



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 08.11.1995
COM(95) 529 final

95/ 0274 (COD)

Proposal for a

EUROPEAN PARLIAMENT AND COUNCIL DECISION

**ON AN ACTION AT A UNION LEVEL IN THE FIELD OF SATELLITE
PERSONAL COMMUNICATIONS SERVICES IN THE EUROPEAN UNION**

(presented by the Commission)

CONTENT

PART A: EXPLANATORY MEMORANDUM

SUMMARY

List of acronyms

1. INTRODUCTION

2. TECHNOLOGY ISSUES AND MARKET DEVELOPMENTS

2.1 Technology issues

2.2 Market developments

2.3 Overview of proposed satellite personal communications systems

3. REGULATORY AND POLICY ISSUES

3.1 General overview

3.2 The operation of the satellite systems

3.2.1 Frequency use and sharing

3.2.2 Other regulatory and policy considerations

3.3 The provision of services

3.4 Gateway operations

3.5 Equipment issues including free circulation and use of handhelds

4. PROPOSED ACTION AT A UNION LEVEL

4.1 The need for action at a Union level

4.2 The objectives of the action

4.3 The modalities of the action.

4.4 The publication of a Call-for-Information

4.5 Proposal for a Council and Parliament Decision

5. PROPOSED ACTION AT AN INTERNATIONAL LEVEL

5.1 International Developments

5.2 Proposed action on international co-operation

ANNEX: COPY OF THE CALL-FOR-INFORMATION

PART B: Proposal for a European Parliament and Council Decision on an action at a Union level in the field of satellite personal communications services in the European Union

PART C: Financial outline

PART A: EXPLANATORY MEMORANDUM

SUMMARY

With the introduction of satellite personal communications services in the near future, a fundamental step will be made towards the implementation of a truly global information infrastructure. Satellite systems, mostly in non-geostationary orbit, will enable global interconnectivity and mobility via the use of personal, handheld, voice -, data -, and, in the future, video communications equipment, often as a complement to terrestrially-based mobile or fixed systems.

The investments required for these systems are in the order of 2 to 4 billion ECU for the most advanced systems. The current projections foresee that voice services will be priced at 0.50 ECU - 3.00 ECU per minute depending on the system (and possibly the market segment), while handheld equipment is expected to cost only marginally more than terrestrial mobile phones. Currently, well over fifty (50) filings for different satellite PCS systems from all over the globe have been submitted to the International Telecommunications Union (ITU) for the purpose of technical frequency co-ordination.

The most important goal is now to work towards the world-wide acceptance of a selection of competing, and economically viable, satellite systems under optimum use of a limited frequency resource for the provision of satellite personal communications services (satellite PCS).

This first generation satellite PCS systems and services will bring about extensive changes in satellite communications and in telecommunications in general, as well as in the way of regulating telecommunications services at a global level. The strategic implications of these systems and services are therefore considerable and of importance for the European market and the European industry, particularly in view of the world-wide consequences of transfer of technology from the military to the civil sector notably in the US.

As a consequence, making use of the opportunity for participation in these programmes by European industry, as well as ensuring effective and comparable access for European organisations to third country markets, is essential.

The issues raised by satellite PCS will also be of importance in the context of the negotiations in the World Trade Organisation (WTO) with a view to ensuring the application of the principle of effective and comparable access in all markets.

In the past, the European Union has already underlined the strategic importance of satellite personal communications systems and services, not only in terms of new service introduction, but also in terms of European industrial participation and benefits, and geopolitical relations¹. The Union has also stressed the desirability to develop a strategy which allows the introduction of mobile satellite services via these systems based on favourable conditions for European industry and end-users. In particular, the Council recognised, in its Resolution on the introduction of satellite personal communications in the Community, "... the challenge for the Community to develop a forward looking regulatory framework " and invited the Commission "... to define, in collaboration with the Member States, an effective joint policy ...".

In the context of the development of mobile and personal communications in the Union, the Council² and European Parliament³ have also come to the conclusion that urgent agreement is required on a Union approach in the area of satellite personal communications services. In particular, the Council considers it to be among its priority objectives "... to guarantee by 1 June 1996 the definition of a harmonised approach for authorisations for mobile and personal satellite communications, after study by the European Committee of Telecommunications Regulatory Authorities (ECTRA) ...".

With the licensing of the first of the satellite PCS networks in the United States⁴, the US licensees are expected to complete their financing and seek licences in the rest of the world in order to commence operations on a 1998-2000 time scale. *However, a considerable number of other proponents of satellite PCS systems have announced their plans for service introduction.* Furthermore, access to the US market for non-US based initiatives, is still to be achieved.

It is therefore urgent and timely to agree to a common approach to selection and authorisation of satellite PCS in the Union, fully responding to the goals and objectives set out by Council and Parliament in Resolutions, and allowing the Member States to issue relevant authorisations for the provision of satellite personal communications services on the

1 "Communication from the Commission on satellite personal communications" COM(93)171 final, 27.04.93
 "Council Resolution of 7 December 1993 on the introduction of satellite personal communications in the Community", OJ No.C 339 p.1, 16.12.93
 "Resolution on satellite personal communication", European Parliament, A3-0302/93 of 29.10.93

2 Council Resolution of 29 June 1995 on the further developments on mobile and personal communications in the European Union. OJ No.C 188 p.03 of 22.07.95

3 European Parliament Resolution of 19 May 1995 on Mobile and Personal Communications.

4 Iridium, a constellation of 66 satellites in low-earth orbit, with Motorola (US) as main investor; Odyssey, a constellation of 12 satellites in medium earth orbit, with TRW Inc. (US) as main investor; and Globalstar, a constellation of 48 satellites in low-earth orbit with Loral/Qualcomm (US) and Vodafone, Alcatel, DASA, Alenia Spazio (Europe) as main investors.

basis of co-ordinated national regulatory conditions and criteria, taking due account of the interests of European industry and users.

In this context, the most compelling arguments for rapid action at European level are:

1. In view of limited availability of frequency spectrum resources and the number of announced satellite PCS systems, there is a need to come to a co-ordinated selection of satellite PCS systems taking due account of the economic, industrial and social implications of the proposed services. The need for coherency of selection and authorisation decisions can be greatly assisted by action at a Union level, aimed to ensure such coherency within the Union and with relevant selection and authorisation decisions of trading partners.
2. There is a need to ensure unrestricted transborder provision of satellite personal communications services throughout the EU and the EEA, taking due account of:
 - the need for optimal use and sharing of limited frequency resources;
 - the need for co-ordinated national regulatory and policy decisions;
 - the international dimension.
3. There is a significant opportunity for European mobile and space industry in both equipment and services in satellite PCS. Actual European industry contracts are valued at about 500 million ECU, while potential further contracts are estimated to reach tens of billions of ECU, especially in handsets. Handset manufacturers should be able to participate fully in the development of satellite PCS and not be hindered by unduly onerous restrictions resulting from intellectual property rights and from the commercial availability of the so-called "air-interface".

The greatest use of satellite PCS is believed to be as a complement to world-wide mobile terrestrial cellular networks, in particular GSM.

4. There exists overwhelming support from industry for a co-ordinated approach at Union level to solve outstanding policy and regulatory issues, in particular:
 - to ensure access to third markets,
 - to establish a greater world-wide influence for European systems and technologies,and
 - to prevent *ad-hoc* national solutions, which would lead to barriers to global operation.
5. Industry believes that measures at a Union level are a matter of urgency and that political agreement on the EU decision process and its timetable needs to be reached as soon as possible.

6. European Union decisions concerning regulations and policies for satellite PCS and accompanying proposals for international co-operation are expected to have a resonance throughout the world and contribute to finding world-wide solutions.

By the middle of 1996 at the latest, political agreement needs to be reached within the Union on the time schedule and the modalities of the regulatory and policy decisions in order to facilitate the timely introduction of satellite personal communications services, and to maximise the economic benefits flowing from this introduction to industry and users.

The modalities of an action at a Union level need to address three elements:

1. *additional information is required from potential market entrants wishing to offer services in the European Union.* This allows confirmation whether or not a selection process is necessary, for which types of services, and in which frequency bands. It also assists in the definition of the scope and modalities of the authorisation process.
2. *satellite personal communications networks must be selected on the basis of a comparative bidding process.* This will allow all prospective market entrants to be valued at their respective merits so that a maximum of potentially viable concepts are permitted to use the limited spectrum available.
3. *all relevant aspects of satellite personal communications services must be subject to transparent and non-discriminatory authorisation procedures.* This should include space segment operators, providers of service, gateway operations, and equipment.

Basing itself, in particular, on the views expressed by industry as well as on the wishes from Council and the European Parliament and in order to enable the Council and Parliament to adopt a position on satellite personal communications by 1 June 1996, the Commission has come to the conclusion that these three elements may be addressed by means of two separate measures:

- ⊗ the publication of a Call-for-Information in the *Official Journal* in order to obtain additional information from potential market entrants, and
- ⊗ a Council and European Parliament Decision on action at a Union level on the selection and authorisation of satellite personal communications services in the European union.

The Commission proposes an action at a Union level which aims to ensure the viable introduction of satellite personal communications services in the European Union, by means of co-ordinated selection and authorisation procedures based on common and harmonised criteria and conditions, taking full account of the global nature of these services. This would

include the elaboration of technical criteria by ECTRA, ERC and ETSI as well as actual authorisation of the satellite PCS services by the Member States in accordance with the provisions of Directive 94/46/EC.

The action shall be based on a legally binding measure in the form of a Council Decision to ensure full transparency of the decision making process, thereby providing a maximum of legal certainty to users, industry, and trading partners.

The establishment of global satellite personal communications services will require the definition of a flexible regulatory framework, including fair and effective procedures for authorisation and frequency allocation, and world-wide co-operation with particular attention to less developed countries. Furthermore, efforts must address interconnectivity and interoperability of satellite PCS services with fixed and terrestrial cellular services around the world, and world-wide, open access to the satellite personal communications networks and services. The proposed action therefore includes concrete proposals for international co-operation with all those countries interested in, or affected by, the introduction of satellite personal communications services.

The international co-operative effort required to establish global satellite personal communications services is fully within the scope of the common vision of the G-7 partners on the Global Information Society and will be a first major test in the context of the implementation of Global Information Infrastructures.

List of acronyms

CEPT	Conférence européenne des administrations des Postes et Télécommunications
DCS-1800	Standard for microcellular communications system
DECT	Digital European Cordless Telecommunications
ERO	European Radiocommunications Office
ETO	European Telecommunications Office
ETSI	European Telecommunications Standards Institute
FCC	Federal Communications Commission (USA)
GSM	Global System for Mobile communications
HEO	Highly Elliptical Orbit
ICAO	International Civil Aviation Organisation
IMO	International Maritime Organisation
IPR	Intellectual Property Rights
ITU	International Telecommunications Union
LEO	Low Earth Orbit
MEO	Medium Earth Orbit
S-PCS	Satellite Personal Communications Services
UMTS	Universal Mobile Telecommunications System
WARC 92	World Administrative Radio Conference 1992 - ITU
WRC 95	World Radio Conference 1995 - ITU
WTO	World Trade Organisation

1. INTRODUCTION

With the introduction of satellite personal communications services in the next years, a fundamental step will be made towards the implementation of a truly global information infrastructure.

The main purpose of satellite personal communications services is to provide data and/or voice (and in the future also video) services into a fixed or portable personal terminal, approximately the size of today's terrestrial cellular phones, by means of interconnection via satellite. Satellite systems, including constellations in non-geostationary orbit, will enable global interconnectivity and mobility via the use of personal communications equipment. Geographical areas which, for technical or economic reasons, are difficult to cover by terrestrial cellular systems can thus be served adequately by means of these satellite systems.

The development in detail of the concepts, the planning of the services, as well as the production of the hardware has been started by a number of industries from the US, Europe and other regions of the world.

