



Bulletin of the European Centre for Space Law

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### Le Mot du Président

*Comment ne pas donner la priorité dans mes souvenirs à ce Colloque qui s'est tenu à Perugia du 5 au 7 mai 1999 ? Plus d'un an de préparation, des inquiétudes jusqu'au dernier moment : combien seront là finalement sur les quelques 2000 envois effectués ? Les doigts croisés ne changent guère l'inquiétude de ceux qui attendent, comment sera-t-il ce Colloque, tout se passera-t-il comme prévu ? Bien sûr que non : au dernier moment quelques amis qu'un événement grave en l'Europe (et pour l'Europe) empêchera d'être là : il faut réorganiser quelque peu le programme. Mais que dire de la récompense, de ce bonheur qui rayonne sur le visage des uns et des autres ! (Je pense notamment à ce fabuleux dîner) Loin le stress, mais quelle ambiance studieuse. Je n'avais plus qu'une dernière crainte, pourvu que les Actes puissent être prêts à temps. C'est désormais chose faite ! Merci Mireille, Eva, Nathalie, Viviana et tous ceux qui sont restés derrière le rideau (Les artistes ne sont toujours pas ceux qu'on voit)*

*L'autre événement a été constitué par l'Assemblée biannuelle. Un nouveau Bureau nous est né et nous allons poursuivre les ambitions d'ECSL*

*Rappelons aussi le Summer Course qui se tiendra cette année à Genève et l'an prochain à Cologne ; la finale de la Manfred Lachs Space Law Moot Court Competition, à Amsterdam, au Palais des Nations, le Practitioners' Forum etc... Nous aurons bien quelques Colloques préparés par nos points de contact, un nouveau Colloque ECSL en 2001!*

*Que pourrais-je souhaiter ? Une plus forte utilisation de la base de données Esalex, un outil fantastique pour la recherche. Etudiants, professeurs, praticiens, n'hésitez pas à l'utiliser et à nous faire connaître les améliorations souhaitées – et toujours un renforcement du tissu amical créer entre les membres.*

G. Lafferranderie

European Centre for Space Law  
Agence Spatiale Européenne

## Le Conseil de l'Agence au Niveau Ministériel (Bruxelles 11-12 Mai 1999)

**Gabriel Lafferranderie**  
European Centre for Space Law  
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*Le dernier Conseil Ministériel avant l'an 2000 et avant le 3ème millénaire. La convocation d'un Conseil au niveau ministériel suppose remplies un certain nombre de conditions: des conditions 'politiques', quelle agence spatiale européenne veut-on, quel rôle doit elle avoir? Ces conditions politiques varient et sont influencées par les événements externes, comme la proposition par les Etats-Unis d'entreprendre une Station spatiale internationale, l'effondrement du mur de Berlin et de l'Union Soviétique, la progressi on vers la privatisation, la déréglementation; des événements internes, le besoin de nouveaux programmes, les difficultés pour les financer, la politique industrielle, l'appel à plus d'efficacité et à plus Europe (le renforcement des relations entre l'Union Européenne et l'ESA et une meilleure définition de la place de chacun dans la structure européenne d'ensemble).*



Ministres et hauts responsables des Etats membres de l'Agence lors de la réunion du Conseil au niveau ministériel des 11 et 12 mai 1999 à Bruxelles

Cette session est directement née de la session d'octobre 1995, Toulouse, et de mars 1997, Paris, dédiée à la politique industrielle.

Comme de coutume, un groupe de travail avait été créé pour préparer la session ministérielle suivante, d'abord envisagée pour le printemps 1998. Mais en juin, ce

ne sera qu'un Conseil au niveau des délégués qui toutefois adopte des décisions sans lesquelles l'ESA n'aurait pu avancer. Citons la Résolution sur la synergie avec l'Union Européenne, ou celle sur les programmes.

Finalement, après 16 réunions, un record, le Conseil ministériel a pu se réunir à Bruxelles (au Palais d'Egmont, celui qui avait connu les réunions de la CSE), convoqué par le Président sortant, le Ministre belge M. Ylief. La petite histoire rapportera les divers petits faits, la rupture d'un câble qui prive d'électricité tout un quartier et notamment celui du Palais d'Egmont, les diverses réunions de groupes de travail pour résoudre les difficultés (quand c'est réparé d'un côté, ça craque de l'autre), un certain découragement qui aurait pu conduire à une suspension de la réunion, et

finalement l'adoption de trois Résolutions :

- Curieux texte que cette Résolution n°1 dont le titre évoque le nouveau slogan retenu par l'Agence, qui n'est pas une Résolution du Conseil en tant qu'organe de l'Agence, mais une déclaration des divers ministres présents qui se rejoignent sur des objectifs.
- Plus longue à se dessiner, la Résolution n°2 au coeur même de la réunion ministérielle. On y retrouve les avancées espérées mais pas toujours au niveau souhaité; surtout Galileo qui a bénéficié de la forte poussée du commissaire européen Kinnock ; Ariane, le programme donné favori a été éclaboussé par une question toujours pas réglée : Vega or not Vega ? Le Ministre Ylief a su trouver

une formule de compromis qui certes ne fait que reporter la solution. Mais que pouvait-on faire contre le mauvais sort ? Alors, on souscrit les Déclarations dans le brouhaha, à des conditions économiques différentes, en MEuros et non plus en pourcentage; on émet des votes 'sous conditions'. Mais la houle est passée, laissant apparaître quelques îlots qui demanderont bien une analyse juridique: un niveau de ressources voté pour quatre ans (et non cinq comme le prescrit la Convention). Le juriste se tait, la caravane doit passer.

- La Résolution n°3 sur le rapport du Comité à long terme. On peut relever dans le rapport une idée qui pourrait intéresser la formation en Europe d'une école de droit de l'espace, mais ne réveillons pas trop tôt l'avenir !

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## Towards a European Spectrum Policy ?

