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ESA Telecommunications Newsletter

Find Out More about Space-Based Solutions for Digital Equality

ESA Telecom has set up a resource of background information and news on current activities to describe how space-based technologies can help bridge 'the digital divide'. The site ***http://telecom.esa.int/digitaldivide*** shows how satellites, thanks to their global coverage, are being used to widen access to electronic communications services beyond Europe's borders.

Research and development activities covering both satellite systems and ground equipment are currently underway with a view to optimising the space infrastructures for new services and achieving significant cost reductions. Extending access to electronic communication services to everyone, particularly in those regions of our continent and under-developed regions of the world which have so far been disadvantaged or neglected, is a major objective.

Equal access to the latest information technologies will spell improved services - in terms of public health (telemedicine), education, and the spread of the Internet - and will encourage fruitful exchanges and economic development.

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SatLabs Group

The SatLabs Group - An Interview with Xavier Lobao

Xavier Lobao, Future Programmes Manager for ESA Telecom and Chairman of the SatLabs Group

The SatLabs Group is an international, not-for-profit association whose members are committed to bringing the deployment of the DVB-RCS standard to large-scale adoption. The SatLabs membership is formed by some 30 organisations worldwide including service providers, satellite operators, system integrators, terminal manufacturers and technology providers. The Group's main goal is to ensure interoperability between DVB-RCS terminals and systems and to achieve low-cost service provision.

Mr Lobao, it seems, that the interest in DVB-RCS technologies is growing rapidly.

"Yes, that's true. Interest in DVB-RCS has grown significantly and is evolving very rapidly worldwide. Many implementations are already available commercially. Many requests from operators ask for DVB-RCS solutions and there are important initiatives that plan to introduce the DVB-RCS technology into the residential market. The SatLabs Group is playing a crucial role in the consolidation of the DVB-RCS standard in the marketplace."

What is the SatLabs Group specifically doing to help DVB-RCS?

"The Group's first priority is to ensure interoperability between DVB-RCS products. The main strength of an open standard is the freedom to choose, and SatLabs is there to certify compatibility and interoperability between products. Secondly, the Group is working to reduce the cost of user terminals, their installation and the total cost per user, including the cost of satellite capacity. In addition, SatLabs is working to simplify market development by ensuring that applications and services will run smoothly and perform at the required level over DVB-RCS. And finally, SatLabs is becoming a knowledge centre for DVB-RCS to increase awareness and promote solutions based on the standard."

What are the main achievements of the Group so far?

"The main achievement is without doubt the fact that interoperability has already been demonstrated between three different DVB-RCS systems and terminals. But in addition, the Group has defined a test plan and associated qualification programme for the verification of interoperability and the formalisation of the certification process. Linked with that, SatLabs has published a document containing system recommendations that will simplify interoperability in DVB-RCS implementations. The Group has also agreed and published specifications for critical components and interfaces in the terminal to foster the availability of common low-cost components and equipment."

What are the next milestones for the SatLabs Group?

"The most important milestone is to establish the formal interoperability testing and certification process. We have already finalised the test plans and the definition of the qualification programme. The key step is the availability of an independent test bed with

