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A Word from the Chairman

This issue of ECSL News *will inform you about the latest legal developments in the space field and, as always, about the European Centre for Space Law, its development and its activities.*

You will first find a summary of the last Council at Ministerial Level of the European Space Agency, followed by the signing of the new Inter-Governmental Agreement (IGA) on the International Space Station, the role of Europe in the Global Navigation Satellite System (GNSS), and the stakes involved in the Global Mobile Personal Communications by Satellite (GMPCS). Other features include the last session of the Legal Sub-committee of the United Nations Committee on the Peaceful Uses of Outer Space (UN-COPUOS) and the Europe-Russia partnership.

As for ECSL itself, it is important to mention that we are now on the Web. The ECSL Homepage, which will be updated on a regular basis, consists of general ECSL information, upcoming events, and the ESALEX database on space law and policy. Access to the ECSL Homepage can be made free of charge, however, an authorised password from the ESA Legal Adviser is required.

Besides the Biennial General Assembly, other ECSL activities include the European preliminaries of the Manfred Lachs Moot Court Competition on Space Law, the participation in the Prague colloquium and the Practitioners forum.

G. Lafferranderie

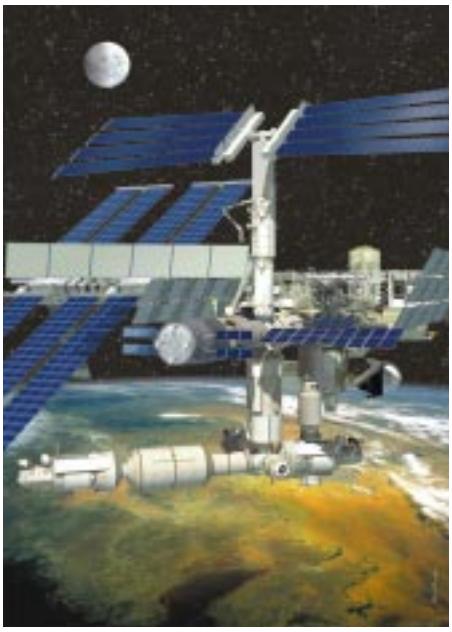
European Space Agency
Agence spatiale européenne

Signing of new Agreements on the International Space Station

André Farand
ESA Legal Office

In September 1993 – shortly after the conclusion of the US Space Station redesign process decided by President Clinton for budgetary reasons and which confirmed the passage from the original Freedom Space Station to a slimmer Alpha Space Station – the United States decided to involve Russia in the Space Station international programme. This decision was taken for a number of reasons, ranging from the desire to benefit from Russia's wealth of experience in human spaceflight to foreign policy objectives. Since the applicable Intergovernmental Agreement (IGA) of September 1988 (a multilateral instrument signed by 12 States, including 9 ESA Member States) and the related Memoranda of Understanding (MOU) do not contain

At the signing of separate bilateral Memoranda of Understanding with NASA are (left to right): Youri Koptev, RKA; Antonio Rodotà, ESA; Daniel Goldin, NASA; William Evans, CSA; Isao Uchida, NASDA



specific clauses enabling an expansion of the partnership through a simple accession of new States to the Space Station Agreements, there was a need for the Partners to agree on an acceptable procedure to provide for the inclusion of Russia. After consultations among the IGA Partners, Russia was invited to join the partnership on 6 December 1993 and to initiate negotiations in the framework established by the Space Station Agreements. Russia accepted the invitation on 17 December 1993 and negotiations started in April 1994, after the Partners and Russia had discussed a number of basic rules for facilitating the conduct of these negotiations.

It took a dozen one-week rounds of negotiations over a period of two and a half years to reach a full understanding in December 1996 between the founding Partners and Russia on the text of a new IGA, to be signed in early autumn 1997. In 1988, NASA and the Russian Space Agency (RSA) also drew up a MOU, similar in its structure to the ones concluded by the other Cooperating Agencies, which were amended in parallel to take into account all the new characteristics of the programme. Although the original concept of an integrated Station was preserved in this negotiation process, many features of the cooperation were modified, to underline the genuine partnership concept.

The new Space Station programme

The new European Space Station development programme (1996-2003) subscribed to by 10 of ESA's Member States in October 1995, will be dedicated to the development of the Columbus Orbital Facility (COF), a pressurised laboratory, and the Automated Transfer Vehicle (ATV). It will also include preparations for the utilisation of the Station by the European Partner's users and continuation of studies on a Crew Transport Vehicle (CTV), on the understanding that a decision to embark on the development of such a vehicle is to be taken at Ministerial Level in 1998. The financial envelope of the programme adopted at Toulouse is 2.5 billion ECU.

The main focus of the European Partner in the recently concluded IGA and MOU negotiation process was of a financial nature. It proposed to amend Article 15 of the IGA on Funding with a view to formalising two concepts:

(a) *the offset concept*, according to which a Partner would be able to meet its share of the Station's common system operations costs by supplying its own goods and services, and

(b) *the concept of the 'not-to-exceed-figure'*, which would involve the establishment of procedures administered by the management bodies for containing the common system operations costs within predetermined and agreed levels, thus imposing a ceiling on these costs. This would enable a Partner to know the full extent of its commitment sufficiently in advance and plan its expenditure accordingly.

These two concepts are linked to an agreement among all the IGA Partners on the setting-up of a fleet of spacecraft supplied by four of the five Partners to meet all the Station's transport requirements. With Ariane-5, operating in conjunction with the ATV, the European Partner is in a position to discharge its share of common costs in a worthwhile manner, given that space transport is going to account for some 80% of the Station's common operations costs.

