RECENT DEVELOPMENTS IN EUMETSAT*

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ABSTRACT

The main recent legal developments in EUMETSAT concern the Convention, data policy, procurements and international cooperation. An amended Convention will allow EUMETSAT to widen the scope of its activities, in particular to deal with operational climate monitoring and the detection of climate change. The data policy ensures a fair and non-discriminatory access to the EUMETSAT data and protects the Member States' interests. Procurement rules on the basis of international tenders allow EUMETSAT to use its resources carefully and receive value for money. International cooperation is enhanced through a flexible legal framework formalising global partnerships, while defining mutually agreed efforts.

1. Introduction

EUMETSAT is a European intergovernmental organisation for meteorological satellites. Its activities are based on an International Treaty ("Convention") which entered into force in 1986 after ratification of all the Member States. Austria acceded later, so EUMETSAT now has 17 Member States. Since 1986 EUMETSAT has rapidly developed from a 4 person secretariat to an operational agency with 130 staff and its own new headquarters/satellite control centre, completed in 1995. Furthermore, EUMETSAT has ensured continuation of its geostationary satellites until the year 2012 (Meteosat Second Generation) and is considering a complementary polar satellite system (EPS/METOP) which shall start in the year 2001 and last until at least the year 2015. The legal developments associated with the rapid growth of EUMETSAT are shown below.

2 Amendments to the Convention

2.1 Additional Objective

It is probably rare that a Convention is substantially changed soon after it has entered into force. But in parallel to the rapid growth of the organisation the EUMETSAT Council, the supreme body of EUMETSAT's 17 Member States, decided in 1991 (EUM/C/Res. XXXVI) to widen the scope of the organisation and go beyond strict meteorological activities or at least to interpret them in a wider sense. The "Amending Protocol" agreed thus allows EUMETSAT to deal with operational climate monitoring and the detection of climate change.

The scope of this amendment has not been defined in great detail, obviously it is to be interpreted by the EUMETSAT Member States. It may allow EUMETSAT to go a long way including use and application of meteorological data, climate data and eventually data often called "environmental monitoring" data.

The long-term-operation of environmental satellites and many data of the kind currently produced e.g. by ERS or in the future by ENVISAT could thus be regarded as being part of EUMETSAT's operational mandate in the future if the EUMETSAT Member States and their Governments so wish.

It should however be noted that the amendments to the Convention have not been fully ratified by all Member States yet, which is indispensable for their entry into force. 5 of 17 ratifications are yet outstanding (status at 1 October 1995).

2.2 Ownership of data

The EUMETSAT data generated by its satellites are EUMETSAT's main asset. The Council therefore wished to protect these data and after analysing the legal issues ("copyright") consequently introduced a provision within the amended Convention that ensures "worldwide exclusive ownership" of all data generated by EUMETSAT's satellites. Other legal efforts to pursue proper protection are mentioned below in another chapter of this presentation.

2.3 Optional Programmes

The "old" Convention requires any new programme to be agreed unanimously by all Member States. This may limit the flexibility of the organisation particularly in areas which might be acceptable to all States but not necessarily of interest to all of them. Therefore the new Convention allows for "optional" programmes to be agreed among those states who wish to carry out such activities.

It is however ensured that the main operational programmes such as the Geostationary satellites (Meteosat) and the polar orbiting satellites (EPS/METOP) remain mandatory programmes. Although it is cumbersome to reach unanimity bearing in mind in particular the cost constraints in many States, this rule has finally resulted in EUMETSAT's main activities being carried out with the full support of all States and their Meteorological offices. The basis of sharing resources is impressively large (EUMETSAT consists of 17 States - more than the European Union and the European Space Agency).

2.4 Voting rules

EUMETSAT's programmes are funded by its Member States according to a scale based on the Gross National Product (GNP) of each State. It is understandable that those who contribute most financially, also would like to have an equivalent influence on the decision making. Smaller contributors may however be afraid of being dominated by the big contributors.