On the regulatory front, initial frequency bands have been set aside at the 1992 World Administrative Radio Conference (WARC-92) while the Federal Communications Commission (FCC) in the US has issued orders licensing several data communications systems as well as three voice communications systems.

Regulatory measures, including licensing, in other parts of the world are yet to be taken although many countries are evaluating the issues arising from the introduction of these services. There appears to exist a general recognition that the issues are of an unusual complexity and encompass, *inter alia*, matters related to frequencies, equipment circulation and use, numbering, service authorisation, market access, industrial participation, national security, and opportunities for assistance to developing countries.

In the European Union, the Commission has undertaken a number of initiatives which are aimed to increase the awareness of European users, industry, and regulators, on the importance of these services as well as to assist in coming to the fullest possible understanding of the scope of the issues which need to be resolved in order to facilitate service introduction.

Following the WARC-92, the Commission organised a hearing in September 1992 where the industry presented their plans to interested regulators, industry and users.

In its Communication on Satellite Personal Communications⁵ of April 1993, the Commission underlined the strategic importance of satellite personal communications systems and services, not only in terms of new service introduction, but also in terms of European industrial participation and benefits, and geo-political relations.

The Communication stressed the desirability to develop a strategy which allows the introduction of mobile satellite services via these systems based on favourable conditions for European industry and end-users. This strategy will also need to take into account the geo-political importance of these systems as a first Global Information Infrastructure, in line with the recent discussions on the Information Society in the G-7 Group of countries.

On the basis of the Communication, the Council adopted a Resolution⁶ in which the importance of the planned use of satellite for personal communications was recognised, and which stressed the importance of developing a Community policy in this area. The Council invited the Commission to study the significance of satellite personal communications and to define, in collaboration with the Member States, an effective joint policy. The Commission was also asked to closely monitor international developments, and to reinforce co-operation with ETSI, ERC and ECTRA on this topic.

In response to the invitation of the Council, the Commission has:

1. initiated a number of important studies with consultants and with ETSI, ERC and ECTRA, the results of which are reported in the next chapter of this Communication;
2. monitored international developments and held discussions with the US authorities, the conclusions of which are also summarised in a subsequent section;
3. developed a proposal for a policy at a Union level for an approach to the selection and authorisation of satellite personal communications services in the European Union, as presented in this proposal.

In particular, the mentioned study work included analysis of:

1. the importance on trade, telecommunications, and industry⁷;
2. standardisation aspects (by ETSI)⁸;
3. frequency aspects (by the European Radio Office)⁹;

⁵ "Communication from the Commission on satellite personal communications" COM(93)171 final, 27.04.93.

⁶ "Council Resolution of 7 December 1993 on the introduction of satellite personal communications in the Community", OJ No.C 339 p.1, 16.12.93.

⁷ "Satellite Personal Communications and their consequences for European Telecommunications, Trade and Industry", KPMG Peat Marwick, March 1994.

⁸ "Possible European standardisation of certain aspects of Satellite Personal Communications Networks (S-PCN)", ETSI, Phase 1 Report (November 1994), and Phase 2 Report (February 1995).

4. regulatory aspects (by the European Telecommunications Office)¹⁰

In addition, a consultation has been undertaken on:

5. industry views regarding the introduction of satellite PCS in Europe¹¹.

With most of the major areas of study complete, and now that the US position has become clearer, it is crucial that European decisions and their related time schedule are agreed as soon as possible. The political decisions however, can only be taken on the basis of a full understanding of the requirements of the services and equipment industry potentially participating in the satellite PCS market.

Therefore an extensive industry consultation has been completed recently with the aim to gain full understanding of industry's views on possible policy actions and their time scale required in the short term. *This consultation showed that the opportunities for European industry in satellite PCS are extremely good. Moreover, there is a large consensus on the part of industry for the urgent formulation of a co-ordinated Community approach to the outstanding regulatory and trade issues.*

Basing itself, in particular, on the views expressed by industry and on the wishes from Council and the European Parliament, and in order to enable the Council and the Parliament to adopt a harmonised approach for satellite personal communications by 1 June 1996, the Commission hereby submits its proposals.

The Commission has come to the conclusion indeed that, by the middle of 1996 at the latest, political agreement needs to be reached on the time schedule and the modalities of regulatory decision-making in order to facilitate the timely introduction of satellite personal communications services in the Community.

Political agreement shall aim to:

1. facilitate the introduction of satellite PCS services in a timely and constructive fashion;
2. resolve regulatory issues by means of a co-ordinated approach between all players involved;
3. provide an agreed time schedule for regulatory decisions in order to offer industry the necessary certainty against which to plan investments;

⁹ "Satellite Personal Communications Services (S-PCS)", ERO, final version, May 1995.

¹⁰ Work still in progress, hence report not yet available

¹¹ "Industry consultation on satellite PCS", LOGICA, February 1994

4. engage in international co-operation, complementary to the internal approach in the Union.

This document contains the Commission's proposals for the formulation of such a co-ordinated approach in the European Union.

2. TECHNOLOGY ISSUES AND MARKET DEVELOPMENTS.

2.1 Technology issues.

The main purpose of satellite PCS services is to provide data and/or voice (and in the future also video) services into a terminal by means of interconnection via satellite. Although the personal handheld unit, approximately the size of today's terrestrial cellular phones, is attracting the most attention, fixed equipment or aeronautical, maritime, or land-based mobile equipment is also foreseen to be utilised. The immediate advantage of satellite systems is the instantaneous geographical coverage of the whole area in its 'footprint'. In this way, geographical areas which, for technical or economic reasons, are difficult to cover by terrestrial cellular systems can be served adequately.

Constellations of satellites in low earth orbits (LEO) and Medium Earth Orbits (MEO) and Highly Elliptical Orbits (HEO) have been proposed as a new and efficient way to communicate with these hand-helds¹². However, concepts are also foreseen based on conventional geostationary satellites.

The signals from the handheld units are retransmitted through a satellite to a so-called gateway, a fixed earth station of considerable size which routes the signals into the public switched networks to its final destination (or to another handheld). These gateways will contain switching and networking functions for the purpose. Limited numbers of gateways are foreseen and these numbers are different for each system. On average, two to three gateways per system are expected to be installed in Europe. The services are offered to the users by providers of services which retail satellite capacity, register and initiate new users, and perform classic commercialisation activities.

The amount of frequency spectrum available for use by such satellite systems is limited and subject to considerable sharing constraints. Spectrum is required for use between handhelds and the satellites, and between gateways and the satellites¹³. The use and sharing of the spectrum is likely to require agreements at a global scale in order to ensure compatibility throughout the coverage zones of the satellites.

¹² Satellites in low earth orbits are foreseen to operate at around 700-1400 km height with an orbiting time of around 100 minutes. Communications with a single orbiting satellite is only possible for around 10 minutes, after which another satellite will have to provide the interconnection. As a result, constellations of 25-75 satellites are required in order to ensure coverage at all times. In medium earth orbits at around 10,000 km, the orbiting time increases to around 6 hours with a longer coverage of each area by a single satellite and thus reducing the total amount of satellites in the constellation to around 10-15. With highly elliptical orbits, the number of satellites can be reduced to 3-10 depending on the overall coverage requirements. Geostationary satellites operate at a fixed distance of 36,000 km and cover a particular area of the globe at all times.

¹³ In addition, spectrum is required for inter satellite links, and for the operational control of the satellites.

Due to different designs, the proposed systems will not allow roaming of handheld equipment between the different satellite systems. Use of a handheld is limited to the geographical coverage of a specific satellite constellation¹⁴, but this is foreseen to be most of the earth's surface.

The international aspects are an important matter, inherent in very nature of satellite PCS services provision as a result of the global coverage and use of frequency resources. In consequence, these services necessitate co-ordinated technical, regulatory and policy decisions among all nations where the services are intended to be provided.

These international aspects are foremost visible in the spectrum use and sharing issues but other important issues concern the need for agreements on the global circulation and mobility of handheld equipment, access of many nations to the relatively few gateways which are planned, interconnection agreements with a variety of other network operators, implementation of global numbering schemes, agreements on the functioning of safety and distress operations, and more. A detailed analysis of these international aspects can be found in the next chapters.

2.2. Market developments.

The market in Europe is expected to be relatively small because of the extensive terrestrial digital cellular coverage which is planned. However, many users from outside Europe having access to different cellular standards are expected to use the satellite function of dual mode phones¹⁵ in Europe. Nevertheless, there remains a considerable primary market in Europe, especially in central and eastern Europe and in some of the Mediterranean countries where cellular coverage is much lower than in the rest of Europe. However, the most significant interest for Europe is in the use of handheld equipment outside the European territory by European users, and in the export opportunity for the European industry.

The estimates of the economic values involved in this sector of the telecommunications market are significant despite the sector's role in a 'niche' market. The investments in the satellite systems alone are of the order of 1-3 billion ECU for the larger satellite systems, including the launches. In addition there is expected to be a considerable market for personal handheld equipment (the strong point of the European industry), and the services industry. It is estimated that the services market, within ten years of introduction of satellite PCS, could

¹⁴ In the case of the use of dual-mode satellite/terrestrial equipment, roaming is obtained via the terrestrial cellular systems e.g. the GSM network.

¹⁵ Dual mode phones function as a terrestrial mobile phone (like GSM or DECT) as well as a satellite phone (with Iridium, Globalstar, Inmarsat or another system)

reach some 10-20 billion ECU per annum world-wide. The market for hand-held equipment is estimated to reach some 20-30 million subscribers world-wide and may account for around 2-3 billion ECU sales per annum world-wide. All these estimates however should be considered with some care, although the latest indications are that these estimates are probably relatively low and the market volumes might reach substantially higher figures. Future use of satellite personal communications infrastructure is expected in vehicle operation (including air- and waterborne- vehicles).

The recent consultation, held on behalf of the Commission with the relevant industry sectors in Europe, revealed that Europeans industry expects to play a major role in this market. *It appears that there is very important existing or anticipated participation of European service and equipment industry in all aspects of satellite PCS, such as satellite manufacturing, launch services, handset and other ground segment equipment supply, software development, networking equipment, billing systems, financing, insurance, service provision etc.*

Table 1: Estimated contract values for European equipment industry in the satellite PCS market.

	current contracts	potential additional contracts
space segment manufacturing	200-400 million ECU	500 million ECU
ground segment/handsets	200 million ECU	10-30 billion ECU

The industry has furthermore warned that the positive influence of the development of global satellite PCS networks on the evolution of terrestrial mobile networks around the world should not be underestimated. Europe's initiatives in terrestrial cellular networks, especially GSM, DECT and DCS-1800, have enabled it to become the world's market leader and a synergetic development of satellite and terrestrial networks must be pursued. European industry can gain competitive advantage by early development of dual mode GSM/satellite standards for handsets which can then be migrated into a fully integrated implementation of a Universal Mobile Telecommunications Service (UMTS)¹⁶. There is therefore overwhelming support for the early commencement of satellite PCS services in Europe, considered as complementary to terrestrial digital cellular systems.

In this context it is important to note that the European space industry will face a much more competitive US civil space industry in the future as a result of the transfer of technology from the military to the civil sector (the "peace dividend") especially in the non-geostationary satellite systems sector.

2.3 Overview of proposed satellite personal communications systems.

A constant stream of new ideas, concepts and business ventures have, and continue to be, announced in the trade press with the apparent purpose of new entrants declaring their interest in participating in the satellite personal communications services market. It is very difficult however to qualify these concepts on a comparative basis in terms of market prospects, technical feasibility, financing ability and so forth. An indicative selection of concepts as well as an indicative table with the systems which have drawn particular interest in Europe is as follows:

¹⁶ UMTS is a technology for third generation mobile digital communications, currently under development within ETSI and by the RACE/ACTS programme.

