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Trusted information systems for health professionals

Company overview

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TELEMEDICINE TECHNOLOGIES S.A.

NOTE

The purpose of this document is to present the activities of TELEMEDICINE TECHNOLOGIES. The information set out herein is not intended to be exhaustive. Nevertheless, it should be comprehensive enough to enable readers to gain a realistic insight into the company's activity and know-how.

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TELEMEDICINE TECHNOLOGIES S.A. (TTSA) is a software engineering company specialized in the healthcare sector. Established in March 2000 and incorporated as a public limited company ("Société Anonyme"), TTSA is a subsidiary of FORTHnet S.A., Hellenic Telecommunications & Telematics Applications Company (94.4%), Greece's second largest telecommunications operator.

Administrative information

The company's accounts are produced by the firms Primexis and Dana & Associés, and are consolidated with the accounts of the principal shareholder (FORTHNET A.E.).

As at December 31st 2007 the company's capital amounted at 319,564 € and there were 10 employees (6 information systems engineers, 1 sale & marketing, 1 quality assurance and clinical operations manager, 1 assistant and 1 managing director). The head office is located at 88 rue du Dôme, 92100 Boulogne-Billancourt, France, and there is no other office.

The majority shareholder FORTHnet S.A. - Hellenic Telecommunications and Telematics Applications Company is a public limited company quoted on the Athens stock exchange, whose head office is located in Heraklion (Greece) with a main office in Athens.

Our positioning

Software engineering and consulting

This activity represents approximately 70% of the company's turn over. TELEMEDICINE TECHNOLOGIES S.A. has developed secure client/server solutions dedicated to clinical research (CleanWEB™ solution) and telemedicine (MEDSKY solution). The implementation of open standards (Java, XML, HTTP and SSL, etc.) and the 100% in house production of the source code, enable us to asnwer particular requirements of our customers in the shortest delay. Our software engineering and consulting activity is therefore mainly related to the maintenance of these platforms, including the development of dedicated features resulting from particular requests from our clients, such as the implementation of gateways with pre-existing information systems (process optimisation and automation).

CleanWEB™ is a solution for the electronic management of clinical trials (eCRF – Electronic Case Report Forms)) which is suitable for all types of projects: phase I to IV clinical trials, veterinary studies, cohorts and epidemiological studies

Well-suited to multi centered biomedical research, this solution supports all corresponding specialized processes: electronic data entry (EDC - Electronic Data Capture) by clinical research technicians or investigators, with integral audit trail, automatic edit checks and online user guide, data cleaning and validation processes, generation of numerous performance indicators, automatic generation of documents and reports (prescription sheet, safety report …), automatic reminders and alerts (performance indicators, e-mails, fax), online randomisation with management of therapeutic units (control of stock and restocking), etc., project management and monitoring (CTMS – Clinical Trials Management System) with the administration of user accounts and access profiles, statistics (global or trial-specific), monitoring of hospital expenses and investigators fees, monitoring visits and telephone follow-up reporting and management, monitoring of deviations, inclusions and documents handling (CVs, agreements, consent forms, etc.) and archiving in the Trial Master File (TMF), recruitment and monitoring of centres etc., data management (management of DCFs, automated consistency checks, incremental data extraction in the SAS format, etc. The system, which can be complemented with a website (electronic newsletter, forums, document sharing, IVRS/Web randomisation), includes a Designer module enabling data and project managers or clinical research assistants to design the electronic case report forms (eCRF) including all automated edit-checks without requiring a special training in software programming, and to easily perform any eventual design changes which may occur throughout the project's life-cycle.

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The personnel of TELEMEDICINE Technologies SA have the required expertise to ensure a perfect compliance with the Good Clinical Practice (GCP), as well as with the regulations and directives of the European Community and the FDA, who govern the use of computer systems in biomedical research.

This platform has been selected by the Assistance Publique – Hôpitaux de Paris (AP-HP), for all biomedical research which it promotes (approximately 100 new projects per year, with an average of 400 projects underway at any time).

MEDSKY is a secure, scalable and flexible solution based on open standards, designed for healthcare professionals: hospitals, isolated sites (rural areas, mobile units …), medical assistance for travellers and expatriates (assistance & insurance companies), healthcare networks, medical call centres, continuing medical education institutions, etc.

