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ECSL News

Bulletin of the European Centre for Space Law – Published under the auspices of the European Space Agency

Special Feature on Remote Sensing

ECSL News' aims with its feature series to build up over time a full, but easily accessible, picture of where Europe stands in relation to creating and applying space law.

Issues 4 to 8 of ECSL News *provided a tour through the different parts of the European space law community. With this issue we begin a new series in which experts in the major fields of space law and policy will systematically examine those fields' salient aspects and bring the reader up to date. Scheduled to extend into 1994, this phase will, it is hoped, be complemented by a structure capable of supporting a regularly quarterly issue of* ECSL News, *rather than the current minimum baseline of 2-3 issues a year.*

For this issue, the field of remote sensing (RS) has been chosen. Never before has this theme been so topical. Global monitoring has been placed firmly on the G7's agenda, and on everyone else's by the Rio Earth Summit. Earth observation was also the ISY '92 Munich Conference's main emphasis, regarding which ECSL and the International Institute of Space Law organised a special session. More locally, ESA and ECSL have performed a survey of legal aspects of RS in Europe which has now been followed up by a study for the EC Commission.

Last but by no means least, ESA's ERS-1 satellite is now fully operational and supplying users. It is planned that ERS-2 and the Polar Platform mission POEM-1 will join it over the coming years to provide a strong flow of RS information. To provide a full picture of present and future developments, ECSL News *has for the first time produced a briefing for readers on Europe's RS programmes.*

The practical issues of data rights focused on in this issue will become yet more pressing with time, and ECSL News *will undoubtedly return to the RS theme.*

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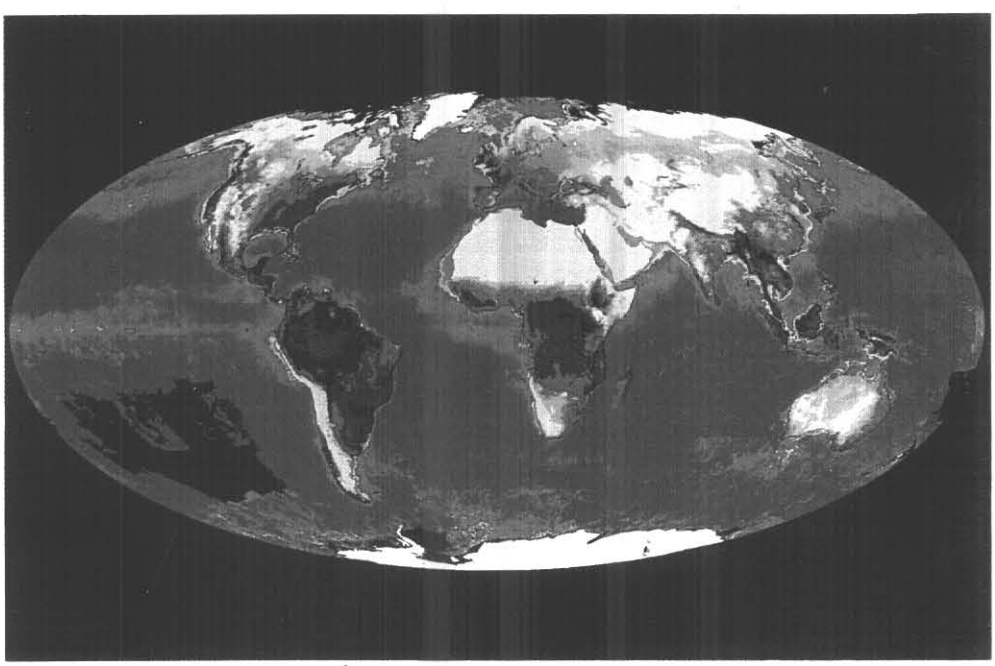
Space law's balancing act on Remote Sensing

Remote Sensing (RS) is already needed for a multitude of purposes including monitoring and understanding the weather, climate, earth resources and other factors of the Earth's environment. This need will grow, as will the means for meeting it such as the Columbus Polar Platform (PPF), which will carry out ESA's Polar-Orbiting Earth Observation Mission (POEM) and link into world-wide cooperative efforts.

Far from respecting political boundaries, RS objectives in most cases require information to be gathered at least on a regional scale (e.g. via ESA/Eumetsat; see *ECSL News No. 7)* and often on an inter-regional or global scale. On the one hand this fact lends a strong incentive to international cooperation. On the other, however, it raises questions as to whether the sensing entity's freedoms are unlimited, most particularly in regard to the interests of States whose territories are 'sensed'.

Since the questions raised could only be answered at the international level, it fell to the Legal Sub-Committee of the UN Committee on the Peaceful Uses of Outer Space (UNCOPUOS) to consider them. The Sub-Committee began discussing the subject in 1971, arriving only in 1986 at a Resolution, adopted by the UN General Assembly, on *'Principles relating to Remote Sensing of the Earth from Space'* (available in ESALEX as ESA/IOSL/0003).

