



# CONNECT

ESA Telecommunications Newsletter

Welcome to the first edition of *Connect* – the newsletter from the European Space Agency's Telecommunications Department (ESA Telecom).

ESA Telecom is responsible for co-ordinating, shaping and supporting European and Canadian innovation in satellite communications. In order to fulfil this role, we work closely with many organisations, particularly with business and industry from our Member States, both those involved directly in satellite communications, and those in the broader fields of telecommunications and IT.

These relationships are important as they provide us with input to help shape our future programmes. They also give commercial companies the opportunity to benefit from playing a more active role, receiving direct support, or bidding for an ESA Telecom contract.

We hope that *Connect* will help us to reach even more potential partners by providing top-line news from ESA Telecom and information about opportunities to get involved. To find out more about any of the topics covered, you can visit our website: <http://telecom.esa.int>.

I hope that you find this first edition of interest.

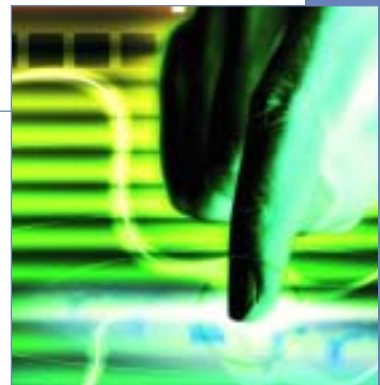


Claudio Mastracci  
Director of Applications Programme  
European Space Agency



## ***In this issue:***

- **An open door for new business innovation** - introducing ESA Telecom's new initiative to support start-up companies entering the satcom field
- **Partnership in practice - Newtec in the spotlight** - the success of Belgian company Newtec illustrates how ESA's involvement can help European companies to develop
- **Seizing market opportunities and meeting the new demands of our society** - the way forward for ESA Telecom and its impact on the services available for people and businesses
- **Multimedia - a solid foundation for the next generation** - exploring one of the hottest topics in communications
- **Artemis rescue operation** - the future of ESA's advanced telecommunications satellite
- **A wealth of opportunities for business and industry** - highlighting the different ways companies can get involved with ESA Telecom





For further information about ESA Telecommunications visit our website at:  
**<http://telecom.esa.int>**

### ***ESA Telecom - an open door for new business innovation***

In the converging worlds of IT and telecommunications, innovation from smaller, entrepreneurial businesses is becoming increasingly important. With responsibility to promote the competitiveness of the European and Canadian satellite communications (satcom) industry, ESA Telecom is keen to capitalise on similarly 'grassroots' driven innovation in this field, to complement the forward-thinking initiatives being taken by the satellite operators and system and equipment manufacturers.

This has inspired ESA Telecom to offer a 'user friendly' doorway to the satellite communications arena for smaller businesses with fresh ideas for satellite-related applications and services, acknowledging that the satcom field has high barriers to entry and so can be a difficult one for newcomers.

We are offering a unique support framework for small businesses to develop and refine their innovative concepts and to demonstrate technical and commercial viability. The support on offer to realise your proposal includes:

- Financial investment of up to 300 000 Euro
- ESA expertise – over 30 years of experience in the satcom field
- The opportunity to meet and work with other companies involved in related businesses.

#### **Who can apply?**

We would welcome ideas from any SME (small or medium-sized enterprise) or start-up company and are particularly looking forward to receiving applications from companies that have not previously worked with ESA.

Any company from a country participating in this area of ESA's telecommunications programme is eligible to apply - currently this includes the following countries: Austria, Belgium, Canada, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden and Switzerland, although other states may join at a later stage.

#### **What kind of innovation would be relevant?**

We are interested in ideas relating to either:

- New services or applications emerging from the creative use of existing satellite technology, such as multimedia, Internet, navigation or mobile applications, or
- Systems or technologies to support new, or improve existing, services.

*"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"*

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## What does the scheme involve?

If your application is accepted you will be awarded a contract and expected to develop your concept to demonstrate its technical and commercial feasibility. Typically, this would include the definition of the new service or system, including the technology needed, and the identification of potential markets and user groups.

## Sounds interesting – so how do I apply?

We appreciate that resources are a big issue for smaller companies, so we have designed a new application process – giving you feedback on your ideas before you submit a full proposal to us.

Your ideas can be submitted using the straightforward 'Outline Proposal' web form, which can be found on the website:

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

The opportunity to submit an outline proposal will be open for six weeks from 17 September 2001. Once submitted, we will give you feedback on your idea within four weeks of the closing date. Subject to the review of your outline proposal, you will be invited to prepare a full proposal (guidance for which is available online), or else we will advise you on areas of your idea that could be strengthened towards a future application.