Several types of application are supported: Multi Disciplinary Team meetings - MDT, distance training and e-learning, broadband internet access via satellite for rural areas, teleconsultation and 2nd opinion, shared multimedia medical assistance record, patient registries. This platform incorporates DICOM compliant imaging data, integrated IP videoconferencing with high image quality (live transmission of ultrasound video or laparoscopic surgery…).

This platform has been adopted by the assistance company INTER MUTUELLES ASSISTANCE to manage medical assistance cases world-wide and by INTERNATIONAL ASSISTANCE GROUP (IAG) and its 26 members which are assistance companies from all over the world, to host and manage their world-wide database of hospitals, air ambulances and service providers. The solution is currently used in over 40 countries.

As an option, the MEDSKY via Satellite extension makes it possible to provide on-demand and on a pay per use basis, broadband communications with guaranteed bit rate: ADSL combined with the service of quality of ISDN. This solution is offered in an exclusive partnership with EUTELSAT S.A. (a leading European satellite operator) and its 100% subsidiary SKYLOGIC based in Turin – Italy, which is dedicated to the delivery of multimedia services by satellite. This service extension is the result of a joint research and development programme based which has enabled the development of an innovative automated system controlling the quality of service (QoS) on end-to-end satellite based communications across a global coverage.

Beginning of 2007, the MEDSKY via Satellite solution has been labelled by the ESA (European Space Agency) as part of its C4AP (Charter For Application Platforms) programme.

Charter for Applications Platforms

http://telecom.esa.int

Select "Web based training system", then "ESA technical assets", then "Application platforms"

Choosing a validated solution is a factor in success:

- "[…] experience shows that many projects tend to develop their own solutions..."
- "[…] in practice, the effect of this do-it-yourself approach... results in high acquisition and usage costs...and a lack of resources required to consolidate operations and improve the maturity of the offer."
- This causes a counter-productive vicious circle... whereby investments in projects are injected into secondary activities rather than into their main objective, leading to failure...

With this background, a demonstration and test terminal has been installed at ESRIN - ESA's technical site near Rome. This terminal is used for all demonstrations and tests, but also for a quarterly system performance check by ESA's technical staff.

End 2007, 71 satellite terminals had been deployed in 22 countries: Algeria (1), Armenia (2), Croatia (1), Cyprus (3), Czech Republic (3), Egypt (1), Estonia (1), France (6), Georgia (2), Germany (3), Greece (16), Israel (3), Italy (2), Morocco (2), Poland (10), Romania (3), Spain (3), Sweden (3), Switzerland (1), Tunisia (1), Turkey (2), United Kingdom (2)

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Services hosted in ASP mode [1]

TELEMEDICINE TECHNOLOGIES S.A. provides its secure Internet hosting platform for any of its clients who request it. This platform is connected to the VERIZON France Internet backbone in the Paris region and to the EUTELSAT /SKYLOGIC satellite hub in Turin (Italy).

Meeting the requirements of the healthcare sector in terms of security, reliability, availability (>99.9%) and confidentiality, this platform offers MEDSKY and CLEANWEB solutions in hosted mode, with a contracted service quality.

The hosted mode services are supplemented by a user support and hotline service with a dedicated information system to monitor users' requests.

Research and Development

Because of its positioning on a market with strong dependence on technology, TELEMEDICINE TECHNOLOGIES S.A. has engaged, since its creation, a comprehensive research and development strategy, taking advantage of relevant programmes of the European Commission, the European Space Agency or national institutions to support innovation.

These programmes make it possible to establish and test strategic technological partnerships with a mid-term perspective: marketing new services and products within a 2 to 5 years period. The first research and development programme was carried out in years 2000 to 2003 from which CleanWEB™ resulting.