The debate involved aspects related to jurisdiction and to the classes of data and the technology used, but it mainly centred on socio-economic and political arguments put forward by the developing countries. They sought to establish a right of prior consent before a State is *'sensed'* and, once it has been, a further right to access the resultant data. Hinging upon the establishment of such rights were secondary questions of the sensed State's entitlement to pass on received data to third parties and other modalities affecting commercialisation.



The 1986 Principles met a number of the developing countries' concerns, but also represented a compromise. As opposed to allowing complete freedom to the sensing entity, Principle XII provides that the sensed State shall have access to raw and processed data *'concerning the territory under its jurisdiction... on a non-discriminatory basis and on reasonable cost terms'*, once the data are produced.

A similar provision applies to *'analysed information'* (e.g. images), this time coupled with the obligation to take into particular account *'the needs and interests of the developing countries'*. Special obligations are, further, imposed on States having sensing capabilities where information would assist in the protection of the environment or to avoid natural disasters.

These provisions clearly promote a policy of free access to and distribution of data – though not necessarily free of charge. Implicitly, no requirement for prior consent before sensing takes place is made. But Principle XIII does oblige a sensing State to *'enter into consultations with a [sensed State] in order to make available opportuinities for participation and enhance the mutual benefits to be derived therefrom.'* Additionally, Principle IV prohibits States from conducting RS activities *'in a manner detrimental to the legitimate rights and interests of the sensed State'*.

The provisions referred to, along with other parts of the Principles (which open doors to international cooperation and the exchange of information) are a step towards recognition of international rights which qualify the freedoms States enjoy by reason of possessing RS technology. Nevertheless, the Principles, being contained in a UN Resolution do not have the authority of treaty law or longstanding custom. They furthermore lack precision on many points and – most seriously in the light of the difficulties of their elaboration – have no effective dispute-settlement mechanism.

Even so, they do set a standard now being reflected in practice. Among others, ESA uses the Principles as its point of reference in negotiating Memoranda of Understanding for use of ERS-1 data (see Ferrazzani article, below). The next step all the same remains the elaboration of a full-fledged treaty on remote-sensing activities within the UN framework.

P. Rinio

ESA Data Policy

Europe's experience in remote sensing has allowed the European Space Agency to establish a policy for sensing from space and the distribution of data resulting from this activity. As any policy is triggered by demand, ESA's position today started with the Member States' desire to gain greater knowledge of the Earth's resources, and their willingness to provide the tools to gain that knowledge.

The meteorological space systems ESA first developed were passed to customers who set up Eumetsat as the operating organisation. Eumetsat now runs a successful programme using Meteosat satellites. ESA itself continues as the manager of other Earth observation data collection and distribution networks where it was considered best suited to make technological and scientific results widely available to customers. This has been the case with Landsat data distribution to users under the mandatory Earthnet programme (most ESA programmes by contrast involve ESA Member States participating on an optional basis; see *ECSL News* No. 7). Earthnet's infrastructural role underlines the commitment of ESA's Member States to sustaining the flow of remote-sensing data to European users.

In the early eighties, European governments on the one hand entrusted ESA with developing and operating the first European Remote Sensing Satellite, ERS-1, which was launched in July 1991 and is now in full operation. On the other, they established a policy within ESA for the management of data resulting from this mission. The concerns of the Member States were obvious, but the answers were complex, since some technological, scientific and user-related requirements were difficult to match up.

At the outset, a basic assessment of remote sensing programmes internationally was performed, taking account of scientific missions and others of a predominantly commercial nature. Against this background, ERS-1's mission was designed to permit a flexible use of its capabilities, without jeopardising its commercial potential. Next, ESA formulated its ERS-1 data policy around these principles:

1. Provision of data to all interested users, each of whom has free access to the data on an open and non-discriminatory basis in conformity with the word and spirit of 1986 UN Principles (see Rinio article). The practice thus set is intended to support the Principles' observance and further development.

The English Channel and the North Sea as seen by ERS-1 ATSR instrument (8.8.91)

2. The implementation of a concept of ownership over ERS-1 data, defined in terms of the output of the sensors on board the satellite along with associated processed and derived products. This provides the basis for adequate commercialisation.

Application of the latter principle brings one immediately into the sphere of private law. A primarily contractual approach has been used to constitute the relevant regime for such data, since no explicit recognition existed in European legal systems for ownership *erga ommes* over RS data.

ESA has implemented this policy in, at the time of writing, over 60 agreements, some contracted at the level of governments, others at the level of private-law entities. All include clauses that bind the user to recognise ESA's full title over ERS-1 data as owner of the satellite. This right is reinforced by separate recognition of ESA's copyright in the data. Through this consistent practice ESA has established a precedent for general application in the field of Earth Observation data generally.

M. Ferrazzani

Contract, Copyright and Data Protection

The question of copyright of remote sensing data rose to full height in Europe for the first time at CNES/Spot Image when the time came to prepare contracts for recipients of Spot data in 1983, and this device was used. Since then, other organisations have joined the club and themselves prepared their own contractual solutions, notably ESA for ERS-1 and – shortly – Canada for its Radarsat distribution. Eumetsat has postponed similar contractual action until data transmissions can be encrypted, and for now relies solely on copyright. (Meteosat data being received directly, they are out of reasonable control on a contractual basis). Outside Europe, the US Eosat (Landsat's operator) uses a semi-contractual (trade secret) approach, while the Japanese have not adopted a position yet, possibly due to the special character of their programmes.

