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

Organizer(s): Directors: A. Induruwa, C. Kavka, U. Raich. Local Organizers: M.L. Crespo and M. Zennaro
Trieste - Italy, 07 - 25 September 2009

Venue: Leonardo da Vinci Building Euler Lecture Hall

Final programme

Monday, 7 September 2009 (Room:Leonardo da Vinci Building Euler Lecture Hall)

08:30 - 11:30	--- Registration ---
11:30 - 11:35	**Abhaya Induruwa** **Welcome**
11:35 - 11:50	**Marco Zennaro** / *Aeronomy and Radiopropagation Laboratory (ARPL), ICTP* **Opening Address**
11:50 - 12:05	**Ulrich Raich** **Introduction to the Workshop**
12:05 - 12:25	**Johannes Grassberger** / *Information and Communication Technology Section (ICTS), ICTP* **ICTP Computer Facilities**
12:25 - 12:30	**Carlos Kavka** **Closing Remarks**
12:30 - 14:00	--- Lunch Break ---
14:00 - 15:00	**Razaq Ijaduola** **Linux refresh**

15:00 - 16:00	**Paul Bartholdi** **Shell programming**
16:00 - 16:30	--- Coffee Break ---
16:30 - 17:30	**Razaq Ijaduola** **Advanced Linux**

Tuesday, 8 September 2009 (Room:Leonardo da Vinci Building Euler Lecture Hall)

09:00 - 10:00	**Paul Bartholdi** **Mathematical software (I)**
10:00 - 11:00	**Ang Chu Suan** **Embedded systems (I)**
11:00 - 11:30	--- Coffee Break ---
11:30 - 12:30	**Paul Bartholdi** **Mathematical software (II)**
12:30 - 14:00	--- Lunch Break ---
14:00 - 16:00	(Room: Computer Lab. (LB)) **Laboratory: Hands-on open source software**
16:00 - 16:30	--- Coffee Break ---
16:30 - 18:00	(Room: Computer Lab. (LB)) **Laboratory: Hands-on open source software**

Wednesday, 9 September 2009 (Room:Leonardo da Vinci Building Euler Lecture Hall)

09:00 - 10:00	**Razaq Ijaduola** **Rapid application development tools (I)**
10:00 - 11:00	**Ang Chu Suan** **Embedded systems (II)**
11:00 - 11:30	--- Coffee Break ---
11:30 - 12:30	**Razaq Ijaduola** **Rapid application development tools (II)**
12:30 - 14:00	--- Lunch Break ---
14:00 - 16:00	(Room: Computer Lab. (LB)) **Laboratory: Hands-on open source software**
16:00 - 16:30	--- Coffee Break ---
16:30 - 18:00	(Room: Computer Lab. (LB)) **Laboratory: Hands-on open source software**

18:00 - 20:00	(Room: Leonardo da Vinci Building Cafeteria) --- RECEPTION ---

Thursday, 10 September 2009 (Room:Leonardo da Vinci Building Euler Lecture Hall)

09:00 - 10:00	**Ulrich Raich** **ARM-9 board hardware**
10:00 - 11:00	**Ulrich Raich** **ARM-9 board software (I)**
11:00 - 11:30	--- Coffee Break ---
11:30 - 12:30	**Ulrich Raich** **ARM-9 board software (II)**
12:30 - 14:00	--- Lunch Break ---
14:00 - 16:00	(Room: Computer Lab. (LB)) **Laboratory: Small, medium and large embedded systems**
16:00 - 16:30	--- Coffee Break ---
16:30 - 18:00	(Room: Computer Lab. (LB)) **Laboratory: Small, medium and large embedded systems**
21:00 - 22:00	(Room: Leonardo da Vinci Building Main Lecture Hall) --- Opera Concert ---

Friday, 11 September 2009 (Room:Leonardo da Vinci Building Euler Lecture Hall)

09:00 - 10:00	**Pablo Santamarina** **Small measurement devices**
10:00 - 11:00	**Abhaya Induruwa** **Introduction to networking**
11:00 - 11:30	--- Coffee Break GROUP PHOTO WILL BE TAKEN AT 11.00 AM. ON THE LB TERRACE ---
11:30 - 12:30	**Ang Chu Suan** **Embedded systems (III)**
12:30 - 14:00	--- Lunch Break ---
14:00 - 16:00	(Room: Computer Lab. (LB)) **Laboratory: Small, medium and large embedded systems**
16:00 - 16:30	--- Coffee Break ---
16:30 - 18:00	(Room: Computer Lab. (LB)) **Laboratory: Small, medium and large embedded systems**

Monday, 14 September 2009 (Room:Leonardo da Vinci Building Euler Lecture Hall)

