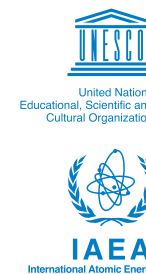




The Abdus Salam International Centre for Theoretical Physics



First Workshop on Open Source and Internet Technology for Scientific Environment: with case studies from Environmental Monitoring

**7 – 25 September 2009
Trieste, Italy**

The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy is pleased to announce the First Workshop on Open Source and Internet Technology for Scientific Environment to be held in the period 7 – 25 September 2009. The Workshop will feature case studies from Environmental Monitoring. Professors: Abhaya S. Induruwa (Canterbury Christ Church University, UK), Carlos Kavka (ESTECO Srl, Trieste, Italy) Ulrich Raich (CERN, Geneva, Switzerland) will jointly direct the Workshop. Drs Maria Liz Crespo and Marco Zennaro of the ICTP Multidisciplinary Laboratory (MLab) and Aeronomy and Radio Propagation Laboratory (ARPL) respectively, will act as Local Organizers.

GENERAL OUTLINE

The objective of the Workshop is to impart knowledge and develop skills needed to design and build small to large scale distributed measurement and monitoring instrument environments based on freely available Open Source technologies. The Workshop aims to teach how to reduce the development time by using Open Source Frameworks that allow quick and easy customisation to meet individual requirements. Case studies from Environmental Monitoring will be presented during the Workshop in collaboration with fellow scientists from the ICTP Aeronomy and Radio Propagation Laboratory (ARPL) and the Multidisciplinary Laboratory (MLab). It is also the objective of the organizers to create a community of experimental scientists in developing countries with the necessary skills and willingness to contribute to a much wider scale and long term data collection/management experiment with ICTP as the main focus that would help to build a repository of data pertaining to a number of areas that are of immediate interest to scientists around the world.

LECTURE PROGRAMME (Approximately 30 hours)

The lecture programme has been designed to introduce the participants to the current status of open source software platforms (GNU/Linux, Real-Time Operating Systems, Software Development Platforms); current Embedded System Hardware for distributed applications; networking technologies for instrumentation (Internet, LAN, Wireless Sensor Technology, Web Services); and distributed data collection, processing and management. There will be case study presentations by experts working in the field of environmental monitoring.

LABORATORY WORK (Approximately 75 hours)

In the first two weeks approximately 40 hours will be spent in directed laboratory sessions. About 35 hours in the third week will be spent in building an integrated instrument system.

Topics covered in the directed laboratory sessions include:

- ☐ Hands-on Open Source Software;
- ☐ Web Technology and Web Services for distributed applications;
- ☐ Small ☐ Medium ☐ Large embedded systems;
- ☐ Networking of embedded systems for communication between them;
- ☐ Data collection and processing using open software;
- ☐ Distributed data management using open software.

The core areas covered in the integration phase include:

- ☐ small scale distributed intelligent sensors and medium sized data concentrators;
- ☐ high end data repositories/ processing machines;
- ☐ distributed communication through the Internet using wireless and wired technologies;
- ☐ applications in environmental monitoring;
- ☐ processing and management of data; and distribution of data/results using WWW or Web Services technologies.

During the workshop ample opportunities will be provided to the participants to present/discuss completed, ongoing or planned work in subject areas related to this workshop. It is hoped that this will stimulate further discussions and provide opportunities for intelligent interaction and long term commitment among the participants and the ICTP.

PARTICIPATION

The Workshop is open to scientists and students from Developing Countries that are members of the United Nations, UNESCO or IAEA. The principal objective of ICTP is to help researchers from developing countries through a programme of training activities within a framework of international cooperation. Participants should have an adequate knowledge of English as the Workshop will be conducted entirely in that language.

It is the objective of the organizers to deliver this Workshop in a manner suitable for Physicists who are not necessarily competent in advanced programming but who have an immediate need to deploy an instrument system for scientific measurement and data collection. However it is expected that the participants will already have a reasonable exposure to the range of topics covered in the Workshop. Selection of participants will be made on the basis of an applicant's involvement in scientific experimentation in his own country/institution and the need for deployment of instrumentation for measurement purposes. **All applicants are required to complete the questionnaire attached to the application form.**

Due to budget limitations the number of participants **will be strictly limited to 40**. All participants are required to take part in all aspects of this activity for the entire duration of the Workshop.

The closing date for submitting applications is 30 April 2009

As a rule, travel expenses of the participants should be borne by their home institutions. However, limited funds are available for scientists from developing countries who will be selected by the organizers. As scarcity of funds allows travel to be granted only in a few exceptional cases, every effort should be made by candidates to secure support for their airfares (or at least half-fare) from their home country.

HOW TO APPLY FOR PARTICIPATION

The application form and questionnaire can be accessed at the activity website <http://agenda.ictp.it/smr.php?2057>. Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit the application form.

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Local Organizers:

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Marco Zennaro
(ICTP Aeronomy and Radio
Propagation Laboratory)

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