The development of Space Station rules, including those affecting the daily life of crewmembers, will be a challenging task for the European Partner States and ESA. It calls for an effort of harmonisation between applicable national laws and regulations, and enabling the European Partner, should the need arise, to exercise the full scope of criminal jurisdiction provided for in Article 22 of the IGA. This effort will be pursued in parallel with the development of the implementing arrangements.

The new Intergovernmental Agreement

A major milestone in the International Space Station programme was achieved on 29 January 1998 in Washington D.C. Fifteen States, forming five Partners, signed the new Intergovernmental Agreement (IGA): Russia, the United States, Canada, Japan and 11 ESA Member States (collectively referred to as the 'European Partner'). This new IGA will replace the one signed in 1988 upon its entry into force, after ratification by the United States, Russia and Japan. The most important feature of the new Agreement is the formal confirmation of Russia's arrival in the partnership, after more than four years of negotiations. In addition, the new Agreement illustrates how the Space Station programmes of each of the initial Partners have evolved over the last ten years and details new rules - essentially financial ones - for the exploitation of the Station. The legal regime created in the 1988 Agreement for this international cooperation remains largely unchanged.

Also on 29 January, NASA signed a bilateral MOU with three of the four Cooperating Agencies designated by the Partners: the Russian Space Agency, the European Space Agency and the Canadian Space Agency. The MOU with the Government of Japan will be signed by the Japanese Diete at a later date, i.e. after ratification of the IGA. These new MOUs describe, in detail, the various steps to be taken by the Agencies for ensuring the complete development (i.e. construction) of the Station over the period 1998-2003 and its exploitation for a ten-year period.

La session du Conseil au niveau ministériel de l'Agence spatiale européenne

Paris, 4 mars 1997

G. Lafferranderie
Conseiller juridique, ESA, Paris

Une session qui n'a ressemblé à aucune des précédentes.

En ce qui concerne le lieu, il y avait bien eu déjà la première qui s'était tenue à Paris en février 1977 au siège de l'Agence, les autres se tenant dans le pays de la présidence sortante. Le ministre belge de la politique scientifique, M. Y. Ylieff, élu lors du Conseil ministériel tenu à Toulouse le 20 octobre 1995, fut reconduit dans sa fonction. L'ordre du jour dérivait de la Résolution n° 1 adoptée à Toulouse; cette dernière avait établi deux groupes de travail, le premier sur la politique industrielle, le deuxième sur le système de calcul du barème de contributions aux activités obligatoires, deux sujets qui accompagnent la vie de l'Agence depuis son début, qui à la suite de divers événements et dérives appelèrent un examen approfondi. Toulouse avait jeté les bases ; il fallait conclure, nécessité avant un nouvel élan dans les programmes. Le Conseil (au niveau des délégués) ayant arrêté en décembre 1995 les mandats de ces deux groupes, ceux-ci purent se mettre au travail.

Le groupe de travail sur la politique industrielle avait deux thèmes à traiter, de l'exécution des programmes et la compensation du passé et l'édification d'un système intégrant de nouvelles données au niveau de la structure des entreprises (PME) ; il tint 12 réunions, sans compter deux réunions de groupe de travail du Conseil chargé de la préparation de la ministérielle et du Conseil lui-même. Quant au groupe de travail sur la revue du système de calcul du barème de contributions, la discussion technique tourna autour du concept de 'circonstances spéciales', et de l'étude des divers facteurs économiques qui permettent de définir la richesse et la capacité contributive d'un Etat membre. Chacun de ces deux groupes produisit un projet de Résolution.

Le Conseil du 16 février 1997 s'essaya à réduire le nombre des points de divergence mais les projets de Résolutions qui furent transmises au Conseil ministériel convoqué le 4 mars, notamment le projet de Résolution n° 1, contenaient encore des passages entre crochets.

A l'occasion du repas qui réunissait les ministres avant l'ouverture de la session formelle, le Président s'efforça de les réduire et de progresser vers le consensus.

La réunion elle-même fut hachée par de nombreuses interruptions pour des consultations. Finalement ce n'est qu'à 2h30 du matin le 5 mars que le Président décida de passer au vote : la Résolution n° 1 fut adoptée par 13 voix pour et une contre (l'Espagne), la Résolution n° 2 étant elle adoptée à l'unanimité.

Les ministres se sont mis d'accord sur une proposition visant notamment à assouplir les méthodes d'approvisionnement de l'Agence tout en préservant le principe dit du 'juste retour', élément majeur de la réussite de l'Agence. Un accord a été aussi atteint en ce qui concerne la compensation du passé pour les pays en déficit. Un immense travail reste à faire puisque les modalités de mise en œuvre des principes retenus doivent encore être définies et approuvées, objet d'une période triennale de transition.

Surtout une réflexion doit s'engager sur l'évolution de l'Agence, s'étendant à la réactualisation de sa mission à mener en concertation avec les autres entités européennes actives dans le domaine spatial en premier lieu, la Commission de l'Union européenne, les agences spatiales nationales et l'industrie. Le résultat de cette réflexion sera soumis, ainsi que certainement des propositions de nouveaux programmes, à la prochaine session du Conseil ministériel prévue pour le printemps 1998. Ce ne sera certainement que le début d'une redirection des activités et du fonctionnement de l'Agence, tenant compte de l'évolution chez les divers acteurs de la politique spatiale en Europe et dans le monde.

Voir : G. Lafferranderie : 'La session du Conseil au niveau ministériel de l'Agence spatiale européenne, Toulouse, 20 octobre 1995', in *ECSL News* n° 16, mars 1996.