Table 2: Some indicative examples of systems which have drawn interest in Europe.

system	services	EU investors	EU invest in %	Major EU contracts	system costs in millions of US\$
Elekon	data	ESD (G)	100	ESD	unknown
Ellipso	voice, data	Cable and Wireless (UK) Arianespace	unknown	launch: Arianespace	564
Globalstar	voice, data	Vodafone (UK), Alcatel (F), France Telecom (F), Aerospatiale (F), Finmeccanica (I), DASA (G),	26	Space segment: 72% Billing system: Vodafone Finance: SG Warburg	1,951
ICO-P	voice, data	Detemobil (G), PTT NL (NL), OTE (Gr), Telecom Finland (FL), Telefonica (Sp), CPR Maconi (P)	24		2,600
Iridium	voice, data	Vebacom (G), STET (I)	14	Switches: Siemens Back-up control centre: Telespazio Finance: Dresdner Bank	4,700
Mediastar	DAB*, voice, data	DASA (G), others to be announced	mostly		unknown
Odyssey	voice, data	expected	-	expected	2,500
Teledesic	broadband data	expected	-	expected	9,000

For illustrative purposes only, based on published data.

**DAB = Digital Audio Broadcasting*

Table 3: An illustration of some of the published satellite PCS concepts

service + orbit/freq. band	concepts	country origin	European particip.	Europ. service	start of service	costs in mill. US\$	No. sat
voice/data non-geost. 1.6/2.4 GHz "big-LEO's"	Iridium *	US	yes	yes	1998	3850	66
	Globalstar *	US	yes	yes	1998	1950	48
	Odyssey *	US	no	yes	1999	2500	12
	Ellipsat	US	yes	poss.	1997	1000	16
	Constellation	US	no	yes	1998	1650	46
	AMSC	US	no				10
	Elekon	D/Russ	yes	yes	1996		7
	Mediastar	D	yes	yes			
	QuasiGeo	D	yes	yes			9
F-SAT ICO/LEO	F	yes	yes				
Glonass-M	Russia	yes	yes				
voice/data non-geost. 1.9/2.2 GHz	I-CO (Inmarsat)	UK	yes	yes	2000	2600	10
	QuasiGeo	D	yes	yes			9
	F-SAT ICO/LEO	F	yes	yes			
voice/data geostationary 1.9/2.2 GHz	Celsat	US	no				
	PCS Corp	US					
voice/data non-geost. 1.6/1.5 GHz	Elekon	D/Russ	yes	yes	1995		7
	Gonets	Russia		yes			36
	Koskon	Russia		yes			
	Signal	Russia		yes			
	QuasiGeo	D	yes	yes			9
voice/data geostationary 1.6/1.5GHz	Artemis	ESA	yes	yes			1
	Maraphon	Russia		yes			
	Italsat/EMS	I/ESA	yes	yes			1
	UKRSAT	Ukraine		yes			
Afri/Asiacom	India			1997		2	
voice/data non-geost. 2.6/2.5 GHz	Petalring	NL	yes	yes			
voice/data non-geo 19/29 GHz	Teledesic	US	expected	yes		9000	840
data-only non-geo 148/137 MHz "little-LEO's"	Orbcomm *	US	yes	yes	1995	320	36
	Starsys	US/F	yes	yes		200	12-24
	Vitasat	US		yes	1995		
	LEO-one	US					
	Final Analysis	US					
	Gemnet	US					
	S-80 TAOS	F	yes	yes	1994		5
	SAFIR	D	yes	yes			6
	Courier	Russ					60
	Kircom	Aus					9
Iris**	B	yes	yes			2	

Based on publicly available data and for illustrative purposes only. The tables may not be exhaustive.

* Note: system licensed in the US

**Note: slightly different frequency bands foreseen

3. REGULATORY AND POLICY ISSUES.

3.1. General overview

A variety of regulatory and policy issues emerge from the way in which satellite PCS services are expected to be delivered. These issues are largely concentrated around:

- ☒ the satellite systems,
- ☒ the provision of services,
- ☒ the gateway operations, and
- ☒ the equipment provision, circulation, and use.

The latter three issues also fall under the scope of Directive 94/46/EC. According to this Directive such services may be provided in competition and Member States must ensure free access to any authorised Personal Communication Services systems, including for the provision of services to the public. Such services fall outside the definition of voice telephony since the service offered matches important needs which (normal) voice telephony does not meet, for example as a result of additional features such as the possibility to be reached everywhere, even when moving etc.. This additional facility is reflected in higher tariffs, which demonstrate that the additional features are decisive in prompting users to use the PCS service instead of voice telephony.

Member States may nevertheless submit the provision of telecommunications services to licensing, general authorisation or declaration procedures as far as necessary to ensure compliance with essential requirements. In addition, for public mobile telecommunications services, such as GSM, the Commission acknowledged that public service requirements could be imposed in the framework of their licensing.

The Commission does, however, not consider Satellite Personal Communications as a mobile service in the traditional sense. It excluded this service from the scope of its draft amendment directive of Directive 90/388/EEC with regard to mobile and personal communications because of its specificities. Consequently, Satellite Personal Communications may not be subjected to such public service requirements but only to requirements aiming at the essential requirements listed in Directive 94/46/EC.

The further retail of already authorised services by independent providers of services (the provision of which is likely to be subject to conditions ensuring compliance with essential requirements) may not justify the introduction of specific authorisation procedures.

Inherent in all these issues are the international aspects which are of particular significance in the context of satellite PCS.

3.2 The operation of the satellite systems

The consortia operating the satellite systems provide space segment capacity which is needed to communicate between a hand-held and gateway (and further into the terrestrial networks) and between hand-helds.

The operation of the satellite systems is subject to two inter-related sets of issues:

1. formal notification to the ITU for the purpose of technical frequency coordination, and
2. selection and authorisation of the systems in nations where the space segment capacity is to be used.

Successful completion of the ITU frequency coordination process does not provide any guarantee that the satellite system will indeed be authorised to provide space segment capacity for use in a particular country. It is therefore required that both the ITU coordination is completed with agreement of a particular country as well as that an operating authorisation is provided by this country, possibly following a selection process.

In order to understand these issues it is best to analyse the frequency issues separate from the other regulatory and policy considerations.

3.2.1 Frequency use and sharing

The amount of frequency spectrum available for use by the satellite systems is limited and subject to considerable sharing constraints. Spectrum is required for use between hand-helds and the satellites, between gateways and the satellites, for control of the satellites themselves, and, in some cases, between satellites.

Given a more limited market in Europe than in other parts of the world, there may not need to be as much spectrum available in Europe for satellite PCS. However, there needs to be compatibility between any European spectrum usage and usage in other regions of the world. The spectrum is to some extent controlled by those who lay first claim on the spectrum in the context of the ITU procedures and there is a danger that, unless precautions

are taken, systems capable of providing service in Europe may be selected by a process outside European jurisdiction.

In its report, the ERO provides a series of recommendations as concerns the allocation of frequency bands and the use of the bands in Europe.

1. A European selection process shall be initiated as soon as possible for the frequency band in which the US has now licensed the three 'big-LEO' systems¹⁷. All potential Satellite PCS space segment operators which have filed advance publications with the ITU shall be considered. Selected operators should be asked to propose a band sharing plan.

The constraints in Europe of use and sharing of the frequency band in which the FCC has licensed three satellite PCS space segment operators, are different from those in the US and must be taken into account in the establishment of selection and licensing criteria. Depending on the eventual selection of operators by nations around the world, compatible band sharing and usage plans might have to be negotiated.

2. A European approach to licensing is urgently needed in order to use the limited frequency resource most efficiently and to strengthen the combined European position on this matter. Licences needs to be considered for space segment, gateways, service provision, and equipment.
3. The ERO considers that there is no need yet to allocate extra spectrum at WRC-95 for use between hand-helds and the satellite systems. Additional spectrum could be dealt with at WRC-2001 when actual requirements can be estimated more precisely.

As at the WARC-92, substantial discussions are expected at the forthcoming WRC-95 on the need for additional spectrum allocations for satellite PCS services. The preparation of European Common Positions, based on the recommendations of the ERO report, is in progress. It would appear that, from a European perspective, it is too early to decide on additional spectrum at this juncture. In case additional allocations are agreed, the principle of 'first come, first served' should be re-examined in order to avoid an avalanche of paper systems being notified to the ITU in order to try and ensure market entrance. Because of the need to obtain both an operating licence and a satisfactorily concluded frequency coordination with each country, it may be more effective to discuss the overall approach to these matters before any further steps are taken. In any case, the satellite PCS systems will still have to prove their place in the market.

¹⁷ frequency band 1610 - 1626.5 / 2483.5 - 2500 MHz uplink/downlink bands to/from satellites

3.2.2 Other regulatory and policy considerations

Apart from the frequency matters described above, a considerable number of other regulatory and policy considerations arise in the context of the satellite systems to be selected and authorised in the Union. Below, the most important ones are briefly discussed.

a. Competition policy: structure of consortia, level of competition.

The Commission has already announced that it is starting an investigation under the Treaty's competition provisions in relation to the composition of some of the consortia likely to provide satellite PCS services in the Union¹⁸. In particular, aspects of vertical integration of the consortia and the planned service and equipment distribution chains are of interest.

b. Regulatory matters: satellite system operations, introduction of new systems, replacement of satellites, likelihood of a single system surviving and possible monopoly positions, confidentiality of data, privacy.

Every satellite system operator will locate satellite operations centres (usually a main and a back-up) in a few countries around the world. Agreements are expected to be needed to ensure that the proper functioning of a system over any country is possible and that regulatory mechanisms of the affected countries allow rectifying action to be undertaken from the country in which the control centre is located. Possible issues arising in this context are the control of frequency interference hazards, liability issues, lawful interception, national security and others.

Further reflections are required on *inter alia*:

- ⊗ how new proposals for satellite systems can be facilitated in view of limited frequency resources;
- ⊗ whether or not special conditions shall be placed on the replacement of satellites (as new features may be introduced which in effect change an original licence application);
- ⊗ what criteria shall be used to determine whether a system, which is not economically viable, must terminate operations as it is occupying frequency resources which may be assigned for use to new or other systems; and
- ⊗ whether market development leading to de-facto monopoly in certain market segments require ONP-like access to capacity by providers of services;

¹⁸ Press release IP/95/549 of 7 Juni 95 in which the Commission announces the launch of investigations into global mobile satellite systems.

The expected implementation of a multitude of national data privacy and data confidentiality provisions are a further matter for consideration, possibly leading to a need for some harmonisation at international level.

- c. Technical matters: interoperability of services, safety and distress operations, numbering, compatibility GSM/DECT/DCS1800,

Interoperability of services is recognised as one of the pre-requisites for world-wide provision of services. Specific discussions have commenced in fora concerned with this matter¹⁹. Numbering is furthermore an issue to be resolved urgently. The numbering requirements for satellite PCS systems are not known precisely but are already recognised as being complicated. Global agreement on these arrangements and implementation in every country around the world will require urgent completion in time for services introduction. Compatibility requirements with the GSM family (GSM/DECT/DCS1800) also needs detailed study and agreement. Safety and distress operations are expected to be an important feature of the systems. Its implementation might be subject to international regulations (IMO, ICAO)²⁰ but may also require additional arrangements. Also this needs verification and further study.

- d. Economical: financial viability;

The financial qualifications of the systems is a matter for serious consideration. The fact that a limited frequency resource will be used in an economically efficient manner, requires a reflection on the need for financial qualification as a selection criteria, as well as during the period of the licence. The financial sector organisations consulted on behalf of the Commission have indicated that financing is considered to be the most critical issue for the first generation systems now under consideration. Financial institutions in Europe are of the opinion that it is important for the Union to determine an appropriate regulatory framework and that, under such a framework, requirements for financial qualifications are essential.

- e. Industrial: industrial participation, availability of the air-interface specification to hand-held manufacturers;

It is expected that many nations will insist that its industry is offered an opportunity to participate in the construction, launch, operations and provision of satellite PCS services.

¹⁹ FAMOUS consultative group between US, Japan, and Europe on third generation mobile communications.