Broadband via satellite telecommunications

eutelsat
communications via satellite

From March 2001, EUTELSAT and TELEMEDICINE TECHNOLOGIES undertook a joint research and development programme to offer healthcare professionals broadband communications via satellite, at competitive prices compared with ISDN, and with guaranteed audio and video quality, compliant with requirements for medical diagnostic or remote training in laparoscopic surgery. Since the end of 2005, TTSA is a certified service provider of SKYLOGIC, and manages its own satellite capacity (European beam of satellite Atlantic Bird™ 1 located at 12°5 W and Pan American coverage of TELSTAR 12 located at 15° W. At the end of 2007, the MEDSKY Via Satellite solution resulting from this programme was labelled by the ESA. The commercial launch is planned for the start of 2009.

Skylogic
a eutelsat company

Participation in trade fairs

TELEMEDICINE TECHNOLOGIES regularly participates at trade fairs or events relating to its field of activity: ● LABO-CROS trade fair (pharmaceutical industry, March 2004), Paris, ● MEDEC trade fair – March 2005 – Palais des congrès, Paris, ● World Summit on the Information Society, Tunis - 2005, ● Evolutions Summit 2006 & 2007 (Pharmaceutical and CRO industry, Monaco), ● Telecomp Maroc, 2006 & 2008, Casablanca (International Telecommunications, Networking, Information Technology And Broadcasting Trade Fair Of Morocco), ● Med-e-Tel 2006, Luxembourg (International Trade Event and Conference for eHealth, Telemedicine and Health ICT), ● Medmatic@2006, Vicenza, Italy (2e Mostra Convegno della Telemedicina e dell'Informatica Medica), ● Conference entitled "Les journées des applications spatiales" [Space application days], Toulouse – France, 2006, ● Satforum08, 2008, Athens – Greece ("satellite navigation and telecommunication for the public», organised jointly by the Ministry of Transport and Communications and the French Embassy in Greece), ● Healthware symposium, Cannes - France, March 2008 (Enabling better care through sustainable satellite-based Telemedicine Solutions).

[1] ASP: Application Service Provider


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Activity in the area of clinical research

72 clinical trials on-going or completed, including 3 with PDAs terminals, 1 with Tablet PCs, 5 patient registries and 1 cohort.

Experience of many medical specialties: cardiology, intensive-care/resuscitation, gynaecology, geriatrics, endocrinology, oncology, rare diseases, infectious diseases, psychiatry, paediatrics, haematology, respiratory diseases and liver diseases, etc.

710 active investigation centres: in France, all University Hospitals (CHU) and most of Regional hospitals (CHR).

Rolled out internationally in 13 countries: France, Germany, Italy, Greece, Japan, United Kingdom, Canada, Switzerland, Belgium, Spain, Hungary, Denmark, and Netherlands.

35,500 patients monitored (clinical trials) and 19,000 medical records in the patient registries.

Examples of pharmaceutical laboratories and research organizations which trust in us:

SCHERING-PLOUGH, SANOFI AVENTIS, NOVONORDISK, FRESENIUS KABI, BRAHMS France, Ela Medical, Assistance Publique - Hospitals of Paris, Institut Pasteur, INSERM, AFM, CHU of Dijon, CHU of Toulouse, United Kingdom Children's Cancer Study Group (UKCCSG), CHU of Angers, CHU of Nice, UMANIS Clinical Research, Institut Gustave Roussy, FOVEA Group …

Know-how transfer: Assistance Publique – Hôpitaux de Paris contract

ASSISTANCE PUBLIQUE HÔPITAUX DE PARIS

CleanWEB™ was selected by Assistance Publique - Hôpitaux de Paris for all clinical trials (60 to 100 new trials per year) which it promotes.

This contract (no. 033845 dated 17 November 2003, following a European public call for tenders) includes technology and know-how transfer services, enabling Assistance Publique - Hôpitaux de Paris to become autonomous for the design and deployment of electronic case reports (eCRF). The CleanWEB™ server module has been deployed on the hosting platform of Assistance Publique – Hôpitaux de Paris, in Bessières. The data managers and CRAs of Assistance Publique – Hôpitaux de Paris have been trained to use the CleanWEB™ Designer module to design and configure the eCRFs. The **contract was renewed** in December 2006 for an additional four years period.

CRO partnerships:

Our CleanWEB™ CTMS offer is primarily aimed at CROs (Contract Research Organisations) to manage their monitoring activity. The CRO partnership programme makes it possible to offer full services to laboratories who wish so.