G. Lafferranderie : 'Le Conseil réuni au niveau ministériel ; son histoire, son évolution', *Bulletin ESA* n° 85, février 1996.

Pour le texte des Résolutions : cf. *Bulletin ESA* n° 89 - février 1997.

Une nouvelle étape dans la coopération entre l'Europe et la Russie

L'Agence spatiale russe (RKA) et l'Agence spatiale européenne (ESA) ont paraphé le 16 juin 1997, au Salon du Bourget, une Charte de partenariat Europe/Russie. Cette Charte est ouverte à l'adhésion de l'ensemble des organismes, instituts ou sociétés industrielles du secteur aérospatial russe et d'Europe occidentale visant à renforcer, par des activités d'échange de méthodes de travail, de formation de leurs personnels respectifs, les nombreux liens de coopération développés dans le domaine spatial au cours de la décennie écoulée.

Le Partenariat sera placé sous l'égide des Directeurs généraux respectifs de l'ESA et de la RKA, les deux agences agissant comme point focal dans cette entreprise, et vise à associer le plus grand nombre possible d'acteurs institutionnels et industriels intéressés au développement des échanges entre l'Europe occidentale et la Russie dans le secteur aérospatial. Il bénéficie également du concours de l'Union Européenne.

Le programme initial des activités prévoit le démarrage, dès le second semestre 1997, de séminaires et de présentations, à Moscou, à destination des personnels russes de haut niveau, dans les domaines du droit international, avec notamment une grande attention portée sur le droit de l'espace, des contrats industriels et de la gestion des projets spatiaux, spécifiquement adaptés aux besoins des destinataires. Ces séminaires et ateliers seront principalement animés par les enseignants de l'International Space University (ISU, Strasbourg - France), tout en bénéficiant de l'expertise qui pourra être apportée par des professionnels de l'industrie spatiale occidentale. esa

What GNSS will mean for Space Law

Marco Ferrazzani
ESA, Legal Affairs

A new worldwide system for positioning and radio navigation via satellite, the Global Navigation Satellite System (GNSS), will constitute a major innovation for all the potential users in the area of air, maritime and land transport, as well as in many other areas of future applications.

Europe is actively planning for such a future system through a common initiative by:

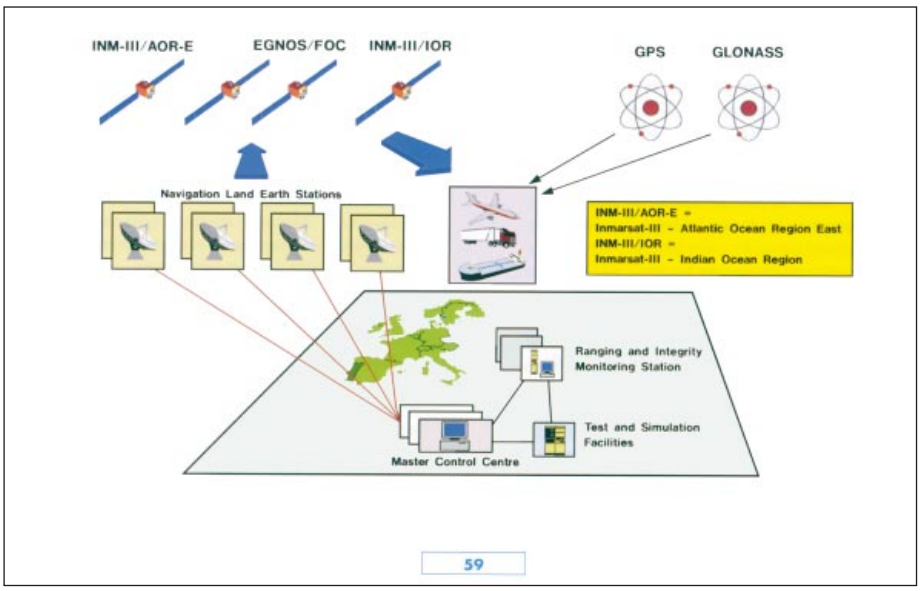
- the European Space Agency, through its ARTES-9 programme;
- the European Union, through the Transport and Telematic initiatives of the European Commission;
- Eurocontrol in its natural role of representing the interests of civil aviation authorities and therefore reassembling the operational and certification requirements of air transport.

For the first time, a binding governmental Agreement has been negotiated among these three European governmental organisations in order to draw together all the European efforts towards a concentrated and fruitful cooperation. This will be accomplished as a logical evolution of the initial studies on navigation by satellite, which started with research and are now planned as a fully operational system.

This institutional and programmatic cooperation has the purpose of placing Europe in a fair but key position as provider of this new space-based service. It shall constitute a European asset towards the development of a worldwide GNSS with coordination for inter-operability with other service providers in other regions of the globe. It shall also result in a major role for European industry in this area. All these objectives will only become possible with a sound institutional framework via the present negotiated Agreement and possible future extensions.

