

Position Paper
On
Satellite Communication Services

DRAFT

by



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1. Introduction

In recent years the EU has given increasing attention to space policy, ICT and satellite systems. These fields are seen as a backbone of the European knowledge based economy and are essential to ensure Europe's competitiveness. Important examples of policy initiatives include:

- the European Council Resolution of 22nd May 2007 on EU Space Policy
- the European Council Resolution of 29 September 2008 titled "putting forward the European Space Policy"
- European Parliament Resolution of 14 February 2007 on 'Towards a European Policy on the Radio Spectrum'
- Decision on a Regulatory Framework for Radio Spectrum Policy in the European Community 676/2002/EC
- Council Regulation on Progressing Galileo: Re-profiling the European GNSS Programmes COM(2007)0534
- Council Regulation on Further Implementation of the European Satellite Radionavigation programmes (EGNOS and Galileo) COM(2007)0535
- EC Communication on a Market Based Approach to Spectrum Management in the European Union COM(2005)400
- EC Communication on Rapid Access to Spectrum for Wireless Electronic Communications Services through More Flexibility COM(2007) 50
- Having regard to the EC Communication on Connecting Europe at high speed: recent developments in the sector of electronic communications COM(2004)
- EC Communication on Accelerating the Transition from Analogue to Digital Broadcasting COM(2005)204
- EC Communication on Global Monitoring for Environment and Security (GMES): Establishing a GMES capacity by 2008 - (Action Plan (2004-2008)) COM (2004) 65 Final
- Commission Decision of 14 February 2007 on the harmonised use of radio spectrum in the 2 GHz frequency bands for the implementation of systems providing mobile satellite services

2. Satellites in Europe

Satellite communication services have contributed to the growth of the European information society more than most other technologies. They have helped to develop new services and to connect areas in Europe which were out of reach of other means of information technology. Still, a significant proportion of the increasing European geographical area and population remains un-served by high quality terrestrial services despite the availability of other existing and able technologies. Moreover, rolling-out high quality communications services by terrestrial means to remote areas and populations are considered onerous and uneconomic. Consequently, presently un-served regions will become further digitally divided with the increasing commercial interest in delivery of IPTV, mobile radio, TV and other broadband services.

Further important considerations in the context of satellite services are:

- The European Union is working towards the objective of Digital Switchover throughout all its Member States;
- Resilient and flexible communications capabilities are necessary to contribute to a coordinated European security strategy;
- A rapidly deployable, resilient and flexible communications system is essential for a coordinated European response to natural disasters and other emergencies;
- Short-term local or regional solutions do not benefit from economies of scale and often incur greater cost than solutions covering more than one or more European regions, for example, for broadband connectivity.

3. Policy Context

Cross-border satellite services are an important element of the internal market with a unique ability to contribute to the achievement of a wide variety of key European Union policy objectives under the renewed Lisbon agenda. Examples include the expansion of geographical coverage of broadband in line with the i2010 Initiative, access to next generation digital content in high-quality format (e.g. HDTV) or complete transition to digital communications as a result of analog switchoff all over Europe.

That satellite communications is a backbone of the knowledge based society was recognized in various legal texts and policy papers:

- Article 8 of the current Framework Directive 2002/21/EC seeks the 'promotion of competition' to 'encourage efficient investment in infrastructure & promote innovation
- In the Third Status Report on European Technology Platforms, satellites were called as being "instrumental for European-wide and International broadcasting, broadband access, bridging the digital divide, safety, crisis management, disaster relief, and dual-use applications".
- An aim defined within the European Union's Thematic Priority 1.4 Aeronautics and Space of Framework Programme Six, was "The integration and validation of innovative and low-cost satellite communication technologies and systems where satellite communications technologies may have a potential edge over terrestrial infrastructures damage assessment, monitoring of protected areas, maintenance of law order by police forces, border surveillance."

Moreover the European Union has the objective of promoting new and innovative communications systems using any kind of technical platform and capable of providing services such as "high speed internet/intranet access, mobile multimedia and public protection and disaster relief" (cfr recital 2 and 3 of Commission Decision of 14 Feb 2007 on 2 GHz) regardless of the location of end users in the Member States, at regional or at a European level. Satellite systems with complementary ground components are considered as such innovative alternative platforms.

Wireless systems such as satellite systems which are operating globally and are not confined to national borders are already regulated in an international context coordinated by the United Nations International Telecommunications Union (ITU)

since 1932. The ITU agreements have achieved a balanced environment for operators all over the world and therefore it is highly desirable that European, regional or national regulations are in accordance with international agreements in order not to disrupt this balanced environment. In that context it has to be noted that it is impossible to enforce EU regulations against non-EU entities, which may result in a distortion of the market for communication services within the EU.

4. Satellites and Societal Benefits

Communication services via satellite have the ability to meet key European Union objectives such as broadband connectivity for European citizens in multiple regions simultaneously and digital switchover throughout Europe also in remote areas and therefore allow service providers and consumers to benefit from the economies of scale of the single market.

