their daily life and belongings. The uncountable numbers of sensors demand, more than ever, models that make management more reliable, efficient and secure. To satisfy this requirement new, generic and future-oriented architectures based on standards are a must for cost-effective use of the immense information pool that sensors generate. Here, specifically modelling methods can play an important role in designing and evaluating sensor networks.

Structure

Having enjoyed a very successful session and workshop on sensor networks at the iEMSs 2008 Conference in Barcelona, (www.iemss.org) and after many fruitful and encouraging discussions we have decided to structure a way forward to capture the necessary science, both status and needs, first into a special issue of the EMS journal series.

Therefore, please feel free to express your interest and submit papers on the following intended topics:
**Topic A) Research in the field of sensor network architecture and modelling**
Papers should demonstrate the current state of the art (in modelling of sensor networks, architectural models and approaches, sensing technology, e.g. architectural aspects of sensor networks, technology aspects, etc.).

Specific topics around modelling and architecture of self-organising, self-healing, self-configuring sensor networks, combined with security and semantics of sensor networks and its usefulness are also highly welcomed. Challenges, such as how much models contribute to the design of better sensor networks, should be discussed.

**Topic B) Applications oriented articles**
Applications based on scientific background but using real, innovative and forward-looking technology to sense/monitor environmental issues. Themes around air, water, soil, etc in combination with risk, health, or management issues are highly appreciated.

**Topic C) Standards**
Papers contributing to applications using standards (like OGC standards, OASIS standards, etc.) for implementing Sensor Networks are welcomed, especially where they show the technical approach combined with the value of using standards.

**Participation**

The editors would like to extend an open opportunity to the membership of iEMSs, ISESS and others in the development of the special issue, either through helping to write a dedicated position paper summarizing the Topic A-to-C or specific papers on one of the topics above or through reviewing any of the papers.

If you are interested in participating please email your contact details and intended participation (discussion paper, topic, title plus a very brief abstract (max. 1 page)) to Gerald.Schimak@arcs.ac.at not later than 15. November 2008.

Note: After initial selection of responses, we will ask for full papers (approx. 20 pages double spaced lines) up to 15th January 2009.

We will use a three step review process: 1. abstracts of about one page will be reviewed by the Guest Editors and ISESS members, and recommendations will be then made for the scope of the full paper; 2. the full paper will undergo a constructive and comprehensive review process to ensure cohesiveness of the special issue and the best quality output; 3. revised manuscripts will be examined by the Guest Editors and, where necessary, the original reviewers.
Future Related Events

Because of the extent of ongoing developments in the sensing area we will elevate
the above topics to an international platform by encouraging you also to participate in
the following events:

ModSim 2009 (July 2009, Cairns, Australia)
(in conjunction with IMACS World Congress: http://www.mssanz.org.au/modsim09/)

We have formulated a session in the Computer Science Stream under the leadership
of Andrea Rizzoli, Instituto Dalle Molle di Studisull’Intelligenza Artificale
(andrea@idsia.ch) and David Swayne, Guelph University (dswayne@uoguelph.ca)
dealing with sensor network architectures and models (including simulation models to
simulate sensor network behaviours on the one hand and on the other hand
discussing models that provide input-data to sensor networks – so-called soft
sensors.)

ISESS 2009 – (6.10-9.10.2009) Venice, Europe, (www.isses.org) : We are planning a
session and workshop dealing with sensor networks (current developments and
restrictions) including results of research efforts currently ongoing in Europe (e.g. EU
funded research projects)

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Environmental Modelling and Software is an Elsevier journal that concentrates on
integrative and innovative methods for addressing environmental issues. It publishes
12 issues per year and has a steadily rising Impact Factor, which stands at 2.099 for
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Kind regards,

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