The amended Convention takes into account both aspects. While the financial weight is in principle an important factor, minority rules are introduced to protect the small contributors. In conclusion a majority of two-thirds of contributors and one half of Member States is in particular required for adopting the General Budget. For optional programmes implementation measures require two-thirds of the contributors and at least one-third of the participating States. In calculating the value of participants votes, however, the maximum weighting is 30%, irrespective of a State's actual financial share.

3 Adoption of recent programmes

The Meteosat Second General Programme has recently (1994) been adopted, still under the 'old' Convention. It has become obvious on the occasion of this programme as with earlier ones that the unanimity requirement and the often lengthy internal approval procedures in the Governments of Member States are at the source of a number of problems.

In particular the time needed for the programme approval is often in clear contradiction to the time schedule and objectives of the programme. Before approving a full satellite programme one might start therefore some initiatives within the existing General Budget. If this is not enough, a preparatory programme, although also requiring unanimity, might be easier to approve quickly than a full programme.

Then an early opening of voting on the full programme may give the various Delegations the necessary time to react. Some States will vote in favour without reservations immediately, others "ad referendum", some will vote at a later stage. Within a hopefully short time frame, the number of outstanding votes can be narrowed down to very few. Some additional measures (consultations, Special Council Meeting etc.) may speed up the process before unanimity is finally reached.

In the case of the Meteosat Second Generation Programme it came to a situation where the programme had to start immediately otherwise the agreed land date for the first satellite would have had to be delayed with the risk of a gap in satellite data supply. Three remaining States were almost ready to vote, because the approval of Governments had been given in principle. However, some formalities were outstanding (signature of the competent person, Head of State or Head of Government). In this case all the Member States decided to start the programme immediately with the understanding to review the matter should one of the formal approvals finally fail to be given. Fortunately this did not occur.

4 Legal provisions on data distribution

As stated above, EUMETSAT has recently introduced into its Convention 'ownership' of all data generated by its satellites.

Utilisation rights for the data are given to the Member States, since they have paid for them through their contributions to the programmes.

The contributions are significant and if anybody could get the data for free, some Member States would reconsider their membership in the organisation.

The utilisation and access to data is set out in EUMETSAT's data policy as enacted by the EUMETSAT Council. EUMETSAT's data policy has a legal and a technical aspect. Encryption of high resolution digital data of the geostationary satellites ensures technical control. Decryption keys are provided on the basis of EUMETSAT's data policy. While meterological services, global partners, researchers and developing countries receive the main data for free for their own use through a "license", others, in particular commercial users, receive the data on an equal and non-discriminatory basis against fees. Standard licenses established facilitate the work of the lawyers or licence officers involved. Fees have been established for users outside the Member States, within the Member States harmonisation of fees is currently being considered, taking into account also the EU legislation.

5 Procurements

It may be astonishing, but a great deal of EUMETSAT's legal activities take place in the area of "contract law" (procurements of satellites, ground systems and infrastructure items).

EUMETSAT's legal charter rules to "take maximum advantages of the technologies developed in Europe that had proved technically and cost effective". Furthermore its suggests to use satellites that may lead to improved services "at optimum cost".

EUMETSAT has therefore developed a detailed set of procurement rules in order to ensure value for money. The principle is open international tender. "Industrial return" to the Member States is not foreseen and is regarded as being contrary to the organisation's objectives. The EUMETSAT rules and their application have led to very satisfactory results, both on EUMETSAT's and industry's side. Clear specifications, clear contractual provisions, clear time schedules and a contract signature before the work starts have contributed to this. Fixed prices in ECU are accepted by industry. Penalties increase the pressure of the timely completion of the work.