Stéphan Le Goueff<sup>1</sup>  
*Le Goueff Avocats*

*The European Commission has recently published its Green Paper on radio-spectrum policy<sup>2</sup>. The objective pursued with this Green Paper is to identify how best to approach and implement spectrum policy at Community level.*

For the time being, the use of the radio spectrum in Europe is loosely coordinated by the European Conference of Postal and Telecommunications Administrations (CEPT), which has 43 participating countries. CEPT does not have the power to take decisions that are binding on its Member States. It only adopts harmonization measures, which its member countries implement on a voluntary basis.

In order to determine whether the present political and legal base, as well as the practical implementation of Community radio-spectrum policy, requires adaptation in the light of technological, market, and regulatory developments, the Green Paper invited comments on the five basic issues: 1. Strategic planning of the use of radio spectrum; 2. Harmonization of radio-spectrum allocation; 3. Radio-spectrum assignment and licensing; 4. Radio equipment and standards; 5. Institutional framework for radio spectrum co-ordination.

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The presentation made of those five issues in the Green Paper tends to demonstrate that the current situation is not satisfactory and that the Commission should be more active and have more powers regarding radio-spectrum issues.

For the time being, although there has been some Community involvement in radio-spectrum policy, such involvement has been relatively limited in scope. Member States have been jealously

guarding their sovereignty and preventing Community encroachment in this field. The CEPT, via consensus-building, has been a relatively effective way to achieve some degree of harmonization in Europe. However, it has its limits since, unlike the EU, it has no power to bind its Member States to the decisions and recommendations adopted within the CEPT.

In the satellite communications sector, the implementation status of the CEPT decisions on S-PCS is a good illustration of the lack of harmonization or radio-spectrum policy in Europe and of the limits of the existing system. Indeed, some regulators have adopted the CEPT decisions and implemented them in their national regulations, thereby giving access to frequencies, facilitating a license-exempt regime for terminals and allowing for their free circulation. Others have also adopted those decisions, but have implemented them only partly or not at all. Another group of regulators have not adopted or implemented some or all of

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<sup>2</sup> *The Green Paper can be obtained at <http://www.ispo.cec.be/spectrumgp>*

the CEPT decisions in their national regulations, but have given access to frequencies or facilitated a license-exempt regime for terminals. Finally, a significant number of administrations have not adopted the CEPT decisions and perhaps are not aware of their existence.

The issue is, of course, whether obtaining wider Community powers in this sector will be positive. Given that, by nature,

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<sup>3</sup> This means that the Community may take action in areas which do not fall within its exclusive competencies only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States and can therefore, by reason of the scale or effects of the proposed action, be better achieved by the Community.

<sup>4</sup> BT and Deutsche Telecom have expressed satisfaction with the existing CEPT system at the Green Paper public hearing of 2/3/99.

radio frequencies ignore boundaries, there is a legitimate claim to be made that the 'subsidiarity' principle<sup>3</sup> should apply to favour a better harmonization of radio-spectrum policies. More importantly, bearing in mind that one of the goals of the European Union is to create a single market, the creation of such a market in the telecommunications sector requires more harmonization on spectrum issues. This being said, some operators are satisfied with the current system<sup>4</sup>.

However, it is the author's view that the current regulatory puzzle in Europe hampers the development of pan-European telecommunications services. Both EU and non-EU companies and consumers would gain by having greater coherence in their telecommunications policies, together with a more predictable environment. While this obviously applies to radio spectrum, it also applies to other issues. I have indicated previously

elsewhere my belief that the European directive 97/13 on the harmonization of licensing was not a success. The political compromises made to achieve a consensus on its content weakened the directive to the point where it is difficult to credibly sustain that it has achieved a meaningful degree of harmonization for telecommunications licenses. Let us hope that Europe will not follow this example and that a true European radio-spectrum policy will emerge.

The Green Paper is, in some respects, a tool used by the Commission to obtain support to achieve this objective. However, obtaining industry support will be the first step. Whether it will be sufficient to incite politicians to give up sovereignty over radio spectrum remains to be seen. At any rate, in light of past experiences, the way towards the creation of a European FCC remains long and uncertain

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## Earth Observation Data Policy and Europe (EOPOLE)

**Ray Harris**

*University College London*

*The European Commission DGXII has sponsored a concerted action project under Framework IV entitled Earth-Observation Data Policy and Europe (EOPOLE). Europe has a diversity of opinions on Earth-observation data policy because of the differing national objectives of its Member States. Opinions are often divided and are poorly developed from the user side. The primary objectives of the EOPOLE concerted action project are therefore:*

- To review and coordinate relevant European national research in Earth-observation data policy with a strong user perspective.*
- To identify and recommend improvements to Earth-observation data policy with a distinctly European perspective in order to provide better conditions for the expansion of the Earth-observation sector, and so to contribute to the objectives of the Centre for Earth Observation (CEO).*

*During the first year of the EOPOLE project, a set of major issues in Earth-observation data policy have emerged and are briefly described below.*

### **Users**

Fundamentally, the description and definition of a user is complex and is not necessarily subject to simple statements. In the context of the UN Principles on Remote Sensing, a user is a person or entity using remote-sensing data for purposes in themselves totally unrelated to outer space, satellites or remote sensing. Principle I of the UN Principles envisages users as being concerned with processed data and analysed information

rather than with other parts of Earth observation. There is therefore at least a distinction between Earth-observation data users who know and understand the source(s) of their data and downstream users who use information products and services with no connection with the input data supply.

Since the use of Earth observation data and the characteristics of the users are varied, it will be helpful to the

development of the Earth-observation sector to envisage different data policies being employed for different uses of Earth-observation data. Data and information suppliers, such as Eurimage, are increasingly segmenting their markets, especially as the organisations in Earth observation move their offerings further downstream. The data suppliers are increasing their offerings of value-added products, for example the SPOT View Thema products, while the traditional

value-added companies are becoming information service providers. The tailoring by Earth-observation organisations to the characteristics of market segments may fruitfully include the tailoring of data policy.

