



CONNECT

ESA Telecommunications Newsletter

Dear Reader,

The European Space Agency (ESA) is calling for companies from its European Member States and Canada to come up with ideas and suggestions for future research and development programmes in the area of satellite communication.

This is your opportunity to propose ideas to the ESA Telecommunications team. All submissions will be treated in the utmost confidence. Your inputs will be assessed by ESA's Telecommunications team, supported by technical experts and system engineers. Only those entries that are judged to be relevant and beneficial to satcom will proceed to the next stage. The successful entries will be used to define work plans for 2004 for three ARTES elements. These work plans will be published on the ESA Telecommunications website in Spring 2004.



Due to the volume of ideas that ESA Telecom receives, individual feedback will unfortunately not be possible. Your ideas are, however, highly valued and help shape Telecommunications programme lines, and in particular the activities put forward in annual work plans. So please do send them in, using the Call for Ideas online form, before 30 September 2003. All ideas submitted should be clearly relevant to satellite communication. For more information and to access the online form, please visit our website at: <http://telecom.esa.int>.

Sincerely, Your ESA Telecom Team

In this issue:

- **Call for Ideas –**
Influence the work plans for 2004
- **E-training Course –**
Learn more about 'Working with ESA Telecom'
- **The Mobile Systems Task Force (ASMS-TF) –**
First International Conference at ESRIN
- **Artemis –**
Helping emergency services to fight Portuguese fires
- **Seamless Internet Connection –**
Sea-trials completed
- **Enhanced Skyplex Engineering Qualification Model –**
Tests Successful - Launch later this year
- **Telecom Applications Workshop –**
Building relationships



For further information about ESA Telecommu
[http://telecom](http://telecom.esa.int)

CONNECT

"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"

Learn more about 'Working with ESA Telecom'

Another essential tool has just been released by the User Support Office (USO). 'Working with ESA Telecom' is an online training course that provides a quick introduction to the ESA tendering process, specifically conceived for those becoming involved in the ESA Telecom initiatives for the first time (visit <http://telecom.esa.int/telecom/www/etraining/artes/>)

With a balanced mix of text and multimedia items, the user is guided through the structure of a typical Telecom Tender: the functions of the different documents with respect to the various sections of the proposal are presented, as well as the principles of the evaluation and the contract-award processes.

Our team and the industrial contractor (Fleximage) have heeded the views of the many users who have often found the task of proposal preparation daunting, and we have therefore devised a step-by-step approach that covers the full extent of the tendering process:

- ESA Telecom Initiatives
- Structure of Tender
- General Clauses & Contract Conditions
 - Submission of a Proposal
 - Management, Financial & Administrative Proposal
 - PSS A forms: Simulation Exercises
 - Proposal Evaluation & Contract.

The three-hour training can be given all at once or gradually. This allows the user to learn each step and prepare for the next one, whilst actually still involved in the tendering procedure. The course also contains an interactive simulation covering PSS forms: both newcomers and more experienced users can test their ability

and their level of understanding with an interactive simulation that will guide them through the preparation of a full suite of PSS forms for a case-study project.

Just a final word before you dive into this new way of interacting with ESA: the material that is being offered to you constitutes a handy reference for all those who are in the process of responding or are planning to respond to an ESA Telecom Invitation to Tender (ITT). As such, it can never replace the official documentation and specific instructions that are released with every ESA Telecom ITT.



communications visit our website at:

telecom.esa.int

First International Conference on Advanced Satellite Mobile Systems



Participants at the ASMS Conference 2003

The European Space Agency (ESA), the European Commission (EC) and the Advanced Satellite Mobile Systems Task Force (ASMS-TF) organized the First International Conference on Advanced Satellite Mobile Systems (ASMS Conference 2003) at ESA's ESRIN facility in Frascati, 20 km south of Rome, on 10 and 11 July 2003.

The Conference was a great success, with more than ninety people from 14 countries attending the two-day event. With the support of ESA, the EC and ASMS-TF, it brought together representatives from operators, industry, research institutions and regulatory and standardisation bodies. It provided an international forum for the presentation and discussion of different aspects of advanced satellite mobile communications, from the market perspective to the latest findings related to systems, services and emerging technologies in the field of satellite mobile telecommunication. It stressed the increasing relevance of mobile satellite communications and their convergence with terrestrial mobile systems,

broadcasting systems and multimedia-content-rich applications.