1. The European picture: Economics drive a debated legal status

This was the conclusion of a survey conducted in 1990-1991 by the author under the auspices of ECSL, with the active support of ESA (see Tuinder article).

During the survey, a large majority acknowledged that RS data may be proprietary and that they would not object to their legal protection against 'piracy' and illegal representation (e.g. dissemination to the public).

The debate starts with where the protection should end, in particular regarding composite (a mixture from different datasets) or derivative (i.e. value-added) products. Here, a majority (80%) felt derivatives of Earth observation data should not be subject to the prior authorisation or to other rights of the initial owner. The remaining 20% (which represents a group holding some 80% of the market, among them the satellite operators and their licencees) thought, predictably, that such rights should apply in order to obtain royalties, although several admitted it may be difficult to enforce them now.

The expectation of the 20% group is that the future of a RS market, if any, lies in cartography at large and in meeting internationally shared concerns (i.e. environment, forest, water, atmosphere monitoring). Small, additional revenues will also come from graphic arts or media users. Copyright is obviously an attractive device in this light.

2. The other clans in the club

Looking at the political choice involved, the 20% group claims that market-driven methods, providing a needed service at a corresponding price, are more efficient than subsidies to reach the common goal of continuity in providing data to the community. But is this true and is it worth overriding the interests of the remaining 80%?

Kuwait on fire (ERS-1 ATSR, 7.8.91)

This issue has been blurred by moves in the US, which differentiate between a 'research' sector, for which all restrictions on use of data would be lifted, and a 'commercial' sector, which would be subject to the consequences of the operator being able legally to protect the data. While such a solution seems like a compromise within the market, it poses the very real question of whether there is then any market left?

In fact, this question embroils one in a hopeless debate on pricing policy versus protection and an impossible search for answers on the definition of research in private and public hands, and whether meeting its needs in such a field as this can be separated from the marketplace.

As an example, NOAA supplies the space and ground segments of weather satellites and refrains from protecting the resultant data products. This is an obvious boon to the US added-value industry since the raw material it uses is almost free. Yet their European competitors have to purchase comparable data from Eumetsat that is protected. This leads to claims of unfair distortion in competition and associated trade-law questions – as well as, of course, to lower royalties!

3. Incidentally, is it possible to copyright RS data?

There is no straightforward answer to this, as several surveys have shown. Who is the owner? Is the concept of 'collective works' really applicable here? Or should the ownership of data be vested in the satellite owner or operator, meaning that legal title would be vested before the waves coming down from space are received? How, though, can human creation or originality (the basis for copyright) apply to this situation when, unlike the situation in telecommunications, photography or computer-generated forms, we are dealing with images not even generated on Earth? Do matters improve if the possibility exists to reprogram the satellite's sensors?

Under more flexible interpretations of copyright, such as are to be found in the US, the risk of falling outside copyright is lower but not low enough to be considered as acceptable. Other legal systems, though – among them the French and German – are stricter, making that risk still higher.

Naturally, many resent these uncertainties since predictability is essential in commerce. In addition the industry is burdened with applying a comprehensive set of contracts, if only to define what are the proprietary data, the derived products, how to end the derivation process, the rights granted for each of them and the associated fees, and so forth.

But what are the alternatives to copyright? Against some cries for an exclusion of protection, others advocate laying down a specific law, the only solution, incidentally, that could be found for semi-conductor topographies. After the ECSL survey was produced, DG XII of the EC Commission convened a working group, assisted by a panel of experts, to contribute to drafting a coherent policy on access to data. One can only wish them luck!

J.-D. Dupuy

BRIEFING

Making sense of Remote Sensing

Guy Duchossois
ERS-1 Mission Manager, ESA Earth Observation Directorate

Over the last twenty-five years, the development of space-based remote-sensing techniques for Earth Observation has provided mankind with a new global perspective of his environment. Associated with this have been significant advances in the scientific understanding of the complex interactions that occur between the atmosphere, the oceans, ice regions and land surfaces, which together control our Planet's climate and environment. It has also acted as a spur for the development of new technologies and the formation of user communities. The impact of the Earth Observation programme has been widespread, affecting all facets of society, political as well as scientific, industrial, technological and military.