Umanis Clinical Research

UMANIS Clinical Research has adopted CleanWEB™ for its eCRF projects, and the CleanWEB™ CTMS solution for the online management of monitoring operations, in line with its policy of compliance with GCP (good clinical practice).

FOVEA GROUP

FOVEA Group has adopted CleanWEB™ for its eCRF projects mainly for post marketing studies (Phase IV) or as part of its full services offer for international studies.

Gecem

GECEM has adopted the CleanWEB™ CTMS solution to manage its clinical research projects, and the CleanWEB™ Backup solution in the frame of its quality assurance policy and 21 CFR Part 11 compliance.

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Registers and cohorts

To answer the needs of our clients, we have developed a set of features dedicated to the implementation of patient registers. One of the characteristics of these registers is the need for long-term maintenance. The CleanWEB™ Designer solution is highly appreciated as it enables easy management of changes to electronic data entry forms. For genetic diseases, dedicated functions are proposed: management of family trees and attached records for relatives; integrated genetic database interfacing with genetic diagnosis assistance software; unique patient identification management. The following list gives a selection of references in the field of patient registers and cohorts.

SEVERE TRAUMA

National register of patients suffering from severe trauma.
Sponsor: CHU of Dijon.
Number of patients: 3692 recruited during the period from January 2005 to July 2007.
Project currently under closure

MELAN COHORT

Cohort, patients suffering from cancerous melanoma
Sponsor: AP-HP.
Number of patients: 338 patients included in 24 centres.
On-going, started June 2006.

AMYOTROPHIC LATERAL SCLEROSIS (ALS)

National register of patients suffering from ALS.
Specific features: comprises a website for healthcare professionals and an event-driven monitoring register (follow-up, attending physicians, actions to follow, etc.)
Sponsor: GFEMM (Association of the French Motor Neurone Disease Study Group,)
Funding : SANOFI AVENTIS and Fondation Caisse d'Epargne.
Number of centres: 17.

VASCULITIS

National register of patients suffering from vasculitis
Sponsor: INSERM [French public organisation dedicated to biological, medical and public health research], University of Paris, approximately 50 centres in France.
Number of patients: 2500 approximately (data migration) with a target of 10,000 patients.
On-going, started January 2008.

SCLERODERMA

National register of patients suffering from scleroderma
Sponsor: CHU of Lille (Reference centre for autoimmune diseases and systemic diseases - «systemic scleroderma») and the Association pour la recherche en médecine interne et immunologie clinique (ARMIIC) [Association for research into internal medicine and clinical immunology].
Project currently under development, delivery scheduled for January 2009.

GENERARE

Register of patients suffering from rare genetic diseases.
Sponsor: AP-HP - Biochemistry Laboratory – Molecular Biology, INSERM U538
Specific features: includes a genetic database which can be used by the genetic diagnosis assistance software, management of family trees and unique patient identifiers, plus a website for involved professionals
Project currently under development, delivery scheduled for the end of 2008.

HAEMOPHILIA PATIENTS

Register for patients suffering from haemophilia.
Funding: NOVONORDISK – Users: 3 centres in the Paris region
Commissioned: May 2007 – data migration: approximately 700 patients

NETWORK OF INNOVATION BIOLOGY IN HAEMATOLOGY]

In the frame of the French cancer plan, the haematology laboratory at the Necker Children Hospital, initiated the creation of an extranet to (1) ensure that patients benefit from the best possible biological diagnostics (online help to clinicians' diagnostic approach); (2) ensure real time monitoring and

tracking of blood samples for innovative biology analyses performed in remote location; (3) provide quick and immediate access to results; (4) export collected data to avoid double data entry by allowing involved clinicians, biologists and CRAs insert such data into their own systems.