²⁰ The International Maritime Organisation (IMO) and the International Civil Aviation Organisation (ICAO) set the international standards related to safety and distress operations in respect of maritime shipping and civil aviation respectively.

Demands for industrial participation however, shall not prejudice free market access rights nor cause unnecessary and costly changes to the proposed concepts. On the other hand, competition policies require sufficient competitive supply of services and equipment, possibly beyond what is currently planned by the consortia. This might thus result in, *inter alia*, provisions to ensure that the air-interface is available to manufacturers under reasonable terms, the availability of multiple providers of services in each country, but also that there are reasonable IPR licensing and patent arrangements, including those concerning the satellite systems.

- f. Others availability of spare space segment capacity for developing countries, national security, lawful interception.

It may be possible to make excess space segment capacity or certain services available to developing countries under special arrangements in order to assist in their economic development. However, in order to ensure that the level-playing field remains balanced in other markets, study will be needed to clarify the exact scope for offering assistance to these countries.

Also, the question of lawful interception and national security is giving rise to the need for special arrangements. Early indications of the requirements are needed from the responsible agencies in order to avoid costly redesign of the satellite PCS concepts at a late stage (as is currently experienced in some countries in respect of GSM).

3.3 The provision of services

Providers of services are the resellers of space segment capacity for the use by end-users, and manage the registration of new users, initiation of users on the systems, billing, interconnection agreements etc. Currently, the providers of services appear to be consortia members with commercial, mostly exclusive, franchise arrangements from the consortia.

Therefore the issues are related to those discussed above and concern: consortia structure, level of competition, numbering, interconnection agreements, access to gateway facilities, ability to switch off users, billing arrangements, privacy, national security.

3. Gateway operations

Gateway operations concerns the provision of the fixed ground station infrastructure to which handheld connect via the satellites and which connect the communications further to the terrestrial networks. Limited numbers of gateways are foreseen and these numbers are different for each system. On average, about two-three gateways per system are expected

to be installed in Europe. Although this number could increase if countries desire so, it would increase system costs.

The availability of such a limited number of gateways will require that there is access from many countries to each of them. Although the frequency authorisation for the gateway station is a matter to be dealt with by the national administration on which territory the station is based, there is a variety of interconnection scenarios possible. These interconnection scenarios are dependent on the way in which numbering schemes will be set up, in what way legal interception of signals is made possible for countries other than the one on whose territory the gateway is based, the way in which national security issues are required to be dealt with, and the way in which traffic routing and billing arrangements are set up.

In conclusion, although based in a single country, gateway operations require regulatory controls by other countries and it is thus a matter which needs coordination at a Union level.

3.5 Equipment issues, including free circulation and use of hand-helds:

Last but not least there is the equipment used by end-users to communicate through the satellite systems.

The consortia are proposing systems which will not allow roaming of handheld equipment. Use of a handheld is limited to the circulation which a particular satellite constellation allows through its coverage, but this is intended to be most of the earth's surface. The fact that there are no roaming capabilities between systems is due to their technical incompatibilities caused by different philosophies for end-to-end system design/optimisation, proprietary to each system.

The use of single and dual-mode (cellular/satellite) equipment is foreseen. This will allow a user to access, for example, a GSM terrestrial network in Europe while using a satellite network in a country outside Europe where there is no terrestrial coverage. Facilitating the free circulation and use of hand-held equipment throughout the world is expected to be one of the more important challenges. Current regulatory mechanisms are not sufficiently developed to accommodate this easily.

At a Union level, the Mutual Recognition Directives (91/263/EEC and 93/97/EEC) will facilitate the free circulation. Within its member countries, an appropriate CEPT Decision, if implemented, is expected to deal with the matter in an equally satisfactory fashion. At the

level of other regions or at a global level, the matter requires detailed study and bi-lateral or multi-lateral agreement. It can be expected that the basic standards, necessary as a basis for type-approval and licensing, can be developed within the ITU. However, considerable work will need to be undertaken to complement this work with the necessary international agreements for mutual recognition of type-approval as well as for free circulation and use of equipment at a world-wide scale, thereby aiming at maximum mobility. In this context it is necessary that Member States notify to the Commission proposed technical regulations for satellite PCS terminal equipment in accordance with Directive 83/189/EEC.

From the ETSI study report it becomes evident that there is, as expected, a significant international dimension involved in the standardisation and equipment type-approval matters if the world-wide operation and use of satellite PCS services are exploited as intended by the industry's concepts.

ETSI recommends:

1. Application of the principle of freedom of circulation for satellite PCS handsets without additional licensing procedures.
2. Every effort should be made to extend this principle to the whole world and not only Europe.
3. Cooperation with standardisation bodies in the rest of the world should result in global approval regimes for handsets based only on essential requirements²¹.
4. Gateway earth stations shall only be subject to national approvals and licensing in the country of location.
5. There should be no requirement for the handset interface protocols;
6. The development of addressing and numbering requirements shall be given due attention.

The approval regime for multi-mode handsets is likely to have a major impact on world-wide operation and use of satellite PCS. With ETSI now being in an advantaged position in the international arena because of the significant knowledge base which it has accumulated, Europe can take a lead in the international community in developing the standards and technical basis for type-approval regulations in a timely fashion.

The commercial availability of the air-interface to hand-held manufacturers and the related intellectual property rights issues warrant particular attention, in view of the competition aspects which may ensue. Numbering and compatibility with the GSM family (GSM, DECT, DCS1800) are issues which are still subject to a determination of a strategic orientation in the Union and may therefore require consideration in this context.

²¹ For example: user health and safety, effective use of spectrum, legal interception, and, if required, interworking with the public networks.

4. PROPOSED ACTION AT A UNION LEVEL

4.1 The need for action at a Union level.

Satellite PCS raises novel policy challenges in that regulators will have to find a fair and equitable way for the global community to benefit from the opportunities of satellite PCS as quickly as technology and finance will allow. Equally, the technology raises challenges to European industry through the economies of scale and scope it demands.

In the telecommunications sector, the European Union is uniquely advanced in having established a regime of close co-operation and harmonisation between many countries. Building on this experience the Union is therefore in a good position to lay new foundations to solve issues such as those raised by satellite PCS:

The most compelling arguments for such an approach at a Union level are the following:

1. In view of limited availability of frequency spectrum resources and the number of announced satellite PCS systems, there is a need to come to a co-ordinated selection of satellite PCS systems taking due account of the economic, industrial and social implications of the proposed services. The need for coherency of selection and authorisation decisions can be greatly assisted by action at a Union level, aimed to ensure such coherency within the Union and with relevant selection and authorisation decisions of trading partners.
2. There is a need to ensure unrestricted transborder provision of satellite personal communications services throughout the EU and the EEA, taking due account of:
 - the need for optimal use and sharing of limited frequency resources;
 - the need for co-ordinated national regulatory and policy decisions;
 - the international dimension.
3. There is a significant opportunity for European mobile and space industry in both equipment and services in satellite PCS. Actual European industry contracts are valued at about 500 million ECU, while potential further contracts are estimated to reach tens of billions of ECU, especially in handsets. The greatest use of satellite PCS is believed to be as an augmentation to world-wide mobile terrestrial cellular networks, in particular GSM.
4. There exists overwhelming support from industry for a co-ordinated approach at Union level to solve outstanding policy and regulatory issues, in particular:
 - to ensure access to third markets,

to establish a greater world-wide influence for European systems and technologies, and

to prevent *ad-hoc* national solutions, which would lead to barriers to global operation.

5. Industry believes that measures at a Union level are a matter of urgency and that political agreement on the EU decision process and its timetable needs to be reached as soon as possible.
6. European Union decisions concerning regulations and policies for satellite PCS and accompanying proposals for international co-operation are expected to have a resonance throughout the world and contribute to finding world-wide solutions.

4.2. The objectives of the action

Co-ordinated action at a Union level is required in order to ensure that the introduction of satellite-based personal communications services is realised smoothly, thereby creating significant economic and social benefits to industry and users.

Regulatory and policy decisions will have to be taken urgently, in a flexible manner and according to an agreed time schedule. The industry will be served with such an agreed and transparent time schedule in order to optimise their planning and in order to allow the necessary technology development to take place in agreement with the regulatory requirements.

A co-ordinated approach at a Union level furthermore necessitates legally binding measures for those issues where divergent national decision-making would result in incompatible regulatory conditions. Divergent national decision-making would not only increase the regulatory overheads for system operators, but could also lead to the creation of barriers to the provision of pan-European systems and services.

Moreover, the transborder nature of the services, without requiring movement of service provider or user, calls for a balanced approach between relevant measures at Union level and a maximum of co-ordinated national regulatory and policy decisions by the Member States under the principle of subsidiarity. Given the inherently international nature of the issues, due consideration must be given to the achievement of maximum synergy between internal Union decisions and bilateral and/or multilateral external agreements and understandings in this area.

Based on views of industry and analysis in previous chapters, an action at a European Union level shall therefore support the following objectives:

1. To ensure the unrestricted provision of transborder satellite personal communications services throughout the European Union and the EEA.
2. To augment the world-wide mobile terrestrial cellular networks and their evolution, in particular GSM, by means of satellite PCS. A strategy should be determined which considers the complementary use of these terrestrial cellular networks with satellite PCS, leading to a completely integrated UMTS service at the beginning of the next century.
3. To work towards an urgent solution to ensure world-wide circulation and mobility of the satellite PCS hand-sets, making use of the Union's standardisation and type-approval mechanisms. Particular attention shall be paid to the use of dual mode terrestrial cellular/satellite handsets.
4. To ensure that the European mobile and space industry is in a position to benefit from the significant opportunity in the supply of both satellite PCS equipment and services.

4.3. The modalities of the action

The most fundamental question in the context of Europe's involvement in satellite PCS arising at this juncture is that of the selection of satellite personal communications networks and services suitable for the European environment.

As with most areas of radio communications, the ever increasing number of services and users is creating severe frequency shortages for most radio services and an increasing number of complex trade-offs is required to enable sharing of the available frequency spectrum among these services.

Given that the technology for a particular service usually prescribes the use of certain ranges of frequencies, trade-offs will have to be made on possibilities for sharing with existing services in these frequency bands, eventual migration of some services with the associated costs, and the introduction of new services of which the market value can often only be subject of speculation.

The frequency spectrum set aside for satellite personal communications services (or mobile satellite services as it is called in a more generic term) is very limited and result of a hard fought compromise during the WARC-92 conference where differences of opinion as to the viability and market value of these services was the subject to much speculation. Now that

substantial market studies are available and the first serious financing efforts are underway, it can be assumed that further spectrum might become available if the commercial success of first generation systems is attracting further systems to enter the market.

In the case of satellite PCS, frequency constraints appear to exist and indications are that there is technical limit of 4 to 5 systems in the currently allocated frequency band.

There are other frequency bands under consideration but their availability and sharing criteria are still subject to international negotiations within the context of the forthcoming World Radio Conferences. Furthermore, the estimates for the market potential carry two very difficult problems: firstly these estimates address mature market potential after a shake-out has taken place (and thus the frequency spectrum would have to be shared initially by more market entrants); and secondly, there is a certain risk that the market might under certain circumstances be subject to *de facto* monopoly provision for certain or all parts of the services.

Furthermore, limited markets in Europe for satellite PCS as well as extensive developments in terrestrial mobile cellular communications, mean that a balanced European frequency spectrum policy is required whereby, although leaving sufficient space for competition, a limit may emerge on the spectrum available for satellite PCS in Europe in order to retain sufficient spectrum for terrestrial cellular systems.

In view of the above, and for those categories for which there is limited frequency spectrum, a Union level selection of satellite systems for the provision satellite personal communications services appears to be the only way forward before any national authorisation decisions are taken. This selection will have to be fair, non-discriminatory and transparent to all contenders for spectrum.

A number of options for selection may be considered.