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http://telecom.esa.int

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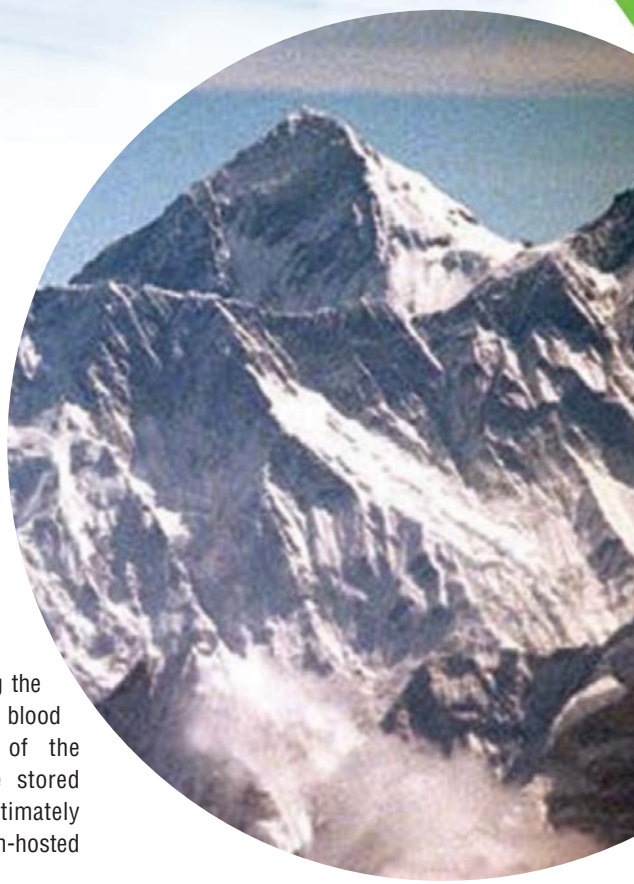
which to test terminals for compliance and interoperability. ESA is developing that test bed for SatLabs. An independent professional testing laboratory will be selected to operate the test bed and execute the qualification programme on behalf of SatLabs. The target is to be operational by the end of 2004. In the meantime, ad-hoc interoperability test campaigns will be organised with interested companies. The Group is also working towards the definition of a standardised interoperable PEP that will guarantee high performance for IP applications, giving at the same time freedom in the implementation of terminals and systems while maintaining interoperability. Many other tasks are ongoing to further consolidate the position of DVB-RCS in the operational, commercial and application-support domains. Thanks to the ever-growing, proactive and committed SatLabs membership, the work programme is constantly evolving with new challenging targets. I don't see any particular constraints on what the SatLabs Group can achieve."

For more information about the SatLabs Group and how to become a member, please visit *http://www.satlabs.org,* or send an e-mail to *info@satlabs.org.*

Satellite Technology to Climb Everest



A satellite-based Health Monitoring Kit from the Canadian company March Networks is being used to aid a group of climbers in their attempt to scale the 9000 m summit of Everest, the World's tallest mountain. The climb has claimed the lives of about one hundred people over the years.

The March Networks technology will log the blood-oxygen levels (SpO2), heart rates, blood pressures and body temperatures of the climbers. The recorded data will be stored on Bluetooth-enabled PDAs and ultimately transmitted via satellite to a Canadian-hosted website.

The lightweight, portable Health Monitoring Kit is fully equipped with the necessary medical devices, and can operate independently of its companion Video Services Gateway and videoconferencing cameras, which are typically used in home-based telehealth applications for remote nursing visits.

"Having more information available to all climbers is a vital element of a successful ascent," says Ben Webster, a renowned Canadian climber and leader of the expedition.

"By using the wireless telehealth system, we will not only see first-hand how our bodies are reacting to the exertion, but we will also be able to track the data, be cognizant of significant changes or trends, and be able to make informed decisions based upon that information."

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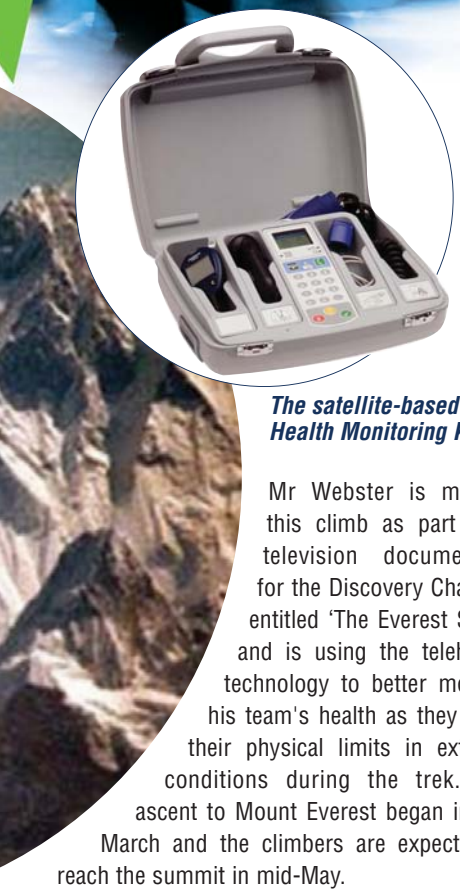
"The European Space Agency (ESA) inspires the vision for Europe's future in space and, through a diverse range of projects, develops the strategies needed to see it realised"