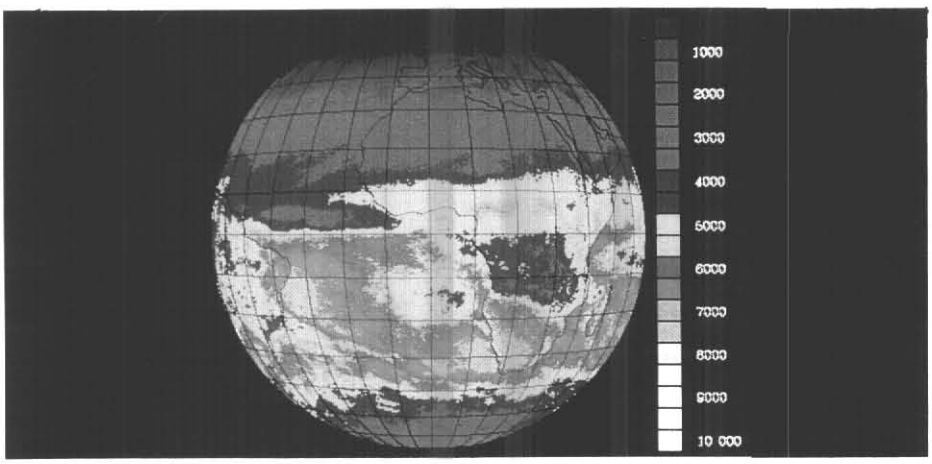
1. The ESA Earth Observation Programme

Observation of the Earth and its environment from space encompasses an extremely broad range of disciplines, including: meteorology, atmospheric physics, chemistry and dynamics, climatology, oceanography, glaciology, land processes, environmental factors and those of the solid Earth. In addition, the degree of maturity of the endeavours in any one of these fields can range anywhere from research to demonstration, pre-operation, operation, and commercial application.

This spread leads to a necessity to fly many different instruments in space, suitably grouped on appropriate flight platforms. In most cases, the long-term continuity of data is also essential for climatology and environmental-change detection, leading to the requirement to sustain the capability for periods of a decade or more by replacing the individual spaceborne systems every few years as each comes to the end of its foreseen lifetime.

ESA's present Earth Observation programme addresses a part of this broad range of disciplines and in some areas already provides for this essential continuity of data. The Agency's plans and strategy for the future envisage a broadening of the programme to enable the wide range of data essential for better understanding, monitoring, protecting and controlling our Planet, its environment and its resources to be obtained. The ESA programme is seen as an important contribution to the overall international cooperative effort to monitor and understand the Earth's environmental system.

Although the subject of the Earth and its environment has recently come under the intense spotlight of world interest, the building up of the necessary infrastructure to be able to analyse the requisite global information cannot be established overnight. What has ESA achieved so far?



Solar radiation in December 1984 as derived from Meteosat-2 data (Photo IGM, Cologne)

The Meteosat programme

This programme is Europe's contribution to the World Weather Watch. Meteosat is one of the ring of five geostationary meteorological satellites stationed above the Equator. It occupies the spot over the prime meridian and images the same part of the Earth's disc on a continuous basis once every 30 minutes in three spectral bands – the visible, the thermal infrared, and a water-vapour absorption bands.

The first Meteosat was launched by Ariane in November 1977, the second in June 1981, and the third in June 1988. The success of the Agency's Pre-operational Meteosat Programme led to the formation of the European Meteorological Satellite Organisation Eumetsat, on whose behalf ESA is constructing, launching and operating three further spacecraft, in the framework of the 'Meteosat Operational Programme'. The first spacecraft in this series, MOP-1, was launched in March 1989; MOP-2 in March 1991, and MOP-3 is scheduled for September-October 1993. Together they will provide an operational service to the European meteorological community until 1995. A Meteosat Transition Programme will then ensure data continuity until the launch of the Meteosat Second Generation planned for the end of the decade.

The Earthnet Programme

With the advent of remote-sensing satellites in the 1970's, the potential role and importance of observing the Earth's land mass, oceans, ice and atmosphere from space became increasingly recognised. To ensure that European users could have access to these important new datasets, ESA established its Earthnet Programme in 1977.

The Earthnet Programme is responsible for acquiring, pre-processing, cataloguing, archiving and distributing data from Earth Observation satellites. It operates receiving stations at, or has arrangements with Member States to acquire data from Kiruna (Sweden), Fucino (Italy), Maspalomas (Spain), Tromso (Norway), Gatineau and Prince Albert (Canada, which participates in certain ESA programmes pursuant to a Cooperation Agreement). It acquires and handles data from a variety of satellites such as Landsat (USA), MOS (Japan), Tiros (USA) and Spot (France). It is now responsible for the handling of the ERS-1 satellite data and is the focal point for all ERS-1 user services.

The Earthnet Programme Office (EPO) is located at the Agency's ESRIN establishment in Frascati, Italy. The data collected from the various spacecraft are distributed through a network of 'National Points of Contact' situated in

each country. Earthnet's data sales have increased year by year, and there is now a large spectrum of users, not only from research establishments to government agencies, but also from firms in the private sector.