The Conference consisted of six oral presentation sessions plus a poster session, during which the speakers and presenters provided insight into the latest achievements in the field. It concluded with a panel discussion during which the key speakers entered into a fruitful discussion with the participants about the present and future prospects for mobile satellite communications.

During the Conference, the first S-UMTS demonstration in Europe was conducted. It used a satellite communication link connecting the satellite gateway at Lario, near Milan, via the

L-band payload of ESA's Artemis satellite, to the mobile terminal (the advanced multimedia van) parked outside ESRIN. This demonstration provided the user with an Internet connection for web browsing and e-mail services. Both are possible while the user is physically in the van and 'on the move'. Other services that this pilot system can provide include: reliable multicasting with local caching capabilities, ftp access, weather reports, current news, MP(3/EG), video-conferencing and localisation services.

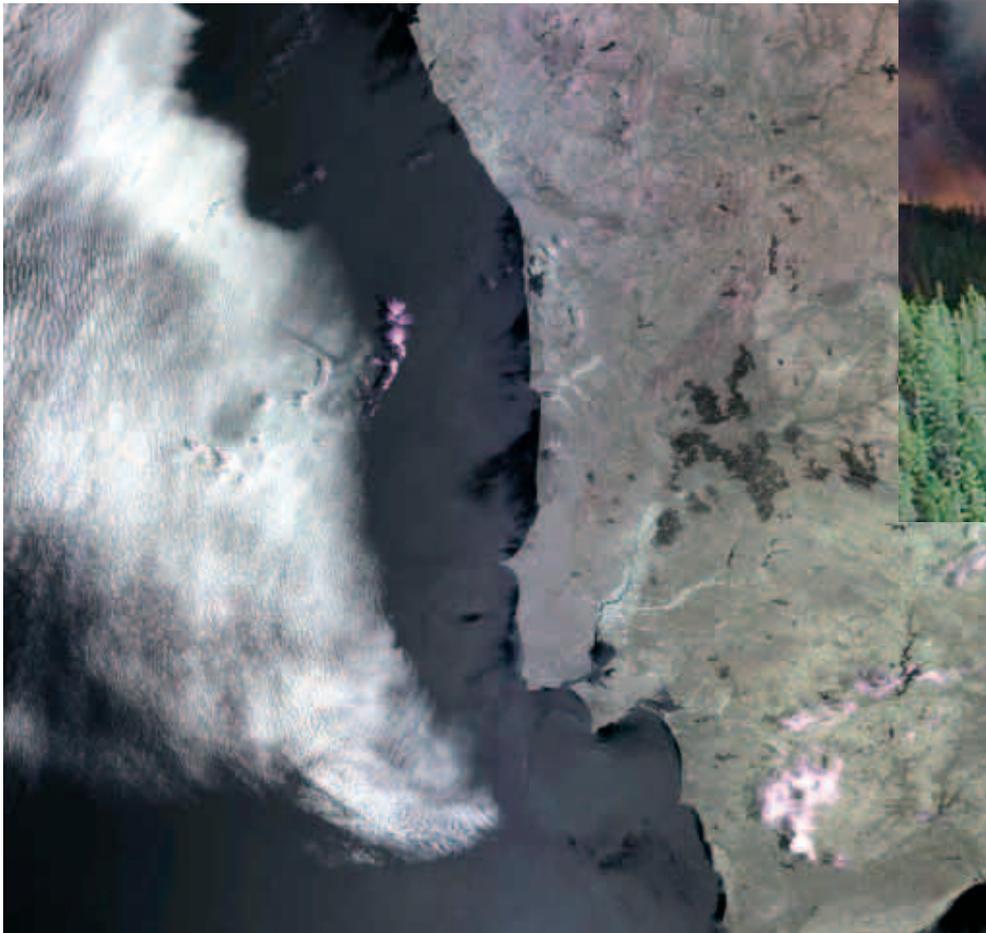
Presentations from the ASMS Conference 2003 are available online at:

<http://telecom.esa.int/asms>



The Advanced Multimedia Van used for the first European satellite UMTS demonstration

Artemis helps emergency services to fight Portuguese fires



Artemis data-relay spacecraft in geostationary orbit, were received in near-real-time at the ESA data processing centre, located at ESRIN in Frascati, near Rome, and forwarded to the Portuguese authorities.

