

# FUNDING INQUIRY FOR THE ESTABLISHMENT OF CAIRO-NET (CAIRONET) AND LOCAL COMMUNITY DEVELOPMENT NETWORKS (LCDNS) FOR E-LEARNING AND E-HEALTHCARE IN EGYPT

**Mission:** “To establish a broadband network for academic, health and economic development”.

## 1. Concept

The CAIRONET and LCDN network will be established in Egypt to foster the development of e-learning and e-healthcare/telemedicine pilot projects using broadband Internet technology in order to enhance teaching and learning capabilities. The project will partner with Global University System (GUS) to facilitate connectivity among current e-learning efforts around the world and provide support and guidance to selected pilot projects serving as models for adoption.

Satellite and fixed wireless broadband technologies will be used to connect universities, hospitals, libraries, local government agencies, elementary and secondary schools. Cairo University in Egypt will be used as a network regional hub and act as the secretariat of the consortium (GUS/Egypt) of those organizations. The network will link up the various project sites across the country using VSAT, microwave radio links and wireless local loops.

## 2. Background

Egypt is one of the Middle East and North Africa countries (MENA). The country has a population of about 70 million. The literacy level stands at 25% as of UNDP Human Development Index (2002) [1]. Egypt's telecommunication teledensity (fixed and mobile) is 16% [1]. At the economic front,

Egypt's statistics are as follows:

*Egypt Human Development Report 2003<sup>1</sup>*

Poor (as % of total households)	20.1	2000
Ultra poor (as % of total households)	5.8	2000
% of total public expenditure spent on:		
Education	19.7	2000/2001
Health	7.2	2000/2001
Social security	6.1	2000/2001
Public expenditure on education (as % of GDP)	6.7	2000/2001
Public expenditure on health (as % of GDP)	2.4	2000/2001
GDP per capita LE	5537.6	2000
Unemployment rate %	9.0	2001

<sup>1</sup> www.undp.org

### 2.1 Cairo University

Cairo University was founded in 1908 in order to meet the educational needs of the country. It has 30 constituent colleges in all branches of education. These colleges are spread in Giza governorate. The enrolment in Cairo University is about 500,000 students. Academic programs offered at the university are Education, Agriculture, Natural Resources management, Engineering, Medicine, Journalism, Environmental Science, Health related programs, Law, and

more others. The university has developed important projects in sustainable development funded both by the Egypt Government and donor agencies such as USAID, GTZ, JICA, EU, IDRC, UNDP, NORAD, DFID, DANIDA, etc.

### **3. Objectives**

The project aims to achieve the following objectives but not limited to:

- a. To promote the development of communities (universities, elementary and secondary schools, hospitals and others), with the use of high-speed wireless Internet connections for e-learning and e-healthcare associated with content development.
- b. To promote the use of information and communication technologies for economic development and wealth creation in the country by the participation of farming and pastoral communities for improving agricultural and animal husbandry practices and to engage them in knowledge and information sharing by harnessing the emerging broadband connectivity to enhance these activities as well as to improve welfare.
- c. To promote the establishment of tele-immersion environment in the country, which emphasizes the critical elements of the people's cultural heritages, history of the people as well as their daily experiences based on their indigenous knowledge systems (IKS) by linking them to centers of learning and promoting ICT to local language development and use in research, recording and retrieval.
- d. To create the Global University System in Egypt (GUS/Egypt) in order to establish technological alternatives to promote the above objectives as well as learning-ware, digital libraries, virtual laboratories and virtual universities with high-speed wireless and satellite technology, which is designed to deliver cost-effective transmission of voice, text, and video content anywhere in Egypt.

### **4. Goals**

The goals to be pursued in this project are to establish:

- i. Broadband Internet network (CAIRONET) of universities, research centers and institutions of learning that will enhance interaction among these institutions and, at the same time, link them with their communities for enabling their life-long learning to increase their productivity for poverty eradication, and
- ii. Local Community Development Networks (LCDNs), which is to link diverse rural communities for knowledge sharing through exchange of experiences.

### **5. GUS/Egypt**

GUS/Egypt will affiliate with Global University System (GUS), which headquarters is located at the University of Tampere, Finland.

The Global University System (GUS) is a worldwide initiative to create satellite/wireless telecommunications infrastructure and educational programs for access to educational resources across national and cultural boundaries for global peace. The GUS helps higher educational and healthcare institutions in remote/rural areas of developing countries to deploy broadband Internet in order for them to close the digital divide and act as the knowledge center of their community for the eradication of poverty and isolation. Learners and their professors from participating institutions form a global forum for exchange of ideas and information and for conducting collaborative research and development with the use of emerging GRID networking technology.

Currently institutions with faculty members who are participating in GUS development projects are numerous around the world. The GUS affiliated institutions will be invited to become members of the GUS/UNESCO/UNITWIN Networking Chair Program, located at the University of Tampere in Finland. The officers of the GUS are: P. Tapio Varis, Ph.D., Acting President, (University of Tampere, and a former rector of the United Nations University of Peace in Costa Rica); Marco Antonio Dias, T.C.D., Vice President for Administration, (former director of Higher Education at UNESCO); Takeshi Utsumi, Ph.D., Founder and Vice President for Technology and Coordination (Chairman of GLOSAS/USA). The trustee members are: Dr. Pekka Tarjanne,

(former Director-General of the ITU) and Dr. Federico Mayor (President of the Foundation for Culture of Peace and a former Director-General of UNESCO). The special advisors are: David A. Johnson, Ph.D. (Professor Emeritus, University of Tennessee), Fredric Michael Litto, Ph.D. (President of the Brazilian Association of Distance Education at the University of Sao Paulo), W. R. (Bill) Klemm, D.V.M., Ph.D. (Professor of Neuroscience, Texas A&M University), Joseph (Joe) S. DiGregorio, Ph.D. (Georgia Institute of Technology, retired).