### International policies

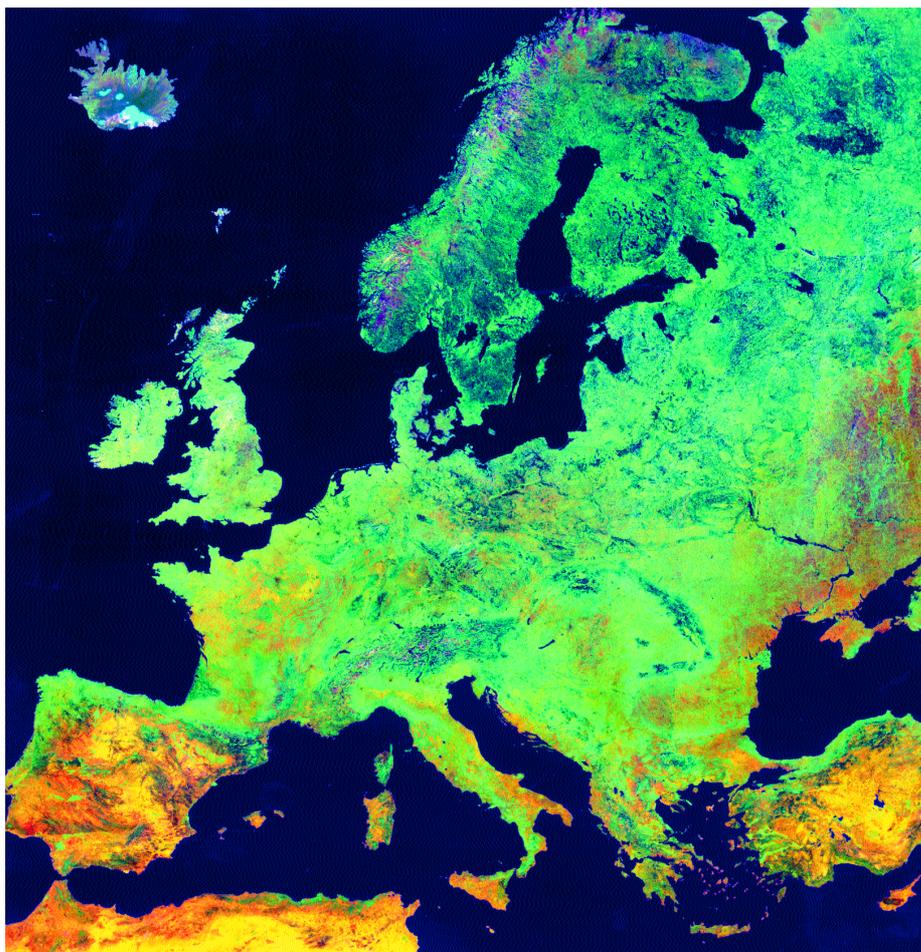
At the global level, the United Nations in 1986 adopted by consensus a set of 15 Principles Relating to Remote Sensing of the Earth from Outer Space. At the Twelfth Meteorological Congress in 1995, the World Meteorological Organisation (WMO) adopted Resolution 40 on the policy and practice for the exchange of meteorological and related data and products, including meteorological satellite data. The UN Principles and WMO Resolution 40 provide a baseline of global Earth-observation data policies.

The UN Principles are not legally binding, but they do have great moral and political weight and a nascent legal validity (a so-called 'soft law' status). Through time, the UN Principles may and can become legally binding by historical practice because of international customary law.

The UN Principles are wide in their scope, provide for legal control over dissemination of data, and because of their public nature are directed towards governments. Principles IV, XII and XIV are key issues in Earth observation. They cover the freedom of the sovereignty of nations, the conditions of access to Earth-observation data by a sensed State, and the control of private Earth-observation data companies by their national governments.

Special attention is given in the UN Principles to the needs of Less-Developed Countries (LDCs). While the general intention is to support LDCs that do not have access to their own Earth-observation satellites, there are several LDCs, notably India and Brazil, which have active and successful Earth-observation programmes.

Although WMO Resolution 40 is based on international agreement among WMO Member States, its actual scope is limited. The Resolution adopts only one prescriptive statement when it says: *Members shall provide on a free and unrestricted basis essential data and products which are necessary for the provision of services in support of the protection of life and property and the*



*well being of all nations, particularly those basic data and products in space..... required to describe and forecast accurately weather and climate, and support WMO programmes.*

Non-discriminatory access is a firm principle in the UN Principles and is implicit in the free and unrestricted access stated in WMO Resolution 40. It is also a firm principle of the World Data Centres, and by implication the International Council of Scientific Unions. However, it is not clearly defined, which results in uncertainty in interpretation and is an obstacle to improved data policies.

In line with the UN Principles and WMO Resolution 40, there is benefit in capacity-building in less-favoured areas/countries so that they can participate more fully and more actively in Earth observation nationally and internationally.

The European Commission can have a useful role in Earth-observation data policy through relevant EC Directives. These directives are developed in a broader framework, but they may be

helpful in developing more coherent data policies for Earth observation. The objective of the European Council *Directive on the Freedom of Access to Information on the Environment*<sup>1</sup> is to ensure freedom of access to information on the environment held by public authorities, and to set out the terms and conditions under which the information is provided. Earthobservation data are also subject to the European Council *Directive on Legal Protection of Databases*<sup>2</sup>. In the absence of other, relevant copyright regimes, the Directive provides protection of databases either by copyright or by a *sui generis* protection, or both. Copyright provides protection based on the selection or arrangement of the database, and *sui generis* provides protection based upon the content of the database. Copyright protection under sources other than the Directive will continue to apply where appropriate.

<sup>1</sup> *Directive on the Freedom of Access to Information on the Environment*, 90/313/EEC, 7 June 1990.

<sup>2</sup> *Directive on Legal Protection of Databases*, Directive 96/9/EC, 27 March 1996.

A European Council *Directive on the Harmonization of Certain Aspects of Copyright and Related Rights in the Information Society*<sup>3</sup> has been issued in draft form. The Directive will harmonise legal protection for data and software by adapting copyright and related rights to achieve a common basis for copyright protection across national borders. It will also acknowledge the development of electronic transfer of data by allowing for electronic rights management and protection.