The procurement of satellites is still carried out together with ESA since ESA develops new technology (prototypes) and EUMETSAT is responsible for the procurement of the follow-on operational satellites. This means to apply different rules (no industrial return within EUMETSAT /industrial return within ESA) and to reconcile different interests (to build technology of excellence vs. low recurrent cost, fixed price, low mass etc.) on both sides. The joint activities therefore require a great deal of understanding for each other's different rules and objectives.

6 International cooperation

EUMETSAT satellites represent Europe's system of meteorological satellites. Those satellites form part of a global system. The cooperation with international partners is sometimes informal, sometimes ruled by "soft law" in the form of memoranda of understanding, letters of exchange and sometimes binding agreements with rights and obligations. None of the recent agreements has led to any disputes.

7 Conclusion

The main recent legal developments in EUMETSAT concern the Convention, data policy, procurements and international cooperation. An amended Convention will allow EUMETSAT to widen the scope of its activities, in particular to deal with operational climate monitoring and the detection of climate change. The data policy ensures a fair and non-discriminatory access to the EUMETSAT data and protects the Member States' interests. Procurement rules on the basis of international tenders allow EUMETSAT to use its resources carefully and receive value for money. International cooperation is enhanced through a flexible legal framework formalising global partnerships, while defining mutually agreed efforts.

THE EUROPEAN SPACE AGENCY - PRESENT AND FUTURE

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this text represents the personal views of the author

INTRODUCTION

October (18-19-20) will see a ministerial-level meeting of the ESA Council in Toulouse at a critical time for the Agency. Its draft agenda gives us an idea of the issues regarding the present circumstances and future of the Agency.

The main items on the draft agenda are the decisions on the major programmes, namely the Europe's contribution to the **International Space Station** and **Ariane-5 complementary programmes**. Decisions will also be sought on the level of resources and on the introduction of the ECU. On directions matters - matters not yet fully mature for decision - mention should be made of Industrial Policy, the strategy on Earth Observation and on Telecommunications, European access to space, the long term and space exploration, relations with other space faring nations and with developing countries.

That is to say:

- like other Organisations (international or national), reduction of financial and human resources and the search for a better management system, with an impact on the level of resources, in particular the science programme level (which is mandatory), questioning of the manned space programme, and delay in other programmes,

- better determination of the respective role of a growing number of intergovernmental organisations with an interest in space activities (like European Union), together with the role of the industry (leading to a review of the industrial policy) and of national space agencies,

- taking into account the enlarged objectives of space activities (see WEU-UEO role), an enlarged membership, the arrival of new actors and new rules necessary on the European and International planes.

Twenty years after the signing of the ESA Convention (1975) and more than thirty years after the birth of the two first European space organisations (1962), where are we, what direction can be taken to maintain the role of space in European construction and the role of ESA?

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Part One
Main features

1. Why was the European Space Agency established?

a) As stated in the preamble to the ESA Convention, the magnitude of the resources required for activities in the space field is such that they are beyond the means of any single European country. What was true then is all the more true today, with the diversification

of space programmes, their relative financial importance, and the emergence of new players and space international ventures.

b) The European Space Agency was based on two earlier separate organisations, ESRO (scientific research) and ELDO (launcher development), set up in the early 1960's with different membership and missions, different structures and linked at political level by the European Space Conference (ESC). The need to regroup activities and forces for economic, industrial, political reasons was felt as from the first years (1966). The ESA Convention is therefore the result of a process, of experience (crisis in ELDO and in ESRO, denunciation even of the ESRO Convention and amendments to it, abandon of ELDO programmes, impact of international cooperation (Post Apollo) and europeanisation of national programmes, Meteosat, Ariane, etc.).

c) The ESA Convention (endorsed in April 1975 by ESC) was opened for signature on 30 May 1975 in Paris and implemented de facto from 31 May, up to its entry into force officially on 30 October 1980 (at the same time the ESRO and ELDO Conventions expired). During the "de facto period" the legal texts were concluded by "The European Space Research Organisation, acting under the name of ESA, ...". The reason why 1975 is retained as the birth of ESA. The principal argument was to offer to Europe a unique framework allowing the conduct of R&D programmes, in all space fields (science, applications, space transportation), with a maximum of flexibility and the consensus research.

