

A fixed station for expert diagnosis support will be situated at the Coimbra University Hospital in Portugal. The field test cities include Azores and Canary Islands; UNESCO will evaluate EU-TeleInViVo in Uganda and Kazakhstan, at two different cities for each country.

At the end of the project a medical teleconference emergency workstation will be available, to be used in Europe, as well as in other regions of the world allowing to provide health care service where it is not possible by the usual means such as ecological disaster areas, remote rural areas, isolated islands.



TeleInVivo Interface



Ainur Saduakasova the doctor of the Regional Hospital, Aral'sk



TeleInVivo Worldmap



UNESCO
Information Society Division

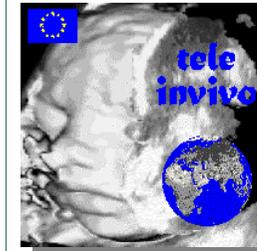
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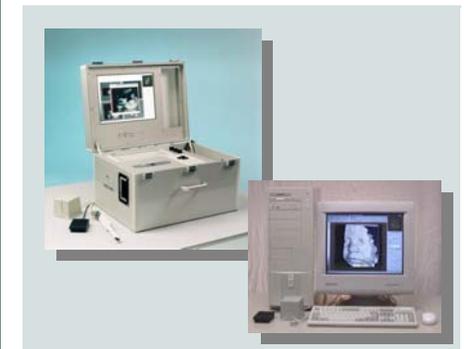
EU-TeleInViVo - 3D Ultrasound Telemedical Workstation

European Commission
Telematics
Application
Programme Project

UNESCO
Information
Society



The aim of this project was to setup a transportable telemedicine workstation to be used in isolated areas such as islands, rural areas and crisis situation areas. It integrates in one custom made device: a portable PC with telecommunication capabilities and a light, portable 3D ultrasound station. The system developed has low price, low weight, is transportable and non-radiating.



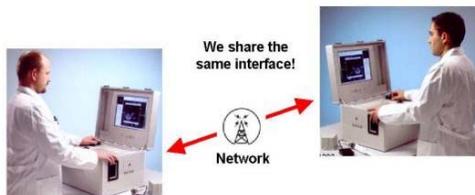


Regional Hospital, Aralsk, Kazakhstan

The integrated workstation uses advanced software techniques able to collect 3-dimensional ultrasound data of a patient. Ultrasound supports a very large range of applications varying from gynecology and abdominal scans to craniological examinations and is currently the only economically and practically affordable imaging modality. The doctor in the field scans the patient and transmits the acquired 3D dataset via:

- Internet,
- ISDN,
- phone line,
- GSM

to the distant expert. Such data transmission can be online, i.e. while both doctors are connected, or offline, e.g. overnight, even through narrowband channels. In the latter case waiting times are minimised, whereas in the first case additional scans can be requested by the remote expert during the teleconsultation for fine-tuning the diagnosis.



Nakaseke hospital Mulago Hospital in Kampala, Uganda

The innovative idea of the system lies on the fact after the transfer of the 3D ultrasound data and during the on-line cooperation, only control signals (e.g. position of mouse, activation of buttons etc.) are transmitted over the network.

Only the actions introduced by one user are transferred to the remote location, where the second workstation locally calculates the corresponding image. Therefore, no bulky image data have to be transferred over the network, only a few bytes of control signals. Nevertheless the 2 doctors see exactly the same image on their screens. The delay between two locations depends only on the latency of the intermediate network, which can be as low as that of a usual telephone line or even a GSM mobile phone. The device is now ready to be tested in different socioeconomic conditions and adjusted accordingly to meet needs of developing countries and countries in transition. It currently comes in two versions, one fully portable, selfcontaining device, and a workstation version (PC attached to an ultrasound scanner for internal hospital use).

TeleInVivo hardware and software created by European Consortium of different organizations such as Fraunhofer Institute of Computer Graphics etc.



The experts of the Katelco technically maintain of the project In Kazakhstan.



TeleInVivo Project organizational chart

*European Commission
Telematics Application Programme*

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