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"COMMUNICATION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL ON SATELLITE COMMUNICATIONS: THE PROVISION OF - AND ACCESS TO - SPACE SEGMENT CAPACITY"

(presented by the Commission)

CONTENTS

1. SUMMARY

Satellite communications have developed rapidly in Europe in recent years. Revenues directly derived from the operation of satellite systems in Europe increased from 540 million ECU in 1990 to 835 million ECU in 1992. More than half of these revenues were generated by the usage of satellite capacity for television services. However, the use of satellite capacity for telecommunications is equally important, given the potential significance of satellite communications to the establishment of a pan-European market. This technology is now considered an essential contributor to trans-European services and networks, and their enlargement to a continental dimension following the agreement with six EFTA countries on a European Economic Area, and the developments in Central and Eastern Europe.

The implementation of the Satellite Green Paper has commenced but, until now, has mainly concerned "ground segment" issues: the liberalisation and harmonisation of satellite earth station equipment and satellite services.

The "space segment" issues (the provision of space segment capacity, access to this capacity, and access to orbit and related frequency resources), now require further action in order to make the overall policy approach fully efficient, taking into account the broad objectives of the Commission in the space sector.

Increasingly the market itself exercises pressure for change. Both within the Community and globally, moves towards easier access to space segment capacity have attracted considerable attention, especially in the context of the International Satellite Organisations EUTELSAT, INTELSAT and INMARSAT.

The satellite communications equipment and services industry has clearly underlined the crucial importance of further progress on space segment matters, which is regarded as a pivotal issue which could determine whether European industry can continue to operate viably and autonomously.

Industry argues that an uncertain or unstable policy in this area would have a negative impact on investment and development decisions of both prospective space segment operators and satellite service providers, as well as the space industry.

Furthermore, the Treaty on European Union identifies as a key Community policy the establishment of trans-European networks in telecommunications. Satellites are intrinsically well suited to assist in the provision of telecommunication services on a pan-European basis, but their availability within this context needs to be assured.

The main requirements for change thus result from the following:

-» The fragmented nature of the European space segment supply market does not provide the European satellite industry with a viable base for world-wide competition, particularly as new systems are emerging; nor does it satisfy the requirements for trans-European networks. The Treaty on European Union now imposes special obligations on Member States to act in common in order to ensure the establishment and development of trans-European networks.

-» The constituent instruments of International Satellite Organisations (Conventions and Operating Agreements) and/or their interpretation must be adjusted to the overall European telecommunications environment and to the schedule leading to full liberalisation of services by 1st January 1998. This requires, in particular, an urgent review of the interpretation of the constituent instruments of Eutelsat, given the special responsibilities of the Member States in this area.

-» The evolving competitive market structure in the global space segment market is leading to a review of the financial and commercial basis of the International Satellite Organisations. Member States must develop a common approach in order to ensure the competitiveness of European undertakings on the global market.

As a result, the European Union's satellite sector risks losing the initiative in the world satellite communications market, as discussed below in this communication and as indicated most spectacularly by recent international developments in the new fields of satellite-based personal communications and multi-media services.

In order to avoid the European Union falling behind in a rapidly developing world satellite communications market, measures and action are now required which must go substantially further than the limited measures to date.

On the basis of the analysis set out in this communication, the Commission considers necessary:

1. *Ensuring throughout the European Union direct access to the space segment, including in particular space segment provided by the International Satellite Organisations*

   To ensure this goal the Commission intends to use fully all means available to remove all existing restrictions through the application of the EC Treaty provisions and in particular, the Community competition rules.

2. *Joint action by the Member States in the reform of the International Satellite Organisations and in particular of EUTELSAT.*

Immediate advantage must be taken of current discussions in the International Satellite Organisations in order to ensure the adjustment of those organisations to the new regulatory and market requirements.

3. *Joint management in the future of the space segment as a common resource of the Union, in particular concerning future applications to the International Telecommunication Union for orbital positions and related coordination procedures and availability of radio-frequencies.*

This should involve close cooperation with the European Committee of Telecommunications Regulatory Affairs (ECTRA) and the European RadioCommunications Committee (ERC) according to the principles and procedures currently being established.

4. *The establishment of measures in order to ensure comparable and effective access to third countries, in parallel with the Union's market liberalisation.*

Balanced market access arrangements must be sought to guarantee full European participation in the global satellite communications market.

5. *Inclusion of satellite-based services in programmes for Trans-European Networks as a major priority, in particular, with regard to the emerging technologies.*

In addition to European research and development activities in particular through the European Space Agency, and the creation of a liberalised environment, the full participation of the European Union's satellite sector in the satellite communications markets is vitally dependent on attracting investment and initiatives into the new fields.

The White Paper on growth, competitiveness and employment identified satellite communications projects as potentially making a major contribution to the development of Trans-European Networks.

The Commission intends, within the overall framework of the development of Trans-European Networks to submit a coherent programme for the development of satellite-based Trans-European Networks.

The further development of - and access to - the space segment constitutes a major factor in securing Europe's potential to participate in the development of the new satellite communications technologies and to maximise the potential of the sector for developing the European Union's communications infrastructure as a whole. It is with this objective in mind that the Commission intends to follow the policy lines set out and that it transmits this Communication to the European Parliament and to the Council.

2. BACKGROUND

The framework of the Community's satellite communications policy has been established with the adoption of the Satellite Green Paper[1] and the subsequent generally positive responses from regulators, industry and users. The related Council Resolution[2] confirmed the broad agreement of the Member States to the approach of the policy.

The Commission has moved ahead firstly in the area of ground segment regulation: the liberalisation and harmonisation of satellite earth station equipment and services. In value, the market size for satellite services and equipment is at least twice that of satellite systems themselves. In December 1992, the Commission adopted a proposal for a Directive[3] concerning the mutual recognition of satellite earth station equipment type approval procedures on the basis of harmonisation. This proposal was adopted by Council[4] on 29 October 1993 and will enter into force in May 1995.

Building on the impetus provided by the Telecommunications Review[5] the Commission has adopted a Draft Directive abolishing exclusive and special rights in the provision of satellite communications services and equipment, and has adopted a proposal for a Directive on a policy for the mutual recognition of satellite communications services licences[6].

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1 "Towards Europe-wide systems and Services: Green Paper on a Common Approach in the field of Satellite Communications in the European Community", COM(90)490 final, 22.11.90

2 "Council Resolution on the development of the Common Market for satellite communications services and equipment", O.J. No C 8 p.1, 14.1.92

3 "Proposal for a Council Directive on the approximation of the laws of the Member States concerning satellite earth station equipment, extending the scope of Directive 91/263/EEC", COM(92)451 final, 15.12.92,

4 "Council Directive 93/97/EEC of 29 October 1993 supplementing Directive 91/263/EEC in respect of satellite earth station equipment", OJ No. L 290 p.1, 24.11.93

5 "Council Resolution of 22 July 1993 on the review of the situation in the telecommunications sector and the need for further development in that market", OJ No. C 213 p.1. 6.8.93.

6 The liberalisation measure ("Draft Commission Directive amending Directives 88/301/EEC and 90/388/EEC with regard to satellite communications") amends the two earlier Commission Directives which opened competition in the provision of terminal equipment and in the provision of services in the telecommunications sector in general, extending both these measures to cover the satellite communications sector. The harmonisation measure concerns a "Proposal for a Directive by European Parliament and Council on a policy for the mutual recognition of licences and other national authorisations for the provision of satellite network services and/or satellite communications services", (COM(93)652, 04/01/94) for a policy on the mutual recognition of licences for the provision of satellite services based on the evolution in the medium term of common licensing conditions.

With the two elements of ground segment regulation (equipment and services) now mainly in place, space segment access is now the vital third policy element that requires addressing in order to facilitate the further expansion of the Community's satellite communications market.

In the context of the provision of space segment capacity, the freedom to provide services (Article 59 of the Treaty) and the right of establishment (Article 52) are specifically concerned.

In addition, as stated in the Commission's Guidelines on the application of the EEC competition rules in the telecommunications sector[7], the Treaty competition rules fully apply to the satellite sector[8]. These require *inter alia* a strict separation of regulatory and operational functions with regard to space segment provision.

Compliance with Community law, and in particular with the competition rules, must also be ensured with regard to the relevant international conventions (such as the ITU Convention or the Conventions establishing International Satellite Organisations). To the extent that these agreements were concluded before the entry into force of the Treaty, Article 234 obliges Member States to take all appropriate steps to eliminate any incompatibility between such agreements and the Treaty[9]

A Community policy in the context of the provision of, and access to, space segment must therefore be developed within the framework of the Treaty rules, the most important of which are mentioned above.

