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EVOLUTION OF SPACE LAW IN FRANCE
MAIN LINES OF THE 2002 STUDY REPORT FOR THE MINISTER

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INTRODUCTION

France bears the international obligation to authorise and supervise space activities under its jurisdiction and can be liable for damage caused by space objects launched from Kourou (French Guiana) and/or by companies registered in France. The current national framework for the activities carried by Arianespace, Starsem, Eutelsat and for the Ariane European launcher operated from the Guiana Space Centre (CSG) is adequately regulated on the basis of relevant programmatic, contractual and administrative legal regime. But in consequence of the liberalisation of the telecommunications market, of the privatisation of international organisations and State owned companies and of the increasing private demands to access CSG facilities, further regulations could be needed.

In this context, the French Ministry of Research's Space Department has convened in 1999, during 2 years, more than 100 technical and legal experts organised in several working groups to propose an upgraded national legal framework for space activities. This constituted working groups dealt with: launching (to implement a licence procedure, considering the responsibility of France and international competition rules), earth observation (for licensing and data policy), telecommunications and navigation, and space objects property and security regime (linked to the registration convention and the Unidroit Space Protocol).

The report of this work named "Space Law Evolution in France Study" was presented to the Minister of Research by March 2002.

The present author has driven the overall study on behalf of the French Research Ministry's Space Department. This paper presents the report's general content

1) Scope of the study

The study is strictly limited to space activities, that is to say mainly the launch services and the life of the satellites in orbit, when these activities are likely to come under national legislation. The services themselves, television broadcasting and telecommunications, as well as the problems of frequency are not dealt with directly, since these questions do not specifically depend on space law. Only the satellite observation and navigation services were tentatively developed since they are not currently covered by specific systems. Manned flight and the status of astronauts are covered by specific international

[1] **This paper only binds its author's opinion and shall not commit its employer in any way.**

agreements and were not examined in this study which mainly concerns the French national space activities.

2) Structure of the report

The report is divided into two parts:

1) General measures common to all space activities;
2) Measures specific to each of the three sectors which are the launch services, Earth observation and radiocommunications. This part is in fact based on the reports of the Chairmen of each of the work groups concerned.

The first part describes: In chapter 1 "Public missions for regulation, authorisation, monitoring and control of space actitivities", the activities which are under the responsibility of the public sector in application of international space law, as regulatory (legislative or reglementary), authorising, monitoring and licencing authority when they are directly operated by the government or by concession.

Chapter 2 "Support for the development of the market and of private initiative", deals with : the private and commercial activities and the legal systems specific to them[2]: the chain of responsibility between the different private players, taxation, (the intellectual property system, the status of property and of safety on space objects, and the conditions for market access.

3) Main findings:

In its introduction, the study highlights the importance of the multiplicity of the challenges linked with producing a national legal framework which goes beyond the basic questions of responsibility.

Among these challenges for France, we can note in particular those of sovereignty, safety and defence, foreign policy, cooperation, humanitarian aid and respecting international treaties, construction of "space Europe" around the European Union, the European Space Agency (ESA) and their respective members, industrial competitiveness, the development of the space application market, and the ethical questions.

It therefore appears that the continuity of the space power status, in addition to a maintained effort in the budgetary and technological fields, must also be supported in France and in Europe by a specific legal system which controls and favours space activities.

The inventory of elements forming the current legal framework in France however shows that this framework is acceptable for the current programs, when these are developed or operated under the responsibility of public organisms, particularly CNES, and when a legal link (contractual at least) has been defined between these space activities and the State which ultimately assumes the international responsibility for them. However, the procedure consisting of treating the legal problem on a case by case basis, from a conventional or contractual point of view and by program, sometimes led to a system which is difficult to read, badly consolidated and lacking in clarity for the new entrants.

In addition, the liberalisation of the space sector leads us to rethink the type of legal bond existing between the new private operators and the French State by posing the question of the implementation

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2 That is to say, beyond private law, the legal systems of all disciplines which can restrict or facilitate these private or commercial activities.

of a public authorisation and monitoring system for these activities.