***We look forward to receiving your ideas!***



Andreas Mauroschat

*"ESA Telecom aims to support all areas of the satcom field. We work closely with the satellite operators and system developers and look forward to expanding our relationships with application developers and service providers", says Andreas Mauroschat, who is responsible for the new ESA Telecom initiative for small and start-up companies.*

## Partnership in practice - Newtec in the spotlight



Dirk Breynaert



Danielle Coosemans

Starting small in the 1980s with ESA Telecom contracts, the Belgian company Newtec Cy now employs over 90 people, specialising in the design and development of digital satcom equipment.

ESA's support over the years helped Newtec develop from a small-scale equipment manufacturer to a recognised supplier of leading-edge products. Newtec's state-of-the-art ground station technology is now used throughout the world to optimise the efficiency of satellite data transmission.

Most recently ESA Telecom is helping to pave the way for Newtec's next leap forward - the transition to complete satellite communications system provider. In June this year, ESA Telecom placed a substantial contract with Newtec (along with Alcatel Bell Space) for the development of a new system to provide an IP access network based on the DVB-RCS (Digital Video Broadcasting with Return Channel via Satellite) standard.

The Newtec system promises to become one of the leading platforms for the new generation of interactive services such as high speed Internet and interactive television.

Aramiska, an early-stage European company with its head office in Eindhoven, The Netherlands, is to be the first customer to exploit the system for the delivery of high-speed Internet. Aramiska will offer two-way broadband communications in key European countries.

The DVB-RCS standard allows for interoperability between equipment from various manufacturers. This results in the economies of scale for production of standardised low-cost satellite terminals, which are key to the future of interactive multimedia satellite communications. ESA has played an important role in the development of this standard.

*"Since the formation of the company, working with ESA has been instrumental to our success. The technical advice, vision and co-ordination provided by our partners at ESA, together with the support of the Belgian Delegation, has been invaluable."*

*Dirk Breynaert, co-founder and CEO of Newtec*

*"We are delighted with Newtec's success and hope to see many other Belgian companies benefit in the same way. Therefore we welcome ESA Telecom's new initiative for start-up companies which should encourage many more businesses to get involved."*

*Danielle Coosemans, Belgian Delegate to ESA Telecommunications Programmes.*

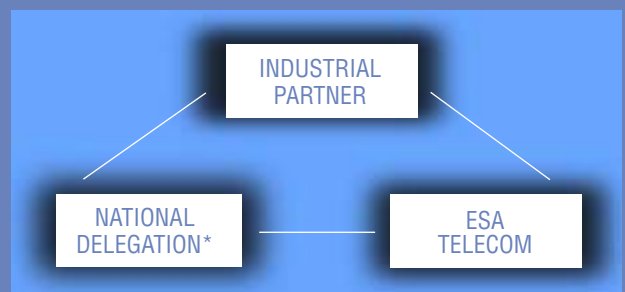
*(See lead article)*

*"The Newtec story is a good example of the strong working relationship that exists between our industrial partners, their national Delegations\* and the Telecom team. Good three-way communication is often an important factor in the success of ESA Telecom's initiatives."*

*Andreas Mauroschat, ESA Telecommunications Department*

\*The Delegations represent the national interests of each of the countries participating in the ESA telecommunications programmes. Some ESA Telecom initiatives require participating companies to have obtained the official support of their relevant Delegation in advance. For more information on national Delegates, and how to contact them, visit the website at:

<http://telecom.esa.int>



## ***Seizing market opportunities and meeting the new demands of our society***

During a press conference at the Paris Air Show this summer (17 June 2001), Antonio Rodotà, ESA's Director General, emphasised the strategic importance of the ESA Telecommunications Programme and its drive to assess and anticipate the real needs of the market:

***"ESA's telecommunications long-term plan proposes activities that are linked to the major forces that are driving the future of satellite telecommunications, especially in the field of the information society. Connectivity, mobility, integrated applications and standardisation are the key words. "***

This approach will mean exciting and relevant business opportunities for companies across the industry spectrum, from small entrepreneurial IT and Internet businesses to multinational equipment and systems manufacturers and satellite operators.

Pietro Lo Galbo, Head of ESA's Telecommunications Dept., illustrated what this could mean for users:

***"For both individuals and businesses, satellite technology offers exciting communications possibilities for the future. High-quality video telephones, operating anywhere in the world, will let us see as well as hear our friends and colleagues, while video e-mail could revolutionise the way we communicate at home and at work.***



***E-commerce companies selling videos, music and software will be able to deliver the product on-line quickly and efficiently, even with high customer demand. It will be possible to download films and television programmes almost instantaneously.***

***We will be able to watch our homes and property while we are on the move via remote-view live webcams and track the location of property that has been stolen. New location-based services, using the communication devices that will replace today's mobile telephones, will tell us where the nearest garage, restaurant or park is, and how to get to it."***

### ***ESA Telecom***

ESA Telecom is the Department of the European Space Agency responsible for co-ordinating, shaping and supporting European and Canadian innovation in satellite communications.