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7 O.J. N° C 233, 06.09.91, p.2, N° 124

8 Agreements between telecommunications organisations concerning space segment capacity must be assessed primarily on the basis of Article 85. A coordinated or common supply of space segment capacity by independent telecommunications organisations may restrict competition between them and with regard to third parties. Additionally, agreements on space segment capacity between telecommunications organisations and private satellite operators may be in violation of Article 85 where they limit competition in the provision of uplinks, unless such agreements can be exempted under Article 85(3) of the treaty. Violations of Article 86 on the basis of abuse of dominant market positions could occur e.g. by direct or indirect imposition on customers of any kind of agreement by a TO, the bundling of uplink and space segment capacity provision, and TO's direct or indirect participation in several of the private, national and/or international satellite systems. No exemption is possible for behaviour which results in abuses of a dominant market position. Where behaviour or agreements result from the grant of special or exclusive rights by the Member States to the telecommunications organisations concerned, Article 90 still requires their compliance to the Treaty in particular to Articles 6, and 85 to 94.

9 Cf. Competition Guidelines n°139 to 144

3. SPACE SEGMENT ISSUES AND PRESSURE FOR CHANGE.

3.1. Access to space segment capacity.

Within the Community, space segment capacity is available from the International Satellite Organisations INTELSAT, INMARSAT, and EUTELSAT created under international Treaties, national satellite operators, private satellite operators and some other organisations[10].

Table 1 presents an overview of the available capacity which is mostly used in Europe. It shows that the International Satellite Organisations are the predominant providers of capacity.

Table 1

Main space segment capacity providers in Europe[11]

(by type of satellite system)

International	National	Private
65 %	25 %	9 %

Note: The EUTELSAT market share is 35%, making it the largest player on the European market.

The Member States of the Community are, practically without exception, all members of the International Satellite Organisations, and represent a significant share in the ownership of these organisations. Table 3 below gives an overview of these ownership shares in INTELSAT, INMARSAT and EUTELSAT. Particularly in the case of EUTELSAT, the Community Member States represent an important majority with a total ownership share of around 85%.

In the Community there is still a wide disparity in access arrangements to the capacity of international, national and private systems. As Table 2 demonstrates, the overall situation in Europe remains restricted, making it difficult for a commercial satellite service operator to gain access to the necessary space segment capacity in a flexible and commercially viable fashion.

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10 International: INTELSAT, Inmarsat, EUTELSAT, Intersputnik, Arabsat.
National : DFS-Kopernicus, Telecom-I and II, Italsat, Hispasat, TDF, TV-SAT, Tele-X, Thor, Turksat(planned).
Private: Astra, PanAmSat, Orion (planned), Columbia, Sarit (planned).
Others: ESA - experimental satellites, various Russian satellite systems, etc.

11 Measured in standardised transponder units of Ku-band capacity. In June 1993 the total number of these units in operation over Europe was 422. For mobile satellite services, Inmarsat enjoys in Europe a near monopoly.

Table 2

ACCESS TO SPACE SEGMENT

Country	International Satellite Organisations access only via national Signatory	International Satellite Organisations access via other Signatories	Access via independent organisation	Access restrictions to other systems [5]	National systems Signatory controlled
Belgium	yes [3]	no	no	yes	-
Denmark	yes [3]	no	no	yes	-
France	no	yes [1]	no	no	Telecom-I,II TDF
Germany	no	yes [1]	no	no	Kopernicus, TVSAT
Greece	yes [3]	no	no	yes	-
Ireland	yes [3]	no	no	yes	-
Italy	yes [3]	no	no	yes	Italsat
Luxembourg	yes [3]	no	no	yes	-
Netherlands	no	yes [1]	no	no	-
Portugal	yes [3]	no	no	yes	-
Spain	yes [3]	no	no	yes	Hispasat
United Kingdom	no	yes [1, 2]	yes [4]	no	-

1 *"Multiple access" arrangement for EUTELSAT space segment (see section 3.4.2.).*

2 *Special arrangement for Mercury can be characterised largely as direct access.*

3 *In addition, the Signatory continues to have the statutory or de facto monopoly in the satellite services sector.*

4 *The arrangement of a Signatories Affairs Office for access to space segment from EUTELSAT (see also section 3.4.2.) and direct access to INTELSAT.*

5 *In many of the Member States this has not yet been taken into account due the presence of an incumbent monopoly provider.*

In eight out of the twelve Member States, access to space segment of the International Satellite Organisations remains restricted exclusively via the national Signatory, who is the national Telecommunications Operator (TO); only in four countries is access now possible to EUTELSAT via the Signatory of those three other countries. Furthermore, only in one country have efforts been made to handle access to International Satellite Organisation's space segment via an independent office, or even directly. In effect this means that despite of the Satellite Green Paper

and the Council Resolution of December 1991, in most Member States access to the International Satellite Organsation's space segment capacity remains controlled by the national Telecommunications Operator, with whom new satellite services providers aim to compete.

With regard to access to other (non-International Satellite Organisation) systems, there are only three Member States in which this is currently not restricted in any way.

Thus, one major issue with regard to access arrangements concerns the control that the Telecommunications Operators continue to exercise over most of the access to space segment capacity in Europe, making them a bottleneck through which competing service providers must pass. There are, in several important cases[12], the main owners of national systems, and they also play a key role in controlling the space segment capacity of the International Satellite Organisations via their role as Signatories to the international agreements.

Studies undertaken[13] indicate that, even in a Member State which has implemented a liberal regulatory regime subsequent to the Satellite Green Paper, the national TO controls access to 70 to 80 percent of the potentially available space segment capacity of all satellite operators combined.

There is no reason to believe that this situation is different in other Member States; on the contrary, in many Member States, the national TO controls all access to available space segment capacity[14].

In addition, the national TO's offer satellite services via this space segment. There is an inherent conflict of interest between the roles of the national TO as a competitor in the provision of services, and as monopoly supplier of space segment capacity as an "essential facility" necessary for the provision of satellite services.

Even in the presence of some form of competition in the provision of space segment capacity, the existence of other provisions or regulations distorts the competitive provision of capacity.

It can be concluded that despite the mandate to the Member States to undertake urgent actions as a result of the Satellite Green Paper of 1990 and the related Council Resolution of 1991,

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12 DBP-Telekom (TV-SAT, DFS-Kopernicus), France Telecom (Telecom I and II, TDF), Telefonica (Hispasat), Telespazio (Italsat).

13 Studies for the Bundesministerium für Post und Telekommunication (BMPT) carried out for Germany during 1991-1992.

14 Notably Belgium, Denmark, Greece, Ireland, Italy, Portugal, Spain.

notably in broadening access to space segment of intergovernmental systems, only limited results have been achieved , and these only in some Member States.

Additionally, the adoption of competition guidelines for the telecommunications sector by the Commission, as a clarification of the legal situation in the sector in relation to Treaty obligations, and in which the issues of the space segment access are clearly identified and addressed, has not yet had sufficient impact to the extent that the guidelines have not been taken into account by Member States in this area.

In order to, among other things, facilitate the procedures for space segment capacity access, the Commission recently proposed measures in the Directive by European Parliament and Council on a Policy for the Mutual Recognition of Licenses and other National Authorizations for the Provision of Satellite Network Services and/or Satellite Communications Services. The proposed Directive foresees that national access arrangements are recognised throughout the Community.

One such an arrangement is the multiple access arrangement[15] mentioned above whereby a service provider operating in one Member State, can use the space segment leased from the Signatory of another Member State. The Directive requires a recognition of possible arrangements in other Member States for the purposes for licensing satellite service providers.

With these Directives, a first step is made towards a clear space segment access policy with regard to the prime facility required for the provision of satellite services.

However, there remains a need for further coherent Community action in order to ensure full and balanced implementation of further measures concerning access to space segment capacity.

3.2 Market pressures on the supply structure.

The liberalisation of the Community's ground segment market, as announced in the Satellite Green Paper and supported by Council, is now underway with the implementation of the various legal measures. The establishment of satellite service providers has started in a number of

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15 France, Germany, the UK and the Netherlands have established such a multiple access arrangement in their agreement of September 1992.

Member States[16] and is expected to take off at a rapid pace after the full effect of the proposed measures is felt in other countries. Revenues directly derived from the operation of satellite systems in Europe increased from 540 million ECU in 1990 to 835 million ECU in 1992. The adoption and publication of the Commission's Satellite Green Paper by itself has thus already triggered significant interest in the use of satellite services.

The establishment of new satellite earth station network operators and satellite communications services providers is resulting in a more complex, but competitive market place. However, these providers address market sectors in a very different way and the related demand differentiation for space segment capacity results in new pressures on the supply sector.