The First European Remote Sensing Satellite, ERS-1

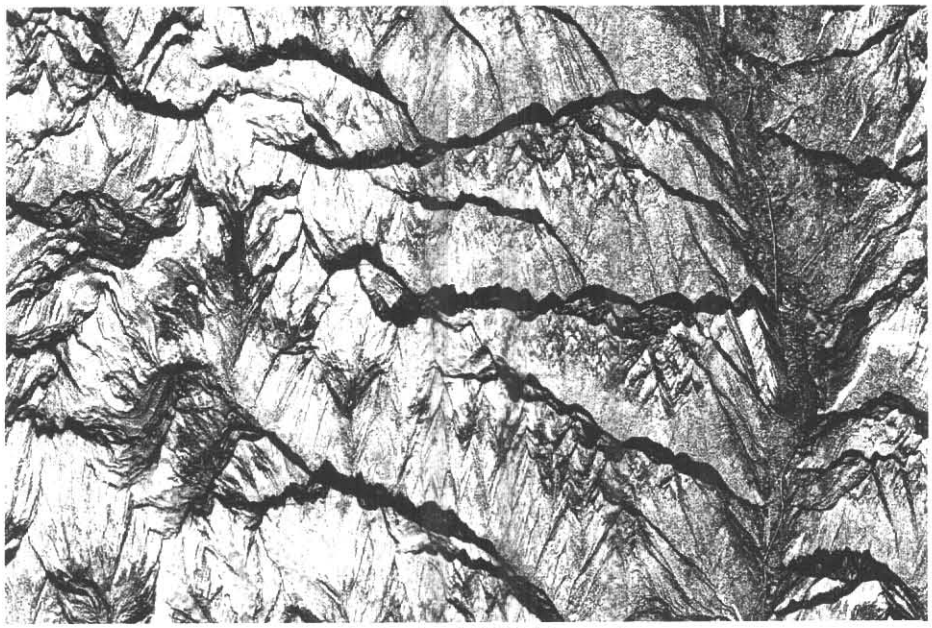
ERS-1, launched successfully in July 1991, is the forerunner of a new generation of space missions planned for the 1990's, which promise to make a substantial contribution to the scientific study and understanding of our environment. It uses advanced microwave (radar) techniques that allow global measurements to be made and imaging to take place regardless of cloud and sunlight conditions. Such techniques have been used previously only by the short-lived Seasat mission in 1978, and during brief Space Shuttle experiments in 1981 and 1984. In addition, ERS-1 provides the measurement of many parameters not covered by existing satellite systems, including those of sea state, sea-surface winds, ocean circulation and sea and ice levels, as well as all-weather imaging of ocean, ice and land. It also measures the sea-surface temperature with greater accuracy than any other current space systems.

Significantly, much of the data are being collected from remote areas such as the polar regions and the southern oceans, from which little comparable information has been previously available.

The ERS-1 mission provides the data that are needed to address a wide range of pressing environmental problems, thereby contributing to:

- improved representation of ocean-atmosphere interactions in climate models;
- major advanceS in our knowledge of ocean circulation and energy transfer;
- more reliable èstimates of the mass balance of the Arctic and Antarctic ice sheets;
- better monitoring of dynamic coastal processes and pollution; and
- improved detection and management of land-use change and cover.

The ERS-1 System has also been designed to satisfy operational requirements for data products needed within a few hours of the observations being made, allowing it to make significant contributions to operational meteorology, sea-state forecasting and monitoring of sea-ice distribution – all being important for shipping and offshore activities. High-resolution (30 m) radar imaging of the Earth's surface will also provide unique datasets for land-resource management, including both renewable and non-renewable resources.



The Rhône Valley and Zermatt, Switzerland (ERS-1 image)

Last, but not least, thanks to its altimetric and precise tracking data, ERS-1 provides very valuable information for the understanding of the Earth's interior and for geodetic applications. The lifetime of ERS-1 is expected to be about 2 to 3 years.

Beyond ERS-1

Through intensive consultations with the user community, the Agency has elaborated a European Long-Term Strategy for Earth Observation which is focused on four major themes:

- Monitoring of the Earth's environment on various scales, from local to regional and global.
- Management and monitoring of the Earth's resources, both renewable and non-renewable.
- Continuation and improvement of the service provided to the world-wide operational meteorological community.
- Contributing to the understanding of the structure and dynamics of the Earth's crust and interior.

Given that these issues are of concern to all of the world's nations, they call for well-coordinated international cooperation. No one nation can afford to develop and operate the complex space systems and ground infrastructure necessary to realise the objectives. ESA's Earth Observation programmes recognise this by seeking collaboration and taking full account of other Earth Observation programmes that are either in progress or are currently being planned in the USA, Japan and Canada. Various consultation and cooperation mechanisms have been set up, allowing a more efficient use of the available resources.

The realisation of the Agency's Earth Observation strategy depends on an integrated future programme consisting of four main elements:

1. **ERS-2.** This ERS-1 follow-on mission was approved in June 1990 and the satellite is scheduled to be launched at the end of 1994. ERS-2, however, is not conceived as just a 'carbon copy' of ERS-1 but will also add an important new capability, that of a Global Ozone Monitoring Experiment (GOME) to address an area of growing concern, namely atmospheric chemistry. This instrument will observe ozone and some related trace gases in both the troposphere and the stratosphere of our Planet.

2. **Aristoteles.** This mission is aiming primarily at a precise determination of the Earth's gravity and magnetic fields and should allow a better understanding of the internal structure and dynamics of the Earth's interior.

3. **Meteosat Second Generation.** The first satellite of this joint programme of ESA and Eumetsat is scheduled for launch toward the end of this decade. It will not only continue to provide the present types of data and products, but improve on them and possibly add new capabilities.