3.1 Implementation of a public authorisation and monitoring system for space activities

After giving a reminder of the commitments which result from the 1972 United Nations Convention on responsibilities (in case of damages), the report fully justifies the necessity for a legal framework for space activities (launches and satellite operations) and more specifically to:

- create a licence (or authorisation) obligation for all launches carried out either from France or from abroad by or for a French national;
- take into consideration all the "national space activities", including when France is not the initial launch State (possible cases of satellites bought in orbit by a French national);
- identify all the space objects and debris likely to involve the State's responsibility or that of its nationals;
- ensure that, when its is considered by an international jurisdiction to be the launch State responsible for a liability, France has the legal means to obtain the reimbursement of the sums it may have to pay to the victims;
- have the technical means and an operational and independent administrative organisation allowing the State, in all circumstances, to assume its international responsibilities and to ensure its national law is correctly applied.

Since it concerns the application in national law of the 1975 United Nations Convention on licencing space objects, the report makes several suggestions concerning the operation of the French national register, given the commercial development of space activities:

- the opportunity to produce an informational text (regulatory act, circular or simple guide) describing in detail the licencing procedure between the various authorities concerned (CNES, Foreign Ministry, Ministry responsible for space...). CNES effectively plays the role of controller or coordinator without this prerogative being formalised;
- define the list of additional information to be provided in this national register (in addition to that required by article IV of the 1975 Convention), in particular to process the authorisation and licence demands linked with the operations and service provided by the satellite to be launched;
- the reason for mentioning the ownership status with respect to the satellite and its component is the following: identification of owners and of possible guarantees covering this object given the links to be envisaged with a future international guarantee system as studied by Unidroit;
- provide information for the intellectual property system relating to the satellite, its components and its mission: patents, applicable law, holder(s) of operator's rights, holder(s) of the copyright on the transmitted data;
- indicate in which conditions the register can or must be modified during the satellite's lifetime (change of satellite orbit or of its mission), and more specifically the procedures for notification of possible transfer of ownership of the space object in orbit? This preoccupation results from the consequences that such a transfer

could have on the responsibilities of the States (acceptance of the new licences...) on the licences given to operate the satellite and, with respect to the rules, on the exportation of sensitive technologies and goods;
- detail the procedures for objects launched from foreign countries by companies covered by French law or for French customers, and vice versa for the licencing carried out by foreign operators or international organisations which have their headquarters in France (ESA, Eutelsat company...) ;
- determine the conditions for public access to the register by reconciling transparent access to public data and the confidentiality linked with the contracts;
- mention, where applicable, the fees and taxes to be paid during licencing, the penalties and the excess charges for late or non registration...

At the same time, a doctrine must explain the consequences of national licencing: in terms of jurisdiction and responsibility of the French State (particularly in the case when the launch takes place abroad), in terms of corporeal and incorporeal property, and of the rights to operate or use the space object.

3.2 Perimeter of a national legal framework regulating space activities

The report defines the perimeter of a national legal framework regulating space activities. It uses a functionalistic definition of space activities stating that a space activity is any activity aiming to launch a space object or to have it launched[3], or any operation necessary for the operation of such objects (i.e. telemetry, monitoring and control of space objects, activities placing and maintaining satellites on-station) and including all other activities carried out in outer space or on a celestial body (Moon and other planets). The scope of the national framework also depends on the nationality of the players concerned. The report states that by the combined application of articles VI and VIII[4] of the 1967 Space Treaty, it is the vocation of our national law to extend its influence, and even its application (at least by default), beyond the national sphere, particularly with respect to European, international, public or private entities which have their headquarters in France (ESA in Paris and at the Guiana Space Center (CSG), Arianespace, the new Eutelsat company) or to companies covered by French law carrying out their activities abroad, such as Starsem. The application of such extra-territorial national law must however remain "compatible"

3 A space object can be defined as any spacecraft designed to carry payloads or astronauts into space.

4 Article VI: "The States adhering to the Treaty have international responsibility for national activities in outer space, including the Moon and the other celestial bodies, whether they be undertaken by government organisms or by non-government entities, and for ensuring that the national activities are carried out in accordance with the terms of this Treaty. The activities of the non-government entities in outer space, including the Moon and the other celestial bodies, must be continously monitored by the appropriate State adhering to the Treaty. In the case of activities carried out by an international organisation in outer space, including the Moon and the other celestial bodies, the responsibility for respecting the terms of this Treaty is the responsibility of this international organisation and of the States adhering to the Treaty who are part of the said organisation."
Article VIII: "The State adhering to the Treaty, on whose register an object launched into outer space is listed will retain under its jurisdiction and its control the said object and all the personnel of the said object, when it is in outer space or on a celestial body. The ownership rights for the objects launched into outer space, including the objects brought to or constructed on a celestial body, as well as their components, remain intact when these objects or components are in outer space or on a celestial body, and when they return to Earth. The objects or components of objects found beyond the limits of the State adhering to the Treaty, on whose register they are listed must be returned to the State adhering to the Treaty, who must, on request, provide identification data before the objects or components can be returned."

with that of the other sovereign laws implicated, particularly where services are concerned (telecommunications, audiovisual...).