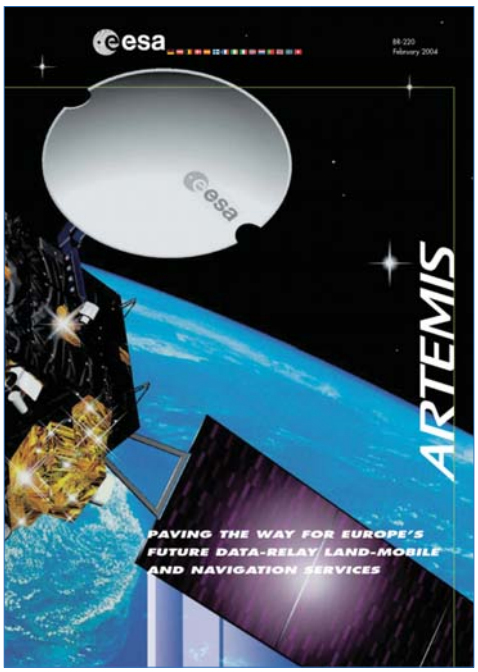
The satellite-based Health Monitoring Kit

Mr Webster is making this climb as part of a television documentary for the Discovery Channel, entitled 'The Everest Story' and is using the telehealth technology to better monitor his team's health as they push their physical limits in extreme conditions during the trek. The ascent to Mount Everest began in late March and the climbers are expected to reach the summit in mid-May.

The technology assisting the group during the climb is based on an ESA co-funded project from March Networks and Telesat of Canada. They worked together to develop the highly successful TeLeCare tele-medicine project, which allows 'remote patient diagnosis and monitoring' via satellite. With the system, nurses can videoconference with a patient anywhere within the satellite's transmission coverage.

For more information about ESA Telecom's involvement in telemedicine, please visit ***http://telecom.esa.int/telemedicine.***

New Artemis Brochure



A brochure on ESA's Artemis spacecraft, covering its history and development, is now available on-line and in printed copy.

Launched on 12 July 2001, Artemis has been designed to qualify new space technologies and promote new services. It carries payloads for Data-Relay, Land-Mobile and Navigation Services, which form elements of the European Geostationary Navigation Overlay Service (EGNOS).

A launch failure, abnormal orbits and a nail-biting recovery operation, Artemis has seen more than its share of setbacks. The Artemis story, now available in this concise and easy to read brochure, therefore makes fascinating reading.

The brochure starts with a thorough description of the successful rescue by the Artemis Satellite Team, which earned them the AIAA Award. It is followed by a detailed description of Artemis' innovative Ion Propulsion System without which, and a manoeuvre called 'low-thrust orbital transfer', Artemis might have been lost forever. The feasibility of many of today's planned missions relies on the pioneering work done by the team to ensure that the spacecraft would reach its intended final orbit.

To download your copy of the Artemis brochure, please go to: ***http://telecom.esa.int/artemisbrochure.***

To request a hardcopy by post, please e-mail or fax your name, affiliation and full postal address to: ***telecom@esa.int or fax: +31-71-5654598.***

Left:
Michael G. Tutty (left), Vice-President of the European Investment Bank, and Claudio Mastracci (right), ESA's Director of the EU and Industrial Programmes per interim

Below:
Martin Nolan, Kerry County Manager (left), Mr Dermot Ahern, Irish Minister for Communications, Marine and Natural Resources (centre), and Councillor Annette McNamara, President of the EDUC Commission (right)

The Digital Divide

- The Role of Broadband Networks in Securing Knowledge-Based Regions

The South West Regional Authority, in association with the European Union Committee of the Regions, hosted a major international conference on "Knowledge Based Regions in the Information Society - the Role of Broadband Technology in Securing a Vibrant eSociety", in Killarney, Ireland on 5/6 April.