### Explicit statements

The attention on data policy and principles in Earth observation has helped to make the issues of access to data more explicit. There is benefit in being more explicit and transparent on the following Earth-observation issues.

- The *value* of the Earth observation data, both financial and non-financial. Non-financial value may encompass issues such as environmental value and the value of the Earth-observation sector to the economic and social development of Europe.
- The flows of the funds for Earth-observation programmes.
- The data and benefit flows of Earth observation.
- The principles, licences and legislation used in Earth observation, as has been achieved in the United States with the

principles on data management for global-change research.

- Exclusive access and distribution rights.
- The intellectual property in the Earth-observation data. Intellectual property can be used to regulate and condition markets, and to provide a different commercial basis for markets.

### Public good

There is a legitimate role for Earth observation as the means to provide a public good. A public good has two main characteristics: non-rivalry and non-excludability. Non-rivalry means that the consumption of the information by one user does not diminish the capability of another user to use the information. Non-excludability means that no user can be excluded from using the information by another user.

The public good nature of Earth observation may be particularly important in the responses to natural disasters, and for assessing the progress against environmental targets as defined in the Kyoto and Buenos Aires meetings of the Intergovernmental Panel on Climate Change. The use of such public good justifications would be based upon a set of information requirements which are not of themselves space-related, but in which information derived from space platforms will play a vital role.

### E-commerce

The possibilities offered by electronic commerce (e-commerce) should be harnessed by Earth observation. Systems such as SATWEB ([www.satweb.gaf.de](http://www.satweb.gaf.de)) are designed for interrogations of data

and real-time downloading. The use of credit cards for payment for data is very attractive, but is limited in Europe so far because of: (i) personal resistance in some countries (for example Sweden) and (ii) institutional obstacles which prevent staff paying for goods on behalf of their organisation by using credit cards.

Encryption keys are very attractive for Earth observation. Large volumes of encrypted data could be transmitted using a variety of telecommunications channels including satellite communications. Some TV channels have a downlink bandwidth of 30 Mbps. The decryption key can be purchased and delivered separately, and can be designed for certain types of products, certain geographical areas or certain time periods.

Earth-observation data are typically transported on electronic media (e.g. CD-ROM). Reading such media requires software to access the databases and the experience to use this software effectively. The growth of e-commerce and the improvement in communications bandwidth can offer a solution to the problems of reading physical media in Earth observation.

### The EOPOLE project web site

The EOPOLE project web site acts as the centre for the collation of information about Earth-observation data policy. For more information about the EOPOLE project and about Earth-observation data policy more generally, consult the web site at:

[www.geog.ucl.ac.uk/eopole](http://www.geog.ucl.ac.uk/eopole)

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<sup>3</sup>*Directive on the Harmonization of Certain Aspects of Copyright and Related Rights in the Information Society, COM(97) 628, 10 December 1997.*

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## The EOPOLE Project: Towards Coherent Earth-Observation Data Policies in Europe

Frans G. von der Dunk  
*Leiden University*

*Space-based Earth observation is frequently quoted as the third area of space activities – next to satellite communications and launch services – where commercialisation and privatisation have advanced considerably throughout the past years. Indeed, an ever-increasing number of satellites produce an ever-expanding range of Earth- observation data. The practical value of Earth observation can no longer be subject to doubt. Applications nowadays cover a wide range of activities, from disaster warning, agricultural and environment management, to city planning, treaty monitoring and arms control. Even private companies such as SPOT Image and EOSat have already entered the field a number of years ago. Presently, satellites with Earth-observation capabilities with resolutions previously reserved to the military are on the verge of becoming launched and operated, thus further increasing the potential impact of Earth observation on day-to-day economic activities (not to mention life).*

Yet, the Earth-observation sector does not constitute a mature commercial market – far from it, really. The private companies involved make money only because they are handed the Earth-observation data in more or less readily marketable and saleable form. Their earnings cannot as yet pay for the full business cycle of development, construction, launch and operation of Earth-observation satellites in addition to marketing and sales of the data. In spite of the manifold and increasing uses of Earth observation, and the obvious value thereof in many cases, governments – whether individually or collectively through such international organisations as the European Space Agency – still have to bear the financial burden of the space-part of the operations.

This naturally has a number of causes, most of which are beyond the reach of law and policy proper to solve. In particular, when it comes to such pre-space and space-based parts of Earth observation, economics and technology rule supreme. Economic laws in the end will dictate the commercial feasibility of running a fully commercial and government-independent Earth-observation-satellite operation, based upon technological developments making particular satellite activities more affordable. Actually, space law itself can hardly be more conducive to satellite Earth-observation operations than it already is, being built upon the general freedom of space activity in outer space and the absence of exercising of legal control by any particular State over (any part of) outer space.

At the same time, it is clear that in the end Earth observation will have to justify its expenses through the actual dissemination and usage of the data – for such public purposes as disaster warning and environmental monitoring, but certainly and much more so for more commercially oriented applications attracting private enterprise and private funding. In terms of data dissemination, for a terrestrial activity taking place within one particular state or another, it is generally accepted that law and policy still have a lot left to contribute. If properly developed, they can achieve a lot in terms of facilitating the establishment of a (mass) market for Earth-observation data, which will in the end have major effects also on the satellite operations ‘upstream’.

This is particularly true for Europe. Firstly, most major Earth-observation activities are undertaken in an international framework.. ESA and Eumetsat are the main examples, but even the SPOT satellite system is an international project with the some-time involvement of Belgium, Sweden and Italy next to ‘majority partner’ France. Any commercial or even private market for Earth-observation data will have to start developing from this international framework..

Secondly, in view of the terrestrial and down-right commercial character of marketing and sales of Earth observation data, real data dissemination, the extensive, partly supranational legal order established within the European Union becomes important. As referred to, terrestrial regulatory hurdles related to or impacting upon data dissemination are not exactly conducive to development of anything like a commercial market for Earth-observation data, and obviously the European Union – or, to be more exact, European Community law – can play a large role within Europe in this regard. In the end, any such positive contribution on data dissemination – preferably establishing coherent Earth-observation data policies in Europe – will also have a beneficial effect on the Earth-observation operations ‘upstream’.