On 4 August, ESA's Earth Watch service requested a full-resolution MERIS (Medium-Resolution Imaging Spectrometer) acquisition over the areas in Portugal affected by the fire. On 6 August the Portuguese civil protection unit requested emergency planning of data acquisition under the terms of the Charter. The first acquisition was made via Artemis on 7 August.

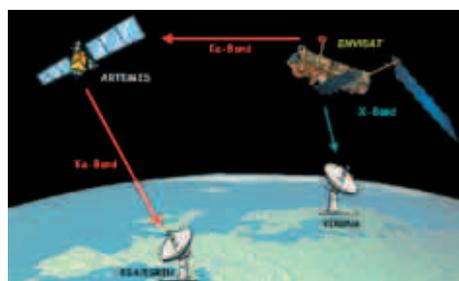
The Charter is an international collaboration for combining international satellite resources to assist participating rescue agencies and other civil protection authorities. ESA participates in the Charter together with Argentina, Canada, France, India and the USA.

Use of Artemis for data relay offers Earth-observation missions greater ground-station visibility and reduces delays in image reception. Artemis has been providing a data-relay service to Envisat and the French national mission SPOT-4 since March of this year.

An Envisat MERIS image, in which the burnt areas appear as very dark patches to the northeast of Lisbon, along the Taro river, Lisbon itself is visible south of the large whitish area at the mouth of the Taro. The image covers all of Portugal plus part of Spain's Galicia region

Fire fighters tackling the blazes that have ravaged Portugal are doing so with the aid of a satellite data-link. For the first time, ESA's satellite Artemis has been used to support an emergency request under the 'International Charter on Space and Major Disasters'.

Portugal's civil protection unit (SNPC) was able to receive information and sets of images that showed the scope of the fires. The data, transmitted from ESA's Envisat earth-observation satellite, via the



Envisat communicates with Artemis and the ESRIN data-processing centre in the Ka-band

Seamless Internet Connection completes sea-trial

In a project designed to make transition from sea to shore Internet networks seamless, the French company Udcast has completed the first sea trials. Tested in the Mediterranean, the successful trial involved two maritime vessels.

The project, which began earlier this year, is attempting to create a network architecture enabling seamless 'mobile routers' from several feeders and several interactive networks. The system will ultimately benefit any sea-going vessel in maintaining seamless Internet connectivity while the ship leaves or enters port, without the current difficulty of transmission breaks. Existing alternatives such as MobileIPv4 and 'Local Area Mobility' are being included in the study, and the project will result in improvements over these current solutions.

While at sea, a ship's Internet connection is purely satellite based. Closer to shore, GSM and W-LAN are used. When docked, landlines and W-LAN provide the ship with a connection. Currently, switching from one to the other results in a disruption in connectivity. The UDCast system allows for seamless transfer by using a heterogeneous IP network, with the added benefit of reducing fees for users.

Their approach involves different feeders corresponding to different spot beams for the forward-link. These feeders perform all IP-related processing, especially the switching between the different spot beams. The feeders accomplish this by using a terrestrial network which maintains their connectivity. Mobile receivers/routers have DVB-S capabilities to receive feeder signals, and an Ethernet connection to a LAN for routing traffic onboard.

The benefits of such a system are not limited to maritime applications. A host of other mobile users, such as aircraft and even road vehicles, can make use of a seamless Internet connection. It will also allow fixed terminals to receive data from both satellite and terrestrial sources simultaneously, with improved transfer performance as a result.