## **6. Project Justification**

In view of the challenges that Egypt is facing in the education and healthcare sector, the project will help to mitigate the problems and its consequences. The exchange of quality and quantitative information in the broadband network will contribute to the efforts of Egypt in bridging the digital divide. The economic benefits that will come from connecting rural communities to the broadband network will be a meaningful and sustainable tool to poverty alleviation, which is in line with the Egyptian Initiative for Building The Information Society.

## **7. Expected Output**

The expected project output will be in the following:

### **7.1 Social Benefits**

It is expected that broadband wireless and satellite Internet, available to universities, secondary, primary and elementary schools and hospitals, will promote the interaction among young people from different areas of Egypt with young people from the rest of the world. Content will be developed and delivered to the network users for education and telemedicine use. The success of Giza community pilot project will be used as a model for replication of the project in Egypt and other countries in Africa.

### **7.2 Technical and Economic Benefits**

The main focus of the proposed broadband Internet (see Figure 1) is either or both of satellite and terrestrial (microwave and/or spread-spectrum) wireless approach in viewpoints of the region's geographical constraints and their cost effectiveness. These infrastructures will be used by the participating institutions and their efficiency will be higher than the use of traditional networks. The project will involve the participation of the community and other interested groups. This will not only contribute to the bridging the digital divide, but also create new job opportunities to the graduates of the universities, and the local community.

### **7.3 Poverty Reduction Impact**

The implementation of a modern communication technology will reduce the risks threatening the country. A faster communication network will increase the ability of people to engage in productive activities in a more satisfying way and thereby contributing to the drive for poverty reduction and improvement in their quality of life. Technological propagation is not an end in itself, but a means to a larger end with clear and compelling community benefit.

## **References**

[1] <http://hdr.undp.org/statistics/data/countries.cfm?c=EGY>

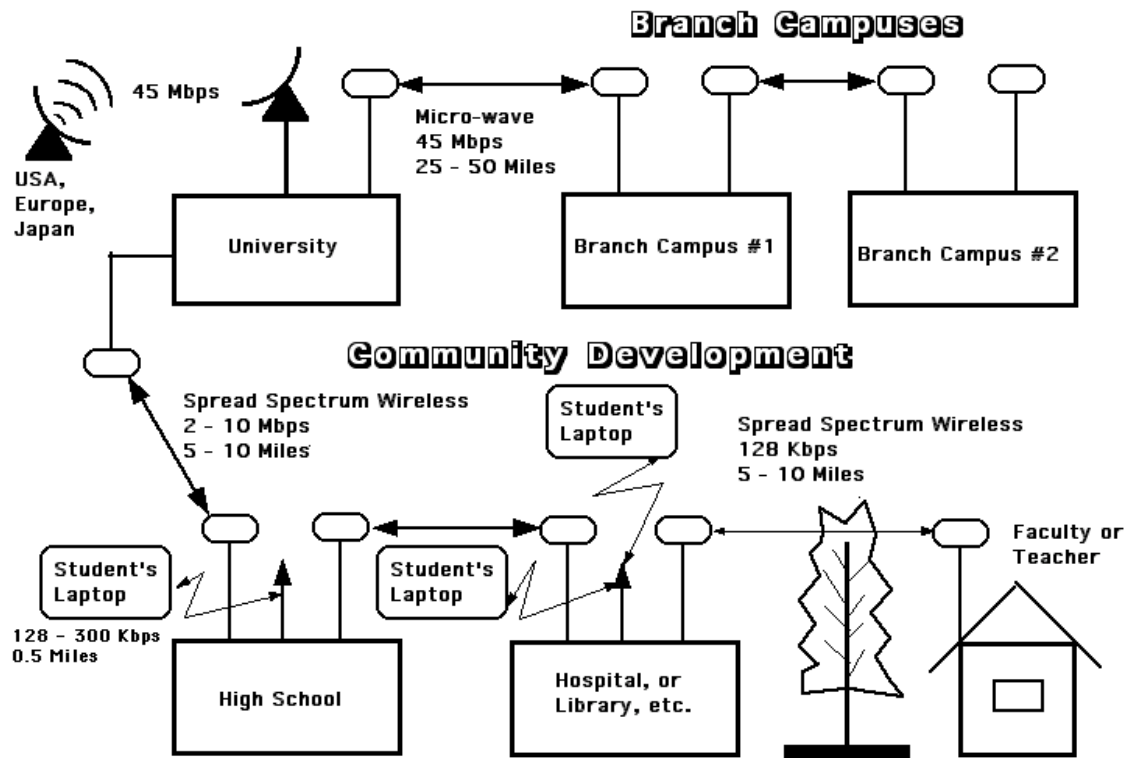


Figure 1: Global Broadband wireless and satellite Internet virtual private network