Satellite Television Broadcasting and Distribution Services.

Contrary to the original planning of the 1970's, the satellite communications sector in Europe has mainly developed on the basis of television broadcasting and distribution. Late 1992 almost 75% of all available transponders were used for television services[17]. The combined space segment revenues for the provision of television broadcasting and distribution services in Europe totalled over 450 million ECU that same year. The use of satellite systems for television has been (and is) of enormous significance for the satellite communications market:

* Firstly, it represents the largest market for all European systems in orbit.
* Secondly, national broadcasting policies may have a direct impact on the development of, and on key issues in, the satellite communications market.
* Thirdly, Community broadcasting policies have a considerable impact on the demand-side of the broadcasting market and thus, implicitly, on the satellite communications market[18].

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16 The provision of satellite services by undertakings other than the TO is now allowed in France, Germany, the UK and the Netherlands.

17 Measured in standardized transponder units of Ku-band capacity.

18 The corner-stone of these polices is the "Television without frontiers" Directive (89/552/EEC) which provides the legal framework for the cross-frontier movement of television signals. Also important in this context is the Community's digital television policy. See footnote 20.

* Fourthly, the existing telecommunications - based players, now have to deal with players from the broadcasting sector, some of whom address satellite communications on a completely different, commercial basis.

It has also been the area of television where competitive forces in the provision of space segment have first made themselves felt. Whilst the space segment used to be almost entirely provided by the International Satellite Organizations, the private satellite system ASTRA[19] has succeeded in acquiring a substantial market share of the television market. The revenues of Astra for television services was about 130 million ECU over 1992, roughly the same as EUTELSAT derived from television services.

The television market can be divided in two parts: television distribution to cable head-ends, and direct television broadcasting. The improved performance of both ground and space segment in this area is currently pushing the distribution and broadcasting market closer together, to a point where it is virtually impossible to distinguish between the two.

At the same time, new digital compression technology is arriving on the market: digital compression. The digital compression techniques are not only important in the context of the introduction of end-to-end advanced digital services[20], but also in the context of existing transmissions of PAL/SECAM signals whereby the satellite transmission path between uplink and receiver uses digital technologies.

If introduced on a relatively large scale in a short time frame, digital compression techniques may, possibly after an initial increase due to "simulcasting", reduce the demand for transponders significantly. Even if the demand for television channels grows, the demand for transponders

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19 The Societé Européenne de Satellites (SES) was founded in 1985. It was granted a 22-year license as a satellite television and radio broadcaster by the government of Luxembourg. Twenty percent of the company's capital stock is held by the Grand Duchy of Luxembourg through two public financial institutions.

SES launched its first satellite, Astra-1A, purchased from GE Astro Space (now Martin Marietta), in 1988. The Astra-1B satellite was purchased from GE Astro Space and launched in 1991. Astra-1A and Astra-1B have 16 transponders each. Astra-1C and Astra-1D have been procured from Hughes, and will have 18 transponders each. Astra-1C was launched in 1993, Astra-1D is plannned to be launched in 1994. A fifth satellite has been orderd from Hughes for launch in 1995. A sixth satellite is being considered. All Astra satellites are planned to be co-located at the same orbital spot.

Thanks to the attractiveness of its offer for space segment, and due to a lack of competitive offering, Astra has been able to charge the highest rates for its television transponders. Customers of Astra include the Sky and RTL channels.

20 See: "Council decision of 22 July 1993 on an Action Plan for the introduction of advanced television services in Europe", OJ No L 196, 5.8.93, p.48, and "Communication on a framework for a Community policy for digital television", COM(93)557, 15.11.93

may be compensated, or even decrease, as a result of the introduction of digital compression techniques.

Satellite services for business users.

As far as other satellite services are concerned, studies recently completed for the Commission indicate an expected realised demand for interactive Very Small Aperture Terminal (VSAT) services in the EC and EFTA countries of more than 50,000 terminals in the year 2000 against only a fraction of this at the moment. The growth of the realised business television demand would be equally important rising from 2000 terminals at the moment to 50,000 terminals by the year 2000, while the SNG[21] market is expected at least to double in size.

In 1992, satellite business services, including VSATs, SNG, business TV and videoconferencing generated more than 300 million ECU of revenues for service providers in Western and Eastern Europe.

The space segment capacity required to satisfy the forecast demand for interactive VSAT, business television, and SNG services is expected to be high and it may prove difficult to supply sufficient capacity of adequate technical performances. This is independent of the fact that, in general terms, surplus capacity is predicted. In particular, the demand for large coverage, pan-European space segment capacity is expected to be high. Given the projected demand, the prices for this capacity will not necessarily come down in the absence of competitive pressures leading to cost-orientated tariff structures.

Other than in the area of television services, space segment for business services is almost exclusively provided by the TO's, either via the International Satellite Organisations or via national systems. There are signs however that in this area there is increasing interest from private suppliers: the US system PanAmSat already provides space segment for this use in Europe, whilst the Orion[22] system, planned to be launched later this year, intends to offer space segment for these purposes.

In addition, the changing circumstances in Central and Eastern Europe call for the rapid and adequate implementation of satellite services.

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21 Satellite News Gathering (SNG), the provision of video and/or audio signals of a news event to a studio via satellite.

22 A US licensed, separate satellite system planned mainly for trans-Atlantic services, with US and European shareholders, among which British Aerospace and Matra.

With the changes in the former Soviet Union, space segment capacity from Russian space systems is also becoming available. This offer extends to capacity of various systems, and is also planned for a number of low earth orbiting satellite systems. Joint ventures and cooperation agreements with Western industries are aiming at enhancing the product quality of the already considerable satellite production capabilities. Increased availability of these systems over the next few years will put further competitive pressure on the space segment supply sector.

Furthermore, Article 129b of the EC Treaty, following amendment by the Treaty on European Union calls for the establishment of trans-European networks in telecommunications. Satellites are by their intrinsic nature well suited for the provision of telecommunication services on a pan-European basis, but their availability within the context of networks will need to be assured. The current progress on the establishment of a framework within which Trans-European Networks can develop, offers an opportunity to propose full use of the inherently international characteristics of the satellite medium for the development of such TEN's both as concerns an infrastructure provision as well as for services development purposes. In this context also broadcasting, mobile and personal communications satellite services are of importance.

Satellite mobile and personal communications services

Among the most promising satellite services are mobile and personal communications services[23].

In Europe, the international maritime satellite organisation INMARSAT has been the dominant supplier of satellite voice and telex services to mobile users for more than ten years. Originally INMARSAT was only intended to address the maritime mobile communications market, but in the eighties the INMARSAT system came to be used for land-mobile and aeronautical satellite communications as well. The INMARSAT system had about 20.000 (INMARSAT A) terminals[24] in use late 1992 , of which about three quarters on vessels, and the remaining quarter on land. About 25% of all these terminals are registered in European countries[25]. In terms of ownership,

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23 See "Towards the personal communications environment: Green Paper on a Common Approach in the field of Mobile and Personal Communications in the European Union", COM(94)145

24 Inmarsat A terminal is the original terminal used by Inmarsat for its services. In January 1991, the Inmarsat-C terminal was added to the range t. This latter category of terminals is used for low data-rate text and data services only. At the end of 1992 there were approximately 3.500 Inmarsat-C terminals in use. At the beginning of 1993, the Inmarsat-M (portable satellite phone) service was launched. Inmarsat has also offered an aeronautical satellite communications service since 1990. Inmarsat-B, the digital successor to Inmarsat-A was introduced in late 1993, and future plans include the introduction of Inmarsat-P, a projected handheld voice device.

25 The largest numbers of registrations were (late 1992) in the UK (867), Norway (674) and Greece (411).

European TO's represent a significant percentage of total ownership (approximately 40% of the total in December 1992[26]).

Not only in voice, but also in data, and other non-voice applications service providers have started to focus their attention on the use of satellite systems for low data-rate mobile services via satellite. In Europe EutelTracs (Eutelsat), INMARSAT-C, and the independent Traksat's service are examples of these.

In this changing context, the usage of satellite systems for mobile services may launch yet another period of revolutionary changes, brought about by new concepts for personal communication services via satellite[27]. Already in the INMARSAT system, terminal sizes and prices are decreasing. The new systems envisaged offer a wide variety of technical solutions in terms of systems power, architecture, facilities or use of orbits (Geostationary Orbit (GEO), Low-Earth Orbit (LEO), Highly Elliptical Orbit (HEO), or others). One thing all these systems have in common is their goal to deliver voice and/or non-voice services to customers via mobile, hand-held terminals.