In addition, specific issues of worldwide regulation and service liability also need to be addressed for the first time in an encompassing view for all those concerned, as the GNSS will be entirely new and entering a dramatic change in both the aviation law and space law culture. The high-tech programme will present legal issues from both activities. Each of the two legal schools of thought will go through an exercise of constructive blending of concepts and issues such as sovereignty, jurisdiction, liabilities, which, until now, were treated somewhat in parallel. For all space lawyers a new exciting study cycle has just started. esa

The GNSS Architecture



Finals of the Manfred Lachs Space Law Moot Court Competition

Tanja Masson-Zwaan

The finals of the 6th Manfred Lachs Space Law Moot Court Competition were held on 9 October 1997. Preliminary competitions were held in Europe and the USA, and the winners of those preliminaries met for the final round in Turin, Italy. The University of Turin hosted the competition and offered a reception after the finals. The University of Paris XI (F) and the University of North Carolina (USA) competed in the case '*Openskey vs. Antipapadia*', which dealt with Very High Resolution (VHR) remote-sensing systems. The members of the University of Paris team were Ranjani Srinivasan, Jean-François Renaud and Amine Lachaani. The US team was composed of Christina Benson and Scott Syfert. The honourable court was composed of Judge Koroma (President), Judge Rezek and Judge Vereshchetin of the International Court of Justice in The Hague. The team from the University of Paris XI won the competition. The case and the written briefs will be published in the IISL Proceedings.

The Law Offices of Sterns and Tennen presented two Outstanding Oralist Awards to Ms Ranjani Shrinivasan (F) and Ms Christina Benson (USA). Professor Gorove presented a one-year subscription to the *Journal of Space Law* to the members of the French team who won the Award for the Best Memorial.

Finals of the Space Law Moot Court Competition (from left): Mr A. Lachaani, Mr J-F. Renaud, Ms R. Srinivasan (Paris XI); Judge Vereshchetin, Judge Koroma, Judge Rezek (International Court of Justice); Mr Jasentuliyana (President IISL, Office for Outer Space Affairs, UN); Mr S. Syfert, Ms C. Benson (University of North Carolina)

The 36th Session of the Legal Subcommittee of the UN Committee on the Peaceful Uses of Outer Space

D. Crowther
ECSL Executive Secretary

The Legal Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS) held its 36th session at the United Nations Office in Vienna from 1 to 8 April 1997. The Legal Subcommittee adopted its agenda at the opening meeting (598th meeting) as follows:

1. Opening of the session
2. Statement by the Chairman
3. Question of review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space.
4. Matters relating to the definition and delimitation of outer space and to the character and utilisation of the

ECSL book is offered to Mr Jasentuliyana on the occasion of the UNCOPUOS' Legal Subcommittee

geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union.

5. Other matters.

The working group on Item 3 was suspended for the present session. With respect to Item 4, it was recommended that consideration of this item should continue in its next session in 1998. The working paper submitted by Germany entitled '*Draft resolution - Request to the International Telecommunication Union: Ensuring equitable access to the Geostationary orbit*' might then constitute the basis for the adoption of the resolution and agreement on the future consideration of the question of the geostationary orbit in the Legal Subcommittee at the 40th session of the COPUOS.

After several informal consultations, the Subcommittee agreed to recommend the inclusion of a new item to the agenda of the Legal Subcommittee entitled '*Review of the status of the five International Legal Instruments Governing Outer Space* '.

The 40th COPUOS meeting was held on 2-13 June 1997 in Vienna, Austria.

Global Communications by Satellite

Overcoming Regulatory Hurdles

Stéphan Le Goueff
Lawyer, Luxembourg

At a time where the vast majority of the world's population does not have access to basic telecommunications services, Global Mobile Personal Communications by Satellite (GMPCS) will, in a very short time period, establish a worldwide communications infrastructure.

These systems purport to launch entire satellite constellations in order to offer advanced communications services on a global basis. The satellites will have the capability to directly communicate with hand-held terminals (the size of a standard GSM telephone) and will be interconnected to public telecommunications networks through gateway stations.

There are various types of GMPCS systems. They are generally classified by reference to their orbit, the weight of the satellites they use and their applications. Table 1 illustrates this classification:

Table 1. **GMPCS Classification**

Classification	Satellite (kg)	Orbit	Main Application
little LEOs	40-100	LEO	positioning and mobile messaging
big LEOs	450-700	LEO	fixed and mobile telephony & data
big MEOs	2600-3000	MEO	fixed and mobile telephony & data
broadband LEOs	500-1000	LEO	fixed tel. & broadband multimedia
mega GEOs	> 3000	GEO	mobile tel. & fixed bbd. multimedia

While some small Low-Earth Orbit (LEO) satellite systems are already operational (e.g. Orbcom), other types of systems are still under development and should be commercially available between 1997 and 2002. Tables 2-5 illustrate the main characteristics of each type of GMPCS systems.

The GMPCS systems currently under development are certainly the most ambitious and sophisticated communications systems ever designed. In a recent interview, Alvin Toffler, co-author of Future Shock and Global Telecommunications, said:

"If you [. . .] look at it as though you were observing from, let's say, another planet, and you saw the proliferation of networks, and networks within networks, Internet and Intranet, and all of this stuff, you would see a fantastic project that the human race has undertaken. It is like one gigantic project and it dwarfs the building of the cathedrals and the pyramids. It's an incredible leap that the human race has taken." [1]

The design of GMPCS systems; the number of operational satellites required in the proposed constellations; the orbit in which these systems will operate; the technology required to build, launch and operate entire fleets of satellites and to mass-produce pocket size terminals; the cost of the systems and the corresponding massive investments required; the size of the market; the scope of the services proposed such as mobile voice telephony (and, once broadband LEOs are operational, multimedia services) on

Table 2. **Main Characteristics of Little LEOs**

Project	# of Satellites (spares)	Orbit	Altitude (km)	Estimated Cost (billion $US)	Start of Service
Orbcom	36 (0)	LEO	775	0.3	1996
Starsys	24 (0)	LEO	1000	0.2	1999

a global scale — all demonstrate the vision of their promoters, their extraordinary ambition, and the enormous technical, financial and commercial challenges raised by these systems.