2. The Agency now comprises 14 Member States * (Finland having joined on 31 December 1994). Canada has been linked to the Agency since 1977 by a close cooperation Agreement. Institutional links have developed with countries in Central and Eastern Europe. An agreement concluded with the USSR in 1990, and subsequently taken over by Russia, was followed by agreements with Hungary, Poland, Rumania and Greece. Negotiations are currently taking place with Portugal and the Czech Republic.

Numerous other Agreements have been concluded with non-Member States and International Organisations for various reasons, for instance for the setting up of ground facilities or for cooperative projects etc. (in particular with NASA).

ESA has been granted the status of observer with UN-COPUOS, has accepted Space Treaties (Astronauts, Registration, Liability).

3. The Agency has its headquarters in Paris, a number of technical establishments and facilities (ESTEC, ESOC, ESRIN and the EAC), a network of satellite monitoring stations (Redu, Villafranca, etc.), a launch base in French Guiana (CSG and ELA) with a network of Ariane downrange stations (in Brazil, Ascension Island, Gabon and Kenya), and offices in Washington and Moscow. Mention should also be made of a network of some 20 stations for receiving and processing data from ERS satellites, as well as an ESA presence in various other places (Toulouse, Houston, Baltimore, etc.)

* Austria, Belgium, Denmark, Finland, France, Germany, Italy, Ireland, Netherlands, Norway, Spain, Sweden, Switerland, United Kingdom.

4. The purpose of the Agency is defined as follows in Article II of the Convention:

"The purpose of the Agency shall be to provide for and to promote, for exclusively peaceful purposes, cooperation among European States in space research and technology and their space applications, with a view to their being used for scientific purposes and for operational space applications systems:

(It follows** :)

a. by elaborating and implementing a long-term European space policy, by recommending space objectives to the Member States, and by concerting the policies of the Member States with respect to other national and international organisations and institutions;

b. by elaborating and implementing activities and programmes in the space field;

c. by coordinating the European space programme and national programmes, and by integrating the latter progressively and as completely as possible into the European space programme, in particular as regards the development of applications satellites;

d. by elaborating and implementing the industrial policy appropriate to its programme and by recommending a coherent industrial policy to the Member States."

Some of these aims have proved over-ambitious and have perhaps been misunderstood, and as a result have not been pursued properly or with sufficient diligence (European space policy, Europeanisation and even industrial policy). It can accordingly be argued that behind the written Convention lies another which is sometimes difficult to define and depends on contingencies, the ambitions of the parties involved and the political environment. It is with satisfaction that the Legal Adviser hears a delegation asking, after hours and hours of discussion, that delegations go back to the text of the Convention. Surprise, the answer is contained in it !

Important questions were not answered by the "fathers", leaving place to the imagination: for instance, at what stage did the R&D activities end and the operational or commercial (what does "commercial" mean?) applications begin? How to treat the defense, military activities, without forgetting the respective roles of the national and European programmes? How to deal with the "priority" between European and national facilities? What does exactly mean Article VIII (preference to the Ariane launcher)?

5. The Convention (a text followed by five annexes) follows well-trodden paths with regard to legal personality, privileges and immunities and, for example, the settlement of disputes. The same might be said of the organisation it establishes, the various bodies and voting rules, were it not for the fact that there has been considerable drift in implementing the texts. To properly grasp the real Convention has thus become an arduous task requiring the observer to delve into the minutes of proceedings and dozens of texts, Resolutions, Agreements, Declarations, follow the discussions, and so on.