The study develops different criteria for authorising a "right to use" a space activity and to licence the corresponding space object by making a difference between the qualities specific to the demander (his status, his solvability, his guarantees, his track record, where applicable, particularly in terms of debris...) and the criteria linked with the type of activity envisaged: the technical criteria (certification), the conditions linked to national defence, the level of risk and responsibility for the State, the other authorisations obtained linked with the system, taxation of applications...

The report then examines the authorities which will be responsible for approvals (authorisation, certification, licencing) of space objects and for their surveillance (safety, security, monitoring placing and maintaining the satellite on-station and debris), both of which can be taken together. The approach chosen is a careful one: it does not suggest that a new public establishment be created, due in particular to the low volume of authorisations to be given and of the risks of duplicating (or scattering) means and skills.

3.3 Application of the concept of public service

We must also make a distinction according to the purpose of the public interest or industrial and commercial program. For this special attention has been given with respect to the concept of "public service", on certain public space systems generating new applications whose operation as given from the beginning to the private sector without the legal context being clearly qualified. Among these systems, we can mention civil Earth observation, navigation, positioning by satellite and launch services.

Unlike other applications which are already operational outside the space sector, like telecommunications, television broadcasting, meteorological, or information gathering which may have been attached to the mission of the appropriate organisms (France Telecom, TDF, Météo France, French Ministry of Defence...), these new systems had to create an *ad hoc* operating system for themselves, very often in the context of a concession between the space agency and a commercial company or subsidiary, created for this purpose, operating in the market in the context of an exclusivity. This structure is aimed at a very wide range of customers or to a user community from the point of view of sector and status, who are spread all over the world, badly structured and very often not aware of future potential uses, hence the term "latent user" currently used with respect to observation and navigation systems.

The legal status and the long-term financing system for such systems are still uncertain since the relations established at the start of the program between investors (originally the agencies), the operators, and the users for a preliminary system cannot be broken down indefinitely into recurrent series, in a context which becomes more operational, more international and more competitive.

The question of the application of "public industrial and commercial service" is therefore posed more specifically in the Earth observation sector, by analysing this activity's current organisation and with the legitimate preoccupation of preserving the economic balance and the development of this activity in an ever uncertain market.

As an illustration, the experience of the relations between CNES and the company responsible for broadcasting SPOT observation satellite images seems to indicate that this system could satisfy the usual public service or public interest criteria5.

In any case, it appears quite inappropriate to wish to unreservedly submit such information systems to the ordinary laws of competition[6] as long as the market has not reached full maturity and as long as the private sector cannot substantially assume the necessary investments.

However, the Treaty of Rome[7] can authorize legitimate concessions to the ordinary laws of competition in favour of companies responsible for the management of public economic interest services. In addition, community law allows exceptions to the prohibiting of the "refusal to sell" in favour of activities guaranteeing public order or national security which can give a legal basis to a possible national system of "security control of data distribution" (cf. work of the General Secretariat of National Defence and of GirSpot)[8].

The difficult discussions on the concept of Private Public Partnership applied to the Galileo program in the context of a rapprochement between the European Union and ESA, highlights however the difficulty of converging at European level in favour of a common concept of public service.

The application of public service rules to certain space activities basically remains a political, economic and social question which is outside the scope of this study. At best this study can identify the domains of application which must be explained.

In these conditions, it seemed appropriate to position ourselves more upstream, by asking Bertrand du Marais[9] for a detailed study of the rules in force in France and in Europe around the concept of public service, in order to analyse the opportunity and the conditions of their application to space activities. It must also be noted that this legal analysis is then placed in a dynamic and future-orientated perspective by concerning, in a personal manner, some space sector liberalisation scenarios.