1. Selection on the basis of first come, first serve.
2. Selection of those already licensed in the US by the FCC.
3. Selection of those systems which pass the ITU frequency co-ordination.
4. Selection on the basis of frequency auctions;
5. Selection on the basis of a comparative bidding process ('beauty contest').
6. Relying on a 'natural' selection process.

Selection on the basis of first come, first serve can only function properly if sufficient frequency spectrum allows all entrants to be authorised. The moment that multiple entrants request authorisations a more sophisticated selection is required. To authorise solely on the basis of first come, first serve would furthermore encourage so-called 'paper' systems to be

put forward. This is an undesirable situation and would deny the market the emergence of commercially viable systems.

Given existing European industry participation, selection of those systems already licensed by the FCC may deserve priority. The question arises however, whether the US selection criteria are acceptable to the Union and moreover, whether the mere acceptance of such a selection could be defended by any due diligence criteria under applicable law.

Moreover, subject to formal confirmation by potential market entrants, there are currently more concepts for consideration than at the time of the commencement of the US selection and licensing process, and all these concepts deserve an evaluation within the Union on their respective merits.

Unless regulated otherwise by the Radio Regulations, the ITU frequency registration and coordination process functions on the basis of first come, first serve. Acceptance of such a principle as the sole selection criteria would not only lead to an increase in 'paper' systems in the future as it would be the safest way of ensuring market entrance but would also deny the consideration of relevant economic and financial criteria.

Some believe, and part of the industry consulted is among those, that there is no requirement for a selection at all. The selection process would be a 'natural' one whereby concepts under development are terminated because of, for example, lack of financing, technological problems, overly optimistic business cases, or other reasons. There is also some belief that sufficient frequency spectrum will be available in due time for all those systems which will actually be in a position to enter the market. If this would be the case, then obviously little action would be required in terms of selection and only the authorisation criteria would have to be developed. However, should the 'natural' selection process nevertheless result in more than anticipated, initial, market entrants while unsolved technical sharing arrangements of the limited frequency resource remain outstanding, then some systems might have to be refused entry to the market.

Selection on the basis of an auction of the available frequency resources has particular disadvantages in the case of satellite PCS as a result of its inherently global nature, namely the need to ensure compatibility of the results of such auctions, as well as the need for technical compatibility between the selected systems. Frequency auctions would thus become a very complex matter, independent of the question of the consequences of the resulting financial implications for such a process at a Union level.

In conclusion, it would seem that there is good reason to argue that a selection on the basis of a comparative bidding process is required. It is nevertheless necessary to establish

exactly in which frequency bands and for which services there are potential market entrants as well as what the prospects are for new entrants over time. The study work undertaken for the Commission has revealed the generic issues in the context of satellite PCS, but additional information is now urgently required on the number and scope of potential satellite systems.

In addition to the selection and authorisation of satellite systems for the provision of satellite personal communications services, , harmonisation of the conditions for the provision of S-PCS services, gateway operations, and equipment including hand-held sets, In chapter 3 details have been presented on the issues related to the authorisation of these elements. At this juncture, it is virtually impossible to take position on all these matters due to the complexity and their inter-relationships. Work needs to commence urgently to resolve these outstanding regulatory and policy questions in detail.

Some of the frequency issues are already addressed by the ERO, while ETSI has build up sufficient knowledge to advance rapidly on standardisation matters. The harmonisation of authorisation conditions is being studied by ETO and carried out within the framework of co-operation between the Commission and ECTRA. However, following a period of mainly study and evaluation, efforts now need to be pursued within an overall framework in order to ensure the availability of results at the appropriate moments in time for consideration under deliberations of regulatory and policy decisions.

There is considerable merit in having as much work as possible performed by the competent technical bodies with the widest European membership, namely ECTRA, ERC and ETSI. In this way, the ground is prepared for any decisions in the Union to be matched with coordinated decisions in other European countries. The work of these bodies shall encompass technical work preparing for the adoption of selection criteria and authorisation conditions, type-approval, frequency use and sharing etc. Both ERO and ETO have gathered substantial technical expertise, gathered in the course of the studywork performed for the Commission.

In conclusion, action at a Union level needs to address three elements:

1. *additional information is required from potential market entrants wishing to offer services in the European Union.* This allows confirmation whether or not a selection process is necessary, for which types of services, and in which frequency bands. It also assists in the definition of the scope and modalities of the authorisation process.
2. *satellite personal communications networks are selected on the basis of a comparative bidding process.* This allows all prospective market entrants to be valued at their

respective merits so that a maximum of potentially viable concepts are permitted to use the limited spectrum available.

3. *all relevant aspects of satellite personal communications services are authorised.* This would include space segment operators, providers of services, gateway operations, and equipment.

The Commission has come to the conclusion that these three elements may be adressed by means of two separate measures:

- ☒ the publication of a Call-for-Information in the *Official Journal* in order to obtain additional information from potential market entrants, and
- ☒ a Council and European Parliament Decision on action at a Union level on the selection and authorisation of satellite personal communications services in the European union.

4.4 Publication of a Call-for-Information.

The Commission has decided to publish a Call-for-Information in the *Official Journal*, addressed to prospective consortia and other relevant industry planning to provide satellite personal communications services and/or equipment in the European Union. Through this Call-for-Information, the Commission seeks detailed information of all relevant matters which may assist the definition of the scope and modalities of a selection and authorisation process, including suitable criteria for selection and conditions for authorisation.

Without prejudice to any formal Council and Parliament Decision on selection and authorisation of satellite PCS services, the Call-for-Information aims to assist the Union in elaborating the exact modalities of the selection and authorisation process. In view of the urgency of the need for selection and authorisation decisions, the Information shall enable significant progress in the period immediately following the adoption of a Decision.

The industry is thus urged to respond to the Call-for-Information with as much detail as it has at its disposal and with submission of options aimed to solve the questions raised by the various studies undertaken and reported in this Explanatory Memorandum.

A copy of the Call-for-Information is attached in Annex to this Explanatory Memorandum.

4.5 Proposal for a Council and European Parliament Decision.

The need for Community action on satellite personal communications services has been recognised by the Council in several Resolutions; it has been acknowledged that action can be better achieved at a Union level and that, in addition, action needs to be taken at international level.

The Council stressed in its Resolution²² of 7 December 1993 the importance of developing a Community policy in satellite personal communications services, recognising "*the challenge for the Community to develop a forward-looking regulatory framework which allows the introduction of satellite personal communications services, taking full account of the global nature of these systems, and the desirability of co-ordinated action*", invited the "*Member States to make efforts towards developing as soon as possible a Community policy concerning satellite personal communications services and a co-ordinated position, in particular within the context of international organisations, such as the International Telecommunications Union (ITU), and in relation to third countries*" and invited the Commission to investigate the significance of Satellite PCS, to monitor international developments and "*... to define, in collaboration with the Member States, an effective policy*" and "*... to propose appropriate measures and/or actions*".

The Council further considered in its Resolution²³ of 29 June 1995 on mobile and personal communications, as a priority objective for the development of the mobile and personal communications sector, "*to ensure within the Union the definition by 1 June 1996 of an harmonised licensing approach for satellite mobile and personal communications, after study by ECTRA*". The Commission is thus invited to propose, in a timely manner, measures necessary to the achievement of this priority objective.

A specific action in respect of satellite PCS is necessary to complement other measures planned at a Union level, in particular the adoption of a common framework at a Union level for authorisation regimes for the telecommunications sector. The satellite PCS industry however, cannot wait for this new regulatory framework. Urgent action is needed *now* if the Union is to provide an adequate response to the licensing of satellite PCS services in the United States of America and to allow selection and authorisation of satellite PCS services in the timeframe 1996-1997 at the latest.

²² O.J. No. C.339 p.1 of 16.12.93

²³ O.J. No. C 188 p.3 of 22.07.95

Community measures have a distinct role to play to complement national measures in particular where co-ordinated and coherent national decisions are required, and where measures have to be implemented simultaneously in order to allow the service provision to commence in due time.

Action concerning satellite personal communications services has to be taken at Union level in order to achieve the objectives of the internal market for such systems, services and equipment (article 7a of the Treaty). Such action will facilitate the introduction of satellite personal communications services throughout the Union in a coherent manner. It will also ensure fair and undistorted competition and overcome barriers to the introduction of this new type of service which would result from uncoordinated national authorisation, based on different dates for entry into service and subject to different, and possibly incompatible, conditions depending on the country concerned.

Uniformity of selection and of authorisation conditions and immediately binding measures such as stand-still obligations on Member States are essential for the introduction of satellite personal communications services in the Union.

The option of taking no action at a Union level is likely to cause delays, distort competition and result in a multitude of incompatible national authorisation and policy decisions, as well as numerous and diverging bilateral international agreements. The implementation of satellite personal communications services under such circumstances would be difficult and costly and would not allow Europe to capitalise on its technological lead in mobile and personal communications, or to build on the evolutionary strategy set out in the Green Paper on Mobile and Personal Communications.

At a global level, in the absence of Community action, the strategic position of the European industry, as well as the political position of the Union and Member States, would be greatly weakened to the detriment of both the European equipment and services industry involved directly in the provision of satellite personal communications services, and of Europe's leadership in mobile personal communications.

Therefore, by reason of the scale and the effects of the proposed policy, the objectives of the proposed action as well as the adoption of a selection process and of common and harmonised authorisation conditions will best be achieved at Union level.

On the basis of the above, the Commission proposes an action at Union level which aims to ensure the viable introduction of satellite personal communications services in the Union, by means of co-ordinated selection and authorisation procedures, taking full account of the

global nature of these services, in support of the relevant European industry elements, based on the elaboration of technical criteria by ECTRA, ERC and ETSI.

The action shall be based on a legally binding measure to ensure full transparency of the decision making process and thereby providing a maximum of confidence to users, industry, and trading partners on the approach within the European Union.

In consequence, the Commission proposes that the European Parliament and Council adopt a Decision on action at a Union level in the field of satellite personal communications in the European Union.

In conformity with the request of the Council, close co-operation with the Member States is central to the proposed approach. Community action will not cover all aspects of the introduction of satellite personal communications services in the Union. In accordance with the common and harmonised conditions being adopted and pursuant to the selection made at Union level, national regulatory agencies would be expected

- to authorise the selected space segment operators,
- to authorise the providers of services and any gateway operations on their territory in conformity with the provisions of Directive 94/46/EC
- to set up type-approval procedures and,
- if required, to licence equipment including hand-held sets.

The Member States will take all appropriate implementation measures and will be fully involved in the complementary Community process through their participation in a Advisory Committee for:

- the establishment of a selection process for space segment operators,
- the adoption of common criteria for the selection of space segment operators.
- the adoption of harmonised conditions for authorisations for all aspects of satellite PCS, and

Member States will be participating through a Regulatory Committee in the decision to select satellite personal communications space segment operators.

In accordance with the Council Resolution²⁴ of August 1990 on the strengthening of the Europe-wide co-operation on radio frequencies, in particular with regard to services with a pan-European dimension, the Community will also draw upon the technical expertise of the

²⁴ O.J. No. C 166 of 07.07.90

European standardisation bodies such as ETSI and Cen/Cenelec and of the ERC and ECTRA for the development of harmonised technical criteria and conditions for satellite personal communications services via work requirements placed by the Commission.

The timetable for decisions is an important element of the action at Union level. The timetable shall be as concrete as possible but nevertheless leave sufficient flexibility for changes as they appear necessary over time.

Proposed time schedule for measures at a Union level.

- Dec. 95 Publication of a Call-for-Information in the Official Journal;
 - Sep. 96 Establishment of categories of satellite personal communications services for which a selection of satellite systems is required;
Publication of a Call-for-Declaration of Interest in the Official Journal;
 - Oct. 96 Adoption of criteria for the selection of satellite systems and the principles for the authorisations for these systems;
 - Dec. 96 Based on a comparative bidding process and subsequent evaluation, selection of satellite systems used for the provision of categories of satellite PCS services;
Adoption of common conditions for the authorisation of the selected systems;
 - Mar.97 Adoption of harmonised conditions for the authorisation of all aspects of satellite personal communications as they concern, inter alia, service provision, equipment , interconnection, numbering, and gateway access;
-

5. PROPOSED ACTION AT AN INTERNATIONAL LEVEL.

5.1 International developments

Most of the regulatory and policy developments in satellite PCS outside the Union have taken place in the United States and at the level of the ITU.