Moreover satellite technology is particularly energy efficient being the only communications technology able to connect large numbers of people over an entire continent by consuming solar energy during their entire lifetime of 15 years. Additionally satellite services provide minimal risk to the health of European citizens due to the low power flux density of signals reaching the earth surface.

For global disaster management it is paramount to have a rapidly deployable communications solution which remains unaffected by terrestrial events. Fixed and mobile satellite communications have these characteristics and should therefore be included in a coordinated and cost-effective European disaster management scheme. Satellite communications are also a resilient and flexible communications means that can be secured to a military grade and one which is increasingly being relied on by governments around the world. The European Union should therefore include satellite communications in a coordinated and cost-effective European security strategy.

5. Requirements of Satellite Technology

Satellite technology is a strategic European infrastructure, built, launched and operated over 20 years, based in outer space and naturally delivering services across national and regional boundaries, the sea and airspace, also beyond EU boundaries.

The operability beyond borders is a particularity of satellite communications having the consequence that non-EU satellites can provide services within the EU as well as EU satellites provide services outside EU territory.

6. Technology Neutrality

In principle a neutral regulatory approach to different technologies is beneficial to the internal market as it maintains a competitive and equitable environment between the different technologies. However, the principle of “technology neutrality” can also have an effect contrary to its purpose by discriminating against certain technologies

with specific characteristics if applied too strictly. For instance, satellite technology relies on access to the same spectrum across borders and is susceptible to interference. Therefore the principle of technology neutrality should be applied taking account of attributes specific to certain technologies.

Hence it would be to the benefit of European competitiveness to provide for proportionate and non-discriminatory regulatory provisions that ensure technical quality of service by taking account of the specific characteristics of satellite systems.

7. Access to spectrum

Satellite communications, by their international nature:

- Are subject to international or regional regulation in addition to national regulation
- Have access to a limited amount of frequency bands due to worldwide harmonisation requirements.

Therefore, most of the frequency bands used by satellite are already shared with other technologies.

The parallel provision of electronic communications networks and services in various EU countries and the development of new electronic communications services and cross-border communication networks and services require the least onerous authorisation system possible. The European Union should also recognise that regulatory fees levied for the use of spectrum are only justified when there is a risk of harmful interference.

It is also important that the European Union consults with and give proper attention to the views of right holders who are well placed to evaluate the need for any potential revision of their existing rights of spectrum use, depending on the market evolution. The European Union should also identify and safeguard specific frequency bands dedicated to satellite services, in line with ITU allocations, existing use across the globe and with due consideration of CEPT studies. Moreover, satellite systems have a smaller choice of bands available than other technologies, therefore the EU spectrum policy should give priority to satellite systems in internationally recognised satellite bands.

Finally, it is crucial for the sustainable future growth of the satellite sector to rely on appropriate European decisions, making a core set of bands for satellite use available and protecting them against risks of interference.

8. Spectrum management

Since satellite systems operate globally they are subject to the decisions of international organisations dealing with radiofrequency spectrum e.g. the [ITU] and [CEPT]. It is therefore crucial for satellite service providers that due and proper

weight is given to those decisions by EU Member States. At the same time each Member State has the sovereign right to decide whether and how to participate in satellite communications systems and to determine the terms and conditions of access to such systems from its territory

For satellite systems abrupt disruption of existing services can be extremely harmful. This danger can be limited through only gradually changing spectrum management policies. It is also important to allow for maximum evidential input both from industry and from technical studies on the compatibility of wireless systems in order to keep harmful interference to an absolute minimum.

Satellite signals travelling from space result in much lower power flux density than the signals of other wide area terrestrial wireless networks such as GSM, WiFi or Wimax and as such are susceptible to interference. This has to be taken into account when discussing questions of spectrum sharing. In particular since the simultaneous operation of different wireless systems in the same or neighbouring frequency bands may result in interference degrading the technical quality of service (the intelligibility of digital signals carried by a wireless network), to such extent that ongoing service provision is no longer certain or even possible

It is therefore paramount that the European Union defines adequate protection policies for satellite signals when considering spectrum sharing both for existing services as well as for potential future services.

A possibility to include these considerations in current legislation would be the amendment of Directive 2002/21/EC by including a Recital highlighting the specifics of satellite.

This recital could have the following content:

(22)a (new) Efficient use and effective management of spectrum requires recognition of the technological requirements of satellite space stations, which provide services of a global nature and rely on international technical rules and spectrum allocations. Satellite communications, observation and navigation services contribute to strategic goals of the European Union and are an important element of the internal market, including expansion of geographical coverage of broadband in line with the i2010 initiative.

A further possibility to limit the danger of harmful interference is to amend Directive 2002/21/EC Article 9.3 by including further restrictions to the technologies used for electronic communications services, being:

- (i) Technical Quality of Service
- (ii) Characteristics of Specific Technologies

EXPLANATORY STATEMENT

Introduction

The European Union's Regulatory Framework covers a wide notion of electronic communications services encompassing terrestrial and satellite, fixed and wireless technologies. This framework therefore applies to the range of services all the way from domestic telephony for the European citizen to emergency communications for governmental organisations in the wake of a disaster and other emergencies.