Sample of clinical trials performed with CleanWEB™

Study	Sponsor	Therapeutic Field	Numbers of centres, patients and length of study
SBXD05	**ELA Medical**	*Cardiology*	*40 centres (in France, Germany, Italy, Greece, Japan and England), 184 patients, 18 months*
CRISTAL	**AP-HP**	*Intensive care/resuscitation*	*80 centres, 3000 patients, 24 months*
CDC	**AP-HP**	*Intensive care*	*19 centres, 1,538 patients, 12 months*
DAME	**AP-HP**	*Gynaecology/Obstetrics*	*11 centres, 1,000 patients, 36 months*
TEMODAL	**CHU of Toulouse** / **SCHERING-PLOUGH** / **UKCCSG**	*Oncology* *paediatrics*	*22 centres in the UK, 27 centres in France, 50 patients, 18 months*
AMNIO-ECHANGE	**AP-HP**	*Gynaecology/Obstetrics*	*11 centres, 140 patients, 48 months*
RAI National Register	**AP-HP**	*Geriatrics*	*10 centres, 300 patients, 36 months*
HYPERHES	**FRESENIUS-Kabi**	*Intensive care/resuscitation*	*10 centres, 212 patients, 12 months*
IRM-COMA	**AP-HP**	*Neurology*	*12 centres, 400 patients, 36 months*
AMNIO-ECHANGE	**AP-HP**	*Gynaecology/Obstetrics*	*11 centres, 140 patients, 48 months, DPP*
"Treatment of severe trauma patients" National Register	**CHU of DIJON**	*Intensive care/resuscitation*	*32 centres (CHUs), 2000 patients, 24 months*
PHENIX	**AP-HP**	*Gynaecology/Obstetrics*	*12 centres, 672 patients, 12 months*
HECTHOR	**AP-HP**	*Endocrinology*	*20 centres, 100 patients, 30 months*
DM-DHEA	**AFM**	*Rare diseases*	*10 centres (CHUs), 75 patients, 36 months*
BIS	**AP-HP**	*Intensive care/resuscitation*	*6 centres, 1,600 patients, 24 months*
Febrile Patients	**BRAHMS France**	*Intensive care/resuscitation*	*1 centres, 400 patients, 24 months*
Melan cohort	**AP-HP**	*Oncology/Dermatology*	*6 centres, 1,300 patients, 36 months*
COLO-REA	**Institut PASTEUR**	*Infectious Diseases*	*11 centres, 1,000 patients, 24 months*
PC-NET	**INSERM**	*Psychiatry*	*5 centres, 48 patients, 36 months*
PI-ELOPO	**AP-HP**	*Paediatrics*	*12 centres, 700 patients, 36 months*
RuBIH	**AP-HP**	*Haematology*	*10 centres, 15,000 records, 24 months*
SPEED	**CHU of Angers**	*Resuscitation*	*23 centres, 3000 patients, 24 months, PDA*
REAVIR	**AP-HP**	*Respirology*	*5 centres, 500 patients, 30 months*
Register of Haemophilia Patients	**NOVONORDISK**	*Haematology*	*4 centres, 500 patients, long-term*
COIITSS	**AP-HP**	*Resuscitation*	*10 centres, 100 patients, 24 months*
PANIC	**AP-HP**	*Cardiology (IC)*	*15 centres, 700 patients, 42 months*
FIBROSCAN	**AP-HP**	*Hepatology*	*15 centres, 2,550 patients, 24 months*
PLUS	**AP-HP**	*Rare diseases*	*30 centres, 800 patients, 36 months*
PERCING	**AP-HP**	*Gynaecology*	*9 centres, 252 patients, 36 months*
EUSpA	**SCHERING PLOUGH**	*Confidential*	*12 centres, 6 European countries*


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Activity in the field of medical assistance (travellers and expatriates)

The MEDSKY platform includes a shared multimedia medical records application, specially designed for medical assistance and repatriation. This application, which is called HealthE, operates like an information hub allowing assistance companies to exchange medical information (medical reports and imaging), logistical information (transport means, medical escorts and mobile medical equipment) and financial information (fees and invoices for coverage of medical fees). This platform is complemented by a world-wide database of medical service providers (hospitals, air ambulances and other miscellaneous medical service providers), as well as a mapping system to display points of interest on the maps, as well as perform address resolution (convert an address into latitude/longitude) and distance calculations.