4. **POEM.** The Polar-Orbit Earth Observation Mission will address the four themes underlying the Agency's Earth Observation strategy and mentioned above in order to provide global datasets that in many cases span decades. These data must cover a wide range of disciplines as the themes generally straddle traditional lines of demarcation. Moreover, given the synergism between both the disciplines themselves and the instruments necessary to realise the objectives, missions will generally have to be broader in scope

and carry more instruments than has been the case in the past. This will be achieved by implementing a series of polar missions based on the Columbus Polar Platform currently under development. Such platforms have an expected lifetime of four to six years, and a payload carrying capability of more than twice that of ERS-1.

The first Polar Platform mission, POEM-1, was approved at the Ministerial Conference meeting held in Munich in November 1991 and is scheduled to be launched in mid-1998. The selected payload will ensure the continuity of data provided by ERS-1 and ERS-2 and will further address other Earth observation disciplines such as marine biology and atmospheric chemistry. It will also include a package of operational meteorological instruments similar to those currently flying on the US/NOAA-Tiros satellites.

Subsequent Polar Platform missions will be deployed to ensure data continuity and address further objectives, e.g. land resources management.

2. Data management and utilisation aspects

The ground segment requirements, i.e. all the infrastructure and software necessary to acquire, process and distribute the data to users, are constantly becoming more challenging in view of the very large quantities of data generated by increasingly sophisticated Earth Observation instruments and the needs of the operational users to receive data products within a very short time (e.g. in less than 3 hours from observation on-board the satellite in the case of ERS-1). More and more effort and money is therefore constantly being called for.

In fact, the Earth observation user community that produces this demand is extremely diverse, ranging from the scientific/academic sector composed of universities, laboratories and institutes to the application sector composed of intergovernmental entities (such as the EC, FAO and UNEP), government-funded entities (Met Offices and hydrological services), ministerial departments (agriculture, fisheries, regional development, and environmental agencies) and the private sector (mining, surveying, oil companies, and the value-added industry).

The scientific communities are generally well-organised in their individual fields and try more and more to coordinate their research within large-scale programmes. Depending on the nature of their research activity, their data requirements range from limited sets to global long-term series. On the other hand, the applications community, with the exception of meteorological organisations, is considerably less organised. However, their data requirements, once identified, are very large, span long time periods, and cover regional to planetary geographical scales. The objectives and the spatial and temporal dimensions of their activities justify more than anything else the investments required in order to adopt remote-sensing technology as an essential contribution to their data gathering process.

The Suir Valley, Ireland (ERS-1 image)

Given the diverse nature of the user community and in order to avoid Earth observation programmes being primarily technology-driven, it has always been ESA's policy to involve users in all stages of mission definition, satellite and instrument development and data exploitation. The Agency also makes special efforts in the fields of training and education.

3. Evolution from experimental to operational phase

The objectives of the ESA Earth Observation programmes spanning the next 15 years can be summarised as follows:

- ESA should continue to support the main Earth-science disciplines through a series of remote-sensing missions, of both an ad hoc and multi-disciplinary character.
- ESA should promote the use of remote sensing data in application domains, to demonstrate their operational utilisation and, where possible, their commercial value.
- The achievement of routine operational status for remote sensing. Truly commercial undertakings will follow if successful operational applications can justify continuity of remote-sensing measurements over long periods on global scales.
- Funding of related scientific research to improve our knowledge of the phenomena under study, our understanding of the measurements performed by spaceborne instruments, and to establish the necessary mixture of ground and space-based measurements to sustain a given application.

Transformation from an experimental phase to a fully operational enterprise will be a complex and gradual process which requires continuity of data and, therefore, of the space systems and associated ground facilities over long periods (e.g. decades).

Past experience shows quite clearly that it takes a minimum of ten years from the moment when data is first provided to a community to the point where user communities become firmly established and the first operational applications emerge. During this period the community has to be nurtured and encouraged to exploit the data, so requiring :

- Adequacy of space data for these operational activities.
- Timely delivery of data to operational user entities.
- Strong coordination with the relevant user communities which need appropriate tools to handle and interpret properly the data provided.

4. Conclusion

Observation of the Earth and its Environment has been part of ESA's activities since the start of the Meteosat programme in the early 1970's. The successful launch of ERS-1 in 1991 to be followed by ERS-2 in 1994 and, later in this decade, with the deployment of Aristoteles, Meteosat Second Generation and the large Polar Platforms, will allow Europe to play an important role and provide a major contribution to the solution of problems relevant to the future habitability of the Earth. It should also be seen as an indication of its political will to play its part in this most important of global enterprises.

G. Duchossois

ECSL Remote Sensing Activities

Since its inception in 1989, ECSL has focused efforts on legal aspects of RS. With support from ESA, J-D. Dupuy undertook a survey to identify the issues and see whether, outside ESA, there was interest in taking steps towards lawmaking. A workshop held at ESRIN in May '91 brought representatives of all interested sectors together, including the EC Commission. Following the confirmation of interest at this workshop the Commission launched a study, with ECSL support. The study aims to propose a legal regime for RS data and to take account of different policy factors.

The first meeting on the study is being organised by ECSL (Paris 19 June). It will deal with the protection of raw data. An interesting point in this preliminary report is the observations on protecting such data through the 'neighbouring rights' concept of intellectual property law. This is the same kind of device as was used to adapt recognised classes of rights (i.e. copyright) to the products of new technologies. Earlier examples of this are works recorded on LP records and photographic images.