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5 That is to say a major interest for administrations (richness of the space observation information from the military, strategic, political, scientific and socio-economic points of view), the public financing of investments (technical operator's satellite and ground network, including part of the maintenance costs), a control by the government, the shareholding and compensatory mechanisms or "ISIS" type promotions, the implementation of concessionary rules of ordinary law (exclusive concession, security control of data distribution, international status of direct receiving station, low licences), respect for traditional principles like the principle of equality between users, the principles of adaptation and continuity (continuity of an operational sector garanteed by CNES since 1986, from Spot 1 to 5 then continued with adaptations in the context of the Pleiades program)...

6 If we consider remote sensing as a purely commercial and competitive activity, the prohibiting of "anticompetitive agreements" of article 81-1 of the European Union Treaty (ex article 85.1 of the Treaty of Rome), and that of "abuse of dominant position" of article 82 (ex article 86), or the implementation of restrictions to the aid given by the States in article 87 (ex article 92) which threaten to distort competitiveness, could affect the legal security of a public satellite data distribution system which would be based on a total concession to a commercial company, which is almost free of charge, exclusive and world-wide.

7 article 86-2 of ex Article 90-2

8 And in particular, article 122-1 of the Consumer Code which reiterates the terms of article 33 of Order no. 86-1243 of 1st December 1986: "it is prohibited to refuse a consumer the sale of a product or the provision of a service, except for a legitimate reason, and to subordinate the sale of a product to the purchase of an imposed quantity or to the concomittant purchase of another product or a service as well as to subordinate the provision of a service to that of another service or the purchase of a product...».

9 Senior Civil Servant attached to the Council of State who also intervened as first participant in this report.

This study, annexed to the report, is based on a typological analysis of the different activities of the space sector with respect to the traditional criteria of public service. It reveals four main categories:

- purely competitive activities: telecommunications services;
- regulated competitive activities: rewarding contracts in favour of public organisms, commercial Earth observation, availability of test facilities...;
- clearly public service activities: State or inter-agency international cooperation, fundamental research, upstream technological research (R&T), space object qualification and certification, management, organisation and availability of launch facilities, scientific program, military programs;
- administrative police activities: security and safety, "space" frequency allocation function, organisation of space object qualification and certification, space surveillance.

The work group devoted to Earth observation by satellite, presided by Jean-Claude Lummaux[10], makes a clear distinction between private or commercial systems and public systems[11].

The private and commercial systems are those for which investments are financed from private funds (equity capital, debt, public issue...). Such systems, without prejudicing the rules of free competition, must receive prior authorisation delivered by the government, in particular to guarantee that the following are respected:

- French international undertakings and responsibilities (article VI of the 1967 Treaty, 1986 Principles on remote sensing, 1972 Convention on responsibility for space damage, ITU (International Telecommunications Union) rules in terms of frequencies);
- texts relative to defence and national security (upstream control of blocking, of programming and disclosure of data);
- fundamental rights of the citizen (private life, right of image, business secrecy...).

The public systems are financed by the State for public interest purposes. The data from these systems can be distributed by public (case of scientific instruments) or commercial (case of Spot satellites) organisms. In this last case, the convention between the State, a public entity, and the commercial operator is similar to a delegation of public service as it guarantees, in addition to the conditions mentioned above: system continuity, no restriction or discrimination for data access, economic balance of the concession and exclusivity of the distribution activity. This leads to ensuring that there is a clear legal and accounting distinction between the activities of the operator, which depend on the distribution of the licenced data, and those of his own added-value services.

Without prejudging the various typologies above, the requirement was largely expressed during the group meetings, to formalise as transparently as possible and whatever the activity or the chosen status, the legal links between the

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10 Jean-Claude Lummaux intervened in the reports and studies which concerned related subjects:

- member of the previously mentioned French Planning Office workshop which led to the "Public data dissemination and the digital revolution" report;
- rapporteur and writer of the report "The prospects of the evolution of geographical information and the consequences for the French National Geographic Institute (IGN)", by Guy Lengagne, deputy mayor of Boulogne sur Mer

11 See Part 3, Chapter 2

different public and private players concerned, to reinforce the legal security of their relations.

This study on the concept of public service therefore appears fairly independent of space law and seems to be able to be treated separately from a space legislation context in the strict sense. We suggest that this be gone into in greater detail, in particular in the context of groups and committees already set up to monitor the programs, Pleiades and Galileo for example, by duly taking into consideration the security and defense aspects and the interactions with the European Union and ESA.