From a regulatory point of view, GMPCS are also the most complex communications systems because they require individual license approvals per country in order to achieve their goal of worldwide communications. Since licensing can be exercised at various levels (satellite system, gateway, service provider and terminal), it is indeed the main tool that national governments have in order to address the concerns raised, such as protecting their national sovereignty and economic interests.

Table 3. Main Characteristics of Big LEOs

Project	# of Satellites (spares)	Orbit	Altitude (km)	Estimated Cost (billion $US)	Start of Service
Indium	66 (6)	LEO	780	4.6	1998
Globalstar	48 (8)	LEO	1410	2.5	1999
ICO	10 (2)	MEO	10 355	3	2000
Odyssey	12 (2)	MEO	10 354	3	2000

For services to have a global reach, licensing must be achieved on a global scale. Unless some international framework emerges, it can be expected that each country will develop its own particular licensing regime to match its specific concerns. In such a context, the quest for the various licenses necessary may add to the enormous and complex technical, financial and commercial challenges, an equally enormous and complex regulatory challenge.

Indeed, in a recent study, Ovum, the London-based consultancy firm, stated that because operators will require licensing in every State in which they seek to operate, regulatory policy is the factor the most likely to hamper the growth of GMPCS.[2]

To address the new regulatory challenges raised by GMPCS, policy makers, regulators and GMPCS operators have started to work cooperatively in a number of *fora*. As a result, a global and innovative response is in the process of being developed. In this respect, the World Telecommunications Policy Forum (held in Geneva in November 1996), by reaching a consensus on a set of non-binding principles designed to facilitate the early introduction of GMPCS, can be considered as a significant breakthrough.

Table 4. Main Characteristics of Broadband LEOs

Project	# of Satellites	Orbit	Altitude (km)	Estimated Cost (billion $US)	Start of Service
Teledesic	840	LEO	700	9	2002
Sativod	64	LEO	1450	3	2001

While the fact that these principles do not have any binding character may appear as their weakness, it is also their strength. Trying to reach a binding international agreement at this stage would be premature. It would involve additional delays and tend towards the lowest common denominator, thereby impairing the timely and complete deployment of those systems.

The issue is, of course, whether these voluntary principles will be followed by concrete action. Concrete action will only follow if there is a general perception that countries will benefit from GMPCS and that the concerns raised by those systems can be adequately addressed by following the non-binding proposals made at the WTPF and other similar events.

Table 5. Main Characteristics of Mega GEOs

Project	# of Satellites	Orbit	Altitude (km)	Estimated Cost (billion $US)	Start of Service
EAST	1	GEO	36 000	0.75	2000
Spaceway	8	GEO	36 000	4	2000

While GMPCS systems can certainly be very useful to international travellers, business and governmental organisations etc., these systems have the capacity and the ambition to accomplish a lot more. Indeed, while between half and two thirds of the world's population has never made a phone call[3], these systems have the potential to make universal access a short-term reality:

"We are at the beginning of a revolution in satellite communications, a revolution which has the potential to make the dream of universal access a reality in the twenty-first century - universal access not just to basic voice telephony and data services, but to a full range of broadband multimedia services." [4]

If this happens, there is no doubt that GMPCS will fundamentally change the lives of the majority of mankind and be a catalyst of changes everywhere, especially in developing countries.

"The single most important impact of telecommunications is to accelerate all of the other changes. Not just in business, but in social life as well. Telecommunications doesn't just reduce the importance of geography and spatial relationship. Its primary and less noticed effect is the acceleration of everything else."[5]

We must therefore understand the stakes involved and develop the broad vision and perspective called for by the breathtaking scope of the projects being developed. While the interests of

the various actors involved may be conflicting on some issues, policy makers, regulators and industry must continue to work constructively together to address and find global solutions to the global regulatory problems raised by GMPCS. To ensure that this 'fantastic project that the human race has undertaken', described by the Tofflers, becomes a reality, there is a common responsibility to overcome these regulatory hurdles.

[1] Interview of Alvin Toffler & Heidi Toffler: Future Shock and Global Telecommunications, *Iridium Today* 28, 1996, 2:4.
[2] *Mobile Satellite News*, 6 Febr. 1997, 5.
[3] P. Tarjanne, *Fifth Satel Conseil Symposium*, Paris 4-6 Sept. 1996.
[4] See *ibid*.
[5] Toffler, *supra*.

Colloquium on Legal Aspects of Cooperation between ESA and the CEEC

Prague, 11-12 September 1997

An International Colloquium on the 'Legal Aspects of Cooperation between the European Space Agency and Central & Eastern European Countries (CEEC)' was jointly organised by ESA, ECSL, the Czech Society of International Law associated with the University of Law and Prague's Charles University. Mr Lafferranderie, Chairman of the first session, recalled that this initiative was the first concrete step towards collaboration between an Eastern European country and ESA since the conclusion of international agreements on space cooperation for peaceful purposes between the Agency and four of these States.*

The first session dealt with 'the Role of ESA in organising international cooperation on space activities and forms taken by this cooperation'. Ms. Baudin (ESA, Legal Affairs) presented international cooperation as foreseen in article XIV of the ESA Convention. This legal explanation was followed by an ESA analysis of cooperation agreements, by Mr Tremayne-Smith (BNSC, UK, and Chairman of ESA International Relations Committee). The following points were explained in more detail: the aims of collaboration agreements, the areas of interest for collaboration and the different routes of collaboration. Dr Kopal (Vice Chairman of the Czech Society of International Law) then analysed the different agreements concluded between ESA and Rumania, Poland, Czech Republic. He stressed that the European Centre for Space Law might serve as a forum for further consideration of legal questions related to the elaboration of adequate tools for such cooperation. Mr Paillon (Head of Unit XII, D-IV Space, European Commission) reported on the 5th Framework Programme of the European Community for research, technological development and demonstration activities.