Inter Mutuelles Assistance

One of Europe's leading companies providing medical assistance to travellers and expatriates (over 35 million subscribers and over 40,000 medical assistance cases yearly). An application which electronically manages medical assistance records, mainly for «overseas» cases and the communications of the IMA medical centre with hospitals and medical correspondents worldwide. The system implements critical processes of the assistance activity, including electronic invoicing, and numerous gateways providing interoperability with IMA's internal information system (IBM mainframe, subscribers' rights verification), some HIS (hospital information systems) and the internal information system of many of the corresponding companies throughout the world, particularly in the USA. **IMA trusts in us since 2001**.

International Assistance Group - IAG

IAG is a network of 45 assistance companies spread over all five continents, and 129 correspondents world-wide. IAG – Paris is an entity whose shareholders are the 26 members of the group. Its mission is among other, to develop a shared information system for all members and contacts. TELEMEDICINE TECHNOLOGIES S.A. was selected to develop this information system, as well as for the secure hosting and maintenance of the system. The information system is based on the MEDSKY solution, to which special features have been added, particularly mapping features, a standardised system for interfacing with the members' information systems (WEB Services), integration with the group's marketing websites (www.netiag.com), a system to share and manage documents writing with version handling, a content manager, electronic distribution lists and numerous statistical reports.

Statistics for 2007: 767 user accounts from 213 companies or bodies, 39 of which are assistance companies, 21,752 user sessions (4045 of which are IMA), 1157 records (1148 of which are IMA), 4 temporary Web records, 229 notifications (IMA only), 4607 message exchanges, 292 medical reports, 1370 medical decisions, 467 statements of fees, 2367 invoices, 6005 sent text messages (5927 of which are associated with IMA's activity) 2071 hospitals in 199 countries (IAG), 48 air ambulances in 34 countries, 109 service providers in 21 countries.

Sample of user companies and institutions

AACHEN Hospital (Germany), ADA Ayuda del Automovilista S.A. (Spain), ADA Portuguese S.A. (Portugal), Ain Shams University (Egypt), ANDS (Algeria), ASIA Assistance (Malaysia), ASIA Medical Assistance (India), Atlantique Assistance Logistique (France), Bristol Royal Infirmary (NHS Trust, UK), Cardioexpress A.E. (Greece), Centre International de Chirurgie Endoscopique (France), Centrum fur Reisemedizin (Germany), CHAM Savoie, hôpital de Moutiers (France), hôpital d'Albertville (France), hôpital de Bourg-Saint-Maurice (France), Ibn Rochd Hospital (Morocco), Clinique Al Amine (Morocco), Community offices (Anafi, Sikinos and Folegandros islands, Anogia, Paleochora, Voukolies and Rodovani sites, Greece), Customer Care Pty Ltd (Australia), Customer Care Solutions (Austria), Deutsches Zentrum für Luft- und Raumfahrt e.V (Germany), EADS – Astrium (France), EKAB Crete (Greece), Evangelismos Private Hospital (Paphos, Cyprus), Faculté de Médecine de Casablanca (Morocco), Family Health Plan Ltd (India), Filo Diretto Service S.p.A. (Italy), Firstassist Group Ltd (UK); FORTH - Institute for Computer Science (Greece), FORTHcrs (Greece), Garantie Assistance (France), Global Voyager Assistance (Russia), IKE Assistencia (Mexico), INSEAD (France), Inter Mutuelles Assistance (France), International Assistance Group (France), Istituto Mediterraneo per i Trapianti e Terapie ad Alta Specializzazione – ISMETT (Italy), Jagiellonian University (Poland), Larnaca General Hospital (Cyprus), Maghreb Secours International Assistance (Morocco), Masaryk University (Czech Republic), MEDASSISTANCE (Israel), Medical Faculty of Istanbul –

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(Turkey), Medicall AG (Switzerland), Netcare 911 (South Africa), New Nicosia General Hospital (Cyprus), NHS Hospital (UK), OMINT S.A. de Servicios (Argentina), On Call International, LLC (USA), PHILIPS Medical Systems (France), POL Assistance (Poland), Public Hospital of Horovice (Czech Republic), Public Hospital of Znojmo (Czech Republic), Public Healthcare Centre of Proszowice (Poland), REMED Assistance (Turkey), ROAD ASSIST (Venezuela), RODASSIST S/A (Brazil), SHR Assistance (Israel), SOS International (Netherlands), Total Care Networks (Greece), Tuberculosis & Lung Diseases Centre (Kielce & Rzeszow, Poland), Total Care Services (USA), Turkey Assistance (Turkey), Universal Assistance S.A. (Argentina), University Hospital Charité (Germany), Venizelio University Hospital (Greece) etc.