For more information, please contact:

Frank Zeppenfeldt
ESA Communications Engineer
E-mail: frank.zeppenfeldt@esa.int
Phone: +31 (0)71 5654376

Enhanced Skyplex EQM passes testing

After extensive performance testing, the Enhanced Skyplex Engineering Qualification Model (EQM) has been fully integrated as part of the payload on Eutelsat's W3A spacecraft, which will be launched later this year.

Developed by Alenia Spazio, SkyPlex is the World's first satellite platform to deliver Internet TV services using a regenerative transponder. When launched, it will provide much greater flexibility and lower operating costs for Internet Service Providers compared with traditional satellite platforms.

Compared with the standard Skyplex unit (the commercial version), the Enhanced Skyplex EQM is a significant improvement. It is roughly 50% smaller in terms of overall size and mass. Hotbirds 4, 5 and 6, and Eutelsats W3 and W3A use Surface Acoustic Wave Filters (SAW), which are the classical analogue filters. The new EQM version uses a digital filter to perform the frequency demultiplexing/filtering function (essentially a bank of filters). Thanks to the enhanced Skyplex EQM developments, all Skyplex units on W3A are now equipped with Turbo decoders.

For more information, please contact:

Manfred Wittig
Head of the Multimedia Systems Section
E-mail: manfred.wittig@esa.int
Phone: +31 (0)71 565 3047



The standard Skyplex unit (left) and the Enhanced Skyplex unit (right)

Telecom Applications Workshop



Building relationships is an often forgotten, but necessary part of any business. Therefore, on 22 and 23 September 2003, ESA Telecom will be holding its Fifth Applications Workshop.

Formerly held in November, the purpose of the Workshop is to help individuals involved in the user segment of the satcom field get acquainted with each other. It is designed to help attendees

learn from the experiences of fellow satcom developers and entrepreneurs. Sharing ideas and exploring potential future areas of cooperation are often the most beneficial aspects of attending. At past Workshops, more than one participant has found that long-sought-after third party needed to make a project team complete.

The focus of the Applications Workshops is mainly on networking with colleagues in the field. In the current economic climate, this is especially vital for start-ups and smaller companies. Exchanging information and offering support are some of the main activities. By attending, participants can find out exactly how others have solved the problems that their own company is only now encountering. About one hundred people are expected to attend this 'invitation-only' event, which will be held in Newton Conference Room at ESTEC in Noordwijk (NL). Remote participation - though no substitute for actually being there - will be possible via satellite.

Receive regular updates from ESA Telecom by e-mail

Would you like to be kept up to date regarding Current Opportunities, the Start-up Initiative, Calls for Ideas and the many other things happening at ESA Telecom? In order to receive information regularly via e-mail, subscribe by completing a short web form, selecting the particular type of information that you wish to receive.

Go to:

<http://telecom.esa.int/subscribe>

Choose between:

'e-CONNECT':

The electronic version of the ESA Telecom newsletter.

E-mail alert 'Telecom News and Events':

Updates on projects and workshops.

E-mail alert 'Telecom Announcements':

Including opportunities to participate in ESA Telecom initiatives.

E-mail alert 'Calls for Ideas':

Your opportunity to influence the shape of ESA's future programmes.

E-mail alert 'The Annual Workplan':

ESA Telecom activities for the forthcoming year.

E-mail alert 'User Support Office (USO)':

Stay updated on new instruments and facilities to support start-up entrepreneurial initiatives.

Please note that the e-mail alerts and the hard copy are intended for companies and institutes in ESA Participating States only.

Subscribe

Receive regular updates from ESA Telecom by completing a short webform, selecting the type of information you wish to receive.

NOTE: The e-mail alerts are intended for companies and institutes in ESA Participating States only.

All fields marked with a (*) are required

Your Details:

First Name*

Last Name*

Job Title*

Phone*

Email*

Your Organisation Details:

Company/Institution*

Address*

City*

Country*

Postcode*

E-mail: telecom@esa.int

CONNECT

Published by:
ESA Publications Division
c/o ESTEC, PO Box 299
2200 AG Noordwijk
The Netherlands
Tel: +31 71 5653400
Fax: +31 71 5655433
E-mail: esapub@esa.int

Editors: Ninja Menning & Bruce Battrick
Layout & Prepress: Isabel Kenny