In the United States, the Federal Communications Commission (FCC) has considered six applications (Ellipso, Iridium, Globalstar, Odyssey, Constellation, and AMSC), some of which now include substantial European investment. *The limited amount of frequency spectrum led to the FCC's decision to ask the six applicants to try and reach an agreement on frequency sharing* and to work out other technical arrangements. Since such an agreement could not be reached, the FCC released a Notice of Proposed Rule Making (NPRM) in February 1993 which proposed a procedure for selection and licensing of up to five satellite PCS networks, and initiated a public consultation process.

In the light of the Commission's concern that unilateral selection and authorisation of satellite personal communications systems by the US might pre-empt decisions in the Community and might jeopardise the viable introduction of global satellite personal communications services, opportunity was taken to offer comments on the FCC Notice, through a 'note verbale' to the US Department of State²⁵. In particular, the Commission is of the view that the inherently global nature of the services in question requires international consultations in order to seek mutually acceptable solutions. The note expressed a concern that uncoordinated national licensing could lead to denial of access to world markets by virtue of, for example, frequency scarcity. The note furthermore mentioned in detail specific areas of concern and ended with a request for further consultations in order to review the issues raised.

After taking into account comments that had been submitted, the FCC released its Report and Order in October 1994, in which many of the concerns expressed by the Commission not taken into account, but which confirmed the earlier selection and licensing proposals and in early 1995 the FCC issued orders selecting and licensing three of the proposed concepts for global service provision, namely Globalstar, Iridium, and Odyssey²⁶.

On 12 June 1995, the Commission received a formal response of the Department of State to the 'note verbale', in which the domestic nature of the FCC's decisions were underlined.

²⁵ 'Note verbale' submitted on 1 June 1994 to the US Department of State by the Washington Delegation of the European Communities.

²⁶ The FCC has now commenced with the rule making procedures in relation to the future licensing of satellite PCS services in the 2 GHz band. Also in respect of the use of these bands, the European Commission would raise similar considerations as it has done in its 'note verbale' on the first round of the US licensing process.

In its response, the US Government offered to find mutually acceptable ways to bring this emerging technology to the international marketplace.

In summary, the first round of selection and licensing of satellite PCS systems in the United States is now completed. The licensees are expected to complete their financing and commence to seek licenses in the rest of the world, and to implement systems on a 1998 - 2000 time scale.

The International Telecommunication Union (ITU) has also underlined the complexity of the issues²⁷ and the fact that governments and telecommunications regulators around the world raise questions concerning new regulatory and operational issues arising from satellite PCS deployment. The ITU considers that the introduction of satellite PCS raises a new range of complex issues which can only be resolved by more analysis and study, and through co-operation of industry and regulators. The forthcoming, first, ITU World Policy Forum to be held in October 1996 will focus on satellite personal communications.

Subsequent to the frequency allocations for satellite PCS at the 1992 World Administrative Radio Conference (WARC-92), the work undertaken by the ITU mostly concerns studies in which sharing between satellite PCS services and other radiocommunications services is analysed and which is largely technical in nature.

Most of this work is progressing in preparation of the next World Radio Conference to be held in November 1995 in Geneva (WRC-95). At that conference, the allocation of so-called 'feeder links' -- the communications links between the gateway stations and the satellites -- will have to be agreed as there is no frequency allocation yet foreseen. Furthermore, this forthcoming Conference is expected to deal with other important matters concerning satellite PCS such as a review of the dates of entry into force of use of frequency allocations for satellite PCS, and a review of the technical sharing constraints of the relevant frequency bands.

The on-going work in the ITU is of considerable importance in trying to solve technical issues at world level. The WRC-95 will offer European nations an opportunity to advance its position in frequency and standardisation matters related to satellite PCS, in order to prepare for globally acceptable solutions, and to the advantage of European industry and users. The ITU World Policy Forum will offer an opportunity to discuss matters at a global level.

²⁷ "Global Mobile Personal Communications Systems - Report of the third regulatory colloquium", ITU publication, 1995.

5.2 Proposed action on international co-operation

The subject of international co-operation merits special attention given the complexity of the issues involved in the regulation of satellite PCS services and their inherently global dimension. As recognised by Council in its earlier Resolution²⁸ on the introduction of these services in the Community, there is a "challenge for the Community to develop a forward looking regulatory framework . . . taking full account of the global nature of these systems . . ." The Council also noted "that any policy in this area may concern all of the [...] CEPT authorities, including those of central and eastern Europe".

Any internal Union decisions will have to be compatible with other international regimes being established in order to allow industry to launch their satellite systems and design services and handsets for availability at global level.

The establishment of global satellite personal communications services will require the definition of a flexible regulatory framework, including fair and effective procedures for authorisation and frequency allocation, and world-wide co-operation with particular attention to less developed countries. Furthermore, efforts must address interconnectivity and interoperability of satellite PCS services with fixed and terrestrial cellular services around the world, and world-wide, open access to the satellite personal communications networks and services.

The international co-operative effort required to establish global satellite personal communications services is fully within the scope of the common vision of the G-7 partners on the Global Information Society and will be a first major test in the context of the implementation of Global Information Infrastructures, as recently discussed during the G-7 Ministerial meeting in Brussels.

The international aspects are foremost visible in the spectrum use and sharing issues but other important issues concern, *inter alia*:

- * the need for agreements on the global circulation of hand-held equipment (global mutual recognition of type-approval),
- * access of nations to the relatively few gateways which are planned,
- * interconnection agreements with a whole variety of other network providers,

²⁸ "Council Resolution of 7 December 1993 on the introduction of satellite personal communications in the Community", OJ No.C.339 p.1, 16.12.93

- * implementation of global numbering schemes,
- * agreements on the functioning of safety and distress operations,
- * agreements on the functioning of the very few satellite system control centres to control the operation of the satellite systems over nations,
- * market access,
- * compatibility with GSM, DECT, and DCS1800 and other terrestrial cellular systems

It can be expected that the ITU and the WTO may contribute to solve a number of the issues, in particular on the technical aspects of frequency use and sharing, numbering, hand-held standardisation, as well as on general market access rules and availability of services respectively.

At regional level in Europe, the CEPT, ETSI and the Union shall contribute under their respective competences. In other parts of the world, the situation however is less clear, although some forms of regional co-operation may be called upon.

The Commission considers that it is urgent for nations around the globe to co-ordinate the timely evaluation of all relevant issues in the context of satellite PCS so that they can be referred to the appropriate international fora, or be addressed on the basis of ad-hoc understandings and/or agreements on a multi- or bi-lateral basis.

A dialogue with countries which would like to associate themselves more directly with the work undertaken in the Union should commence immediately in order to review any possibilities for co-operation as well as for co-ordination of positions in existing fora. This should apply in particular to non-EU European countries, especially those who are candidates for either full or associate membership of the Union.

In its Resolution of 7 December 1993 on satellite PCS, the Council invited the Commission to consult with non-Community countries on the co-ordinated, global, introduction of satellite personal communications services. The Commission intends to continue, and broaden indeed, the consultations it has commenced as a consequence of the Council's request. In cases where either the Member States report on difficulties of Community organisation with the introduction of satellite PCS in third countries, or where the results of the consultations of the Commission with third countries lead to a need, the Commission may recommend to Council that it negotiates, on behalf of the Community, multi-lateral and bi-lateral agreements on particular aspects of satellite personal communications services.

Given the complexity of the matters, it is furthermore desirable that industry is invited to co-operate and to propose solutions to issues raised by regulators. The Commission intends to

set up an industry consultative platform to provide input to the process of selection and authorisation in the Union.

Call for Information concerning
the introduction of satellite personal communications services (S-PCS)
in the European Union and the European Economic Area

Following a request from Council, pursuant to its Resolution of 7 December 1993 on the introduction of satellite personal communications services in the Community (O.J. No C 339 p.1 of 16.12.93), the European Commission is seeking detailed information with regard to satellite personal communications services.

The goal of this Call for Information is to obtain detailed information which may assist the Community and its Member States in the definition of the scope and modalities of a selection and authorisation process with regard to these services: The call is addressed to any entity (including non-EU), and in particular space segment providers, providers of services, equipment manufacturers, network operators and mobile services providers, users, and consumers groups, interested in, or affected by, the provision of satellite personal communications services in the European Union.

In parallel to its decision to publish this Call for Information, the Commission adopted a Proposal for a European Parliament and Council Decision on an action at a Union level in the field of satellite personal communications services in the European Union [COM(95)529 final of 8 November 1995], a copy of which is available upon request.

For ease of analysis, the information corresponding to specific items shall be provided and numbered in accordance with the headings on the list below. If desired, commercially-in-confidence information may be provided in an annex, separately bound and clearly marked accordingly.

The requested information shall concern the views of the responding entity on the items listed below in relation to any selection and/or authorisation process, the exact format of which is still to be decided by Council and European Parliament following the mentioned proposal of the Commission.

Detailed information shall be provided under the following headings, as applicable:

1. *Information concerning the responding entity*
 - 1.1 Name/address and other contact details
 - 1.2 Entities' background and interest in S-PCS
 - 1.3 Detailed description of equipment/services intended to be provided, including relevant time schedules
2. *Provision of S-PCS space segment capacity in the EU*
 - 2.1 Criteria for selection of S-PCS space segment providers
 - 2.1.1 frequency use and sharing issues, including introduction of new systems,
 - 2.1.2 technical qualifications such as compatibility with GSM/DECT/DCS1800, interoperability of services,
 - 2.1.3 financial qualifications,
 - 2.1.4 other qualifications
 - 2.2 Conditions for authorisation of S-PCS space segment providers
 - 2.2.1 frequency use and sharing issues, including introduction of new systems, and compatibility with frequency plans of other nations,
 - 2.2.2 other regulatory conditions,
 - 2.2.3 technical conditions such as compatibility with GSM/DECT/DCS1800/UMTS, interoperability of services,
 - 2.2.4 financial qualifications and viability,
 - 2.3 satellite systems operations,
 - 2.4 national security and legal interception,
 - 2.5 safety and distress operations
 - 2.6 replacement of satellites,
 - 2.7 availability of spare space segment capacity for developing countries,
 - 2.8 other relevant issues
3. *Authorisation conditions for provision of S-PCS services*
 - 3.1 interconnection agreements, access to gateway facilities,

- 3.2 ability to switch off user equipment,
- 3.3 billing arrangements,
- 3.4 privacy and data protection,
- 3.5 national security and legal interception
- 3.6 others.

4. *Authorisation conditions for S-PCS Gateway operations*

- 4.1 access to gateways, interconnection to networks,
- 4.2 regulatory control over gateways in other countries,
- 4.3 frequency use and sharing,
- 4.4 ability to control handhelds and satellite system functions,
- 4.5 privacy,
- 4.6 national security and legal interception,
- 4.7 others

5. *S-PCS Equipment issues*

- 5.1 standardisation
- 5.2 type-approval and mutual recognition thereof in other countries,
- 5.3 free circulation
- 5.4 authorisation for use,
- 5.5 interoperability,
- 5.6 aspects of frequency use and sharing,
- 5.7 privacy and data protection issues,
- 5.8 national security and legal interception
- 5.9 compatibility GSM/DECT/DCS1800 and other terrestrial mobile systems,
- 5.10 health/safety.
- 5.11 others

6. *International aspects*

- 6.1 access to third markets
- 6.2 compatibility of frequency use and sharing plans, frequency interference hazards
- 6.3 equipment issues such as standardisation, free circulation and use, type-approval
- 6.4 numbering
- 6.5 access to gateways,
- 6.6 billing and accounting
- 6.7 national security and legal interception
- 6.8 intellectual property rights, copyrights
- 6.9 others

7. *Other relevant issues*

- 7.1 competition aspects
 - 7.1.1 structure of the consortia,
 - 7.1.2 level of competition at various levels of provision,
 - 7.1.3 availability of air-interface specifications to manufacturers,
 - 7.1.4 others
- 7.2 timetables of selection and authorisation procedures
- 7.3 completeness of existing EU/national legislation
- 7.4 others

The Commission may make available to the national regulatory authorities of the Member States of the European Union and the EEA, copies of the information provided in the course of this Call for Information. Confidential treatment shall be guaranteed of those parts of the information which are marked for the purpose by the respondent.