It is with regard to these fundamental issues that, back in 1998, the European Commission started a Concerted Action research project with University College London’s Department of Geography as the main partner, and involving inter alia the present author’s International Institute of Air and Space Law as co-operating partner. The project has been christened ‘EOPOLE’, which stands for ‘Earth Observation Data POLicy and Europe’.

The EOPOLE project has two major aims: to review and co-ordinate relevant European national research in Earth-observation data policy with the interests of any potential user in mind, and to identify and recommend improvements to Earth-observation data policy specifically in the European context in order to provide better conditions for the expansion of the Earth-observation sector, thus contributing to the objectives of the European Commission’s Centre for Earth Observation (CEO).

As secondary aims, EOPOLE would collate and review the Earth-observation data policies of European states and international agencies in which Europe plays an active part; transfer knowledge and experience of Earth-observation data-policy issues (particularly those directly affecting users) amongst European States; increase awareness in the Earth-observation sector of obstacles that current Earth-observation data policies produce and point out opportunities for improving the conditions of access to Earth- observation data by changing Earth-observation data policies; and build broadly-based European expertise in Earth-observation data policy so that the European perspectives can be articulated in global Earth-observation fora.

The two most important parameters for undertaking the tasks EOPOLE has set itself, with a view especially to the juridical analyses involved, arise from the two primary objectives. Firstly, a strong user perspective will guide the discussion of the pertinent issues, in addition to being a major factor in providing answers to relevant questions and guidelines for future activities. This would mean that discussion of legal aspects should focus on those Earth-observation data issues that are presently, or at least in the foreseeable future, of real importance for the users, e.g. as to the types of activities closely considered.

Secondly, the European perspective on Earth-observation data policies, whilst perhaps obvious for a project such as the present one, should be reiterated as a major parameter. It would mean that analysis and discussion will focus largely on the European interests in Earth-observation data and related activities and on European obstacles and opportunities in this field. Consequently, for example United States and Russian experiences will only enter the debate in case of clear relevance for the European dimension to Earth-observation data policies.

A third parameter of importance relates to the various measures of privatisation discernible in the Earth-observation field. There may be little doubt that privatisation as a concept is beneficial for the further exploitation of space, including Earth-observation activities. Yet, a balance should be struck between the interests of

private enterprise in undertaking certain Earth-observation-related activities (and of governments in enticing them to do so) and the interests of the public at large in (for instance) safe, non-violent and non-polluting Earth-observation activities.

The fourth and final parameter to be kept in mind deals with the realisation that the Earth-observation sector should really be subdivided into a few distinct and legally relevant categories of activities. Earth observation from this perspective consists of the following sets of activities:

1. The development and production of spacecraft and instruments used for Earth observation, taking place in Earth-bound facilities within some State's sovereignty;
2. The launch and actual operation of the spacecraft, including the core activity of Earth observation itself, which are predominantly and intentionally directed at outer space or take place in outer space itself (and hence are fundamentally regulated by space law *stricto sensu*);
3. Activities consecutive to the creation of

data in the strict sense, such as down-linking, reception and value-addition back down on Earth; and finally

4. Marketing and sales activities related to the data once these are (value-added or not) fit for use by entities not involved and experienced in any Earth-observation activities themselves – which is clearly also a purely terrestrial activity.

The EOPOLE project, running into the autumn of 2000, is essentially based on two pillars. On the one hand, a series of Workshops is being organised by the various partners, at which working papers are presented and extensively discussed. So far, Workshops have taken place in London, Cosenza (Italy), and Oberpfaffenhofen (Germany); further Workshops are planned in Brussels, Stockholm, Athens and Leiden. These Workshops also involve special guests, upon invitation.

On the other hand, publicity is generated to a maximum extent as part of the aims

of EOPOLE. Thus, summary reports of the Workshops and other relevant developments are made widely available by means of a Newsletter. Also, a website is maintained on the Internet, at the following address:

<http://www.geog.ucl.ac.uk/eopole>.

Apart from University College London and Leiden's International Institute of Air and Space Law, the following partners have joined the EOPOLE project: National Technical University of Athens; Swedish Space Corporation; Eurimage; P. Geerders Consultancy; MiCE Microwave Consultant Engineering; OMM Observation, Mapping and Monitoring; the German Aerospace Centre DLR; and Infocarto SA. Further information can be obtained upon request from: Ms. Nicola Olby, EOPOLE Research Coordinator, Department of Geography, University College London, 26 Bedford Way, London WC1H 0AP, United Kingdom; Fax: +44-0171-504.4293, E-mail: [nolby@geog.ucl.ac.uk](mailto:nolby@geog.ucl.ac.uk).

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## Final Report of the IISL Workshop on Space Law in the 21st Century

*The Outer Space Treaty of 1967 and further international instruments built upon it have been successful in answering the challenge of creating a legal framework for the exploration and peaceful uses of outer space, and have thereby preserved the space environment for the benefit of mankind. However, the present significant changes in space activities give rise to a need for further developing this framework, while protecting what the World community has gained. The Legal Subcommittee of UNCOPUOS, as a vehicle for law-making within the United Nations, is now in a unique position to take up issues in an explorative way. The following issues can therefore be accommodated flexibly on its agenda, subject to decisions by UNISPACE and/or UNCOPUOS on the sequence of their inclusion. For this purpose, the International Institute of Space Law (IISL) proposes a number of recommendations as listed below.*



The Board of Directors of IISL: from left to right – L. Perek, P. Stern, S. Doyle, M. Smith, T. Masson-Zwaan, M. Bourély, I. Diederiks-Verschoer, G. Lafferranderie, Moutserrat-Filko, T. Kosuge, E. Fasan, G. Catalano-Sgrosso, N. Jasentuliyana, V. Vereshetin, F. Lyall, A. Tereshkov, N. Mateesco-Matte. Photo by Board member V. Kopal

The rapid expansion of private activities in and related to outer space requires examination of many aspects of existing space law, in particular:

- in respect of space applications services, which give rise to responsibility, liability and jurisdiction issues not currently covered by space law
- the impact of commercialization and privatization of space activities on the public-service aspects thereof
- intellectual property rights and technology-transfer issues which may require special treatment for global uniformity in practice
- protection of investor's rights in space objects and space artifacts, which may require totally new approaches to establish effective and enforceable security interests
- the nationality of spacecraft; and protection of the environment, where private entities are now not held directly accountable.