This high-profile event on the EU Presidency Calendar was connected to the ESA-funded South West Broadband Project that looks at the potential and usability of alternative technology for providing broadband connectivity to rural areas, an issue that is of huge concern in many parts of Ireland and throughout the EU.

"Broadband is an infrastructure that can empower and revitalise rural communities, and Government policy should not be contributing to reinforcing a digital divide that commercial market operators have helped create," stated the Irish Minister for Communications, Marine and Natural Resources, Dermot Ahern, at the beginning of the conference. ***"Since becoming Minister, I have consistently held the view that the key ingredients for success in broadband are the 'three Cs' of cost, choice and competition."***

Claudio Mastracci, Director of EU and Industrial Programmes at ESA, emphasised the importance of space technology in bridging the digital divide, saying: ***"Satellites surely can offer cost effective and efficient solutions. Thanks to the interesting projects done jointly with ESA, this can already be experienced in rural areas of Ireland."***

Fulvio Sansone, Secretary-General of the European Satellite Operators Association (ESOA) highlighted the fact that satellite broadband is already a reality in Europe for SMEs (Small and Medium Enterprises) and corporate entities. The main barriers to wider satellite broadband deployment, however, are delays and uncertainties concerning regulations, the high costs for the consumer, and the fact that the user is not always aware of satellite broadband and its benefits.

The conference, which was opened by Annette McNamara, Chair of CoR's Commission for Culture and Education, brought together some 300 delegates, including Michael G.Tutty, Vice-President of the European Investment Bank, Mike Buhagiar of ESAT BT, and Jean-Bernhard Benhaiem of the EC's Directorate-General Regio. The varied speakers presented different ways of providing access to affordable, reliable and sustainable broadband connectivity in the light of new applications, hardware and user types.

The digital divide has been addressed in the White Paper on European Space Policy as a major priority, with the key question: How can space contribute to solving this problem? In fact, space solutions can respond to the needs in areas with an obsolete or no communication ground infrastructure. They provide services beyond national borders. ESA is currently analysing the costs and benefits of these solutions. Preparatory activities are to be initiated in mid-2004 for a programme proposal to be tabled at the ESA Ministerial Conference in mid-2005.

USO Releases Web-Based Training System

Did you know that a VSAT consists of an IDU and ODU? Of course you did. But what exactly is Differential Coding? Maybe the intricacies of the BER concept are keeping you awake at night? If so, then the USO's new Web-Based Training System (WBTS) is something for you!

Communicating with experts outside your own field of specialisation can sometimes be confusing. But, by broadening both your technical and non-technical knowledge of the satcom industry, communication and comprehension become that much easier. To achieve this, the User Support Office (USO) of ESA Telecom has introduced WBTS, which is designed to inform you about satellite technology and about working with ESA Telecom. By learning the language of the satcom field, at the end of the course you will not only be able to understand and explain to others the capabilities and main features of satcom, but also to develop better business ideas.

EADS Fleximage, EADS Astrium and SUPAERO/ENSAE, from France, British Telecom Exact Technologies from the UK, and the International Space University (ISU) in Strasbourg (F) worked together to develop the WBTS system.

Currently two training modules are available. The SATCOM Training Module is the main technical training tool. Everyone needs at least a basic understanding of the technical issues and so this module offers three levels of knowledge, from basic information for non-technical personnel to advanced for expert graduate engineers who need to expand their knowledge beyond their own fields.

Each level contains tutorials on SATCOM Technologies, Systems and Services, Communication Links, Space Segments, Networking and Earth Segments. These categories are further divided into more detailed specialist areas, and also include some exercises at the end.

The second module, 'Working with ESA Telecom', provides your company with the administrative and managerial information needed in order to work with ESA Telecom. It contains everything you need to know about ESA Telecom Initiatives, General Clauses, Contract Conditions, how to register as an ESA bidder, and much more.

To access the e-learning course, go to:
http://telecom.esa.int/wbts

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