Training Initiatives with Scientists for Wireless Networking and Building Wireless Sensor Networks for Weather and Climate Research Activities in Africa

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what is the ICTP

- the Abdus Salam International Centre for Theoretical Physics was founded in 1964 by the late Nobel Laureate Abdus Salam

- ICTP is administered by UNESCO and the International Atomic Energy Agency (IAEA)

- The Centre is located in Trieste, Italy
ICTP statistics

- The ICTP hosts more than 6,000 scientists each year
- +50 training activities per year
- More than 120,000 visits since 1964
  - 60% from developing countries
  - 40% from developed countries
- 184 nations represented
TRaining in wireless

- 1993 to 1996 - Activities cosponsored with ITU/BDT
- 1998 - 1st School on the use of Radio for Digital Communications in Developing Countries (its 14th yearly edition in 2011 with financial support of ITU-BDT and NSRC)
- Many African scientists participated in our activities supported by NSRC

More than 40 activities, 1600 people!
1995 vs 2010

Wireless LAN

- 400$ 3 Mbps

- 77$ 150Mbps
Aim of QWeCI: to examine the potential to produce malaria forecasts and risk projections from monthly to seasonal/decadal timescales

EUFP7 funded project 2010-2014, 13 partners (6 EU, 7 Africa) in three target regions in Africa: Senegal, Ghana and Malawi
Malawi: we deployed a 162km link from Blantyre to Mangochi, via Zomba peak (62km + 100km) to connect rural clinics.
Wireless sensor networks

- Small devices that can monitor the environment.
- Low cost and low power.
- They can be solar powered.
- Many communication options: Zigbee, GPRS and Satellite.
- Wide range of applications.
GLOBALSTAR

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Training in WSN

- What is needed to foster the deployment of WSN is: awareness, training and projects

- We organized two training activities in Africa: University of Cape Town and University of Nairobi

- Two more are planned in 2012: Ghana and Senegal

- Regional activities, with 20-30 participants
Air Quality in .ZA

- Pollution mapping in Cape Town
- Darker clouds: more pollution
- Oil Refinery is polluting!
- Around 200 euro
Project in Kenya
TAHMO

- Trans-African Hydro-Meteorological Observatory (TAHMO)
- Project of TU Delft and Oregon State University
- They have built a prototype of an acoustic disdrometer (rain gauge) that can be produced for €10
Thanks

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