Key Elements

- Submitted under EC 6th Framework Program (FP6)
- In "Aeronautics and Space" thematic priority
- Addresses the development of end to end satellite telecommunication systems for telemedicine applications
- Three years project, started on 1 May 2005
- Alcatel Alenia Space coordinates a consortium of 19 partners including:
  - Industrials
  - TMD services operators
  - Engineering companies
  - User associations
  - Satcom operators
  - Research centres
  - Health Academics
Objectives & approach

- Promotion of the European DVB-RCS satellite standard
- Contribute to the sustainability of end to end telemedicine solutions/services using DVB-RCS satellite technology
- Specify & design a modular, standard based and interoperable platform
- Integrate and validate solutions that will fulfil end-users requirements
  - Collection and understanding of end-users needs
  - Solutions design/integration and industrial validation
  - Validation of network and telecommunication solutions (star, mesh DVB-RCS, QoS and security mechanisms, performances optimisation ...)
  - Preparing and validating deployment procedures
- Achieve large scale pilot deployment (40 sites) and validation over networks managed by medical leaders
- Analyse how to turn the proposed solutions/services into sustainable ones
Technology focus: DVB-RCS

Typical remote SIT

Typical DVB-RCS network architecture
**DVB-RCS Technology advantages**

- DVB-RCS is a **mature** and **fully operational** technology: on the forward link, it capitalizes on the success of DVB-S norm for TV broadcast and on the return link, it offers powerful solutions (up to 2 Mbps return) for access and transmission over satellite from anywhere.

- DVB-RCS is an **open standards technology** which secures customer investments in infrastructure by ensuring interoperability with heterogeneous network like terrestrial, mobile, wireless.

- DVB-RCS **supports current and upcoming IP services** and provides the network functionality to support new generation of interactive and multimedia applications (high quality video based applications).

- The **ground network independency** (2W architecture) of the DVB-RCS satellite solution enables customers currently suffering of the lack of terrestrial broadband networks, to access value added services.

- **Ease of installation** of the DVB-RCS satellite solution allows fast installation of a new site and its integration into the overall network.
Telemedicine Service and Medical domains Focus

Focus on three medical domains

- Chronic respiratory diseases
- Cardiology / Heart problems
- Oncology

Concerning four preferred services

- **Services at home:** monitoring and remote assistance to patient located in isolated areas (islands, campaigns, mountains) either at home or in nursing home
- **Medical training:** knowledge dissemination towards medical staff, nurses, auxiliary nursing staff as well as medical knowledge preservation in rural areas
- **Second opinion:** tele-radiology and interactive video-communication between specialists
- **Teleconsultation:** interactive video-communication between general practitioner/patient and doctor
Project End users dimension

- Appointment of Medical Leaders who will manage their own medical network
  - Identify motivated local partners & coordination
- Benefit from a real-environment of use and evaluation
- Agree on a precise and continuous user-feedback, in order to sustain and adapt each implementation,
- Benefit from a fruitful return on experience from all concerned actors and beneficiaries of telemedicine (Medical user communities, Patients, Citizens) which contribute at refining the proposed solutions.
- In charge of acceptance of the proposed solutions/services & implementation in daily practice
End-users geographical representation

United Bristol Health NHS Trust
University Hospital Toulouse
Remifor
Masaryk University Brno
Jagiellonian University Krakow
Forth
University of Cyprus
Telbios
Cardioexpress / Total Care Networks
Overview of telemedicine services

▼ Jagiellonian University Krakow (Poland)
   ▪ 1) teleconsultation in respiratory medicine & oncology care (lung cancer) between referential centres (pulmonary specialist) and peripheral hospitals/policlincs. 2) Medical training (video database)

▼ Mazaryk University Brno (Czech Republic)
   ▪ 1) Remote expertise : connecting peripheral hospitals to the main healthcare centres in Brno (traumatology, cancer, …). Process of pushing patient’s exam to expert’s place / request / expertise / reporting & feedback. 2) Medical training (case database)

▼ University Hospital Toulouse (France)
   ▪ 1) Teleconsultation between nurses and general practitioner concerning elderly residents in a nursing-home in mountain area. 2) Teleconsultation between a specialist in a psychiatric hospital and patients (with the possible attendance of specialized psychiatric nurses) concerning the post-hospitalization follow up of patients with mental diseases.

▼ Remifor (France)
   ▪ 1) Medical support to operational staff involved in Collective urgency. 2) Training of medical and operational staff (civil protection, fire brigades)

▼ United Bristol Healthcare NHS Trust (UK)
   ▪ 1) Remote expertise : interconnection of UK main nodes to enhance the organisation of regular MDT sessions (lung cancer disease/oncology) about patients’ cases
Overview of telemedicine services

▼ Telbios (Italy)
  ▪ 1) Homecare / video-assistance and vital signs monitoring

▼ CardioExpress/TotalCare Networks (Greece)
  ▪ 1) Homecare / Cardiac diseases telemonitoring

▼ University of Cyprus / Forth-EKAB (Cyprus, Crete)
  ▪ 1) Emergency teleconsultation between Larnaca Hospital and intensive care specialist from Nicosia Hospital to take quick and reliable triage / emergency treatment decision. 2) Basic Life Support / Advanced Life Support medical training (jointly with EKAB centre in Crete)
Services/solutions sustainability

- Definition of fast track options to convert trials into sustainable solutions/services
- Identification of the key players (TLC provider, medical service provider, final users, HW & SW providers, …)
- How they interact
- Service Cost analysis
- Definition of indicators that can be monitored during the project to evaluate the impact of the system
- Role of the users: involving/dealing with local authorities and representatives
For further information, visit our Web site: http://healthware.alcasat.net