



ANNEX THE ROLE OF SATELLITE COMMUNICATIONS IN EUROPEAN SPACE POLICY

SPACE AND ECONOMY

Delivering optimum solutions to citizens' needs

Space applications have proven to be of significant value to the everyday life of citizens in Europe and beyond, both directly, such as by means of direct-to-home television distribution, and indirectly, through the results of scientific and military space missions. Telecommunications infrastructures have become a foundation of the modern Society and all advanced nations have built efficient communication systems to rely on during operations within the borders as well as outside of the national territory.

Presently, the most viable space-based applications are the satellite communication services representing 90% of the value-added of the market, highlighting the need to secure innovation and further developments in the Satellite Telecommunication (Satcoms) sector. Satellites have continuously been at the leading edge of the growth of the commercial and defense Telecom sectors, enabling the deployment of major phone infrastructures in numbers of countries and the TV Direct To Home market world wide. In 2007, 20 out of 21 satellites placed in orbit by Ariane 5 and Soyuz were Telecommunications Satellites, which account for more than 50% of the turnover of the European Satellite Industry.

Initial Public investment and support for European Satcoms through the early satellite programmes as well as other multi-national policies implemented in the European Space industry, including the Ariane programme, have brought about a competitive satellite industry sector that has grown and flourished over the period and led Europe to the forefront of Satellite communications.

No new terrestrial network can be deployed without satellites

Satellites can have a major role in the broad commercial deployment of broadband and mobility, two of the major themes of the Lisbon agenda, together.

Satellite technology can complement terrestrial broadband networks, allowing a rapid deployment of seamless, universal broadband services today to unserved and underserved areas, which in Europe are usually the rural, low-population density, areas, and constituting a platform for providing competitive services and applications to companies, institutions and citizens (B2B and B2C).

Moreover, satellites can complement the roll-out of terrestrial 3G/UMTS mobile networks by providing add-on broadcast and interconnection capabilities, and facilitate the transition from analog to digital terrestrial broadcast networks, through the provision of capacity to rural and mountainous areas out of the reach of the terrestrial coverage.

Thanks to their wide regional coverage, satellites offer genuine solutions to the growing scope of European Union policies covering security and defence, transportation and mobility, aviation safety, knowledge society, environment monitoring, research, maritime safety and security, and have an essential part to play in enabling Europe to bridge the digital divide.

Community interests extend well beyond current boundaries and indeed there is the potential of both demand and demonstrable example which exists in overseas aid and development programmes in Western Asia and Africa and Latin America.

SATCOMS ARE A KEY ENABLER OF SECURITY

During the last ten years up to five European nations have independently developed their civilian and dual use satellite-based communication systems, which appears as being a costly exercise

Satellite not only facilitates the integration process within the EU but also provides a link between EU and the emerging countries.

The further research and development of integrated and advanced systems is required in order to meet the exponentially growing demands deriving from a combination of global economical, environmental and security factors. The efficiency of all the European space-based systems could be dramatically enhanced by using existing capacity as well as enhanced satellite telecommunication systems.

In particular, the integration of satellite communication with Earth Observation and Navigation would significantly increase the potential of the European space sector. In the case of the GMES initiative, the near real-time transmissions of Earth Observation images will require larger communications capabilities on board the satellites.

Also, navigation applications combined with Earth Observation images and quick satellite telecommunications capacities can bring the necessary tools to allow immediate actions in case of emergency situation.

Another aspect of security will be covered by the future European ATM (Air Traffic Management) system within the Single European Sky initiative allowing to control the increase of flights in European and globally (so-called SESAR project). In SESAR, satellite is already considered as a technology enabler for this future ATM system.

SPACE AND THE NEED FOR A PROPER SPECTRUM POLICY

Spectrum consists in the core of all telecommunications activities, including the satellite business. Spectrum and regulatory threats are impacting on Satellite Communications system evolution. Today satellite frequencies are managed by the International Telecommunication Union (ITU) based in Geneva.

However, the EU Reform Proposals do not recognise or address the importance of ensuring compatibility with the ITU rules and procedures and international legally binding constraints and entitlements arising under them. The efficient use of spectrum absolutely necessitates compliance with the ITU filing and coordination procedures. Otherwise, this could ultimately lead to the breach by EU Member States

of their legally binding obligations at international level and limit the benefits that EU Member States are legally entitled to derive from their ITU membership.