3.4 Other measures relative to market developments and private initiatives

The report then in part 2, under the title "Support for market development and private initiatives", deals with other questions not directly linked to the authorisation and control context, and which are more specifically concerned with private law or current legal practices applicable in the industrial world. The report does not propose to produce a private legal system specific to the space sector, but rather to specify or adapt, where necessary, due to the specific nature of space activities, the branches of national law concerned as in private law, particularly property and real security law, intellectual property law, civil and contractual liability law, insurance law, and at public law level, in setting out an authorisation and monitoring system for space activities in France, without forgetting the fiscal aspects.

Of the points which require targeted action, we will mention in particular:

- The confirmation of the systems of responsibility used between private players in the space sector (for over 20 years). According to a legal practice largely recognised and accepted internationally due to the specific nature of the risks from the technical point of view and of the costs, the participants in a launch activity (satellite manufacturers, equipment manufacturers, launch operators, satellite operators, customers...) are all bound by specific contractual agreements where the economy is that "each one individually deals with the damage caused to his own persons and property", and abandons, where applicable, all claims against those responsible who are protected by 'no-claim clauses and guaranteed agreements" or determines responsibility limitations. The manufacturers concerned (Arianespace, EADS Launch Vehicle, Astrium, Alcatel Space Industries, Snecma...), and also the insurers, desire that French law, like that of the United States of America, incorporate these practices in the texts and that in this manner what is implicit becomes explicit for the recognition of the validity of such clauses[12].

- The limit of responsibility for launch operators must be formalised in a legal or reglementary framework. The French State, in conformity with its international and European agreements currently obliges Arianespace to take out responsibility insurance for damage which could be caused to third parties during an Ariane launch to a limit of four hundred million francs (60 Meuros). This limit corresponds to the responsibility limit left to the

12 In particular, by reference to the terms of the French civil code and of the jurisprudence relative to the contractual responsibility and to the guarantee against latent defects, particularly since the transposition of the 1985 European directive on the responsibility for defective products.

responsibility of Arianespace by the State which covers the indemnities beyond this limit. However, this insurance obligation does not result from a law. It would be desirable, for transparency and stability, that this insurance obligation be translated into a legal form[13] and generalized to all launch operators liable to launch satellites for which the French State would be the launch State in the sense of the Convention on responsibility of 29 March 1972 (cf. Soyuz at Kourou hypothesis).

- The obligation to insure satellites for risks in orbit with respect to third parties must be envisaged. This obligation, expressly planned for by English law, does not currently exist in France particularly concerned with Eutelsat. The amount of this type of policy is not very high given the probabilities of collision in orbit.

- The overall analysis of the tax context of space activities in France has not indicated any basic problems. The legibility of this system could however be improved. In the hypothesis where the above different systems should be rediscussed, a certain amount of European reciprocity must be preserved and the advantages given to this sector of activity must be maintained, given those allocated by competitor countries.

- Coherence must be sought in terms of intellectual property, between space law and the different aspects of patent law. Some measures require to be specified in national law: the status of inventions and patents in space, the extent of the protection (implementation of infringement action...), possible conflicts with the principle of non appropriation of space (case of patented orbits...) and the temporary presence exception (impossibility to seize space objects "in transit" on the launch site).

Like certain countries (United States), it is proposed to extend the application of French patent law to space objects and to their components which are under French jurisdiction or control, in conformity with article VIII of the 1967 Space Treaty (effects of licencing and conservation of property, jurisdiction and control systems in space).

In addition, the "launch" manufacturers (Arianespace and EADS LV...) desire that, since the temporary presence exception already applies in France to vehicles in transit (ships, aircraft, trains), it be extended to spacecraft and space objects so that their commercial partners are not exposed to possible infringement actions by third parties, in particular on the Guiana Space Center site. European satellite manufacturers are also favourable to this exemption, but more especially to benefit from a reciprocity for their objects in transit on United States territory as the United States has allowed the temporary exception only for nationals of countries which allow the same exception to American nationals.

- The clarification of the laws of ownership and guarantees concerning space objects also seems to be a necessity to favour the development of private space activities, in order to guarantee new methods of financing them. This question alone has justified the creation of a specific work group (group 4). This group suggests that the French "Property law" make reference to the space object, in the same way as ships and aircraft, under a specific system of licenced mobile property, depending on the Civil Code.