**Recommendation:**

It is recommended to the participants at UNISPACE III to add paragraph 319-bis to the Draft Report as follows:

"319-bis

*Member States of the United Nations should initiate discussions of and seek solutions to emerging relevant legal problems, and in particular recognize the need to expand the role of private enterprise in the law-making process. In respect of protection of the environment, the establishment of launch standards and environmental impact assessments should be examined. Specialized agencies should consider drafting standards and recommended practices as well as models for public-private partnership in their respective sectors of space activities. The concept of 'public service' in its various manifestations should be further elaborated, paying particular attention to the global public interest and to the needs of developing countries. The principles of fair trade should be strengthened. Attention should be paid to the various aspects of liability and security of ownership issues in order to arrive at a coherent global framework. Concerned international organizations should arrange effective and focused joint fora."*

As the use of outer space expands, it has been proven that many of the resources (orbits, frequencies, access to ground infrastructure, etc.) turn out to be no longer unlimited. As a consequence, such resources should be dealt with by means of coherent global resource management frameworks. The global public interest in this field can primarily be safeguarded by public institutions. Currently, adequate coordination is lacking.

**Recommendation:**

It is recommended to the participants at UNISPACE III to add paragraph 319-ter to the Draft Report as follows:

"319-ter

*Member States of the United Nations should consider possible coordinating frameworks for space-related global resources management. This work should focus on the needs, the potential conflicts, the natural limits, the values, the costs and the privatisation of resources. International organisations involved in space activities should seek early coordination. There is a need to have at least a code of conduct on space debris. To this end, previous work in this area should be taken into account as possible models. The Legal Subcommittee of UNCOPUOS should address the topic without delay and discuss it together with the Scientific and Technical Subcommittee. Elaboration of a legal regime for Low Earth Orbits should be considered taking into account recent changes in the ITU Convention concerning the status of LEOs as limited natural resources. The issue of security of ownership regarding spacecraft should be addressed promptly, for example by means of an international inventory linked to the international registry of space objects. In this connection, the UNGA should encourage Member States to adhere to the Registration Convention. In the context of the role of international organisations, the issue of 'consumer rights' should be dealt with. The UNGA, through UNCOPUOS and/or through special meetings for this purpose, should consider soon how best to coordinate the burgeoning demands on global resources generated by expanding space activities, both governmental and non-governmental. "*

The ongoing development of space activities requires the resolution of a growing number of issues. Space activities are increasingly affected by the expanding body of international economic law, which is blurring the boundaries between public and private law, and generating more reliance on recommended standards and practices. In this environment it is important that there is a mechanism for giving effect to the principles of outer-space law in a flexible and timely manner. This necessitates appropriate dispute-settlement mechanisms.

**Recommendation:**

*It is recommended to the participants at UNISPACE III to add paragraph 319-quater to the Draft Reprt as follows:*

"319-quater

*The UN General Assembly should consider the elaboration of effective mechanisms for settlement of disputes arising in relation to space commercialization. These mechanisms should have regard to existing arbitration rules used in international practice for dispute settlement."*

The expanding growth in areas such as commercial remote-sensing services, commercial complexity, impacts on international cooperation, and scientific and industrial applications of services necessitates consideration of appropriate regulations. National restrictions on access to data are emerging.

**Recommendation:**

It is recommended to the participants at UNISPACE III to add paragraph 321.bis to the Draft Report as follows:

"321-bis

*The Legal Subcommittee of UNCOPUOS should start with the elaboration of a treaty covering remote sensing from outer space on the basis of the 1986 Principles taking into particular account the expanding growth in commercial remote-sensing services and preserving the principle of non-discriminatory access to data. "*

-v-

Many emerging issues are influenced by rapidly advancing space science and technology. Space law should be based upon a solid foundation of scientific and technological facts to ensure effective legal formulation. Interaction among scientific and legal experts will strengthen the relevance of space law.

**Recommendation:**

It is recommended to the participants at UNISPACE III to add paragraph 321-ter to the Draft Report as follows:

*"321-ter*

*The two subcommittees of UNCOPUOS should in general meet adjacently so that their respective work can lead to increasing interaction."*

-vi-

One of the most challenging new developments in space activities concerns expanding global navigation satellite services.

**Recommendation:**

It is recommended to the participants at UNISPACE III to add paragraph 175 of the Draft Report, in the part dealing with GNSS, a paragraph 175-bis as follows:

*"175-bis*

*The recommendations set forth in the paragraphs 319-bis, 319-ter, 319-quarter, 321-bis and 321-ter [as proposed] should apply, as relevant to GNSS."*

**Final remark**

The Proceedings of the IISL Workshop on Space Law in the 21st Century should be referred to for purposes of amplification and elaboration of the issues mentioned above, and for relevant analysis and argumentation underlying the recommendations proposed herein.

## Space Law in the International Law Association (ILA)

The International Law Association (ILA) was founded as long ago as 1873 and has, ever since, been a non-governmental international organization of academics and practitioners in the field of international law. The ILA has national branches in all parts of the World and its headquarters are in London. Its work is presented and formalized at biannual conferences held in various places worldwide. Between these conferences, the work is mainly carried out by ILA Committees, which are established for the various fields of public and private international law.

One of these Committees is the ILA Space Law Committee, which is chaired by Prof. Karl-Heinz Böckstiegel (Germany). Its Rapporteur is Prof. Maureen Williams of Argentina and its members are distinguished specialists in space law from all over the World.