The forecasts for these new types of "personal communications via satellite" vary widely, ranging from 2 million subscribers world-wide to more than 20 million. No matter what the exact size of the market will be, it would seem, that, if and when these new satellite PCS[28] systems commence service later this decade, they will completely change the scale of the satellite mobile market: from tens of thousands of users to millions.

Already steps are being taken by INMARSAT to respond to these significant market changes, and the organisation is now reviewing its status as a governmental organisation with an eye to the introduction of private capital.

The changes in the commercial and technological environment for all satellite applications, and the resulting change in the supply structure, call for a review of the principles on which the provision of space segment thusfar has been based.

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26 Status for end December 1992. EC countries represent slightly more than 30% in terms of investment shares. The other main European investor is Norway with an investment share of slightly more than 10%.

27 See: "Communication from the Commission and Proposal for a Council Resolution on Satellite Personal Communications", COM(93)171, 27.04.93

28 Personal Communication Services (PCS)

3.3 Fragmentation of the supply

Both from studies conducted in individual Member States introducing liberal satellite service licensing regimes, and from studies conducted for the Commission, it appears that the overall economic benefits, arising from the introduction of the Community's liberal satellite communications policy, are substantial. These benefits represent new complementary satellite services, addressing markets whose demand is not presently satisfied by the national Telecommunications Operators. With the exception of satellite PCS, the overlap with non-satellite services is expected to be small, as such specialised satellite services address specific end-user communities, in contrast with the traditional terrestrially based TO services which, in general, address undifferentiated demand of the public at large and the wider professional community.

As witnessed in those Member States[29] where more liberal regimes have resulted in the creation of independent satellite service operators, competitive service provision has brought important economic benefit, as well as a proliferation of satellite service offerings. Some of these new satellite service operators already have such demand for services that their required space segment capacity requirements exceed those of numerous International Satellite Organisations' Signatories.

In order to achieve its full potential, however, the satellite market needs to further develop economies of scale, which will reduce end-user prices. A major barrier to this, is the current fragmentation of the European satellite market.

The markets addressed by the different satellite applications are quite diverse. The satellite TV market is not uniform but segmented according to linguistic zones, though the use of multi-channel soundtracks can overcome this problem to some extent[30]. The VSAT/business services market requires a broad coverage but the predicted size of the market, even under the most optimistic scenarios, does not require abundant numbers of transponders. The market for military and governmental services is largely national, while the market for international trunk connections requires specifically tailored space segment. And last, but not least, the mobile satellite services market may be on the verge of expanding from a market of several tens of thousands of terminals into a mass market of millions.

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29 Germany, France, Netherlands, United Kingdom

30 Euronews, the European-based news channel, is broadcast in English, French and German with subscribers owning stereo TV's being able to select the appropriate sound channel.

The use of multi-function space segment (for fixed, broadcasting and/or mobile services from one satellite) may seem attractive from the perspective of a single country, especially a smaller country, as it would limit the necessary investment. From the perspective of a satellite operator however, this leads to considerable inefficiencies in economy due to technical constraints.

The geography of Europe, contrary to that of the continental U.S., adds a level of complexity for satellite operators. The use of shaped beam antennas and related costly hardware has proven necessary for many operators in order to prevent overspill into non-addressable markets, and in order to avoid frequency interference hazards. The resulting increases in costs for the satellite systems are a heavy burden in the face of competition.

Entry of new satellite systems for the provision of satellite space segment capacity in the Community has been largely agreed on an ad-hoc basis todate. The number of satellite operators currently numbers 14 with at least another 2 entrants planned[31], and amongst these only 4 satellite operators are not national Telecommunications Operators or consortia involving TO participation[32].

The fragmentation of the satellite operations industry has led to high prices while the economic sustainability of each individual satellite system is low, especially for the satellite systems which, to date, only address a limited national market.

This proliferation of satellite systems finds its cause in satellite policies pursued primarily with a purely national orientation. The absence of a policy at Community level, or at European level for that matter, has led to Member States to give priority to policies of national interest.

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31 INTELSAT, EUTELSAT, Inmarsat, France Telecom (Telecom-I and II, and TDF), DBP Telekom (DFS-Kopernicus, TVSAT), Telespazio (Italsat), SES (Astra), NOTELSAT(Tele-X), Norwegian Telecom (Thor), Alpha Lyracom (PanAmSat), Columbia (TDRSS), Intersputnik, Hispasat and Turksat. Orion and RAI (Sarit) are planned new entrants, as well as are various former Sovjet systems.

32 The European (Luxemburg) system ASTRA, that now holds more than 25 % of the satellite TV market in Europe (1992 revenues of 130 million ECU out of a total European broadcast market of 451 million ECU).

The American systems Alpha Lyracom and Columbia.

The planned system Orion with its shareholders: British Aerospace, Matra, General Dynamics, Nissho Iwai, STET, Kingston Communications and Com Dev.

As far as national satellite systems are concerned - operated by the TO's under their direct control - the provisions concerning "economic harm co-ordination" in the constituent instruments of the International Satellite Organisations constitute, in principle, a significant entry barrier[33].

The lack of a clear entry policy at Community level, which encompasses both private and national systems in addition to the intergovernmental systems, has led to a proliferation of relatively small, mostly national, satellite systems and a resulting lack of economies of scale, both in terms of orbital and frequency use, and in terms of industrial development.

The financial viability of relatively small national systems addressing limited markets is, to a large extent, dependent on national government financing and support. The question arises whether this continued support has the desired effect on the development of the market for satellite services and equipment in general, as well as being consistent with Community law. This support has in the past always led to closing of the national market for other satellite systems (other than the International Satellite Systems), with the result that reciprocal restrictions were imposed by other Member States, so that national systems were unable to address other markets besides their limited national market.

A national satellite system has, in a number of Member States, been the key element of a national industrial policy aiming to stimulate the national space and satellite telecommunications industry. However, in order to make that policy a success, development of the ground segment market is of utmost importance as it is this market that provides the industrial impetus and sustainability in the long term. The national systems need to be able to access this ground segment market, not only at national level, but also at a wider Community level in order to be able to support pan-European services, which, by nature, have an international dimension.

Experience of the difficult financial situation of virtually all national satellite systems around the globe leads to the conclusion that a restructuring of the industry may take place in the future, including within the Community.

An uncontrolled shake-out of the sector however, could well be to the detriment of the industry as a whole, and to an intergovernmental system like EUTELSAT in particular. The financial commitments of national Telecommunications Operators in systems operated by the International Satellite Organisations, notably that of EUTELSAT, are substantially smaller than their stakes in their own national system(s). Therefore the survival of national systems can be

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33 Although these provisions have actually never led to formal objections against the establishment of private systems, they are still seen as a significant delay to the introduction of new capacity and innovative services, as well as providing Signatories with confidential information concerning a competitor's activities.

expected to be the key financial and political priority of any national Telecommunications Operator and its Government.

Studies undertaken for the Commission and the European Space Agency indicate that a consolidation of the satellite operations industry is to be expected in the medium term in the Community, probably as a result of decisions on follow-up generations of satellite systems over the next few years.

These studies indicate that full implementation of the Satellite Green Paper liberalisation proposals, including those for space segment:

* could trigger a fall in the price of space segment to users by some 25-30 percent;
* will allow space segment operators to operate profitably, if opportunities are created for consolidation and scale effects flowing from the European space segment;
* will have maximum effect if the space segment operations industry is allowed to consolidate at the same time that liberalisation is introduced.
* provide an opportunity for the European space industry, if a significant degree of consolidation is achieved.

Continuing the current framework of nationally oriented policies would be detrimental to the European operations industry as a whole, as an increasingly fragmented variety of national systems would emerge, operating on an effective monopoly basis in small national niche markets segments, as well as increasing pressure on EUTELSAT in particular, as national systems try to survive individually.

Currently, EUTELSAT is the primary source for space segment capacity for interactive VSAT/business applications, as well as for a majority of SNG applications. As a consequence, the future of EUTELSAT is becoming a pivotal issue in the space segment supply market.

3.4. The International Satellite Organisations.

3.4.1 Introduction

The International Satellite Organisations, INTELSAT, INMARSAT and EUTELSAT[34], constitute an important element in the development of a Community satellite communications policy and its related regulatory framework. Not only do they offer 66 percent of the available space segment capacity in Europe, they are also of particular importance in the context of pan-European telecommunications services.

The Interantional Satellite Organisation's are unique in being international organisations, set up on the basis of a treaty under public international law, operating on a commercial footing. On the one hand, the very existence of the Conventions and Operating Agreements is an acknowledgment of the particular difficulty and complexity of providing satellite services on a larger, international scale. On the other hand, the operations of the International Satellite Organisations as major, if not dominant players in the market, are now difficult to accommodate under normal regulatory control mechanisms.

