

Report on Visit to Niger

The tour started on November 22, 2007, with a warm welcome of the organizing committee and especially Prof. Hamadou Saliah-Hassane who was in Niamey since November 15th and Dr Zeinabou Mindaoudou, Eng. & Researcher at Radio Isotope Institute Research Center of University Abdou Moumouni Dioffo (UAMD) of Niamey. Several activities took place during our short stay in Niamey. The details of the major activities undertaken are the following.

Meeting with members of a Non Government Organization (NGO) (Information and Communication Network for Development: RICOD)

The meeting aimed to exchange knowledge and technology transfer between Tunisia and Niger by training 5 members namely - Ibrahim Saliah, Adamou Badio, Djibrilla Bello, Yacouba Mahamadou, Banbacor Jean Marie. These members are training teachers on the use of information and Communication Technology in primary and secondary schools. Our goal is, by In this specific case, using a *learning by doing* teaching strategy, we have trained the 5 members to perform some practical works. To name only a few, the trainees were able to install Windows 2003 Server and correctly configure and install a mail server. Other programs such as VMware (for installations of multiple operating systems on a single computer), MS Office 2003 and VNC (a tool for remote access to a computer from networks).

We started by testing a number of software for hardware failure diagnostics. The hardware configuration and diagnostics software were useful in this phase where we had a hard drive failure, and members of the NGOs presented an interest in this phase and have appreciated the diagnostics software tools for partitioning and recovering of hard disks.

After this phase, began installing Windows 2003 Server, which seemed new to Ngo's members. After some basic instructions, the participants were let alone to finish the task up to the required computer network configuration.



Figure 1 Mr Wahid Bannour Tutoring a Non-Government Organization (Information and Communication Network for Development) Members in Niamey, Niger

Meeting with the organizing committee of AFRA to the IRI (Institute of Radio Isotopes)

The Radio-isotopes Institute (IRI) of the University Abdou Moumouni Dioffo of Niamey Niger (UAM) in co-operation with the International Atomic Energy Agency (IAEA) Organized *THE 1ST AFRA CONFERENCE ON "INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTS) IN TEACHING AND LEARNING IN NUCLEAR SCIENCE AND TECHNOLOGY"*.

Prior to the conference day, Prof. Saliah-Hassane and Mr Wahid Bannour visited Institute of Radio Isotopes (IRI) on November the 23rd. After a warm welcoming meeting at the University Abdou Moumouni in Niamey by Dr. Zeinabou Mindaoudou coordinator of the AFRA conference and Dr Sallah Mayaki Director of IRI, we actively participated to help the local organizing committee in their last miles before the conference to be held on the 26th to 27th of November.

Meeting with a teacher for potential development and dissemination of our the platform (ECLATE) for online laboratories in Niger

As part of promotion of distance education and the use of remote laboratories for education and research, we have arranged a meeting with Mr Chaibou Amadou, a teacher working at EMIG, an engineering school in Niamey. The software (ECLATE) feature was presented to Mr Chaibou Amadou, The first version of ECLATE was develop in Montreal at Lab@DER (Lab @ Distance for Education and Research); Hamadou Saliah-Hassane's Research lab and then upgraded by Wahid Bannour's team along with several intervening members from Institute of Higher Technology Studies of Mahdia of Tunisia. The goal was to check for Mr Chaibou Amadou's abilities to understand the source code and his interest to work with us and to keep, with us, the continuous process of development, deployment and use in the context of Niger, of our course delivery platform called ECLATE.

Broadly speaking, there has been a good part of his dedication to the work but we are still waiting for some more news from him.



Figure 2 Mr Wahid Bannour Presenting ECLATE, a Course and Laboratory Web Base Delivery Environment, Developed at LICEF Research Center in Montreal and And Adapted at ISET of Mahdia (Tunisia)

Second meeting with the members of a Non Governmental Organization (NGO)

The second meeting with the members of the NGO took place after the members have successfully achieved the installation of Windows 2003 Server. The following configuration tasks were performed: a) Setting configuring a DHCP server; Setting configuring a DNS server; Setting configuring an Active Directory (as a primary domain controller); Setting configuring a Mail and IIS server.

After nearly 3 hours of work, the trainees were able to attach another computer in the Windows server 2003 network previously configured.

A software package was delivered to the group that will test them and use them to train other audiences in Niger.

Promoting Science and Technology for K12 in secondary school

The activity aimed quite young high school students composed of mainly by girls. The meeting took place in the Department of Mechanical Engineering of EMIG. Two engineering students under the supervision of the chair of the mechanical engineering department prepared the activities thanks to the mechanic kit we bought and provided a week before the activity. On November 25th we conducted the major activity. The objective is to introduce youngsters in engineering using some modular kits by mounting small mechanical devices such as cars and motorized devices. Six secondary school girls came to learn how to use the kit. They proposed the creation of a club of young girls co-supervised by Mr Hassane Amadou, and Mrs Rackia Kaffa, both teaching respectively at EMIG and EAMAC, École Africaine de la météorologie et de l'aviation civile (Aerospace and Meteorology African Engineering School). We all have seen a keen interest by students have already noted their dedication to study in science, engineering or technology. The high-school girls who participated in this activity planned to come every Sunday in the Department of Mechanical School of EMIG to practice their activities. Mr Wahid commits himself to contribute to the establishment of the club by sending a document related to Science and Technology Clubs in Tunisia. Prof. Saliah-Hassane also is working to introduce Mrs Kaffa to Dr Karen Panetta, from Tufts University, for a possible mutual involvement of IEEE WIE committee. It is also expected to see if Dr Karen Panetta will help us to establish a relationship with LEGO Engineering Group working at Tufts University.