P.H. Tuinder

ECSL Summer Course launched

First European Summer Course on Space Law & Policy
Messina, Italy, 7 – 16 September '92
Erasmus – Univ. of Messina – ECSL

The 1992 participating Universities are: Universities of Aberdeen, Amsterdam, Granada, Leiden, Messina, Paris I, Toulouse I and Utrecht.

Themes of the Course:
- Space Law and the United Nations
- International Space Organisations
- National Space Laws & Agencies
- Changing structure of Europe in Space
- Commercial Uses of Outer Space
- Environmental Issues and Space Law
- Space Transportation Systems and In-Orbit Infrastructures

The themes will be addressed by experts from Universities and from ESA. The Course (to be given in English and in French) is open to students from the participating Universities who have taken or are taking a subject in international law and/or space law. Further information can be obtained from the lecturer of the participating University specialised in space law.

The Summer Course is a cooperative project, working within the EC's Erasmus framework but with administrative and financial support from ECSL and ESA, as well as funding from national space agencies (BNSC has already made its contribution; others are to follow). The largest element of funding (13 000 ECU) has come from Erasmus. Forty students from the eight participating Universities will attend. Messina University is the host site and will provide accommodation and educational infrastructure.

Combined with an intensive schedule, students will also participate in workshops where they will have the opportunity to explore subjects further and apply their knowledge. ESALEX training will be provided. Students completing the course will receive a certificate.

Recent Conferences

The **Colloquium on Legal Aspects of Manned Space Flight** (Cologne Univ. Inst. of Air & Space Law, 20-23 May 92), presided over by Prof. Böckstiegel, was a major event, bringing together astronauts, space administrators and lawyers and scientists in a wide-ranging review of human spaceflight and applicable legal instruments. The Böckstiegel-Vereschchetin-Gorove draft Convention on Manned Spaceflight was introduced and examined in detail. Proceedings to follow.

First Italian Conference on Recent Developments and Prospects in Outer Space Law. Faculty of Economics, Institute of International Law, Rome Univ. 'La Sapienza' (Rome, 13-14 March 92). This conference was held in memory of Prof. Napolitano and brought an interdisciplinary gathering of Italian and international speakers together to make a tour de force of space law.

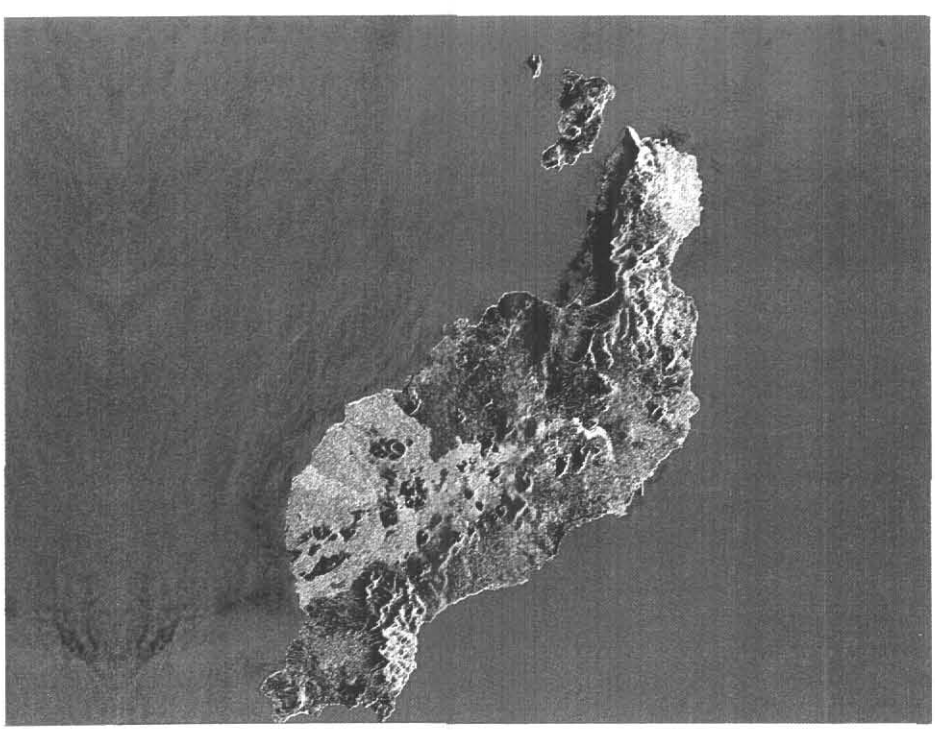
ECSL/IISL Session at European International Space Year Conference on Legal Aspects of Use of Satellite Remote Sensing Data in Europe (Munich, 31 March '92). Presentations were given by representatives of NASA, ESA, UNESCO, Eumetsat, Spotimage. The Proceedings of all Symposia of the ISY Conference (6 volumes) are being published by ESA Publications Division.