In the recent past, the ILA Space Law Committee has elaborated drafts of international conventions on the subjects of space debris and the settlement of disputes related to space activities. Presently, the Committee is engaged in a review of the major space law conventions in view of commercial space activities. As a first step, Special Rapporteurs of the Committee have elaborated Introductory Reports on the Outer Space Treaty, the Liability Convention, the Registration Convention, and the Moon Treaty. Comments regarding those Introductory Reports have been circulated to other members of the Committee and a final report will be produced early in the year 2000, to be discussed at the next ILA Conference in London in July 2000. A resolution of the ILA Conference in London is expected to decide on the further procedure in this regard.

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## International Organisations and Space Law: Their Role and Contributions

**International Colloquium**  
Perugia, Italy, 6 – 7 May 1999

The 3rd International ECSL Colloquium co-organised with the University of Perugia and the Italian National Research Council (Istituto di Studi Giuridici sulla Comunità Internazionale) was held on 6 and 7 May 1999 in Perugia, Italy.

Perugia, with its roots going back three thousand years ago, developed a tremendously rich heritage, both artistic and cultural. This beautiful city, with its university, is also a renowned centre for the development of knowledge in various fields, among which international law and space law have a very special place. Perugia, with such incentives, offered the perfect setting for a challenging Colloquium.

The main goal of the Colloquium was to address current space-law-related issues in the light of the UNISPACE III Conference taking place in July 1999.

Major space programmes are conducted by or with the participation of International Organisations, which are increasingly playing a role in the drawing up and implementation of space law. Many have accepted some of these treaties; several are drawing up and agreeing texts of importance to the progress of space law, agreements and Memoranda of Understanding (MOUs) containing provisions related to space law lato sensu: liability, intellectual property rights, life and work onboard manned space stations, Earth observation, telecommunication and navigation.

International law, space law and national laws all have a bearing in various ways on activities conducted in outer space by International Organisations.

The Organisers had therefore prepared a programme likely to provide the broadest

and most comprehensive analysis of the subject. Space-law experts and practitioners addressed the latest developments in the field, bringing participants up to date.

The programme was as follows: On 6 May, a first session was dedicated to 'International Organisations Participating in Space Activities', with regard to space law, bringing together speakers from the European Space Agency, Eutelsat, Eumetsat and Intersputnik. During a second session, experts from the United Nations, ICAO, WIPO and ITU expressed their views on the topic of 'International Organisations Engaged in Space Regulatory, Policy-making and Related Activities'. The last session of the day brought together representatives of Inmarsat, Intelsat and

Eutelsat, to discuss 'Problems Arising from the Privatisation of International Space Organisations'.

On 7 May, the various eminent speakers reflected their thoughts on the topic of 'A New Role for International Organisations in the Development of Space Law within Contemporary International Law'. The first session provided academic thinking on International Organisations' 'Contributions Through International Treaties and Agreements'. The two last sessions of the day took the form of panel discussions on International Organisations' 'Contributions in the Main Sectors of Space Activity'. The sectors of space activity dealt with were: commercialisation, living and working in space, space transportation systems, Earth observation, telecommunications and navigation.

This highly rated Colloquium was a very fruitful one. Through these two days, the goal set by the Organisers – providing a general overview of the relations and interactions between international organisations and space law – was fulfilled to a very large extent. Our thanks to the speakers and participants who worked hard to achieve this result.

The Proceedings of the Colloquium can now be purchased from ESA Publications Division (price 80 Dfl or 35 Euros); contact:

The Bookshop (Mr F. de Zwaan)  
ESA Publications Division  
c/o ESTEC, PO Box 299,  
2200 AG Noordwijk, The Netherlands  
Tel. (31) 71 565 3405 –  
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## 8th ECSL Summer Course on Space Law and Policy Geneva, 30 August – 12 September 1999

**Thierry Herman**

*European Centre for Space Law*

*The 8th ECSL Summer Course on Space Law and Policy, jointly organised by ECSL and the Geneva-based law firm Fasel-Bochatay-Tsimaratos, was held at the University of Geneva, which generously provided all the necessary infrastructure. During the two-week course, more than thirty-five students from all over Europe gathered for an intensive programme of lectures given by many outstanding authorities in space law: experts from the space industry, international organisations involved in space activities and university academics.*

To provide a coherent programme, the course was divided into five units devoted to different aspects of space law:

- An introductory unit focused on the United Nations Treaties and Principles on Outer Space, other sources of space law as well as national legislation applicable to space-related activities.
- Given the current trend towards increasing commercialisation of space activities, a large number of lectures were devoted to that topic. Just some of the many subjects covered were: the international trade in launch services; the draft Unidroit Convention on international interests in mobile equipment; intellectual property rights; remote sensing, global navigation satellite systems; and insurance and risk management in the space sector.
- A further series of lectures focused on the European Space Agency (ESA): ESA's future role as a driving force behind Europe's space industry, the

Agency's structure, its industrial policy and its procurement practices and procedures were all analysed by visiting ESA staff members.

- Analysis of the legal aspects of telecommunications was two-fold. First, institutional, with lectures being given on the International Telecommunications Union (ITU) and its rules concerning the allocation of frequencies and orbital positions to satellite operators, on the privatisation of international telecommunications organisations such as Inmarsat and Eutelsat. Second, regulatory, with lectures on the European Union telecommunications regulations, telecommunications and competition law, and the law applicable to satellite TV.
- Countries such as the United States, Britain, Sweden, and more recently Australia, have adopted such legislation. Should other countries do likewise? Is there a need for

unification? These issues were addressed in the last unit.

Alongside this very busy schedule of lectures, the students were also required to solve a practical case addressing the principle of non-appropriation "by claim of sovereignty, ..., or by any other means" (O.S.T., Art. II). Over the two weeks, the students met daily in groups of ten and, under tutorial supervision, drafted a position paper which they presented during a mock International Conference chaired by Profs. Bénédicte Foëx and Christian Bovet of the University of Geneva. The work presented was impressive in all respects.