** text underlined by author.

The Agency has two organs - the Council and the Director General. The balance between them is moderated in the Convention by the role of the Chairman of Council, who is assisted by a Bureau. The personality of each party (the Chairman of Council and the Director General) may of course influence the balance of powers. The Bureau has gone through long periods of hibernation during which it has been practically forgotten, alternating with periods of rejuvenation (sometimes being replaced by meetings of Heads of delegations). Council itself may meet either at delegate or at ministerial level (formula retained after long consideration, the Ministerial Council being often renamed Ministerial Conference).

No regular period is set for ministerial meetings, nor is any function reserved for the Ministers. Council is Council. Naturally, from time to time the need is felt to refer matters to Council meeting at ministerial level.

This was done in February 1977, November 1985 and 1987, November 1991 and 1992, and the next such meeting will take place on October 18, 19 and 20. But the matters have to be properly prepared by the ordinary structure to leave to the Ministerial Council its role of deciding on political matters.

The structure of delegate bodies, confined in the Convention to the SPC and then extended to the AFC, IPC and IRC***, has developed considerably - indeed perhaps too far - in line with the development of the Agency's programmes, giving rise to Programme Boards that are subsidiary bodies of Council and act by delegation from Council. Each Programme Board is responsible for monitoring a number of programmes and may also set up its own consultative bodies. There is also a structure of experts responsible for assisting the Director General. The meeting rooms are in a state of siege, and you can readily imagine the amount of paperwork produced daily, the workload of the translation department, and so on. Conditions are created for a micro-management. The Director General is assisted by a staff, a matricial structure has developed with programme Directors, Establishment Directors grouped in a Management Board.

6. One ESA peculiarity resulting from its history is the way in which the Agency has been able to cope with the development of space activities by making a distinction between activities and programmes that are mandatory (essentially basic activities, the research and technology programme and the science programme) and those that are optional. The latter may cover the full range of space activities: pre-operational applications satellites, launchers, space stations, etc. Mandatory programmes are funded by all the Member States in line with GNP within the level of resources adopted unanimously for five years and revised every three years for a further five year period (in principle !).

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SPC:
Scientific Programme Committee
AFC :
Administrative and Finance Committee
IPC :
Industrial Policy Committee
IRC :
International Relations Committee

Member States may choose not to participate in any of the optional programmes. Participants define its content, financial envelope, scale of contributions, etc. In practice, their interest in a given programme, and the size of their contributions, will largely depend on the industrial return expected.

The Participating States (referred to at this stage as "potential participants") draw up a draft Declaration describing the aims of the programme and establishing its financial envelope, scale of contributions, timetable, industrial return arrangements and any other specific provisions (e.g. delegation of management responsibilities to a national entity). More and more, the scale of contributions is deviating from a GNP-based scale, thus weakening the solidarity principle.

The Declaration is sent to Council (which will have previously adopted an "enabling" Resolution by a simple majority) for information purposes, in principle together with a set of implementing rules for approval (rarely the case). The enabling Resolution represents an important date because it starts the clock, i.e. the three-month period allowing a Member State not interested to so declare. Although Council will very often be led to intervene by issuing guidelines, seeking solutions and compromises, etc., the Participants are always ready to lapse into dreams of independence. Declarations and Implementing Rules have a tendency to be a specific regime derogating from the normal rules of functioning quite without barriers.

A Participating State cannot withdraw from an optional programme until the estimated cost at completion exceeds 120% of the financial envelope; but how to determine when the 120% are reached; is it possible to start a programme not fully covered financially? Participants may waive their right of withdrawal or decide not to exercise it until a higher threshold has been reached.

The relevant Programme Board receives information regarding the programme, issues instructions and approves the annual budgets within the limits of the financial envelope referred to in the Declaration. Council adopts the annual budget for the science programme and mandatory activities within the framework of the five-year level of resources. The level of resources serves primarily as an instrument of financial planning, but being adopted unanimously it constitutes a means for bargaining. (In the past procedural incidents led simply to approve a level for one year, the annual budget being equivalent to an annual level of resources, and applying a regime of provisional twelve).