ESOA is extremely concerned that recently a substantial satellite spectrum has been lost or is about to be lost. It is important to solve these issues and to secure especially C-band and Ku-band as well as securing spectrum for mobile services since satellite applications are at the core of the space market and hybrid satellite/terrestrial solutions offer unique advantages over terrestrial-only systems.

Substantial satellite spectrum was lost over last few years with some existing BSS & MSS bands at UHF & S band lost at WRC-07 and L-band BS/BSS ("T-DAB") gradually reassigned to exclusive terrestrial use. This impacts innovative (hybrid) satellite services including video-to-handheld.

We therefore recommend to reconsider spectrum policies in favour of more hybrid satellite/terrestrial use of spectrum, especially between 1 and 3 GHz and to strongly protect the priority of satellite services in frequency bands above 3 GHz, possibly allowing exclusive rights for satellites.

SPACE AND RESEARCH

In order to provide the most appropriate basis for the growth as the market develops there is the need for new technology to be developed in a suitable timeframe. Much has been made of the gap between European and US development funding and effort, but there are key developments which will be required in Europe to enable European industry to position itself on the international market to compete for new satellite procurement within the next 5-year period.

Of the three main areas of the Space domain, Communications, Earth Observation and Navigation, the communication services and applications are so far the most important in terms of economic value referring to the entire value chain. This fact is again showing the importance of investing in R&D activities in the Satellite Communications field. A purely terrestrial system based offer, not complemented by satellite capabilities, does not allow digital services such as innovative TV solutions, broadband internet access in remote/rural areas, mobile broadband and security/emergency applications all representing key services under growing demand across Europe. Satellite technologies and services have driven innovation in Europe, making services such as digital television or HDTV available on the market, illustrating the importance of supporting SatCom R&D developments.

In this year 2008 where the political dimension of Space will materialize by the establishment of the European Space Policy, time seems ripe for strengthening further investment of the EU in space programmes including research. The EU's 7th framework programme (FP7) does not for the moment support research in satellite communications while EU funding continues to support research in other technological domains. This trend is reinforcing an unbalance benefitting the terrestrial operators primarily.

Research and development funding must therefore be available to permit:

- System development and evolution
- Development, standardisation, and industrialisation of affordable and efficient satellite terminals
- New innovative applications

- New space segment technology development and qualification of flight hardware

We should remind that the original basis for the commercial satellite industry in Europe, both satellite operators and manufacturers, was built on the foundation of public investments in the development of the first national and European satellite programs such as OTS/ECS/SYNPHONY/TDF 1/TVSAT etc. The commercial sector rapidly expanded and within ten years several European satellite operators were established and although some sources of supply were from outside Europe, the European manufacturing and operator sector grew very substantially. Innovation and growth in Satcom services have a very significant impact on the overall economics of the Space value chain and beyond, spanning from space transportation to user terminals.

Conclusions

ESOA therefore pleads for enlarging the European Space Policy implementation plan to encompass a larger investment in satellite telecommunications which would allow to:

- ✚ Ensure that Lisbon objectives are met by providing an immediate and seamless satellite-based solution to areas which are unserved or underserved by new terrestrial services
- ✚ Recognize that satellite is a key enabler for the introduction of new services and applications in Europe and in emerging countries in competition or in complementarity with terrestrial services.
- ✚ Provide tools and solutions to allow the second pillar “ Common Foreign and Security Policy” to be deployed quickly and cost-efficiently with existing and new satcom facility (in particular as regards the new developments proposed in the draft Constitutional Treaty).
- ✚ Allow applications to be distributed through satcoms in real-time to all of the European citizens in major programs and policies such as GMES, Galileo ;Promote the role of the satellite as a technology enabler (alone or in combination with other technologies) for systems supporting key EU policies as done in SESAR
- ✚ Reconsider spectrum policies in favour of more hybrid satellite/terrestrial use of spectrum, especially between 1 and 3 GHz.
- ✚ Protect the satellite bands which are seriously under threat today (mainly in C-Band and Ku-Band and mobile bands) with a serious risk of stalling our whole sector to be in line with international regulations (ITU).
- ✚ Promote Research and development and the evolution of European satcoms technology to be applied not only in the medium-long term, but also in the short term, to the benefit of all European citizens.