Figure 3 Mrs Rackia Kaffa, Teacher at EAMAC, an Aerospace and Meteorology African Engineering School, supervising a motor assembly activity by young secondary school girls interested in Science and Engineering



Figure 4 Mechanic Kit Assembly Activity by Young Girls, in Niamey, Republic of Niger

Partial Report of IEEE Foundation Grant Award Application #2006-017 - "Mainstreaming Engineers in Africa and Middle East". 2006 – Principal Co-Investigators Dr Rob Reilly and Dr Hamadou Saliah-Hassane



Figure 5 A Mechanic Kit Assembled by Young Girls

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Figure 6 Front: (Left to right): Aminame Abdoussamed Yacine, Leila Yacouba, Binta Modi Maiguizo, Nana Barira Laminou Zabeirou, Aminatou Issa Sidikou Harouna; Back(Left to right): Hassane Amadou, Mathurin Nerguidima, Idrissou Bello Rafiou, Farissatou Hassane Laminou, Hadiara Mounkaila Idé, Bassira Mahaman, Abdoulaye Saliah-Hassane, Rackia Kaffa, Wahid Bannour



Figure 7 Prof. Hamadou Saliah-Hassane with Mr Idrissou Bello Rafiou and Mathurin Nerguidima working with a LEGO MINDSTORM KIT at EMIG, an Engineering School in Niamey, Republic of Niger

Participation to the 1st International Conference AFRA 2007 on ICT for teaching and training in nuclear science

University Abdou Moumouni of Niamey in Niger hosted the 1st AFRA 2007 conference. The conference attracted more than one hundred participants and guests and been covered by the National Television News Office and other media including daily newspapers.

Mr Wahid Bannour presented an article entitled "Modeling Online Laboratory: the case of an implementation of remote practical work on a Digital Signal Processing kit". It summarizes the work we have done in Tunisia in the framework of Lab@DER project that involves the whole Tunisian Higher Institutes of Technology Studies Network (ISRT) of Tunisia working with partnership with Prof. Saliah-Hassane research laboratory (Lab@DER). Wahid presented the contribution made by their Tunisian teams for the evolution of the web based delivery environment ECLATE Tunisia and how they are using it to teach digital signal processing complemented with practical laboratory work on a remote kit at ISET of Mahdia.

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Prof. Hamadou Saliah-Hassane presented a speech entitled "On-line laboratory brokerage system for education and research". His contribution was also, as the chair of scientific committee since the beginning of the conference project.



Figure 8 Prof. Saliah-Hassane presenting his talk on The Relevance of Online Laboratories for Africa

Partial Report of IEEE Foundation Grant Award Application #2006-017 - "Mainstreaming Engineers in Africa and Middle East". 2006 – Principal Co-Investigators Dr Rob Reilly and Dr Hamadou Saliah-Hassane



Figure 9 Prof. Saliah-Hassane presenting his talk on The Relevance of Online Laboratories for Africa



Figure 10 Mr Wahid Bannour Presenting his paper on "Modeling Online Laboratory: the case of an implementation of remote practical work on a Digital Signal Processing kit"

Mr Wahid Bannour and Prof Hamadou Saliyah-Hassane presentations have been appreciated by many participants and raised many questions. The discussion was mainly focused on the goal of making this kind of experience in the least-developed countries as they are already missing the most vital resources (electricity, telecommunications, teachers...). "It is clear that online laboratories can help countries with a fairly solid infrastructure, but for others, one needs to think about consolidating their infrastructures before moving to try to such kinds of experience." quoted one of the speakers at the conference.

Our contribution lies in many folds:

Networking: We have met many peoples from more than 20 countries in Africa along with the International Atomic Energy Agency officers present in Niamey for the conference;

A chance to present IEEE organization and IEEE Foundation and the personal development opportunities for some participants and research and education units in developing countries;

New opportunities of collaboration with universities, research units are expected in the next few months;

Potentially networking Women in Science and Technology of Niger and IEEE WIE members



Figure 11 In the framework of the 1st AFRA International Conference on ICT for Teaching and Learning in Nuclear Science and Technology, held in Niamey, the 26 & 27th, Prof. Hamadou Saliah-Hassane, proudly standing with Dr Amadou Hama Maiga Associate Professor at Gaston Berger University, St-Louis, in Senegal and Dr Almoustapha Aboubacar , Chair of Department of Physics at University Abdou Moumouni Dioffo of Niamey. Both were taught as Master es Science Students by Prof Saliah-Hassane in 1985 at University of Niamey in Niger.

In general, the conference was a success if we take into account the first temptations with ICT for most of the participating countries. However, we must now hope that the next conference (which will take place after two years) will provide solutions and experiences completed and tested in order to estimate their degree of relevance to the African context.