The second session of the day, chaired by Mr Böckstiegel, dealt with 'the recent and expected developments in space law, contribution of, and possible impact on, ESA and other international organisations or institutions. Ms. Cheli (ESA, International Relations) reviewed the evolution of the relations between ESA and CEEC. The presentation included inter alia the more political aspects of coordination activities. Mr Roisse (Legal Adviser, Eutelsat) spoke about the recent development of Eutelsat and the role the organisation plays in providing the use of satellites for telecommunications and audio-visual services in Europe.

Dr Hartig (Ambassador of Austria and Director General of Central European Initiative Documentation Centre, Trieste, Italy) explained the Central European Initiative.

This was followed by a presentation by Ms. Crowther (ECSL) of the European Centre for Space Law and its active role in the promotion and development of space law education. Some ideas of cooperation with CEEC were also provided.

The day was concluded by a fascinating presentation of concrete cooperation in space by two astronauts, Dr Merbold (ESA/EAC) and Dr Prunariu (Rumanian Space Agency).

The second day of the colloquium dealt with future issues. The opening session, chaired by Dr Kopal, reflected the 'new perspectives on space cooperation between ESA and the Central and Eastern European Countries'.

The first speaker, Mr Olthof (Head of the Prodex Programme, ESA) explained ESA's Space Science and Prodex programmes. These programmes could provide a good opportunity for further cooperation at the scientific level with CEEC. Dr Pico (Executive Director of the Rumanian Space Agency) pointed out the importance for CEEC to expand and their need of cooperation at regional level to establish a network of space science in technology, research and education in these countries. Mr Szegö (Scientific Director of the KFKI Research Institute for Physics, Hungary) reviewed the Hungarian experience of cooperation with ESA in the field of space science and its further development within Prodex.

The subject of space applications was then discussed. Mr Ferrazzani (ESA Legal Affairs) reported on the Global Navigation Satellite System, Prof. Linsenbarth (Director of the Institute of Geodesy and Cartography, Poland) on Earth observation and Dr Maslag (Ministry of PTT, POLAND) on telecommunications policy.

The afternoon session was dedicated to a round-table discussion, chaired by Dr Jankowitsch (Ambassador, Permanent Mission of Austria to OECD), on the topic of 'the prospects for international cooperation between ESA and Central & Eastern European countries'. Dr Jankowitsch evoked the existing structures allowing experts of the CEEC to play a role in a European forum, but he also mentioned that ESA should play a more active role in this process of integration and cooperation.

Mr Dordain (ESA, Associate Director for Strategy, Planning & International Policy) explained the recent evolution of ESA; a new strategy needs to be developed for the future. It is clear that cooperation with CEEC is important but the initiative for developing industrial links has to come from these countries. ESA is then willing to help.

Mr Ortner (Head of Austrian Space Agency) is ready and willing to share the Austrian experience of 13 years' cooperation with ESA. He recalled the interest of the Prodex Programme for scientific cooperation.

Mr Sehnal (Astronomical Institute, Academy of Sciences of the Czech Republic) expressed the view that ESA should be more open to non-European countries.

Mr Gál (Honorary Director, IISL) clearly stated that the CEEC do have a lot of differences in terms of financial, industrial and technological capabilities. That fact has to be taken into account.

Dr Klos expressed his satisfaction about the actual cooperation between Poland and ESA at a scientific level with their participation in the Prodex Programme. For the time being, it would be rather difficult to engage further (for example, by enjoying an 'associate member status').

Mr Rebillard (Chargé de mission, CNES) expressed the view that the ESA structure is too costly for CEEC to participate as members. The best cooperation solution would be to adopt a more pragmatic view.

Dr Schrogl (DARA, International and National Cooperation, Germany) recalled that as far as the UNCOPUOS is concerned, a long tradition of cooperation and coordination between ESA and CEEC already exists. He expressed the idea that CEEC should adopt a concerted strategy.

This last point raised several reactions. Mr Gal stated that the differences of levels of economies and of space-connected industries do not allow for such a uniform structure.

Further ideas for the exchange of information, of the ESA rule on geographic return, and of integration in the European Union, were also discussed.

The proceedings of the colloquium, including all the speeches and discussions, will be available early in 1998 through ECSL Secretariat:
8-10 rue Mario Nikis, 75738 Paris
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* Hungary (1991), Rumania (1992), Poland (1994) and the Czech Republic (1996)

Sixth Practitioners' Forum

ESA Headquarters, 14 November 1997

Michelle McGonagle & Cedric Wells
University of Paris XI-Sceaux

The *Sixth Practitioners' Forum of the European Centre for Space Law* was held on 14 November 1997 at the European Space Agency. The forum was an occasion for legal experts and specialists in the space sector to convene to discuss and debate current issues in space law and related activities. The main themes of the forum focused on recent developments in space law and the commercialisation and privatisation of space activities.

In his opening speech, Mr G. Lafferranderie, ESA Legal Adviser, insisted on the importance of the impact of technological progress in the space sector on international law, as well as global and economic structures.

First to take the floor was Mr Le Goueff, an attorney from Luxembourg, who discussed the recent developments in European satellite communication regulations, notably the new licensing directive 97/3. He emphasised that the new directive is an attempt at creating a coherent framework for licensing by requiring states to remove exclusive rights and outlining the conditions and the procedure for authorising general and individual licenses.

