

STSM Scientific Report

Action Number: IS0605 - A Telecommunication Economics COST Network (Econ@Tel)

STSM Title: "Wireless Broadband Networks for Developing Countries"

Beneficiary/Applicant: Dr. Zviad Kirtava, Partners for Health / National Information Learning Centre, Tbilisi, (Georgia)

Host: Sergio Ramos and Claudio Feijoo – CeDInt, Madrid (Spain)

STSM Dates: 25-30 September, 2011

STSM Place: CeDInt (Centro de Domótica Integral – Research Centre for Smart Buildings and Energy Efficiency), Technical University of Madrid (Universidad Politécnica de Madrid, UPM), Campus de Montegancedo 28223 Pozuelo de Alarcón, Madrid, Spain

Purpose of the visit:

- to analyse the cost of deploying broadband networks with wireless technologies already available (WiMAX, 3G-WCDMA, CDMA).
- to elaborate deployment of broadband wireless network using different access technologies.
- to identify the optimal technological specifications a wireless network should meet in order to contribute to broadband universalisation.
- to discuss potential of combination of wireless+fixed broadband networks for different social purposes (e.g. eHealth networks) for mountainous regions.

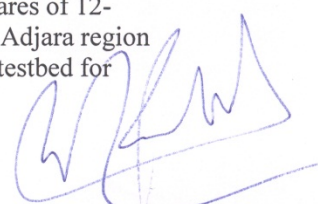
Description of the work carried out during the visit:

Dr. Kirtava visited CeDInt-UPM during May 25-30 (5 working days), 2011.

Dr. Kirtava provided brief presentation to Spanish colleagues about PfH work in field of e-Health and m-Health, as well as regarding 2 possible projects for ehealth network planning and development at Chapidze Heart Center (Tbilisi) and Adjara Regional Hospital Network. General situation of wireless mobile networks and trends in hospital sector privatization and hospital networks emerging has also been described.

Dr. Ramos and Dr. Feijoo have discussed challenges of infrastructure development related with access and usage, which are interconnected – without access to modern technologies public benefits in areas of education, health, e-commerce, e-government can not be realised, but without significant usage of the proposed e-services the significant infrastructure development cost can not be recovered. Therefore considering density of population, need of most demanded services, IT literacy and already most advanced market players (in most cases – mobile operators) needs to be considered and weighed for optimal tactics and approaches for hybrid technology for broadband development.

It was mentioned that development of regional hospital networks in regions with already existing well developed competitive mobile market (3 mobile operators with shares of 12-45%) and existing Fiberoptic backbone creates unique situation – especially in Adjara region with its tourist potential and rapid growth of hospitality services to becoming a testbed for broadband network development with securing some niche for other services.



Special attention was paid to information about density of population and location of hospitals. Zone analysis based on the model for Mexico was suggested.

It was decided that in Tbilisi mobile networks and Internet/Digital-TV fiber-optic networks development might be the prominent market trend with government securing some low tariffs from the operators for universal access usage, especially for needy population.

Description of the main results obtained and future plans agreed on:

We have agreed that:

- In Tbilisi (capital over 1.5 mln population) mobile networks and Internet/Digital-TV fiberoptic networks development might be the prominent market trend with government securing some low tariffs from the operators for universal access usage, especially for needy population.
- For Adjara Regional e-Health network planning the special zone-related mapping and special formulas were discussed and agreed upon. The experience of Mexico regional and Spain's Castila-La Mancha districts to be considered. The necessary population density information to be gathered at Georgian public registry and or State Department of Statistics.
- Hybrid networks seem the most efficient type for Broadband regional networks development in Georgia. However, satellite coverage potential needs to be elaborated. For the moment wireless (3G/HSDPA) + Fiberoptic hybrid networks seem efficient but expensive type of solution.
- It was agreed that Z. Kirtava will discuss with Adjara Regional Hospital System owner company – JSC Imedi L International Insurance Company and its medical branch – Unimedi Adjara an option of engaging Spanish partners in eHealth Regional network planning with possible visit to Georgia in Summer 2012.
- Possibility of partnership with TERRAIN - Techno-Economic Research for future Access Infrastructure Networks project of Ghent University was discussed. Zviad Kirtava will attend TERRAIN workshop on municipal fiber networks in Ghent on Oct 24.

As an STSM outcome, it will be reflected in final reports and possible article publication as a result of COST 605.

Dr. Zviad Kirtava, MD, PhD
PfH/NILC, Tbilisi, Georgia

Confirmation by the host institution of the successful execution of the mission:

The host acknowledged that this was a successful STSM. Key issues were discussed and worked on during the visit. The Outcomes and future workplan are concrete and promising.

Dr. Sergio Ramos,
CeDInt-UPM, Madrid, Spain