Nevertheless, the fact that the International Satellite Organisation are dominant players in the market, requires that a Community satellite communications policy articulates their role, as well as their place, in the evolving regulatory framework. This is of importance in relation to establishing a level playing field, for the acceptance of the International Satellite Organisations by the other players in the market, as also in relation to the future of the organisations themselves.

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34 The intergovernmental structures of INTELSAT, Inmarsat and EUTELSAT are very similar, based on the way the INTELSAT statutes were conceived in the beginning of the sixties. Their constituent instruments encompass two international agreements, the Convention and the Operating Agreement (In INTELSAT these are called Agreement and Operating Agreement, respectively. For ease of reading this document will call them Convention and Operating Agreement). In all three organisations, States (known as "Parties") signed the Convention, whereas the Operating Agreement was signed either by governments or by a singl;e designated public or private telecommunications entity (known as "Signatory"). Within each of the Community Member States, the Signatory is the national Telecommunications Operator (TO) for all three organisations (with the exception of Luxembourg and Ireland in the case of Inmarsat, as they are not members). Ratification of the constituent instruments of the three organisations has taken place by all national parliaments concerned.

Table 3

Participation of Member States and shareholdership of Community Signatories in Intelsat, INMARSAT and Eutelsat (1992)

Member States	Signatory	Investment Share (%) Intelsat	INMARSAT	Eutelsat
Belgium	Belgacom	0.73	0.87	2.62
Denmark	Tele Danmark A/S	0.59	2.00	2.04
France	France Telecom	3.68	5.41	19.45
Germany	DBP Telekom	4.19	2.77	14.50
Greece	OTE	0.63	2.49	0.05
Ireland	Telecom Eireann	0.20	-	0.19
Italy	Telespazio	2.80	2.74	8.10
Luxembourg	Administration des P&T	0.05	-	0.05
Netherlands	PTT Nederland NV	1.22	2.51	3.60
Portugal	CPRM	0.64	0.26	1.10
Spain	Telefonica	3.09	1.84	17.12
UK	BT	11.60	11.74	15.86
	Total	29.42	32.63	84.68

It would seem that, due to the international conventions in place and the international obligations resulting thereof, certain rights remain with the International Satellite Organisations. However, in accordance with Treaty, international obligations entered into by the Member States after the date of entry into force of the Treaty must be consistent with Community policy. Such a privileged position for the International Satellite Organisations should not result in barriers, preventing licensed service operators (also those other than the Signatories) from accessing the space segment for the purpose of providing services, in particular in terms of access to space segment capacity.

At the time of the creation of the International Satellite Organisations[35], the Signatories were mostly part of the Government as a department of a Ministry.

One of the principal motives for the creation of the International Satellite Organisations was the *notion of availability of space segment capacity on a non-discriminatory basis*[36]. With the

35 INTELSAT was established in 1964, Inmarsat in 1979, and EUTELSAT in 1985.

introduction of the separation of regulatory and operational functions and the subsequent split off of telecommunications administrations into separate corporations, the continued adherence to this notion is becoming complex. The Member States' role as Parties in the International Satellite Organisations is therefore becoming of increased importance: they need to guarantee that in the new situation all economic operators, whose need for space segment capacity is vital in order to be able to sell their products, have non-discriminatory access to the assets.

Over recent years, and under the influence of the proposals of the Commission's Satellite Green Paper, it has been recognised that certain provisions of the constituent instruments of the International Satellite Organisations need changing or, as a minimum, need an agreed and flexible interpretation, to take account of the evolving telecommunications policies and, in particular, of the application of competition rules at the root of the Union's telecommunications policy.

In response to the new market requirements, fundamental changes and interpretation of their constituent instruments are being contemplated within the three International Satellite Organisations to ensure their continued adaptation to the new environment. INMARSAT, for instance, is now investigating the options for changing its financial basis towards a quasi-private company.

All three International Satellite Organisations have set up special working parties to study the issues. This examination is focusing on articles concerning "economic harm" which oblige competing satellite operators to coordinate their independent satellite systems before they are put into operation with the aim of establishing potential economic harm to the International Satellite Organisations[37].

Other provisions under review concern, *inter alia*, technical coordination of competing systems, access to the space segment capacity, approval of satellite earth stations, utilisation charges, and investment share determination.

However, limited progress has been achieved to date in terms of amending the constituent instruments, or agreeing on further action.

As a consequence of this limited progress, unilateral or multilateral measures are being implemented in some Member States on an interim basis in order to try and alleviate the most pressing conflicts of interest. This is in itself already an indication that urgent action is required.

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36 Preamble to the INTELSAT Agreement: " .. considering the principle [] that communication by means of satellites should be available [] on a [] non-discriminatory basis".

37 INTELSAT Agreement Article XIV, Inmarsat Convention Article 8, EUTELSAT Convention Article XVI.

3.4.2. National implementation of the constituent instruments.

In all Member States, the implementation of the International Satellite Organisations' Conventions and Operating Agreements has resulted in the appointment of a *single* national Signatory, the national TO: which was consistent with the monopolies which existed at the time the Conventions were adopted.

However, some Member States, in accordance with the Satellite Green Paper, have put in place additional arrangements which aim to alleviate conflicts of interest inherent to the TO being the sole Signatory to the International Satellite Organisations.

In the United Kingdom, Mercury Communications plc. can deal directly with INTELSAT and EUTELSAT, as a "virtual" Signatory, instead of passing via BT. Although understandable at the time, this arrangement may have to be reviewed as new UK licensees can not benefit from similar arrangements.

In the United Kingdom furthermore, a Signatory Affairs Office[38] was created in 1989, with the aim to take away from British Telecom those administrative functions connected with providing access arrangements for other, specialised satellite service providers. This arrangement has drawn considerable attention as a potential short-term alternative, pending changes to the International Satellite Organisations' Treaties. However, a recent review of the SAO's operations by the UK's Office of Telecommunications (OFTEL), revealed that the arrangements are considered "fundamentally unsatisfactory"[39], and OFTEL suggests that the objective of direct access must be facilitated. This has subsequently been achieved for access to INTELSAT.

On the basis of data available at the time, the Council Resolution of December 1991 considered the creation of Signatory Affairs Offices in all Member States as an initial step to develop effective procedures in improving and broadening access to the space segment capacity of the International Satellite Organisations. It would appear that, while some Member States are now considering this option, they may wish to take into account OFTEL's conclusions.

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38 The Signatory Affairs Office (S.A.O.) is a "walled-off" division of BT dealing with applications for the use of space segment. It is intended to operate independently from the commercial divisions of BT (separated by a "Chinese wall").

The option of the creation of S.A.O.'s was taken account of in the Satellite Green Paper, and recommended in the Council Resolution of December 1991.

39 "The operation of BT's Signatory Affairs Office and Competition in the Satellite Servies Sector", OFTEL, July 1993, paragraph 2.1.

In June 1992 EUTELSAT informed the Commission of discussions on possible improvements in access arrangements through either SAO's or via the so-called multiple access arrangements, where licensed operators can also obtain space segment capacity through other Signatories than the Signatory in which they are located. On the basis of data available at the time, the Commission replied that, in its view and with regard to the Community's competition rules, both options, i.e. the introduction of competition (e.g. via a "multiple access" arrangement) and the introduction of structures to avoid conflicts of interests (e.g. via an SAO arrangement) could remedy the competition problems raised by space segment access.

In four Member States[40], such a "multiple access" arrangement has now been worked out whereby a licensed operator may apply to any of the Signatories of the four Member States in order to obtain space segment capacity. The precise impact of this arrangement is still not clear. However, it appears that in some cases the agreement is subject to national interpretation[41].

The principle of multiple access is now integrated in the proposed Directive on a policy for the mutual recognition of authorisations for satellite services[42].

Organisations in countries which are not members of the International Satellite Organisations, can nevertheless access their systems as long as they have the authorisation of their national regulatory body. The latter usually notifies the International Satellite Organisation of its authorisation. In these cases, more that one operator can be authorised to access the systems[43]. This has led to a situation where in some cases access to EUTELSAT is currently easier to achieve in non-member countries than in Signatory states.

3.4.3. The role of the current Signatories in the International Satellite Organisations.

As mentioned, the role of the Community Signatories in the International Satellite Organistions has changed considerably over the years. The implementation of a competitive telecommunications environment has led to conflicts of interest for Signatories in their function of dominant provider of space segment capacity, their role as competitive or substitute provider of

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40 France, Germany, the UK and the Netherlands have established such a multiple access arrangement in their agreement of September 1992.