7. Finally, there are the operational activities carried out at the request of users (in Europe or outside Europe) which have to pay "all" the costs incurred by the Agency. "Operational" activities were originally conceived as a means of transition to commercial activities outside the Agency's competence and the establishment of an operational structure. They have become highly diversified over the years and include consultancy work and other activities sometimes hardly distinguishable from international cooperation. (Often delegations questions are related to the competence

of the Agency and the competition with national entities, the support of costs, the transfer of technology).

8. The Agency may indeed conclude cooperation agreements in pursuance of its activities. They require the unanimous approval of Council.

- A first category of these agreements varies widely in content: exchange of information and personnel, execution of joint projects, establishment and operation of ground facilities, etc.

- A second category consists of agreements on the participation of a non-Member State (or an International Organisation) in an optional programme (which in some respects replace subscription of a programme Declaration).

- A third category grants Associate Member status (not defined in the Convention), which must be distinguished from the process of actual accession to the Convention for "European" States. Council has laid down guidelines on the obligations involved, the contribution to be paid, lack of access to the TRP, etc. A non-Member State may enjoy such status and at the same time have a separate agreement under which it participates in an optional Agency programme.

9. The Agency manages around 70 different budgets, involving the use of over 16 currencies. As mentioned, all Member States contribute to both the general budget and the budget for the science programme (which accounts for no more than about 15% of all the budgets taken together). The scale of contributions is established every three years by a two-thirds majority decision on the basis of GNP (as indicated in the latest national statistics compiled by the Federal Office in Wiesbaden, Germany). The budgets for each optional programme are drawn up within a financial envelope fixed in the programme Declaration. Budgets are drawn up and implemented in accordance with a set of financial regulations. This is not without difficulty: retroactive adjustments of contributions, impact of currency devaluations (see also the effects of the German unification), etc. The difficulties created by this complex system are at the origin of the decision to have recourse to the ECU (question on the draft agenda of the next Council ministerial meeting), but nothing is simple.

10. Finally, it is impossible to speak of ESA without mentioning industrial policy. To have built up a European space industry and made it competitive is by no means the least of its achievements. It has taught firms how to work together in a new sector and brought about a situation in which some 90% of the budget is spent on outside contracts.

One of the fundamental principles is maximum recourse to industrial firms rather than the development of internal capacity. Such recourse must be based on free competition and the systematic use of Member States' capabilities (industry and test facilities). The development of scientific instruments remains a matter for the national authorities.

The watchword - although not found in the Convention - is "fair return", meaning a geographical distribution of contracts in proportion to financial contributions to the programmes.

The way in which the fair return principle is applied has changed considerably over the years. The minimum of 80% laid down in the Convention (before corrective measures are to be taken) - as the overall, and not programme by programme - was raised to 90% and then 95% at ministerial meetings (for limited periods). In each optional programme, each of the participants is looking for a return coefficient of 1. This is an impossible task, and yet the percentages achieved are sometimes nothing short of miraculous. Therefore, it happens that "surplus" countries have to contribute for the benefit of "deficit" countries.

The principle of fair return, fiercely defended by certain parties when starting up new programmes, has its detractors both inside and outside the Agency. The former argue that it is a source of additional costs and the latter that it conflicts with freedom of competition.

The fact remains that this principle has played a decisive role in building up a European industrial capability.

Part Two

"Times have changed" it is often said, implying that the Agency should adapt itself, no longer stick to its rules, in particular in time of economic crisis and the new international environment. It is true. But how often have we been told that? For ESRO, ESA, in the early seventies, eighties? What does that mean, that we have to abandon basic principles, to put in place a "marshmallow" Convention? A careful reading of the Convention reveals its basic flexibility. It has created a climate of consultation and coordination among delegations, and of close relations between delegations and the Executive (which, despite its name, has powers of initiative). In addition, the Executive is often considered as a national space agency for countries ("small" ones) which do not have one of their own.