Neither the fact whether or not an interested entity responds, nor the contents of any response, will prejudice the position of, or give any rights to, the entity in any formal selection and/or authorisation process in the European Union and/or its Member States.

Responses to this Call for Information must reach the European Commission offices three (3) months after the publication date in the Official Journal of the European Communities.

All correspondence concerning this Call for Information should be sent to:

European Commission
DGXIII-A1/Call-for-Information on Satellite PCS
BU 9-4/191, 200 Rue de la Loi,
B-1049 Brussels, Belgium

telephone: +32.2.296 8609

facsimile: +32.2.296 8395

E-mail via internet: spcs@dg13.cec.be

Preferred formats: W4W version 2.0 or WP version 5.1

The use of electronic mail is recommended. Acknowledgements
of receipt will be issued.

PART B:

Proposal for a
European Parliament and Council Decision
on an action at a Union level in the field of
satellite personal communications services in the European Union

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community and in particular Articles 57, 66 and 100a ,

Having regard to the proposal of the Commission,

Having regard to the opinion of the Economic and Social Committee,

Having regard to the opinion of the Committee of the Regions,

1. Whereas on 7 December 1993 the Council adopted a Resolution on the introduction of satellite personal communications services in the Community¹; whereas in that Resolution the Council stressed the importance of co-ordinated action required to allow the introduction of satellite personal communications services in the Community, taking full account of the global nature of these services; whereas the Council underlined the need for the development of an effective policy and asked the Commission to study the matter, monitor international developments and propose appropriate measures and/or actions;

Whereas on 19 May 1995, the European Parliament adopted a Resolution on Mobile and Personal communications in the European Union² in which it considers as a priority objective to establish, before 1 January 1996, a harmonised authorisation approach for satellite based mobile and personal communications and, on that basis, the implementation of procedures for the provision of licences of those systems at an early stage; whereas this approach must be implemented by 1 January 1996 in order to take account of the rapid development of these services at a global level and their social and commercial potential;

¹ O.J. No. C 339/1, 16.12.93

² O.J. No. C , to be published

Whereas on 29 June 1995 the Council adopted a Resolution on the further development of mobile and personal communications in the European Union³ in which it considers as a priority objective to ensure, prior to 1 June 1996, the definition of a harmonised authorisation approach for satellite based mobile and personal communications, after study by ECTRA;

Whereas satellite personal communications systems have a role to play in assuring the delivery of universal service to remote parts of the Union, thereby strengthening social and economic cohesion;

2. Whereas, having considered the telecommunications, trade and industry aspects as well as the frequency and standardisation aspects of satellite personal communications, and after consultation of the relevant industry, the Commission has submitted proposals for decision-making and the related time schedule with the aim to come to selection and authorisation of satellite personal communications services on the basis of a common approach;
3. Whereas, market entry for satellite PCS space segment operators can only be restricted on the basis of objective, transparent, proportionate and non-discriminatory selection criteria relating to the availability of scarce resources, and award procedures shall be objective, transparent and non-discriminatory; whereas within the limited common spectrum a harmonised selection is required at a Union level; whereas the common conditions for authorisations for satellite PCS services shall be based on the principles of objectivity, transparency, non-discrimination, and proportionality;
4. Whereas, since satellite personal communications by nature addresses foremost the needs of mobile users travelling between Member States and outside the Union, diverging national legislations, regulations, and administrative measures would hinder or even prevent the provision of Union-wide satellite personal communications services, the free movement of related equipment and, as a consequence, the successful introduction of satellite PCS on the internal market;
5. Whereas the free provision of satellite personal communications services and the free movement of related equipment on the internal market can only be achieved if an approximation of national regulations and administrative measures is achieved on the basis of harmonised conditions for authorisations for providers of services and gateway operators and, if required, for equipment;

³ O.J. No. C 188/2, 22.7.95

6. Whereas the European Parliament and the Council are examining measures on authorisations and individual licences in the field of telecommunications in the Union; whereas, given the urgency of the matter and in the absence of adoption and implementation of such Union authorisation measures, the area of satellite personal communications services therefore requires an action at a Union level, as specified in this Decision; whereas the action shall be of limited duration;
7. Whereas, given the foreseen implementation timeschedule for satellite personal communications systems, the action aims to ensure that, within its limited duration, appropriate regulatory and policy measures are taken in the Union on the selection and authorisation of satellite personal communications, taking due account of the international dimension and its ensuing requirements;
8. Whereas, in view of limited availability of the frequency resources, categories of satellite personal communications services shall be determined for which a comparative bidding process is required to come to a selection of satellite systems; whereas a single Union-level selection process shall avoid incompatible national decisions on the selection of satellite systems; whereas the procedures by means of which the comparative bidding process will be undertaken will have to be determined in detail;
9. Whereas potential applicants shall be informed of the procedures of the comparative bidding process, and of the criteria which have been determined for selection, and of the principles which will be used for the establishment of the common conditions to be attached to authorisations for satellite PCS space segment operators
10. Whereas the determination of common conditions for selected space segment operators, and of harmonised conditions for authorisations for providers of services, gateway operators and, if required, circulation and use of equipment will permit Member States to provide authorisations under applicable national regimes in accordance with the provisions of Directive 94/46/EC, and thereby avoiding uncoordinated and incompatible national regulatory decisions;
11. Whereas measures adopted by the European Radiocommunications Committee (ERC) and the European Committee for Telecommunications Regulatory Affairs (ECTRA), if consistent with the Union's interest, may be a basis for the use of the relevant frequencies by, and for the elaboration of the authorisation criteria of, satellite personal communications services;

Whereas the European standardisation bodies such as the European Telecommunications Standards Institute (ETSI) and Cen/Cenelec may be engaged in a timely fashion to elaborate the necessary standards which are relevant in this area;

12. Whereas the global dimension of satellite personal communications systems and services, as well as the related global regulatory structure under which they are provided play an important role in the considerations of the Union; whereas this action at a Union level shall permit the Union and its Member States to exert greater influence on the world-wide development of mobile and personal communications;

Whereas the inherent global nature of satellite personal communications services may require the adoption of a substantial number of agreements with third countries on, *inter alia*, interconnection, free circulation and use of equipment, satellite system and satellite control centers operations, frequency band usage and sharing plans, numbering, safety and distress operations, access to gateway stations and access to third markets; whereas these agreements are closely related to market access arrangements; whereas therefore the Commission may start multi-lateral and/or bi-lateral negotiations on these aspects of satellite personal communications.;

13. Whereas the results of international discussions and/or other warranted changes of circumstances may require that decisions taken under this action be amended or other appropriate action be undertaken by the Commission in close co-operation with the Member States;

14. Whereas Member States shall take all appropriate action to implement this action and its resulting decisions in a timely fashion and communicate national implementation measures to the Commission;

15. Whereas the relevant industry should be requested to co-operate closely with the Commission and the national regulatory authorities in order to achieve solutions for issues raised during the selection and authorisation of satellite personal communications services; whereas this co-operation may be extended to address the issues in an international context;

Whereas the Commission may wish to seek assistance from an ad-hoc panel of experts in the elaboration of the detailed work required under the tasks assigned to it by this Decision; whereas the ad-hoc panel of experts should be made up, in as far as available, of relevant experts from industry augmented, as necessary, by experts from national ministries, representatives of relevant bodies such as, *inter alia*, ETSI, ECTRA, ERC, and other relevant governmental bodies;

Whereas the nature of the information provided by applicants and other relevant industry may be of a commercially-in-confidence nature; whereas the utmost discretion shall be undertaken in respect of this information; whereas however this shall not prevent publication of information relevant for a selection and authorisation process;

HAVE ADOPTED THIS DECISION:

Article 1

The establishment of an action at a Union level

This Decision shall apply to the introduction of satellite personal communications services in the Union by means of co-ordinated action at a Union level between the national regulatory authorities for telecommunications.

This action is limited to a period of three years from the date of publication of this Decision in the *Official Journal*. The Commission shall keep developments in the satellite personal communications area under review, report on the effectiveness of action taken under this Decision after two years and, if required, propose a prolongation of action in this area to the European Parliament and the Council.

Article 2

Objectives

The objectives of action in satellite personal communications shall be to ensure, within the period set out in Article 1:

- (i) the selection of satellite PCS space segment operators;
- (ii) the adoption of common conditions to be attached to authorisations for satellite PCS space segment operators;
- (iii) harmonisation of conditions for authorisations, established in accordance with the provisions of Directive 94/46/EC, for providers of S-PCS services and gateway operators, and, if required, appropriate measures for equipment circulation and use;

- (iv) the establishment of a dialogue and, where appropriate, negotiations between the European Union and third countries with the aim of establishing international co-operation in order to promote the development of satellite personal communications services and remove the obstacles to their development.

Article 3

Definitions

For the purposes of this decision:

- authorisation of a space segment operator: the permission allowing an undertaking to establish and operate space segment capacity for the provision of S-PCS services and to be granted the right to use the relevant frequency spectrum under specified conditions;
- provider of S-PCS services: any undertaking providing satellite communications services as defined in Directive 94/46/EC and making use of space segment capacity provided by the selected space segment operators; this does not cover resellers of authorised services;
- gateway operator: any undertaking providing satellite network services as defined in Directive 94/46/EC and making use of the space segment capacity provided by the selected space segment operators.

Article 4

Establishment of selection process for space segment operators

The Commission shall, in close co-operation with the national regulatory authorities of the Member States in accordance with the procedure laid down in Article 7:

- (i) establish categories of satellite personal communications services, and determine, where appropriate, the need for selection of satellite personal communications space segment operators;
- (ii) adopt, for the relevant categories, criteria for the common selection of satellite personal communications space segment operators to be authorised to provide their services in the Union;
- (iii) adopt the procedures by which a comparative bidding process may be undertaken;
- (iv) adopt, for all categories of services, principles for the common conditions to be attached to authorisations for selected satellite personal communications space segment operators;

Article 5

Selection of space segment operators

1. A Call for Declaration of Interest shall be published in the Official Journal within six months after adoption of this Decision.
 - (i) The Call for Declaration of Interest shall set out the criteria for the common selection for each category of service established pursuant to Article 4 par.(ii), the procedures to be followed in the selection established pursuant to Article 4 par.(iii) and the principles of the common conditions to be attached to authorisations established pursuant to Article 4 par.(iv).
 - (ii) The Call for Declaration of Interest shall invite declarations from any person or entity wishing to operate a system for the purpose of providing satellite personal communications services in the European Union.
2. A Decision selecting satellite personal communications space segment operators for the relevant categories of services shall be adopted in accordance with the procedure laid down in Article 9.

Article 6

Adoption of common and harmonised conditions for authorisations

The following shall be adopted by a Decision in accordance with the procedure laid down in Article 8:

- (i) common conditions to be attached to the authorisations of the selected satellite personal communications space segment operators;
- (ii) harmonised conditions for the authorisation of providers of satellite personal communications services, gateway operators, and, if required, for the circulation and use of equipment;
- (iii) any other measures aimed at facilitating the development of satellite personal communications services.

In view of the adoption of common and harmonised authorisation conditions, the Commission may decide, where it deems appropriate, to consult representatives of selected space segment operators.