41 In Germany for example, broadcasting services do not fall under the agreement.

42 "Proposal for a Directive by European Parliament and Council on a policy for the Mutual Recognition of Licenses and other National Authorizations for the Provision of Satellite Network Services and/or Satellite Communications Services", COM(93)652

43 So-called Duly Authorised Telecommunications Entities (DATE's). Russia has for example five DATE's accessing EUTELSAT capacity.

satellite services, and/or as (partially) substitute regulator. These conflicts of interest are seriously threatening the development of the satellite communications sector as the newly licensed private operators find considerable obstacles to acquiring the essential facility required for the provision of satellite services, namely space segment capacity.

Current interests of Signatories in the International Satellite Organisations are diverse.

In the case of INTELSAT and INMARSAT this interest is clearer and also more narrowly focused. INTELSAT provides capacity mainly for the basic provision of intercontinental public voice services and intercontinental TV contribution and distribution links, while INMARSAT is considered by many Signatories to be a lucrative investment, as the effective monopoly provision of mobile satellite services in their countries enables them to demand considerable mark-ups.

As regards EUTELSAT, of prime importance in the European context, the Signatories' interest combine four elements in which EUTELSAT is seen as:

* a provider of space segment capacity,
* a financial investment,
* a player in the telecommunications and broadcasting market,
* a vehicle for national industry policy.

As a provider of space segment capacity, EUTELSAT can be anything from a major source of capacity, to a certain risk to satellite investment interests and/or terrestrial networks investments. The former seems mostly true for the smaller nations, while the latter seems to hold for some of the larger countries which are also the biggest investors in EUTELSAT.

As regards financial investment, EUTELSAT's return on equity is reasonable and relatively secure but not excessive, while on the other hand, the shares are not tradable, limiting the flexibility of the owners. The link of the investment share to the utilisation however, is becoming a burden, certainly for Signatories with financial liabilities related to the use of space segment by licensed private operators.

In the broadcasting sector, EUTELSAT's biggest Signatories, representing around 75 percent of the investment, have significant interests in other satellite systems[44]. In the telecommunications sector, EUTELSAT seems to be perceived by some as a threat as its capacity could be used as

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44 The latest event reported by the trade press is DBP Telekom's (the German EUTELSAT Signatory) association with SES Astra.

the transmission medium to assist new operators to enter the European telecommunications market in line with the new liberal regime environment.

Some third country telecommunications operators are entering into special arrangements with member governments either as nominated Signatory or as Duly Authorised Telecommunications Entity in new member countries of the International Satellite Organisations. This in itself could already be sufficient to call for a change in the arrangements.

As a vehicle for industrial policy, EUTELSAT has been set up in the past as a symbol of European technological capabilities in high-technology in general, and space technology in particular[45]. However, the ongoing privatisation and "corporatisation" of the national operators means that industrial policy considerations are less important for them than for the European space industry which has expressed strong reservations concerning the Signatories' policies in this area[46].

Studies undertaken for the Commission indicate that, in principle, EUTELSAT would not have any problems in remaining an important and competitive player in the market. However, the structural problems related to EUTELSAT's institutional basis, the role of the Signatories therein, and the possible inabilility for major reform as a result thereof, calls for political initiatives by Member States to address EUTELSAT's future.

3.4.4. Community rules and policies.

The provisions under which the International Satellite Organisations operate are contained in their constituent instruments, the Convention and Operating Agreement, as well as in their operations guides and tariff manuals. In addition, there are bilateral and multilateral agreements between Parties and/or Signatories as well as communications from individual Parties to the executives of the International Satellite Organisations which concern implementations of specific measures at national level (E.g. the Signatory Affairs Office in the United Kingdom, and the four country agreement between Parties and Signatories of the U.K., France, Netherlands and Germany).

In analysing these documents, agreements and the ongoing discussions of the various working parties against the background of the Community's satellite communications policy positions of

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45 ESA was responsible for the OTS industrial contract and launch, and the launch and construction of the first generation of six EUTELSAT satellites.

46 ESA report: Europe at the Cross Roads: The Future of its Satellite Communications Industry, 15 September 1993.

the Satellite Green Paper and the Council Resolution on satellite communications, the following emerges:

- the separation of regulatory and operational activities has by and large not yet been achieved;

- the interpretation of the provisions of the constituent instruments often results in differences in national implementation, and continuing conflicts of interest for the Signatories;

- Community Member States are not acting in these bodies on the basis of a common position in order to advance changes and agree on a flexible interpretation of the constituent instruments in line with the positions of the Satellite Green Paper and Council Resolution on satellite communications;

- Two major goals of the Satellite Green Paper, as endorsed by Council, have not yet been achieved:

  * *Free (unrestricted) access to space segment capacity*;

  * *Full commercial freedom for space segment providers, including direct marketing of satellite capacity to service providers and users*;

- The full review of the EUTELSAT constituent instruments, as called for in the Satellite Green Paper, has only been partially undertaken;

- Progress in adapting the provisions of the constituent instruments of the International Satellite Organisations to take a more flexible approach, supporting the overall goal of liberalisation, has been slow and structures are still not sufficiently responsive to market needs in the Community;

- Whilst national measures interpreting the constituent instruments of the International Satellite Organisations, notably INTELSAT, have been adopted by certain of their members, such as the establishment of multiple signatories[47], Community Member States have not followed suit.

Now that liberalisation and harmonisation measures within the framework of the Community's satellite communications policy are being implemented, the provision of space segment capacity by the International Satellite Organisations within the Community needs further and rapid action.

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47 More than one Signatory per country on the basis of a specific, national, arrangement under flexible interpretation of the constituent instruments.

As either changes to provisions of the constituent instruments, or related unilateral or multilateral arrangements must not affect compliance with the EC Treaty, in particular with the competition rules[48], the application of these Conventions in accordance with the Treaty must flow from a common position amongst Member States. A coherent position at Community level is therefore essential to guide such a development.

Within Europe, the issues mentioned above are particularly pressing in the context of EUTELSAT, the European Telecommunications Satellite Organisation.

3.4.5 The future of the International Satellite Organisations.

International Telecommunications Satellite Organisation - INTELSAT

The pressures which are put on INTELSAT in the form of separate satellite systems competing head-on, and in the form of cable systems of considerable capacity, are impacting the organisation. The success of the INTELSAT organisation, and the way in which it has promoted satellite communications, has been a major factor in the development of the satellite sector. However, the original basis for the operation of the organisation has been replaced by a realisation that its success can only be maintained if adapted to a competitive environment.

It has been argued that the current changes in INTELSAT, achieved on the basis of a majority view of over 120 countries, are substantial. Nevertheless, INTELSAT has substantial assets and operates on a relatively stable market in which it has a dominant position. Although separate systems have started to divert some of this business, INTELSAT's market position allows it to accommodate relatively easily new policy directions.

The recent interpretations of the INTELSAT constituent instruments by some of its members indicate what can be achieved at national level, without revising parts or all of these legal instruments. This new flexibility, however, has until now mainly been used by nations outside the Community, namely Argentina, Chile, Australia and others. In these countries, national telecommunications policy requires recognition of the notion of multiple signatories, as well as direct access to the organisation.

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48 See: "Guidelines on the application of EEC competition rules in the telecommunications sector", Section VIII, OJ No C 233, p.2, 06.09.91.

Based on the schedule for liberalisation of public voice services set out in the Council Resolution[49], the Community must now review the manner in which satellite service operators are allowed to participate in INTELSAT. The current interpretation of the constituent instruments by other nations shows that there is little standing in the way of a more flexible interpretation by Member States. However, any such interpretation will have to be achieved on the basis of Community wide implementation and harmonisation.

International Mobile Satellite Organisation - INMARSAT

The provision of space segment for mobile satellite services is becoming more and more exposed to competition. Until recently, only INMARSAT provided mobile satellite services, but now EUTELSAT has started to provide a service, while also former Soviet satellite systems are engaging in this (potentially) lucrative market. Furthermore, a communications payload developed by the European Space Agency might fly later in the decade to provide mobile services across Europe.

With the advent of satellite personal communications services, the provision of space segment develops a different character as competition might develop between geostationary and non-geostationary - notably low earth orbiting - satellite systems. The effects of this, if any, will not be known for some time[50].

The provision of competitive mobile satellite services has various aspects which merit special attention.

Firstly, the level at which such competition could take place must be addressed. This could be both in the provision of space segment and in the provision of the mobile satellite services itself.

INMARSAT through its Signatories, in effect, provides only services, and not space segment capacity as such. The only provision of space segment is that for domestic use, but INMARSAT has declined a lease policy with regard to the provision of space segment for international,

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49 "Council Resolution of 22 July 1993 on the review of the situation in the telecommunications sector and the need for further development in that market", OJ No. C 213 p.1, 6.8.93.