Mr Farand, ESA Legal Affairs, then presented the new Intergovernmental Agreement on the International Space Station (IGA), which will be signed by the parties (ESA, USA, Russia, Canada and Japan) in January 1998. He noted that the agreement took four years to renegotiate, the main issues being the transportation, the utilisation and the funding of the Space Station, as well as the inclusion of Russia in the project. He added that 40% of the composition of the first IGA was changed, with the majority of the amendments effecting the legal framework. Cross-waiver liability, exchange of data and goods, criminal jurisdiction and customs laws were the principal issues.

Mr Achilleas, a professor at the University of Paris XI-Sceaux and an expert in satellite communications, followed with a discussion on the developments in television broadcasting

in the European Union. He spoke of the amendments to European legislation regulating broadcast television, *'Television without Frontiers'*. The new text stipulates that all cable operators who broadcast major events must make them accessible to the general public (free of charge), regulate home shopping networks, as well as the content of programmes and advertisements in order to protect minors and consumers. Mr Achilleas finished by discussing the difficulties in harmonising regional and national policy.

Development in Earth observation in the European Union was then presented by Mr Richter, an expert to the European Commission. The most important strategic work in 1996 was highlighted: *'The European Union and Space: fostering applications, markets and industrial competitiveness'* which outlines European goals in the space sector, including Earth observation which has proven to be a field of increasing scientific, socio-economic and political importance since it is an extremely effective tool for research and monitoring the environment. For this reason, the EC and ESA have been working closely together to build a solid framework for this field, the main goal being to establish a sustainable European capacity and independence from other sources. ESA has helped to develop a sound base for Earth observation with the SPOT, ERS and Meteosat satellites and by funding space development projects.

Mr Ferrazzani, ESA Legal Affairs, intervened to discuss developments in global navigation satellite systems. He emphasised the need to develop the European satellite system (EGNOS), which will contribute to GNSS and GNSS2, the future global systems outlined in the Tripartite Agreement signed between ESA, Eurocontrol and the European Commission. He also encouraged the development of a European agency specialised in satellite navigation, in order to coordinate the decision-making process and to serve as a reference point in negotiations with other entities.

The morning session ended with discussions on the legal problems posed by the evolution of space technology.

Ms. Arpon de Mendivil, an attorney for Gomez Acebo & Pombo in Madrid, spoke of the legal battle concerning digital television and decoders systems in Spain, highlighting the various legal complications involved in regulating the television signal.

Mr Golda, an Italian legal expert, discussed the difficulties in protecting national operators from frequency piracy and prosecuting violators.

The afternoon session was chaired by Professor K.-H. Böckstiegel, Director of the Institute of Air and Space Law at Cologne University, Germany. Opening the session, he pointed out the increasing role of enterprise in the space industry and the need to create a new legal framework for space law to accommodate both state and commercial actors. The effects of privatisation and commercialisation of the space industry was the main theme of the afternoon forum.

An important topic of discussion was the restructuring occurring within space organisations as a result of privatisation and increasing competition.

Mr Roisse, the legal adviser for Eutelsat, was the first to address the subject. He spoke of the Eutelsat meeting held in May 1997 in Sofia which discussed restructuring the organisation and said they would meet again in May this year to review the progress. Proposed changes could lead to a structure including an operating company under national legislation and an intergovernmental organisation.

Professor Lyall of Aberdeen University, UK, elaborated on the subject by discussing the restructuring taking place in Inmarsat. The inter-governmental character of Inmarsat will be maintained but the Operating Agreement terminated, and new elements of the organisation will be developed within a limited liability national company. Possible changes include the creation of a fiduciary board of directors, broader ownership and investment, the global marketing of services and the removal of privileges and immunities. The Inmarsat Council, planned to meet from 25 to 27 November 1997, would consider these proposals, while the 12th Inmarsat Assembly of Parties was scheduled for April 1998 to officially approve amendments to the convention.

Professor Böckstiegel added that Intelsat was also moving towards privatisation and commercialisation.

In addition, Mr Veshchunov, Legal Adviser of Intersputnik, spoke of the changes occurring within the Russian space organisation, notably the development of its commercial character since the break-up of the Soviet Union and the growing number of strategic alliances and cooperative projects. The 26th Board Meeting was to take place in Warsaw on 21 November 1997, at which time proposals for restructuring would be considered and Ukraine would be officially admitted as a member of Intersputnik.

Also discussing international cooperation was Mr de Mourzitch, an attorney representing Starcem, a French firm founded in 1996 providing launch services with Soyouz launchers.

Mr de Mourzitch stated that the firm's strategic goal is to promote civil and commercial cooperation between Europe and Russia and pointed out that both partners have an equal share in the company's capital, administration and directorship. The capital is divided between Arianespace, Aérospatiale for the European part, and Samara (Soyouz) and the RKA for the Russian part.

Mr Dahbi, Managing Director of J&H Marsh & McLennan, stressed the increasing role that insurance companies now play in satellite telecommunication activities. He emphasised that insurance is intricately linked to privatisation: the market continually growing with the number of commercial actors. He stated that only the Western European and American markets are ready to insure against accidents such as damage caused to satellites during launch, accidents on the ground caused by satellites or launchers, sea-launching, loss of use or space debris (when liability cannot be proven). According to the speaker, prospects are very promising for insurance companies, as more reliable launchers are being developed, thus cutting losses and increasing profits.