Article 7

Co-operation with CEPT and European standardisation bodies

In order to assist the adoption of common and harmonised criteria and conditions and with due regard to the time schedule established in Annex, the Commission may ask the European standardisation bodies such as the European Telecommunications Standards Institute (ETSI) and Cen/Cenelec, as well as the European Radio Committee (ERC), and the European Committee for Telecommunications Regulatory Affairs (ECTRA), via work requirements under the relevant existing framework agreements with those organisations, to study the necessary technical criteria and conditions.

Article 8

The advisory Committee

1. The Commission shall be assisted in the implementation of this Decision by an advisory Committee, made up of representatives of the national regulatory authorities of the Member States and chaired by a representative of the Commission.
2. The representative of the Commission shall submit to the Committee a draft of the measures to be taken. The Committee shall deliver its opinion on the draft within a time limit to be determined by the Chairman according to the urgency of the matter and, where necessary, by taking a vote.

The opinion shall be recorded in the minutes. Furthermore, each Member State shall have the right to request that its position be included in the minutes.

The Commission shall take the utmost account of the opinion delivered by the Committee and shall inform the Committee of the manner in which its opinion has been taken into account.

Article 9

The regulatory Committee

1. By way of exception to the provisions of Article 8, the following procedure shall apply in respect of the matters covered by Article 5 (2).
2. The representative of the Commission shall submit to the Committee a draft of the measures to be taken. The Committee shall deliver its opinion on the draft within a time limit which the chairman may lay down according to the urgency of the matter. The

opinion shall be delivered by the majority laid down in Article 148(2) of the Treaty in the case of decisions which the Council is required to adopt on a proposal from the Commission. The votes of the representatives of the Member States within the committee shall be weighted in the manner set out in that Article. The chairman shall not vote.

3. The Commission shall adopt the measures envisaged if they are in accordance with the opinion of the committee.
4. If the measures envisaged are not in accordance with the opinion of the committee, or if no opinion is delivered, the Commission shall, without delay, submit to the Council a proposal relating to the measures to be taken. The Council shall act by a qualified majority.

If, on the expiry of a period of three months from the date of referral to the Council, the Council has not acted, the proposed measures shall be adopted by the Commission.

Article 10

International aspects

1. The Commission monitors developments, particularly in respect of regulatory proceedings, outside the Community and, if appropriate, consults with third countries on the coordinated introduction of satellite personal communications at a global level.
2. The Member States shall inform the Commission of any difficulties encountered, *de jure* or *de facto*, by Community organisations in the introduction of satellite personal communications in third countries;
3. Whenever the Commission establishes that the action undertaken under this Decision, in particular with regard to the information received further to paragraphs 1 and 2, may require negotiations with the aim to facilitate the introduction of satellite personal communications in the Union and remove obstacles thereto, the Commission will start, where appropriate, negotiations in view of these aims.

The principle of Community action will be aimed at ensuring effective and comparable access for Community organisations to the markets in these third countries;

4. Measures taken pursuant to this Article shall be without prejudice to the Community's and Member States' obligations under relevant international agreements.

Article 11

Amendment of Decisions

In order to take into account the results of discussions in international fora and /or with third countries or as a result of measures taken in accordance with the provisions of Article 10, as well as any warranted change of circumstances, the Commission shall adopt, in close co-operation with the national regulatory authorities of the Member States in accordance with the procedure laid down in Article 8, all appropriate measures as deemed necessary, including amending its decisions.

Article 12

Implementation

1. Member States shall take all necessary measures by law or administrative action to enable implementation of the measures agreed in or pursuant to this Decision;
2. Member States shall supply the Commission, not later than 6 months after adoption of this Decision, with such information as may be required by the Commission to verify the implementation of this Decision.
3. Member States shall supply the Commission, not later than 3 months after adoption of the decisions taken pursuant to this Decision and in accordance with the time schedule in Annex, with such information which will allow the Commission to verify the compliance with such decisions.

Article 13

Confidentiality

1. Without prejudice to the provisions of this Decision, the Commission and the national regulatory authorities, their officials and other servants, and experts consulted shall not disclose any information acquired by them as a result of the implementation of this Decision and of the kind covered by the obligation of professional secrecy.
2. The provisions of paragraph 1 shall not prevent publication of information on selection criteria and authorisation conditions which does not include information of a confidential nature.

Article 14

This Decision is addressed to the Member States.

Done at Brussels,

For the European Parliament

The President

For the Council

The President

Annex

**to a European Parliament and Council Decision of . . .
on an action at a Union level in the field of
satellite personal communications services in the European Union**

Time schedule for measures

- Sep. 96** **Establishment of categories of satellite personal communications services for which a selection of satellite systems is required;**
Publication of a Call-for-Declaration of Interest in the Official Journal;
- Oct. 96** **Adoption of criteria for the selection of satellite systems and the principles for the authorisations for these systems;**
- Dec. 96** **Based on a comparative bidding process and subsequent evaluation, selection of satellite systems used for the provision of categories of satellite PCS services;**
Adoption of common conditions for the authorisation of the selected systems;
- Mar. 97** **Adoption of harmonised conditions for the authorisation of all aspects of satellite personal communications as they concern, inter alia, service provision, equipment , interconnection, numbering, and gateway access;**
-

PART C: FINANCIAL OUTLINE

1. Title of Action

European Parliament and Council Decision on an action at a Union level in the field of satellite personal communications services in the European Union.

2. Budget Line

B-5 401: Telecommunications and Postal Policy

3. Legal Basis

- European Union Treaty. Articles 57, 66 et 100a.
- Communication to the Council on satellite personal communications COM(93 171 final) of 27 April 1993.
- Council Resolution of 7 December 1993 on the introduction of satellite personal communications services in the European Community. OJ No C 339, 16.12.93, p.1.

4. Description

4.1 General Objectives of the Action.

This action aims for the establishment of a common market for satellite personal communications services, through implementation of an action at a Union level which foresees selection and authorisation on the basis of common and harmonised criteria and conditions.

The action has a very strong impact on the introduction and development of satellite personal communications services in the Community and the rest of Europe and its justification lies in the necessity of establishing a Community-wide approach for services which are inherently international, even global, in nature .

4.2 Duration and renewal.

The proposed action is limited to three years, after which a Council and European Parliament Decision is required to allow a further extension of two years maximum.

5. Classifications

- Non-obligatory expenditure
- Dissociated credits

6. Nature of operational Spending

The Community's financial contribution shall, depending on the nature of the work, vary between 50% and 100% of the resources invested. It will be needed for contracts for study of certain technical, legal, economic or other aspects, and for subventions given to ECTRA/ETO, ERC/ERO and ETSI for the elaboration of harmonised technical criteria and related tasks by means of work requirements established under existing framework contracts between the Commission and each of the mentioned organisations.

7. Financial implication

7.1 Total costs of the action

The Community resources will be required to cover the spending described under point 6.

Indicative timetable see below (assumption: Decision adopted mid 1996 - for a period of 3 years thus until mid 1999, with financial engagements spread out over 4 fiscal years 1996-1999)

(B5-401 under Chapter B5-40 - Actions in the telecommunications and Posts, standardisation and automatic translation sectors)

7.2 Itemised elements of the action

The following table presents the itemised costs of each element of the action in ECU's.

item	1996	1997	1998	1999	total
studies by consultants	100.000	300.000	200.000	100.000	700.000
subventions ETSI/ETO/ERO	150.000	200.000	300.000	150.000	800.000
total	250.000	500.000	500.000	250.000	1.500.000

7.3 Appropriations

The following table sets out the estimated payment engagements against the credit engagements for the duration of the action

	1996	1997	1998	1999	total
credit engagement	250.000	500.000	500.000	250.000	1.500.000
payment engagement					
1996	50.000				50.000
1997	200.000	200.000			400.000
1998		300.000	200.000		500.000
1999			300.000	250.000	550.000
total	250.000	500.000	500.000	250.000	1.500.000

8. Anti-fraud provisions

The control of payments of any services, preparatory, feasibility or evaluation studies requested is carried out by the Commission prior to payment taking into account any contractual obligations, economic principles and good financial or other management practice. Anti-fraud provisions (supervision, reporting requirements etc.) will be included in all agreements and contracts made between the Commission and the recipients of any payments.

9. Elements of cost-efficiency analysis

9.1. Objectives and coherence with the financial programming.

The proposed action aims at the establishment of a common market for satellite personal communications services, through implementation of an action at a Union level which foresees selection and authorisation on the basis of common and harmonised criteria.

The action is provided for in the financial programming of the DG. The objective of the proposed action corresponds to the general objective of the "establishment of an internal market for telecommunications equipment and services", defined in the financial programming of the DG.

The action directly concerns the telecommunications, satellite, and mobile equipment and services industry in the Union.

9.2 Justification of the Action

The proposed Decision is a legislative measure necessary for the establishment of an internal market in the satellite communications sector and more particularly a common market for satellite personal communications services.

Satellite personal communications services will be introduced in the very near future, as a step towards the implementation of a truly global information infrastructure. It is now urgent to agree to a co-ordinated approach in the Union which allows the Member States to issue relevant licences for the provision of satellite personal communications services on the basis of co-ordinated national regulatory conditions and criteria. The proposed decision therefore provides for the adoption of an action at European Union level in order to ensure the viable introduction of S-PCS in the Union by means of co-ordinated selection and authorisation procedures, taking account of the global nature of these services. The proposed action is fully in line with the principle of subsidiarity as the inherent transborder nature of the provision of S-PCS, which will not require movement of providers of services or users, necessitates the adoption of Community measures which enable the implementation of co-ordinated national measures in the Member States, thereby promoting the development of telecommunications services in the Community, as well as completing the single market for these services. The objective can therefore better be achieved by an action at Community level.

9.3 Follow-up and evaluation of the action.

The proposed Decision sets out a procedure which, on the basis of a Commission evaluation and request, requires a further Council and European Parliament Decision to prolong the action by a period of two years.

10. Administrative expenses.

The actual utilisation of the required administrative resources will be the result of an annual decision by the Commission on the allocation of resources, taking due account of the manpower and additional budget which have been allocated by the budgetary authorities.

10.1 Impact on employment.

Employment type		Affected manpower		of which		duration
		Permanent	Temporary	existing resources	additional resources	
Fonctionnaires or Temporary Agents	A		1	1		3 years
	B					
	C					
Other resources						
Total			1	1		3 years

10.2 Global financial impact on additional human resources.

None

10.3 Increase of other costs resulting from the action.

none

The required budget of 416,000 ECU annually for a period of 3 years, totalling 1,248,000 ECU (as outlined below), will be *covered through redeployment of existing financial resources* and no additional budget is expected to be required:

- a. Staff costs: 100.000 ECU per year. (budget title A1, A2, A5)
- b. The specific requirements for Committee meetings can be estimated to be about 6 meetings per year of a Committee with 30 members, specifically constituted for the purposes of this directive. This covers two Committee's as created by articles 9 and 10 of the Proposed Decision.

The total of the Committee meetings of the two Committees combined will cost about 144,000 ECU (= 6 x 24,000) per year to be covered by budget line A-2510.

- c. Six expert panel meetings will also be held in view of the preparation of these Committee meetings. Expert panel meetings could involve 6 experts from organisations such as CEPT, ERO, ECTRA, ETSI, together with 14 private experts. The cost for such six preparatory meetings will amount to 112,000 ECU per year (29,484 ECU (6 x 14 x 3 days x 117 ECU) + 92,400 ECU (6 x 20 x 770 ECU)) covering travel and accommodation expenses without professional fees. This will be covered by budget line A-250.

d. Further mission costs of 60,000 ECU annually will be related to discussions/negotiations with international community in view of international agreements and /or understandings. This will be covered by budget line A-130.

ISSN 0254-1475

COM(95) 529 final

DOCUMENTS

EN

15

Catalogue number : CB-CO-95-591-EN-C

ISBN 92-77-95903-7

Office for Official Publications of the European Communities

L-2985 Luxembourg