09:00 - 10:00	**Abhaya Induruwa** **TCP/IP networking**
10:00 - 11:00	**Carlos Kavka** **Databases (I)**
11:00 - 11:30	--- Coffee Break ---
11:30 - 12:30	**Abhaya Induruwa** **TCP/IP networking**
12:30 - 14:00	--- Lunch Break ---
14:00 - 16:00	(Room: Computer Lab. (LB)) **Laboratory: Networking of embedded systems**
16:00 - 16:30	--- Coffee Break ---
16:30 - 18:00	(Room: Computer Lab. (LB)) **Laboratory: Networking of embedded systems**

Tuesday, 15 September 2009 (Room:Leonardo da Vinci Building Euler Lecture Hall)

09:00 - 10:00	**Carlos Kavka** **Databases (II)**
10:00 - 11:00	**Abhaya Induruwa** **Wireless sensor technologies**
11:00 - 11:30	--- Coffee Break ---
11:30 - 12:30	**Carlos Kavka** **Web services**
12:30 - 14:00	--- Lunch Break ---
14:00 - 16:00	(Room: Computer Lab. (LB)) **Laboratory: Networking of embedded systems**
16:00 - 16:30	--- Coffee Break ---
16:30 - 18:00	(Room: Computer Lab. (LB)) **Laboratory: Networking of embedded systems**
20:00 - 21:30	**Presentations by Participants** Satellite Image Processing - Case Study using Data from the Azov Sea (Ganna Antoniuk) 30' Setting up of an Environmental Monitoring System in Armenia (Anna Movsisyan) 30'

Wednesday, 16 September 2009 (Room:Leonardo da Vinci Building Euler Lecture Hall)

09:00 - 10:00	**Paul Bartholdi** **Distributed processing**
10:00 - 11:00	**Olexiy Tykhomyrov** **Realtime operating systems (I)**
11:00 - 11:30	--- Coffee Break ---
11:30 - 12:30	**Paul Bartholdi** **Distributed processing (II)**
12:30 - 14:00	--- Lunch Break ---
14:00 - 16:00	(Room: Computer Lab. (LB)) **Laboratory: Data collection and processing using open source software**
16:00 - 16:30	--- Coffee Break ---
16:30 - 18:00	(Room: Computer Lab. (LB)) **Laboratory: Data collection and processing using open source software**
20:00 - 21:30	**Presentations by Participants** Community Based Flood Early Warning System (FEWS): An Embedded Wireless Sensor Solution for Real Time Monitoring of Rainfall and Water Level (Mercado Reginald) 30' Water Quality Analysis and BOD-DO Modeling of a Waste Water Outfall off Tema, East Coast of Ghana (Bempah Kofi Crentsil) 30'

Thursday, 17 September 2009 (Room:Leonardo da Vinci Building Euler Lecture Hall)

09:00 - 10:00	**Paul Bartholdi** **Distributed management**
10:00 - 11:00	**Olexiy Tykhomyrov** **Realtime operating systems (II)**
11:00 - 11:30	--- Coffee Break ---
11:30 - 12:30	**all** **Question and answers**
12:30 - 14:00	--- Lunch Break ---
14:00 - 16:00	(Room: Computer Lab. (LB)) **Laboratory: Data collection and processing using open source software**
16:00 - 16:30	--- Coffee Break ---
16:30 - 18:00	(Room: Computer Lab. (LB)) **Laboratory: Data collection and processing using open source software**
20:00 - 21:30	**Presentations by Participants** Measurement in a Solar Powered House (Awolola Teru) 30' Indoor Air Quality Monitoring (Ahmed Elsafty) 30'

Web-based monitoring on optimisation GRID for Biogas pro-
duction Systems using GSM Technology and Data Acquisition Module (Evariste Kana) 30'

Friday, 18 September 2009 (Room:Leonardo da Vinci Building Euler Lecture Hall)

09:00 - 10:00	**Concettina Giovani** **Environmental Radioactivity Monitoring in FVG: Role of ARPA**
10:00 - 11:00	**A.B. Bagula/M. Zennaro (ICTP ARPL)** **On Using Open Wireless Sensor Networks for Environment Monitoring**
11:00 - 11:30	--- Coffee Break ---
11:30 - 12:30	**Pablo Santamarina** **Oceanographic embedded systems applications**
12:30 - 14:00	--- Lunch Break ---
14:00 - 16:00	(Room: Computer Lab. (LB)) **Laboratory: Distributed data management using open source software**
16:00 - 16:30	--- Coffee Break ---
16:30 - 18:00	(Room: Computer Lab. (LB)) **Laboratory: Distributed data management using open source software**

Monday, 21 September 2009 (Room:Leonardo da Vinci Building Euler Lecture Hall)