There are difficulties, rigidities, arising from regulations developed by Member States outside the Convention, outside events, or from the choices that have to be made in order to keep within the resources available to the Agency etc. However, we have to be careful and not change for the sake of changing.

1. Mandatory and Optional programmes

This distinction remains valid but the mandatory programme, basic activities and scientific programme are loosing their role. Optional programmes account for over 80% of the funds available to the Agency, which may suggest that it is too easy to embark on them. A Council Resolution, adopted by simple majority, a Declaration, texts in which there is no mention that the financial envelope of an optional programme should be covered 100% at the outset (obvious for the "fathers"). A custom grew up that 80% cover was sufficient, provided there was an assurance that the rest would be forthcoming. That assurance has become vaguer with time and does not prevent programmes being started that go beyond the financial commitments. How is one to establish the starting point for exercising the right of withdrawal? How is one to cover additional work that is consonant with the programme objectives but of interest to only a few, perhaps only one, of the participating states? In response to these and other questions, a large sense of freedom and even

"creativity" has become the name of the game.

One of the first things to happen was acceptance of the principle of slices governed by additional Declarations, sometimes subscribed by only one Member State (thus avoiding the need of a new enabling Resolution or a revision of the basic Declaration), which resulted in the proliferation of budgets and different management and industrial return rules. The latest system "à la mode" is the national in-kind deliveries, which can be used to reduce or replace the contributions to a financial envelope and thus reduce the role of ESA in the conduct of the programmes.

At the ministerial meeting in The Hague (1987), an attempt was made to deal with the endemic problem of inadequate subscription levels, but it was not until the ministerial meeting in Granada (1992) that the basic problem was tackled and a Council Working Group set up to draft strict rules. However, these rules were said to apply only to the four major programmes of the time, and the final responsibility remained with the participating States. The main recommendations adopted by Council on that occasion were : a minimum financial cover of 95%, a time limit of 9 months within which to determine the means of absorbing structural shortfalls, and arrangements for regular progress reports. Despite this, the arguments start afresh with each new programme Declaration : how to determine the 120% threshold, regulate industrial return and define the Executive's management role?

Here the delegation of tasks to national agencies, the use of national facilities instead of ESA one, raised criticisms from certain delegations against the Agency being dismantled.

2. One State, one voice?

The growing number of programmes accompanied with different rules on contributions on geographical return or on the use of facilities, the enlargement of the Membership (14 Member States plus Canada) could raise the suitability of the basic rule of one State, one voice. If the modification cannot be made without modifying the Convention as far the mandatory activities are concerned, one could ask if the same is valid for the optional programmes.

3. Operational activities

- If, despite all these difficulties, a development programme does manage to get off the ground, severe problems then arise in funding the exploitation phase (as in the case of ERS-1 and ERS-2). Should one halt operation of a satellite which is demonstrating Europe's technological capabilities and functioning well but whose envelope not fully covered?

- Often the operational phase cannot present the same technological interest. Which should be first, the industrial return or the community interest? Can we set up scale of contributions always on industrial return?

The drafters of the Convention had to stop half-way when dealing with operational programmes. They were able to offer only the limited opportunities provided by Article V.2. Nevertheless, transfers of responsibility have taken place to Eutelsat, Eumetsat and Arianespace. What has to be done in the Earth Observation sector, where there is no organised user community,

in the Microgravity sector or in the exploitation of In-Orbit Infrastructure? How is a scale of contributions to be established and the financial envelope to be greater than the development one? What about the problem of fair return of users?

The Agency provides limited answers, but the question is how to take matters further, and in what direction. The advent of exploitation programmes (i.e. of the International Space Station) calls for very careful thinking about ESA-user relations and about continuity between development and exploitation, especially as neither the criteria of value (technological development) nor the players remain the same.

- The Ariane programme, under which the Agency remains responsible for Ariane 5 complementary programmes (Exploitation - Infrastructure - ARTA) with the involvement of Arianespace, is an example of a possible solution, but here the facilities of the Guiana Space Centre are still needed in order to complete the development work and maintain an autonomous launch capability - not to mention the need for a pricing policy.