ESA's aim in the satellite communications field is to contribute to the competitiveness of the European private sector by providing a lead in research and development (R&D) activities and by forging partnerships within the industry. The Telecom team seeks input from commercial businesses (such as equipment manufacturers, system developers, satellite operators, service providers and application developers) and academic organisations (such as research institutes and universities) to produce a single, prioritised R&D plan.

ESA Telecom also plays an investment role by supporting the development of new satellite systems and technologies in preparation for future services. Such investment is necessary to offset the inherent risks of advanced space projects, which deter commercial investors.

In the realisation of its goals, ESA Telecom's work includes:

- Awarding contracts to companies from participating states to undertake development and testing, as well as in-orbit demonstration, of new satellite systems and technologies
- Ensuring that new technologies are successfully transferred to, and exploited by, service providers and application developers
- Promoting agreement of standards to ensure the benefits of interoperability of systems across Europe and Canada.

ESA Telecom's role as a major facilitator of R&D activity enables European and Canadian businesses to develop world-class products and services, and helps European and Canadian citizens to benefit from high-quality, cost-efficient, telecommunications.

## **Multimedia - a solid foundation for the next generation**

Today, one of the hottest topics in communications is multimedia, responding to the growing demand for two-way broadband services, such as interactive digital TV, high-speed Internet and data-rich content, for both fixed and mobile users.

Satellite communication has a natural role to play in this sector. High cost and limited available bandwidth, due to congestion, are known bottlenecks of terrestrial networks. Satellite communication offers a solution by providing the flexible, adaptive bandwidth necessary for the provision of multimedia services.

ESA Telecom is pushing forward novel initiatives, which are pioneering a new generation of intelligent satellite systems, capable of receiving several multimedia data streams and routing them, one by one, to their required location. These systems will complement existing and future terrestrial networks by providing two-way, high-speed communication to both domestic and corporate clients, via small, flexible, low-cost terminals, located almost anywhere on the globe, including places without any terrestrial telecommunications infrastructure.

In real terms for business, the advanced initiatives backed by ESA offer a unique opportunity for entrepreneurs to exploit the new satellite systems - both by building individual system elements and by developing applications and services.

## **Artemis rescue operation - the future of ESA's advanced telecommunications satellite**

ESA Telecom's Artemis satellite was launched by Arianespace on 12 July on an Ariane-5 launcher, from Kourou, French Guiana, but was left stranded in a lower than expected orbit owing to a launcher malfunction. The launcher was expected to propel the satellite into an elliptical orbit, some 36 000 km from the Earth at its furthest point. However, the orbit reached was only 17 000 km.

The joint ESA / Alenia Spazio-Telespazio team had to devise a plan to correct the situation. Through a series of firings of the satellite's own propulsion engine, the orbit was subsequently raised to 31 000 km and circularised.

The remaining journey to the correct geostationary orbit at 36 000 km will be achieved by using Artemis' novel electric-propulsion system (ion engines). To accomplish this procedure, new software must be written and loaded into the satellite's computer. The satellite is expected to arrive at its final position in mid-2002. Sufficient fuel should then still be available to allow Artemis to perform its mission for several years.

The Artemis industrial partners have successfully demonstrated that they can cope with unexpected situations requiring the development of completely new plans and manoeuvres.

### **CONNECT**

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## **A wealth of opportunities for business and industry**

Partnership is central to all of ESA Telecom's work. A broad spectrum of business and industry, from small entrepreneurial IT and Internet businesses and research institutes to multinational equipment manufacturers and satellite operators, have the opportunity to get involved in a number of different ways:

### **Workshops and Info Days**

to stimulate direct exchange of information between existing or potential partners.

### **Invitations to Tender (ITTs)**

specific competitive opportunities to tender for contracts for:

- the development and testing of satellites and related systems which will form the infrastructure for future satellite-based services.
- the piloting of new applications and services.

### **New Initiative for Small and Start-up Companies (see lead article)**

support for the development of new concepts that use satellite communication.

### **Industrial Initiatives**

in some cases ESA accepts unsolicited proposals from companies wishing to develop a particular concept with demonstrable commercial potential.

### **Calls for Ideas**

your opportunity to shape the future with suggestions for research and development to be included in ESA's future programmes. The latest Call for Ideas is NOW OPEN - details can be found on the ESA Telecom website.

If you are interested in any of these opportunities, you will need to check the conditions of participation. You can do this by visiting the ESA Telecom website (<http://telecom.esa.int>), which also provides more information on each of the schemes.

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