Miscellaneous activities

Marie-Georges Fayn publications, France

On behalf of the Conference of Managing Directors of the French University Hospitals (CHUs), the design and development of a website to ensure communication towards the media and the public. (**www.reseau-chu.org**) TTSA also provides hosting and maintenance services. The website includes an administration and update interface, an electronic newsletter system and an online publishing system. Built entirely using Flash technology, on a JAVA J2EE/STRUTS platform. **Reseau-CHU trusts us since 2000.**

ARTIS: Advanced Robotic Tele-echography Integrated Service

Project awarded by the European Space Agency (ESA) following an international call for tenders. The objective is to design and evaluate a tele-echography service and, by extension, a multimodal imaging service. Echography is performed remotely by an expert in real-time. The service is based on the use of a probe-carrying robot controlled remotely by an expert and the real-time transmission, via satellite, of the resulting video signal from the probe. The project, which has been allocated a budget of 500,000€, started in November 2007 and should continue until the end of 2009. TELEMEDICINE TECHNOLOGIES is working with the Institute of Space Physiology and Medicine (MEDES), the French Space Agency (CNES) and CERCOM, a research laboratory attached to the CHU of Tours. The MEDSKY Via Satellite platform will be used for video transmissions via satellite.

European Space Agency (ESA)

Realisation of market research entitled "Market and Regulatory Study for Telemedicine via Satellite", contract No.: 18163/04/NL/AD (financed as part of ESA's ARTES 1 programme). Start: 2004, end: 2005. Research carried out by a consortium, whose main contracting party was EUTELSAT and whose other contracting parties were AVIENDA (United Kingdom, regulations), D'APPOLONIA (Italy, creation of a database, study of the value chain), TELEMEDICINE TECHNOLOGIES S.A. (France, value chain, operational constraints and market research) and FROST & SULLIVAN (market research and surveys).

EUTELSAT S.A – Paris, France

Design and creation of a secure intranet/extranet for monitoring the DSAT satellite network. The system was rolled out (July 2005) on the client's UNIX platform and interfaces with the NMS (Network Management System) located in Lario, near Rome in Italy, to integrate all of the usage and invoicing data. Accessible to EUTELSAT clients to enable them real-time monitoring of activity and to eliminate paperwork (orders, invoices and implementation of new satellite terminals).

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Research and Development projects

SAFE – SAtellites For Epidemiology

Project co-funded by the European Space Agency as part of the ARTES/Health Early Warning programme. The purpose of the project is to set up and demonstrate the benefit of broadband communications via satellite in the frame of epidemiological outbreak and early warning / management of crises (such as earthquakes, etc.). The project started in November 2006 and ended in March 2008, was led by a consortium consisting of MEDES (the Institute of Space Physiology and Medicine - France), FORTH (Research and Technology Foundation – Greece), GMV (Spain), Verona University (Italy), REMIFOR an association under the authority of Civil Protection of Gard (France) and TELEMEDICINE TECHNOLOGIES which supplied the MEDSKY Via Satellite solution for a wide scale demonstration carried out in Heraklion, Greece, November 2007.

HEALTHWARE – Standard & interoperable satellite solution to deploy healthcare services over wide areas

Project co-funded by the European Commission as part of the 6th research and development framework programme in the "Aeronautics and Space" section. Start: April 2005 - End: March 2008. Coordinator: Thalès Alenia Space (Cannes, France). The purpose is to demonstrate how satellite telecommunications solutions based on the DVB-RCS standard can be used in the healthcare field. A total of 40 pilot sites have been equipped with satellite terminals. Four types of usages have been demonstrated (services at home, medical training, teleconsultation and 2nd opinion) in three medical specialties (cardiology, chronic respiratory pathologies and oncology). The consortium consisted in 19 partners from 9 European countries. The main role of TELEMEDICINE TECHNOLOGIES was to supply the MEDSKY Via Satellite platform to 28 pilot sites; to ensure that continuity of the service, perform the required evolutions until the end of the project; and study financial sustainability of the service.