13 Thus following the practice adopted by all the States which have already implemented specific space legislation, and particularly the United States.

In parallel, it appears necessary to unify the different rules of guarantees at the international level, in particular by supporting the action of Unidroit for the implementation of the Convention and the Space Protocol, while encouraging constructive dialogue with CUPEEA (United Nations Committee for the Pacific Use of Outer space), due to the interdependences with space law and to the necessity to harmonise the respective licencing systems, or even to combine them under a same authority. This action with respect to Unidroit is carried out in France[14] by the Foreign Affairs and Justice Ministries, which have received group 4's contributions, and the contributions of the space aeronautics department in the context of this study.

This group also desires that the system of guarantees recommended by Unidroit be studied, beyond the strict framework of space law, by the international, European (EU) and national (DiGITIP, ANFR, ART, CSA...) authorities which are competent in terms of "services" licences (telecommunications, audiovisual...). It is important that the transfer of ownership of a space object, or of its use, to a creditor benefiting from an international guarantee is accompanied in the most foreseeable, or even automatic, conditions possible, by the transfer of all its associated rights (responsibility, frequencies and orbital positions, operating licences).

- Finally, favouring access to the market and the respect for free competition, for the commercial activities, is one of the priorities mentioned in the report[15]. This question is specifically developed in chapter 2 of the report, in addition it underlies all the conclusions of group 3 concerning radiocommunications (Part Three: Specific measures - Chapter 3). These contradictions inherent to commercial space activities seriously penalise their development.

The adoption of legislation specific to space activities is therefore a privileged solution to resolve this antagonism observed throughout the study between the requirement to have space activities controlled by the States and that of favouring the development of a space application market at the European and

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14 To favour Unidroit's approach, the national civil law and the French rules on private international law must be adapted in parallel to reduce all sources of conflict between different creditors (national, international, with their respective priviledges ...) in favour of the creditor who benefits from an international guarantee. Public international law, in particular United Nations space law (1967 treaty...), must also provide for the possibility of taking control of a satellite, transfer of property or of its use to a secured creditor or even its retention. In particular, it is important to specify in which conditions a State can allow or refuse the transfer of ownership or retention of the secured property, given its responsibilites in case of damage. Finally, the **national licencing register** items must be defined in consequence, whatever their form (law, ministerial order, circular...) specifying the mandatory or optional, confidential or public endorsements.

15 Following the world and European liberalisation process for the telecommunications and audivisual communication sectors, the space radiocommunications activities have been integrated in a market whose dominnt principle is, and must remain, that of **free access**. In France, this principle results from the "freedom of commerce and industry", laid down during the Revolution and now considered as a fundamental legal principle. In the context of the European Union, this principle refers to the **freedom of establishment,** it also tends to become the common rule in the context of the World Trade Organisation and of the general agreement on trade and services. It therefore opposes all national measures confering exclusive rights without justification. These principles of free access and of fair competition can, as developped above, clash with other restrictions which are just as valid particularly with respect to the application of space law (responsability of States, obligation to authorise and control activities, licencing...), national security restrictions (exports of war materials, technologies or sensitive imagery), of rules linked with the use of rare resources like those of frequencies and orbital positions, or of other public restrictions (particularly audiovisual).

world level in an appropriate competitive environment.

4) Conclusion and outlook:

The question of the construction of a legal framework specific to space applications is posed more specifically with respect to future systems, delegated or operated by the private sector, but more generally the need for coherent regulations, guaranteeing the current practices appears to be more and more necessary, and is the subject of insistent requests by contractors, operators, insurers and financiers and legal professionals.

The high participation, at the best level, in the work groups set up for this prospective approach is evidence of this.

Of the main actions which can result from this study, we must note:

- the interest, as a priority, of creating in France a general framework for the authorization of space object launches, of licencing and surveillance of space activities (launchers and satellites) regulating, in particular, the question linked with the State's responsibilities;
- given the specific nature of the space activities, the need to specify or adapt certain branches of national law, particularly property and real security law, the law of intellectual property, the law of civil and contractual liability, and insurance law;
- the pertinence of clarifying the concept of public service applied to space activities, in particular in the European context of the European Union and the European Space Agency;
- and in this respect, the interest of specifying the context of CNES missions in its interactions with its supervisory authorities, and more generally the interest of better understanding the roles of the States and their regulatory action in the above European context.