09:00 - 10:00	**Andres Cicuttin, Maria Liz Crespo** / *Multidisciplinary Laboratory, ICTP MLAB* **Innovative hardware/software platforms & open source projects for scientific instrumentation**
10:00 - 11:00	(Room: Computer Lab. (LB)) **Integration: Small scale distributed intelligent sensors and medium sized data concentrators**
11:00 - 11:30	--- Coffee Break ---
11:30 - 12:30	(Room: Computer Lab. (LB)) **Integration: Small scale distributed intelligent sensors and medium sized data concentrators**
12:30 - 14:00	--- Lunch Break ---
14:00 - 16:00	(Room: Computer Lab. (LB)) **Integration: Small scale distributed intelligent sensors and medium sized data concentrators**
16:00 - 16:30	--- Coffee Break ---
16:30 - 18:00	(Room: Computer Lab. (LB)) **Integration: Small scale distributed intelligent sensors and medium sized data concentrators**

Tuesday, 22 September 2009 (Room:Computer Lab. (LB))

09:00 - 11:00	**Integration: High end data repositories/processing machines**
11:00 - 11:30	--- Coffee Break ---
11:30 - 12:30	**Integration: High end data repositories/processing machines**
12:30 - 14:00	--- Lunch Break ---
14:00 - 16:00	**Integration: High end data repositories/processing machines**
16:00 - 16:30	--- Coffee Break ---
16:30 - 18:00	**Integration: High end data repositories/processing machines**
20:00 - 21:30	(Room: Leonardo da Vinci Building Euler Lecture Hall) **Presentations by Participants** Remote Monitoring of Hazardous Gas from Chemical Plants ? Case Study Chemical Plants in Qatar (Adewale Lawal) 30' Development of a System to Monitor Oxygen (Johann Renner) 30' Digital Instrumentation for Power Measurement (Diego Sandoval) 30'

Wednesday, 23 September 2009 (Room:Computer Lab. (LB))

09:00 - 11:00	**Integration: Distributed communication through the Internet using wireless and wired technologies**
11:00 - 11:30	(Room: ICTP MLAB) --- Coffee Break ---
11:30 - 12:30	(Room: ICTP MLAB) **Visit to and presentation of the ICTP Multidisciplinary Laboratory (ICTP MLAB)** ICTP MLAB ? Multidisciplinary Laboratory (Maria Liz Crespo) 15' Applications and preliminary results of XDXL (Dipak Debnath, Debashis Bhowmick, Nicola Zampa) 15' Neurotelemetry ? An RVI application of Digital-Radio Transmission of Neuronal Signals (Miguel Risco Castillo) 15' Development of a portable X-ray instrumentation for non destructive characterization of archaeological and artistic materials (Federico Bernardini) 15' Description of the experimental DPF set-up at ICTP (Andres Cicuttin) 15'
12:30 - 14:00	--- Lunch Break ---
14:00 - 16:00	**Integration: Distributed communication through the Internet using wireless and wired technologies**
16:00 - 16:30	--- Coffee Break ---
16:30 - 18:00	**Integration: Distributed communication through the Internet using wireless and wired technologies**
18:00 - 19:00	(Room: Leonardo da Vinci Building Euler Lecture Hall) --- Distribution of Diplomas of Attendance ---
20:00 - 21:30	(Room: Leonardo da Vinci Building Euler Lecture Hall) **Presentations by Participants** Monitoring of Volcanic Activity (Maria Lorena Gomezjurado Benitez) 30'

A Practical Use of Ad-hoc Mobile Networking in Rwanda ?
OLPC as a Case Study (Charles Kabir) 30'

Thursday, 24 September 2009 (Room:Computer Lab. (LB))

09:00 - 11:00	**Integration: Applications in environmental monitoring**
11:00 - 11:30	--- Coffee Break ---
11:30 - 12:30	**Integration: Applications in environmental monitoring**
12:30 - 14:00	--- Lunch Break ---
14:00 - 16:00	**Integration: Applications in environmental monitoring**
16:00 - 16:30	--- Coffee Break ---
16:30 - 18:00	**Integration: Applications in environmental monitoring**
20:00 - 21:30	(Room: Leonardo da Vinci Building Euler Lecture Hall) **Presentation by Participants** Realization of a Piloting System using J2ME Application (Mounir Arioua) 30' An Overview of the Experience of Working for TUBITAK, MRC, ITI, in Turkey (Laleh Candemir) 30'

Friday, 25 September 2009 (Room:Computer Lab. (LB))

09:00 - 10:00	**Integration: Processing and management of data and distribution of data/results using WWW or Web Services technologies**
10:00 - 11:00	(Room: Galileo Guest House) **Visit to the ICTP-ARPL and ITU Laboratory**
11:00 - 11:30	--- Coffee Break ---
11:30 - 12:30	**Integration: Processing and management of data and distribution of data/results using WWW or Web Services technologies**
12:30 - 14:00	--- Lunch Break ---
14:00 - 16:00	**Integration: Processing and management of data and distribution of data/results using WWW or Web Services technologies**
16:00 - 16:30	--- Coffee Break ---
16:30 - 18:00	**Integration: Processing and management of data and distribution of data/results using WWW or Web Services technologies**