This strenuous academic programme was supplemented by field trips to CERN and WIPO and two presentations opened to the general public. The first was given by M. Bertrand Piccard, one of the pilots of the Breitling Orbiter III balloon which made the first non-stop flight around the world,

in 19 days. The other presentation, given by Prof. K-H. Böckstiegel, dealt with international commercial arbitration.

In order to heighten public interest in space activities, ECSL put on display a scale-model of Ariane-5 and various exhibition panels on ESA in the departure lounge of Geneva airport and in the library of the University of Geneva. On 26 September, ECSL, Fasel-Bochatay-Tsimaratos and the University of Geneva organised what proved to be a successful press conference on the Summer Course and European involvement in space activities. No fewer than 6 articles were

published the next day in the newspapers. The students also had a chance to enjoy the night life (yes, Geneva does have a night life!) which, I was told, was quite hectic...

The course ended with a farewell dinner on a Rhône boat cruise. Special thanks go to Mr Alfons Noll for his (musical) contribution to the success of this final gathering.

I would also like to thank the tutors – Erica, Mirkka, Jean-François and Jan – for all their efforts; Profs. Bénédicte Foëx and Christian Bovet for their help and

kindness; all the partners and collaborators of Fasel-Bochatay-Tsimaratos for their great support before and during the course; Drs. Créola and Piffaretti from the Swiss Space Office for their contribution; Meyer&Meyer for their hospitality and friendship, and, of course, the students for their fine spirit.

I wish good luck to my successor and to Prof. Böckstiegel and his 'team' for the next Summer Course, to be held in Cologne in July 2000.

Adieu (hopefully in the Swiss meaning of the word!).

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## International Institute of Space Law (IISL) Technical Programme International Astronautical Federation (IAF) Congress in Amsterdam,

Summary 4-8 October 1999

Liara Covert  
(CEDS)

*The keynote address of the IISL workshop was made by Dr. N. Jasentuliyana. Four sessions (two days) of presentations took place before the International Moot Court Competition at the Peace Palace of the International Court of Justice (ICJ). A final session of presentations, comprehensive summary and discussion of the entire programme then followed.*

During the initial session, participants considered legal aspects of the forthcoming International Space Station (ISS) Utilisation. Here, the interim results of the Project 2001 were presented, including plans for an international working group to consider Space-Station issues. Certain aspects of the ISS legal environment encouraging industrial exploitation were also clarified, while it was recognized that the ISS legal framework of public-private co-operation between ISS Partners is in an ongoing process. The legal status of crew was another important issue discussed in the light of developing interpretations of UN space and other treaties. These treaties also framed analyses of potential patent problems and obstacles to traditional terrestrial jurisdiction on ISS.

The second session was concerned with new developments in telecommunications and their impact on the legal aspects. At this time, the progress of the Cologne-based Project 2001 mentioned a related telecommunications working group. Comparisons were also made between globalisation and cyberspace, which may

have some parallel effects and applications in ITU regulations for satellites in different orbits. The future legal regimes to govern GNSS, geostationary orbit, radio-frequency and mobile communications were also noted as points worth further reflection.

The third session focused on the need to protect space environments. Related exchanges proposed to identify risks and dangers associated with space activities, as well as to re-evaluate the role of regulatory authorities and their legal implications. Interventions demonstrated that space debris in both Earth and lunar orbits is a growing problem that will require more decisive action. It was indeed shown that the protection of space systems is greatly related to Earth communications services.

Notwithstanding, the scientific exploration and at this point, hypothesized settlement of extra-atmospheric space should arguably involve ethical considerations linked to exobiology.

The fourth session concentrated more specifically on the legal implications of

expanding privatisation in space. Key challenges were linked to co-ordinating national laws with private space activities while enhancing commercialisation. Poignant issues of discussion included comity in space, intellectual property, shifts in US export controls, and evolving legal parameters defining relationships between launch providers, governments and service users.

The final discussion centred a variety of clarifications. Notable were debates concerning the value of non-legally-binding property and the possible associated or non-transferable rights, the ethics of reducing outer-space resources to procurable objects, the role of history and morality in justice, which will likely continue to impact developing legal infrastructures in outer space, and also questions of uncertainty regarding the place of extra-atmospheric jurisdiction. In essence, through a brief, yet comprehensive survey of contemporary obstacles yet to be overcome in space law, it became apparent that philosophy continues to play a pivotal role.

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*Dr H. Peter van Fenema*

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## 8th Manfred Lachs Space Law Moot Court Competition

On Thursday 7 October 1999, participants in the IISL/IAF Workshops had the opportunity to attend the International Moot Court Competition at the Peace Palace of the International Court of Justice (ICJ) in The Hague (NL). The American Team was from Vanderbilt University in the US State of Tennessee, and the European Finalists (Irène Aupetit and Mickael Torrado) were from Université Paris XI - Jean Monet. The Space Law case concerned responsibility and liability issues involving a commercial, movable launch platform. The ICJ judges who presided and deliberated over the case were Judge Abdul G. Koroma (Sierra Leone), Judge Gilbert Guillaume (France) and Judge Vladen S. Vereschetin (Russian Federation). The European team won the Best Memorial Award. The Leiden Institute of Air and Space Law hosted the post-competition dinner in Leiden.

## Calendar 2000

- Project 2001, Workshop 19 January 2000, Bremen, Germany
- Unidroit Conference on the Draft Unidroit Convention on international interest in high value mobile assets, January 2000, London, United Kingdom
- Scientific and Technical Sub-committee of the UNCOPUOS, Meeting, 7-18 February 2000, Vienna, Austria
- Legal Sub-committee of the UNCOPOUS, Meeting, 27 March-7 April 2000, Vienna, Austria
- UNCOPOUS Meeting, 4-23 June 2000, Vienna, Austria
- International Law Association (ILA) Space Law Committee, ILA Conference, July 2000, London, United Kingdom
- 9th ECSL Summer Course on Space Law and Policy, July 2000, Cologne, Germany
- IAF-IISL Congress, 2-6 October 2000, Rio de Janeiro, Brazil
- 9th ESCSL Practitioners' Forum, November 2000, Paris, France