

## **Satellite-based interactive telemedical services for disaster emergencies (DELTASS Project)**

G. Grasczew\* PhD, T.A. Roelofs PhD, S. Rakowsky PhD, P.M. Schlag Prof. MD, PhD  
Surgical Research Unit OP 2000, Robert-Roessle-Klinik and Max-Delbrueck-Centrum,  
Charité, Humboldt University at Berlin, Lindenberger Weg 80, D-13125 Berlin, Germany

In the framework of the DELTASS project (Disaster Emergency Logistic Telemedicine Advanced Satellites System; July 2001 – December 2002; funded by the European Space Agency, ESA) OP 2000 has designed and validated various interactive telemedical services to support the medical staff of mobile field hospitals (MFH), deployed at the disaster area, where primary patient/victim intake is done. These services are provided by medical experts from a designated Reference Hospital (RH), outside the disaster area. These services use the Telemedical workstation WoTeSa (“Workstation for Telemedical Applications via Satellite”) with the high-end interactive communication software WinVicos (“Wavelet-based Interactive Video Communication System”) and combine high quality live video transmission with remote control of medical equipment in the MFH by the experts at the RH.

The following services have been realized: a) live teleconsultation during triage, including telemonitoring of vital patient data; b) live telesonography, including telementoring of the medical staff at the MFH during the ultrasound investigation; c) live teleconsultation during surgery; d) interactive Virtual Reality simulation, with remote control of the simulation by the medical staff at the MFH; e) interactive telemicrobiology, with complete remote control of the microscope at the MFH by experts at the RH; f) satellite-based internet access from the MFH to consult external medical reference data bases.

The DELTASS system with the telemedical services described here, should contribute to a better and more efficient medical care for patients/victims in cases of disaster emergencies.