RURAL WINGS – Standard & interoperable satellite solution to deploy healthcare services over wide areas

Project co-funded by the European commission as part of the 6th research and development framework programme in the "Aeronautics and Space" section. Start: January 2006 – End: December 2009. Coordinator: National Technical University of Athens (NTUA – Greece). The purpose is to demonstrate how broadband satellite telecommunications solutions based on the DVB-RCS standard can be used in isolated rural communities. In particular, the project aims to extend satellite links using WiMax-type wireless networks. The project aims to roll out satellite terminals at a total of 125 sites in approximately 15 countries. TELEMEDICINE TECHNOLOGIES and EUTELSAT are responsible for rolling out 88 pilot sites to which the MEDSKY Via Satellite service will be delivered. The service offer and prices will be adjusted to users' needs as evidenced through pilot operations.

TEMOS – TElemedicine for the Mobile Society

Project co-funded by the European Space Agency, the German Space Agency (DLR) and the French Space Agency (CNES). Start: September 2004, end scheduled for: July 2008. Partners: University Hospital of Aix-la-Chapelle (Aachen), Centre for Travel Medecine (Centrum fur ReizeMedizin – CRM - Düsseldorf) and TELEMEDICINE TECHNOLOGIES. The project aims to develop satcom based services for continuing medical training, real time teleconsultation and 2nd opinion for travellers and expatriates, and to establish a network of certified hospitals and clinics for travel medicine. TTSA provides the MEDSKY Via Satellite platform (high quality videoconference and shared multimedia patient records).

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EMISPHER - Euro-Mediterranean Internet-Satellite Platform for Health, Medical Education & Research

CHARITE Hospital has been leading the EMISPHER (Euro-Mediterranean Internet-Satellite Platform for Health, Medical Education & Research) project co-funded by the European Commission as part of the EUMEDIS programme (EUMEDIS contract B7-4100/2002/2165-083 P110), the purpose of which was to reduce the digital divide between the countries around the Mediterranean. This programme covered three fields of application: continuing medical training and research, assistance to travellers and expatriates, teleconsultation and second opinion. The MEDSKY Via Satellite solution was selected. TTSA also carried out a study of user requirements, and delivered a web site for project coordination and promotion. Eleven teaching hospitals (in Berlin, Clermont-Ferrand, Tunis, Casablanca, Istanbul, Nicosia, Cairo, Athens, Palermo, Algiers and Paris) have been equipped with satellite dishes and high quality IP videoconferencing solutions.

OPTESS – Offshore Platforms Telemedicine Service via Satellite

Project co-funded by the European Commission as part of the eTEN market validation programme. Carried out September 2004 – February 2006. Coordinator: D'APPOLONIA (Genoa - Italy). OPTESS offered an integrated teleconsultation solution via satellite onboard off-shore platforms. The Italian company, Filo Diretto World Care, provided a medical assessment and control centre for the project. The project was conducted by nine partners from three countries and consisted of two pilot installations in the North Sea. These installations were fitted out with satellite terminals and medical equipment (ECG, radiographs and ultrasounds), as well as high-quality video conferencing software compatible with satellite communications. TELEMEDICINE TECHNOLOGIES was subcontracted by the coordinator to provide the satellite video conferencing solution.

ORPHANET Pharma

ORPHANET Pharma was carried out in partnership with INSERM/SC11/ORPHANET, with a co-funding from the French Research Ministry. The purpose was to support clinical research networks in the field of rare diseases. As part of this project, TELEMEDICINE TECHNOLOGIES provided the CleanWEB™ solution in its «register» version. Project completed in 2003.

UMVF – French speaking Virtual Medical University

Project co-funded by the French Research Agency and co-ordinated by the Rennes Faculty of Medicine. Most of major French university centres participated, and the project resulted in the creation of a public interest group (GIP) to which all major French university centres have now adhered. TELEMEDICINE TECHNOLOGIES has provided project management assistance and carried out studies concerning the Web resources to introduce for remote learning, management of pedagogical content, and studied a gateway with Doc'CISMeF the search engine developed by CHU of Rouen for medicine.

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