Spanish NPOC founded

The Diplomatic School, Madrid, hosted the inaugural meeting of Spain's ECSL National Point of Contact on 6 April 1992. Papers were given by several prominent speakers, including Prof. Azcarraga, President of the International Astronautical Federation (IAF) and directors of the industrial concerns INTA and CASA. Copies of the NPOC Charter, which provides for the Diplomatic Shool to assure the NPOC Secretariat, are available from the ECSL Paris Office or Professor Faraminian (tel: +34-58-226488).

Norwegian NPOC on its way

Contact: Per. V. Solgi, Institutt for Offentlig Rett, Oslo Univ. Tel: +47-2411500, fax +47-2-36-3191.



Island of Lanzarote, Spain (ERS-1 image)

Astronauts U. Merbold and J.-L. Chrétien during a debate at the Manned Spaceflight Colloquium presided by Prof. Böckstiegel (Cologne, 20-23 May 1992)

Forthcoming Conferences

1st UK ECSL NPOC Workshop on Satellite Rights (and Wrongs). Chair: Prof. Lyall. Inmarsat, London, 18 June 92. Information: Mr Paul Taylor, tel. +44-71-936-4000.

2nd ND ECSL-NPOC Workshop on Space in a Changing Europe (23 Oct. 1992). Contact Mr. von der Dunk. Tel: +31-71-277724

Symposium on Space Technology for the Environment. Rio de Janeiro, 3 June 1992. International Institute for Law, Science & Technology.

World Space Congress. Combined meetings of COSPAR, IAF and IISL. Washington, 28 Aug. -5 Sept. '92. Tel. IISL Secretariat +33-1-45674260.

Colloque sur Le Droit face aux Techniques de Télédétection par Satellite au service de l'Environnement, Strasbourg, 27-29 mai 1993. Contact: A.M. Malavialle, Inst. de Droit comparé. Tel: +33-1-4222 3593.

Space Law Notepad

Consensus on NPS principles near
All eyes will be on the full COPUOS meeting in New York (15 – 26 June 92) after an exercise in constructive brinkmanship at the Legal Sub-Committee (Geneva, 23 Mar. – 10 Apr. 92) which led to a NPS Working Group Report recommending adoption of a revised – and hopefully – final draft of these Principles. Through a judicious adjustment of the revision clause (Principle 12) and addition of suitable wording in the Preamble, the US move to reopen consensus on the critical Principle 3 (dosage limits; see *ECSL News* No. 5) that was expressed last year was discontinued.

Martin Marietta v. Intelsat
US District Court (Maryland) upholds cross-waiver, dismissing Martin's counterclaim (20 Nov. '91).

ESALEX expands

ESALEX now contains all ESA internal law, plus a new selection of texts, both historical and current. Recently added are: the ELDO Convention, the Eutelsat and Eumetsat Conventions, the Gibson Report and the EC Commission Green Paper on Satellite Communications. Also included are such instruments as the 1986 UN Remote-Sensing Principles (referred to in this issue), and the DBS Principles.

Publications/Theses

Eumetsat, *Proceedings 1st Eumetsat Workshop on Legal Protection of Meteorological Satellite Data,* 13-14 March 1989 (1991).

I. Schwartz, *Durchflug von Weltraumgegenständen durch nationale Lufträume* (Thesis, Cologne Univ. 1989 – available at the ECSL Depository).

S. Courteix, *Chronique des activités spatiales, Aspects juridiques et politiques, 1989-1990*, Centre d'études & de recherches sur le Droit de l'espace (1991).

M.L. Charollois, *Problèmes juridiques de la Diffusion télévisuelle en Europe* (Thèse, Univ. Paris I, 1992).

M. Couston & L. Pilandon, *L'Europe, Puissance spatiale,* Bruylant (1991).

J.-F. Boudoul, *La Gestion d'un programme spatial de l'ESA: ERS-1 ou la télédétection par satellite,* (Thèse, Univ. Lille 1992 – 2 vols. available at ECSL).

Agreements/Exchanges

The following is the text of the diplomatic note sent by the Government of the Russian Federation to ESA regarding continuation of the ESA-USSR Agreement of 25 April 1990 (see *ECSL News* No 5):

*"L'Ambassade de la Fédération de Russie en France présente ses compliments à l'Agence spatiale européenne et a l'honneur de lui faire savoir que la Fédération de Russie continue d'exercer les droits et de respecter les obligations découlant de l'*Accord entre le gouvernement de l'Union des Républiques socialistes soviétiques et l'Agence spatiale européenne dans le domaine de la recherche spatiale et de l'utilisation de l'espace dans les fins pacifiques *du 25 avril 1990.*

Le soin de remplir les obligations sur le plan pratique a été confié à l'Agence spatiale russe (Directeur général : M. Y. Koptev).

Paris, le 28 avril 1992"

ECSL Board approves practitioners' forum

Meeting on 28 February, the Board approved a plan to establish a Forum specifically devoted to practitioners space law needs. This move is in fulfilment of the 2-year plan adopted at the June '91 General Meeting. The forum will be an informal structure to:

- provide for regular exchanges of views and information at European level
- define research proposals
- promote sponsorship for ECSL research/educational activities.

The Board also welcomed plans for production of a video on ECSL and space law themes, for production over the coming year, funds permitting.

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