4. Financial and monetary mechanisms

The mechanisms employed by the Agency do not function in isolation. They have to take account of the environment and must strive to attenuate the effects of exchange rate fluctuations on the programmes themselves. The Agency has established a very complicated system (of economic conditions, retroactive adjustments) designed to maintain the purchase power of the AU. (Budgets are drawn up and adopted in AU, while contributions are paid and contracts expressed in national currencies.) Recently, Council has taken up the idea of introducing the ECU.

5. The new players -one European space policy or several?

New players have appeared with Organisations like Eutelsat, Eumetsat, Arianespace, Spot Image, Intospace, etc. not to mention the national space agencies and other European entities. But above all there is the growing interest in space on the part of the European Commission following the Single Act and the Maastricht Treaty. The European Commission is said to be a major user of space technology. It has produced "Communications", reports and it has set up the Space Advisory Group, whose membership largely overlaps with that of delegations to the ESA Council, and the European Parliament has created a "Sky and Space" Committee. Are we heading towards a redistribution of roles? While a merger is not on the cards, there is need for a rapprochement.

The Agency and the European Commission have set up six joint working groups and are learning how to work together without treading on each other's toes, for example in the negotiation of an agreement with Russia on launch services. The Agency will also have to learn how to work in an essentially EU legislative environment when it comes to patent law and authors' rights, where a coordinated response remains the responsibility of the European Union. The need for loser definition of the responsibilities of all concerned is obvious.

Similar considerations arise out of the fact that the Agency was established for exclusively peaceful purposes. The

space techniques which it has developed, notably for Earth observation (the SAR), as well as its test and launch facilities, can also be used for satellites to verify the application of disarmement Treaties. Some States have their own satellite systems (Helios), and WEU has a processing centre of satellite data at Torrejon. How can all this potential be coordinated in order to avoid duplication of effort?

6. International cooperation - international competition

International cooperation is of the utmost importance in the conduct of the Agency's programmes, and Council has, for example, given instructions that the needs of developing countries should be taken into account in their preparation. Pride of place in international cooperation goes of course to International Space Station.

The Agreements (IGA and MOU) signed in September 1988 are being revised to take account of Russia joining the partnership and of changes in the contributions of the other Partners (Protocol amending the IGA, new MOU between the RKA and NASA, revision of the MOUs).

Important subjects have been tackled, such as the way in which partnership is to be understood, management of the International Space Station, the division of operating costs, the use of launch and communication facilities and also more legal questions on patents and copyright, criminal jurisdiction, the confidentiality regime, etc.

New entrants on the international launching market with different economy systems (Russia, China, Japan, India, Brazil, Ukraine) require to set up "Rules of the Road" and to agree on the conditions of Europe's access to space. The solutions for Europe would come from a joint attitude of the various actors, ESA for R & D, Arianespace, European Union, Member States. The same would apply for other fields.

7. Space law

Finally, mention must be made of the work the Agency has put into promoting space law, through the creation of the ECSL. The ECSL is a streamlined body whose task is to provide services - a forum for discussion, support for teaching (summer courses) and for the establishment of national points of contact, and a database (ESALEX, ECSL News, Moot Court Competition). Its success shows that the ECSL meets a real need.

CONCLUSION

What can be said in conclusion?

The history of the ESA Convention and of space activities in Europe shows the soundness of the assumptions on which it was based and its fundamental flexibility. The machinery created can be seen to ensure relations of confidence between the Members States and the Agency itself. Admittedly, greater coordination would be welcome, to ensure better management of responses to challenges that are not new in themselves but are taking new forms. The ESA Convention introduced innovations and a certain spirit. Today we have to think about a flexible mechanism associating all the actors (ESA, EU, industry, space agencies) towards the same objective, the European space policy.
Thank you.