Presentations were given on the development of satellite technology in the private sector. Mr Pinglier, Head of ESA Coordination Office, Telecommunication sector, spoke about the technical aspects of the 'Skybridge' project headed by the French group Alcatel in the United States. Skybridge is a constellation of 64 low-orbit satellites which will be ready for operation in 2001, costing approximately $3.5 billion.

Mr Smith, an attorney with Alcatel, discussed the impending legal and technical problem the project poses, specifically, the fact that Skybridge wants to use frequencies allocated to fixed services. Skybridge is proposing a new system to manage frequencies as a solution but it will require ITU approval. Mr Smith later addressed the difficulties in applying patent law to outer space.

Mr Cardin, the Legal Director of Matra Marconi Space, finished up the discussion on satellite technology with a presentation on the Euro-African Satellite Telecommunication project (EAST), a satellite-based system designed to provide fixed and mobile telecommunications services to Africa, the Middle East, Central Asia and Europe. He stated that geostationary satellites will provide services to these areas at a low cost by complementing telecommunications infrastructures.

The Sixth Practitioners' Forum of the ECSL clearly illustrated the increasing importance of space law and technology in international and commercial affairs. The number of students and spectators present, including the winning French team of this year's Manfred Lachs Space Law Moot Court Competition, indicated the growing interest in space activities.

From the ECSL Library

G. Lafferranderie (Ed. In chief, co-editor D. Crowther), *Outlook on Space law over the next 30 years* - Essays published for the 30th anniversary of the Outer Space Treaty. Kluwer Law Intl. 1997.

K. Madders, *A new force at a new frontier*. Cambridge Univ. Press, 1997.

P. Achilleas, *La télévision par satellite - Aspects juridiques internationaux* , 2ème éd., Montchrestien, Paris 1997.

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Le cadre institutionnel des activités spatiales des Etats - Etude comparative, sous la direction de Simone Courteix. Ed. Pedone (in press).

Regulation of the Global Navigation Satellite System (GNSS), Conference held at ESTEC on 14-15 Nov. 1996, published by ECSL.

European Space Agency - Bibliography published by ECSL, Dec. 1996.

ESA and the Internet

Since the fall of 1996, ECSL has its own site on the Web. This means that wherever you are, if you are Internet connected, you can be informed on the ECSL activities, events and publications. All this information is regularly updated. The actual home page and the whole presentation of the site were renewed at the end of June 1997 to be even more friendly and easy to use.

It is important to mention that ECSL site is also a way to access the ESALEX home page. What is ESALEX? It is an important legal database on space law and space policy. There are a tremendous amount of space law documents, especially ESA legal documents (2/3 of the whole database), many references of space law and policy books or articles.

The table of contents will probably give you an idea:

- ESA (ESRO/ELDO) Basic Texts
- International Organisations' Output on Space Law
- International Agreements
- International Space Organisations
- National Laws and Regulations
- Case Law
- Proceedings of Legal Colloquia
- ESA Legal and Policy Articles
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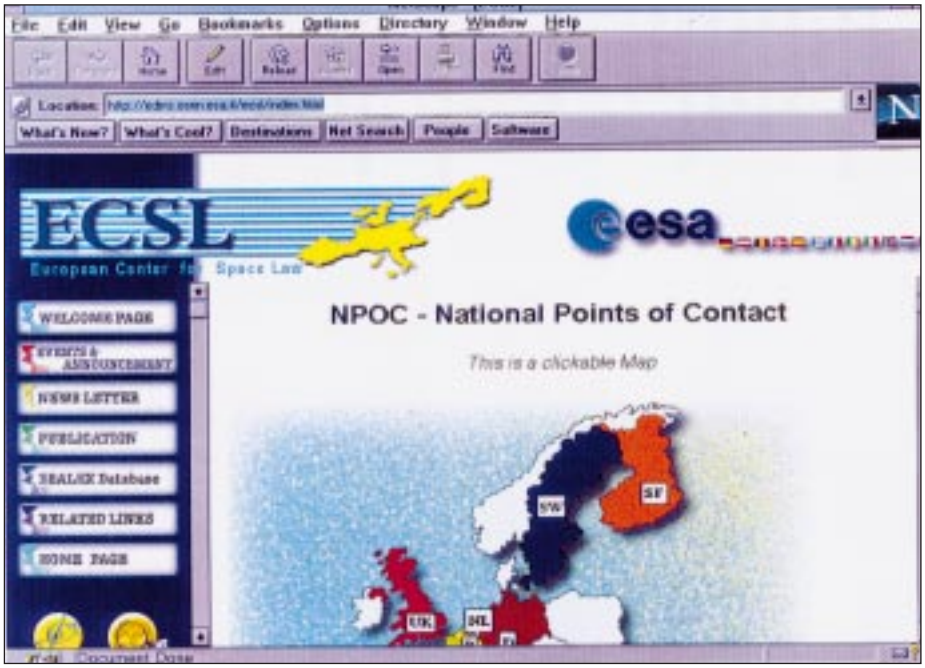

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Coordinator: Daphne Crowther
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Editors: Tan-Duc Guyenne & Dorothea Danesy

Layout & Prepress: Isabel Kenny

For further information on ECSL and on *ECSL News*, contact ECSL Secretariat:

c/o ESA, 8-10 rue Mario-Nikis
75738 Paris Cedex, France
Phone: +33-1-5369 7605
Fax: +33-1-5369 7560

Requests for inclusion in the mailing list should be addressed to:

ESA Publications Division
c/o ESTEC, Keplerlaan 1
2200 AG Noordwijk, The Netherlands

Fax: +31-71-565-5433