50 See: "Communication from the Commission and Proposal for a Council Resolution on Satellite Personal Communications", COM(93)171

roaming services. However, by virtue of the lease policy for national use, both AMSC (U.S.A.) and TMI (Canada) have been able to start up services[51].

INMARSAT has now embarked on a path of reviewing its tasks (and commercial goals) in the light of market and technological developments. This may lead, subject to the outcome of the review, to moves towards privatisation of INMARSAT. Without prejudging the outcome of such a review, it would seem that fundamental changes are required to align the organisation's policy with the changing environment, in particular with regard to potential competitors.

The results of a special working group involving both Parties and Signatories could well be instrumental in pointing the way to a more commercially oriented organisation and have an important effect on the other organisations in this respect.

An element of considerable importance in this context is the development of a new model for the functioning of a possibly (partially) privatised organisation under cover of an intergovernmental Treaty instrument. The separation of regulatory and operational activities achieved as a result, might, as a logical subsequent step, lead to a new form of global cooperative regulatory oversight, restricted to those areas where such oversight is strictly necessary, over all the players in the global mobile satellite communications market.

European Telecommunications Satellite Organisation - EUTELSAT

Given the analysis provided earlier, it would appear that EUTELSAT's future needs careful consideration and will have to be assured on the basis of substantial common political initiatives. The future of EUTELSAT constitutes a major element of any European approach to space policy. Service providers, equipment industries, and users' needs require maximum exploitation of EUTELSAT's assets.

Firstly, EUTELSAT could fulfil an important public service role in the provision of satellite services in the wider European context. This relates, for example, to the provision of capacity for TDMA[52] voice services; for interconnection of trunk and light traffic voice services in Central and Eastern Europe; in the context of Trans European Networks; as well as the provision of capacity for pan-European VSAT services.

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51 The American Mobile Satellite Corporation (AMSC) and Telesat Mobile Inc. (TMI) both lease Inmarsat space segment for the provision of their services. Both firms plan to launch their own satellite systems in 1994.

52 Time Divison Multiple Access, a method of access to a satellite by utilising its capacity on a time sharing basis.

The political role as a catalyst in the new East-West relations in Europe may also be seen as a public service role, in order to try and assist in the stabilisation of the new democracies and to facilitate economic developments.

In addition, there are, conceivably, other important missions under more general policy considerations.

One of these is related to the Community's policy on advanced television which identifies as indispensable the need for predictable availability of space segment capacity with the proper technical characteristics.

But also, the possible extension of the scope and depth of the past role of EUTELSAT in European space industrial objectives will need evaluation.

In general, the current assets and its potential market base are an important element in efforts to stabilise EUTELSAT. However, its current institutional base works to its disadvantage and limits its ability to react according to normal commercial principles. On the basis of the considerations above, and as part of overall Community satellite communications policy, political initiatives need to be developed to guarantee the future of Europe's most important provider of space segment capacity.

3.5. Non-discriminatory access to orbit and related frequency resources.

A major influence on satellite communications in Europe is brought about by the international coordination procedures for orbital positions and the related frequency resources administered by the International Telecommunication Union (ITU)[53], of which the Community Member States are members.

The radio frequency spectrum and the various satellite orbits, including the geostationary satellite orbit, are recognised as finite natural resources to which all countries have, in principle, equitable rights of access. All radio communications services using these resources must comply with certain coordination procedures designed to ensure access without harmful interference to other services.

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53 The ITU regulations with regard to orbital position and frequency bands are geared to the usage and applications for usage by individual member countries. As set out, this implies that the application for usage passes via the national government, and that this application has to be coordinated with other national governments where this application could lead to interference.

The ability to satisfy the increasing demand for these resources in a non-discriminatory fashion will depend on the ability to adopt measures to maximise the capacity and efficient use of these finite resources within an environment of increased competition.

The fact that the ITU procedures are based on national applications, also in the case of private systems, and that there is no prior coordination at Community level, is a major reason for the fragmentation of the offer of space capacity in Europe.

A continued fragmentation of these resources will mean that in the long run the collective Community requirements may no longer be met: experience in the European satellite broadcasting sector has already shown that coherent action is required to achieve an efficient management of these resources, taking due account of the use of the resources by other continents sharing the same orbital resources as Europe, notably Africa.

Also, space activities are normally regulated either by specific national law implementing international law principles[54] or may be subject to case-by-case treatment. Authorisation or licence obligations under national law for the establishment of satellite systems and the use of orbit and frequency resources may include a variety of criteria linked to financial, technical, operational and other requirements. The diversity of national laws in this area in EU Member States now requires Community-wide implementation of the applicable international law principles on a transparent and non-discriminatory basis, and in line with Community law.

A careful and balanced approach towards Community action is therefore essential as equitable access to orbital and frequency resources by all Member States within a competitive environment must be ensured.

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54 With the exception of Portugal, all EU Member States are bound by the following international Treaties regarding space activities and which have been adopted by the United Nations:

"Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies", done at Washington, London and Moscow, January 27,1967

"Convention on International Liability for Damage caused by Space Objects", done at Washington, London and Moscow, March 29, 1972.

"Convention on the Registration of Objects Launched in Outer Space", New York, January 14, 1975.

3.6. Future regulatory coordination in the satellite sector.

With the Telecom Review and the subsequent Council Resolution of 22 July 1993, a clear time-table has been drawn up for regulatory change in the Community. As a result, the Commission is requested to prepare, before 1 January 1996, proposals for the adjustments necessary to the Community regulatory framework to promote a liberalised environment.

Studies undertaken for the Commission as well as for the European Space Agency over recent years, have suggested that serious consideration should be given to the strengthening of regulatory coordination in the satellite sector, combined with substantive means to undertake a coordinated approach to the formulation and/or implementation of satellite communications policies in the Community.

In its response to the Satellite Green Paper, coordinated by ESA, 150 representative industry representatives stated in their submission to the Commission that " .. *there is strong support for an independent and efficient European regulatory authority (EURO-OFTEL or OFSAT) to ensure fair play* ..", as well as ".. *many .. advocate the creation of a European equivalent of the FCC in the USA*..".

The industry voiced its concern that national orientation, policies and procedures would be detrimental to the development of the satellite communications sector as a whole. In addition, it was felt that, as a minimum, " .. *the Commission itself should be responsible for ensuring access to orbital and frequency resources* .. ".

A further ESA-led satellite and related communications industry initiative is now underway. It is investigating the current state of affairs in the satellite communications sector as a whole, with the aim of making proposals to ESA and the Community Member States, the Commission, industry itself, EUTELSAT and its members, as well as ETSI.

One of the key results of the initiative to date is a determined appeal for the management of satellite communications issues at a European level, and the strengthening of European regulatory coordination for the sector.

While the creation of new regulatory mechanisms will have to be discussed in the more general context of the adjustment of the Community regulatory framweork set out above, an immediate response is needed to the call for intensidying regulatory coordination in Europe in the satellite sector, in particular with regard to space segment issues

3.7. The competitive position of the European satellite communications industry

As a result of considerable efforts by the European Space Agency and relevant national space agencies, the European space industry has been successfully built up over the last 20 years. A significant share of the satellites covering Europe has been manufactured by European manufacturers.

However, some of the new private systems covering Europe, both European systems (Astra), and third country systems (PanAmSat) have selected U.S. suppliers for their satellites. Additionally, the more recent developments of satellite mobile communications, would seem to indicate a strong non-EC dominance of this now evolving new industry, limiting itself not only to the manufacturing of satellites, but extending to services as well. The concept of vertical integration of the satellite operations industry and the satellite service industry elsewhere could well threaten the position of European industry. The Commission has already drawn attention to these developments in the context of satellite personal communications services.

This causes particular concern, since European industry is confronted with many barriers when seeking access to the markets of those third countries of which operators are among the most active on the European market.

In this context also, the strategic importance of space in general and of satellite communications in particular is considerable for a number of the Community's trade partners. The resulting civil and military government support to the satellite communications industry in these countries is undeniably of such a magnitude so as to result in distortion of competition. The widely acknowledged dominance of the US satellite communications industry is the clearest example of this support. Furthermore, issues such as state-aids, access to financial resources, tax immunitites, and related matters further distort competition. Given that mainly the global market is of importance to the satellite communications industry and the fact that the US market is effectively closed, the provision of third country satellite systems and services might also require a reflection under the Community's competition rules.

Directly related to this concern regarding third country provision of satellite systems and services in Europe, is the issue of competitiveness of the European space industry. With the scaling back of government support for large space research projects of a more general nature, the commercial telecommunications sector has become even more important. Increasingly, however, the European industry is confronted with fierce competition both inside and outside of the Community.