The nature of satellite services is wholly different from other communications services in that they are often of great strategic relevance as well as being part of a critical infrastructure. In addition they comprise a unique technology that has allowed Europe to secure independence in the establishment of space assets and become a global leader in key space technologies: it is the responsibility of European policy makers and legislators to ensure that this strategic infrastructure is maintained and the trend is supported.

In the context of the Review of the European Union's Regulatory Framework, proper consideration must be given to the evolving space and defence competency of the European Union. The Treaty of Lisbon notwithstanding, the French Presidency will put forward specific initiatives and programmes which will lay the basis for a cohesion along inter-governmental lines for enhanced European cooperation in these areas. Amongst other issues, the question of spectrum presents a compelling case for a comprehensive analysis, which is not accommodated for in the Review. Specifically there is a convergence of national, European, non-European and international organisation competencies interacting, which sows the basis for discord. The issue of spectrum allocation for satellite communications is clearly a subject, which demands a more comprehensive review and indeed a more adapted approach than is presently the case in the current reform of the Telecoms Package.

The Satellite Industry

The current global environment for satellite communications services allows the European satellite industry (manufacturers, operators, launchers and downstream service providers) to secure finance for, order, build, and launch satellite systems for the delivery of defined services for up to 15 years. The industry has developed to a situation today where approximately one third of the global commercial fleet of satellites in orbit today is European.

European satellite manufacturers, satellite operators and launch service providers account between them for: around 30,000 employees, € billion turnover per year, and approximately 90 satellites in orbit. This does not include the value of downstream service provision in areas such as earth observation, telecommunications

(including TV broadcasting) and navigation, which makes a further contribution to EU economies.

The initiative of the common European Space Policy is already a clear indication that the satellite communications sector is part of a strategic infrastructure. Indeed the Galileo Programme and the GMES programme, just as the Ariane programme back in 1973, are more recent examples of Europe wishing to further secure its leadership, independence and competitive advantage in delivering space-based applications for the space economy.

In addition to the strategic space programmes being driven by the European public sector, satellite communication services also compete in a wider commercial and competitive communications and broadcast services market in Europe.

For these reasons, the optimum operating environment for satellites and their services must ensure protection in terms of European industrial policy and legislation, without which the viability of services in this industry sector will be exposed and threatened.

Access to spectrum

The distinct nature of satellite services also becomes clear when it comes to the use of radio spectrum. With their reliance on an infrastructure located in outer space, the ability of those spacecrafts to send simultaneous signals across any national borders and the very low power of these signals when they reach the earth, this technology is clearly different to other means of communication. Countless EU citizens have unknowingly come to depend on satellite for TV broadcast, live media coverage of news and sports events and the weather forecast! In addition, if our minds wander to the disasters of the world: Hurricane Katrina, the Tsunami, wars and troops deployed in Iraq or Afghanistan, satellite appears as the enabler in terms of communications, operational in the face of terrestrial destruction and allowing remote units to function almost as if they were at home. For ships and planes they are even the main or sole means of communication. This technology is thus an everyday and undeniably crucial part of our lives. Given not only the global reach of this infrastructure but also the mobile functionality associated with it, assured access to spectrum and protection from interference, become obviously vital concerns.

In the Review of the Framework, the regulation of this technology does not reflect appropriate recognition of the specifics and advantages of this strategic infrastructure. It is treated just as any other communications technology, including those that operate solely within a single Member State or those which can deliver services only in urban areas. Noting the specific attributes of satellites, in particular the fact that their signals are significantly weakened after travelling from space and subsequently present the least risk to the health of EU citizens when received on earth for example for TV broadcasting,

The United Nation's Inter-Agency Working Group on Emergency Telecommunications, which has declared the C-Band as its standard for all emergency communications is of particular importance. In the present uncertainty both in political terms in parts of the world and surrounding global warming and its effects

the international community requires a reliable emergency communication network which only satellite technology can provide.

Specifically within the context of the EU's Regulatory Framework, no recognition whatsoever is accorded to such matters and implications of satellite technology and it is, by virtue of the principle of technology neutrality, treated on a par with other technologies.

At present the only protection for industry players who risk being harmed by the application of the principle of technology neutrality is for those whose operations risk being interfered with. Thus one limitation on this principle is "protection against 'harmful' interference". With the review presently underway, proposals have however been made to widen protection by including a limitation for "technical quality of service". Technical quality of a wireless electronic communications service can be interpreted as the intelligibility of digital signals carried by a wireless network and received by end-users. This technical quality of service can be seriously degraded at interference levels that are significantly below the level of "harmful interference". Harmful interference represents the level where the very availability or continuity of the service is damaged and can ultimately be stopped, i.e. the signal is lost. For this reason, various levels of either "permissible" or "accepted" interference have been defined at ITU level, which demonstrate that wireless communications means such as satellite networks are designed to be able to meet a given level (or 'quality') of service even when there is a limited amount of interference.

Therefore, protection against 'harmful' interference is not enough to guarantee the proper availability of at least satellite services, which are 'highly' sensitive to interference from other wireless systems. This has to be considered in order to obtain a clearer and more certain wording of legal provisions in the Regulatory Framework to ensure the required protection of satellite communications services.