The Commission has outlined its general policy line with regard to the European space effort in the Communication entitled "The European Community and Space. Challenges, Opportunities

and new Actions"[55]. Therein it was stated that the Community's contribution should support and complement the role of ESA and the Member States, in particular their national space agencies.

These contributions could, *inter alia*, take place in the context of R&D programmes of both ESA, national agencies, and the Community. The concept of Trans-European Networks may offer a further framework for appropriate support.

With the establishment of a new regulatory framework, a key step has been made towards developing a viable market base for the European space industry. The coordination of programmes at Community level could add substantially to the impact of this development on the European satellite communications industry and its competitive position on the world market. This is all the more important with the slow-down of traditional space markets and the increase in competition in new areas, such as satellite personal communications.

3.8. Conclusions

Although improvements have been achieved, the lack of sufficient progress on space segment issues, combined with the increasing pressure from the market place, means that new initiatives are required to ensure that the new satellite communications developments, emerging as a result of the Satellite Green Paper, are not hampered by bottlenecks flowing from the provision of - and access to - space segment capacity.

It is also evident from the current situation, that the lack of a comprehensive policy, as well as the divergence in national attitudes, has had a negative impact on the supply side of the market. Investments in satellite systems, especially in new technologies, require stable policies and stable regulatory frameworks as a solid base for long term planning, development and financial risks, especially now that new systems are developing[56]. The lack of this solid base currently presents a major threat to the position of the European space industry as a whole.

The next chapter indicates the policy lines which, according to the Commission, should be followed to improve the current situation, as decribed above.

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55 "The European Community and Space. Challenges, Opportunities and new Actions", COM(92) 360 final

56 See: "Communication from the Commission and Proposal for a Council Resolution on Satellite personal Communications", COM(93)171, 27.04.93

4. POLICY LINES TO BE FOLLOWED

4.1. Requirement for action.

The market for space segment capacity in the Community is characterised by the presence of multiple and diverse satellite systems with either national, regional, or international coverage. This market continues to be fragmented and access to it continues to remain limited.

Main requirements for change result from the following:

- The fragmented nature of the European space segment market does not provide the European satellite industry with a viable base for world-wide competition, particularly as new systems are emerging; nor does it satisfy the requirements for trans-European networks. The Treaty on European Union now imposes special obligations on Member States to act in common in order to ensure the establishment and development of trans-European networks.

- The constituent instruments of International Satellite Organisations (Conventions and Operating Agreements) and/or their interpretation must be adjusted to the overall European telecommunications environment and to the schedule leading to full liberalisation of services by 1st January 1998. This requires, in particular, an urgent review of the interpretation of the constituent instruments of Eutelsat, given the special responsibilities of the Member States in this area.

- The evolving competitive market structure in the global space segment market is leading to a review of the financial and commercial basis of the International Satellite Organisations. Member States must develop a common approach in order to ensure the competitiveness of European undertakings on the global market.

As a result, the European Union's satellite sector risks losing the initiative in the world satellite communications market, as discussed in this Communication and as indicated most spectacularly by recent developments in the new fields of satellite-based personal communications and multi-media services, where US actors have announced major global projects during recent months.

A new phase of EU satellite communications policy, going substantially beyond current achievements, is now needed if Europe is not to fall behind its competition in the world satellite market and to lose the benefits of the very substantial research and development effort undertaken in Europe,in particular, through the European Space Agency, during the last two decades, which has helped to develop the European space sector and the European space industry.

4.2 Detailed objectives and lines of action.

An urgent objective continues to be the full implementation of the political decision to liberalise the satellite communications sector on a pan-European basis, taken as far back as 1991 with the adoption of Council Resolution 92/C8/01 on the development of the common market for satellite communications services and equipment - a commitment renewed by Council Resolution 93/C 213/01 of 22 July 1993 on the review of the situation in the telecommunications sector and the need for further development in that market.

This implies in particular:

- The implementation of a Directive liberalising both the satellite services and equipment markets;

- The adoption of the proposal for a Directive on mutual recognition of national licenses and authorisations for satellite network licences and/or satellite communications services, based on harmonised conditions, with an interim solution based on a one-stop-shopping procedure;

The Commission has submitted the necessary measures and proposals.

However, in order to allow the European Union to keep pace with a rapidly moving world satellite communications market, measures and actions are required which must go substantially further.

On the basis of the analysis set out in this communication, the Commission considers necessary:

1	*Ensuring throughout the European Union direct access to the space segment, including in particular space segment provided by the International Satellite Organisations.*

Towards this purpose, the Commission intends to use fully all means available to it through the application of the EC Treaty provisions, in particular the Community competition rules to remove all national restrictions within the Community on access to space segment, allowing free and direct access to the International Satellite Organisations and in particular EUTELSAT, as well as to other systems' space segment

2. *Joint action by the Member States in the reform of the International Satellite Organisations and in particular of EUTELSAT.*

Immediate advantage should be taken of current discussions in the International Satellite Organisations in order to ensure the adjustment of those organisations to the new regulatory framework and market requirements, in particular in relation to the future of EUTELSAT,

Joint action should imply prior coordination within the ad hoc high level Committee of National Regulators established according to Council Resolution 93/C 213/01 on the review of the situation and the need for further development in that market, and in the framework of the future Community Telecommunications Committee to be established according to current proposals.

This prior coordination should concern in particular all positions taken by Member States concerning the Party's obligations under the respective Conventions as well as with regard to reform of the respective Conventions and Operating Agreements.

Common positions on these issues should be worked out taking into account, inter alia, the following principles:

- Strict separation of all regulatory and operational aspects within the International Satellite Organisations to enable moves towards a more commercial environment;

- Separation of user and shareholder interests in the International Satellite Organisations through, *inter alia,* a separation in the linkage of investment share and usage, including adjustment and strenghtening of the financial base and opening participation to new shareholders;

- Within the International Satellite Organisations, structural separation of space segment provision on the one hand, and the provision of satellite communication services on the other;

- The marketing and selling of the International Satellite Organisations' space segment by either the relevant Executive directly, or by agents (brokers) for whom conflicts of interest do not exist.

3. *Joint management in the future of the space segment as a common resource of the Union, in particular concerning future applications to the International Telecommunication Union for orbital positions and related coordination procedures and availabilility of radio-frequencies.*

The development of future European satellite services and networks and Europe's participation in the new satellite communications markets such as satellite-based personal communications and multi-media is critically dependent on a common European approach with regard to the space segment resource and its management thereof.

This should involve, in particular, prior coordination in the Community framework set out above of all future requests to the International Telecommunication Union concerning orbital resources and related frequencies. It should also involve close cooperation with ECTRA and ERC in their fields of technical competence, according to the principles and procedures currently being established.

4. *The establishment of measures in order to ensure comparable and effective access to third countries, in parallel to the Community's market liberalisation.*

Balanced market access arrangements must be sought to guarantee full European participation in the global satellite communications market. A current case in point in this context is the future development and operation of satellite-based personal communications and multi-media services.

Common action should be developed according to standard procedures within the Community's 113-Committee to ensure comparable and effective market access to third countries, in line with the GATT framework.

Until such market access is achieved, and subject to the Community's bi-lateral and multi-lateral obligations, the option of including provisions in Community legislation similar to those pertaining in third countries could be considered.

5. Inclusion of satellite-based services in programmes for Trans-European Networks as a major priority in particular with regard to the new technology developments.

In addition to European research and development activities and the creation of a liberalised environment, the participation of the European Union's satellite sector in the new satellite communications markets is vitally dependent on attracting substantial investment into the new fields. As referred to in the White Paper on growth, competitiveness and employment, satellite communications projects can make a major contribution to the development of Trans-European Networks.

The Commission intends, within the overall framework of the development of Trans-European Networks to submit a coherent programme for the development of satellite-based Trans-European Networks and to propose guidelines according to the procedures of Title XII for identifying projects of common interest for the sector. These guidelines should concern in particular: satellite-based personal communications; interactive corporate and multi-media services; broad-band services; satellite services supporting the transport sector; and global navigation satellite services concerning positioning and tracking services.

In defining and developing projects, full use should be made of the possibilities to cooperate with third countries to promote projects of mutual interest.

4.3. Concluding remarks

The European satellite communications sector - and the European satellite industry globally - are in a critical phase of their development. The further development of - and access to - the space segment constitutes a major factor in maximising Europe's potential to participate in the development of the new technologies in the sector and to maintain Europe's position in the world space market.

It is with this objective in mind that the Commission intends to follow the policy lines set out and that it transmits this Communication to the European Parliament and to the Council.