

Building Blocks for International Cooperative Agreements

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Abstract

In a time where ambitions of the New Space challenge the traditional programmatic model of States Space Policies, this paper assesses the present rationales, framework and practices in building public-private partnership on benefit of Space activities. It reviews the original institutional and legal mechanisms which shape such cooperative effort, in particular some specific requirements or clauses such as governmental licences, waivers of claims, best effort obligation, limitation of responsibilities, export control, customs, data policy, non-disclosure, real and intellectual ownership and settlement of dispute. New schemes of cooperation with industry are also considered. Philippe Clerc is currently head of legal department at CNES, the French Space Agency. He has also served the French Space Ministry and Arianespace Company. This work aims to share common procedures and practices he has experimented as a Space lawyer involved in negotiating and drafting of international agreements between governments, Space agencies, industrials and Space users. However, the content of this paper only reflects personal views of its author and not those of its present and passed employers.

1. Introduction

Jean-Jacques Dordain¹ has recently published an article in “La Tribune”, a French economics newspaper with the sounding title of “*Space is a laboratory for cooperation*”² where he recalls, with historical examples, the widely-held characteristic of Space activity’s evolution being built *from competition to cooperation*.³

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1 Jean-Jacques Dordain, Former ESA Director General (2003-2015), Senior Advisor at CSIS (Center for Strategic and International Studies – Washington DC).

2 La Tribune” 16 juillet 2016 N°6005 <http://www.latribune.fr/opinions/tribunes/l-espace-un-laboratoire-de-cooperation-586179.html>.

3 On this approach, see in particular John M. Logsdon, Competition to Cooperation the Evolution of Global Space Activities, Space Policy Institute, Elliot School of International Affairs, The Washington University, Washington, DC, USA.

He considers the development of a future global cooperation not only at a geographic scale but associating the private sector (*New Space*), users, generations of citizens and major Space powers with a focus on USA and China. Are identified some potential mobilizing projects that are likely to overcome the “inward looking” of some national policies. Among this projects are quoted “common enemies to fight”: collisions of asteroids, Space meteorology, Space debris, shortage in Earth natural resources (mining celestial bodies), threats associated to climate and environmental change (COP 21 ...).

It is understood that the successful outcome of these ambitious projects for humanity depended on the capacity of partners to create win-win solutions to overcome conflicts between national interests and competition stakes.

This dialectic relationship between competition and cooperation for the benefit of Space conquest is also visible at several steps of the legal background governing Space activities, namely: international and national Space Law, statutes of national Space agencies, cooperation agreements among them, partnerships or contracts with and among the private sector, including Space industry and users of Space applications.

Considering this legal side of the cooperation process, the purpose of this paper is to describe in a pragmatic approach, the different institutional, legal and contractual tools available, in other words “building blocks”⁴ facilitating international cooperation among public and private Space community.

This paper first examines the legal framework applicable to such cooperation [2]. Then it discusses common mechanisms (or buildings blocs) of such agreements at the level of governments and Space agencies [3]. An outlook on permanent organizations in charge of Space cooperation governance in Europe is offered in paragraph [4]. Last but not least, mechanisms of cooperation with industry are addressed in paragraph [5].

2. Legal Regime Governing International Cooperation

Any cooperation on a civil Space project has to comply with the basic legal framework applicable. The latter is articulated around three international blocks, the Space Law, the Telecommunication Law and the Competition

4 The term of “building blocks” make reference to the original structural approach in the findings of the working group on national legislation associated to the Project 2001, “legal Framework for the commercial use of outer space” under the auspices of the Institute of Air and Space Law & Chair of International Business law of the University of Cologne, Germany. See Michael Gerhard, German Aerospace Center (DLR), Analyzing the presentation and discussions: Potential “building blocks” of a national space legislation, Proceedings of the Workshop on National Space Legislation 5/6 December 2000, ISSN 1616-6272, Cologne, March 2001, page 181 to 184.

Law [2.1 to 2.3] in addition with all relevant governmental measures that have been taken in application or in complement of such blocks [2.4].

2.1. The UN “Outer Space Treaty” (OST) of 1967⁵ and Followings

The five UN treaties⁶ set up the general legal frame of the Space activities driven by States. They deal with issues such as the non-appropriation of Outer Space by any one State, the freedom of exploration, liability for damage caused by Space objects, the safety and rescue of spacecraft and astronauts, the prevention of harmful interference with Space activities and the environment, the registration of Space objects (vehicles), the scientific exploration, the exploitation of natural resources in outer space and the settlement of disputes.

Private activities are not directly regulated by these treaties: it is of the responsibility of each State Party to translate its international commitments into a national legislation.⁷

5 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space (1967), including the Moon and Other Celestial Bodies, adopted by the General Assembly in its resolution 2222 (XXI), opened for signature on 27 January 1967, entered into force on 10 October 1967. The 1967 OST treaty.

6 - The “Rescue Agreement” (1968). Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, adopted by the General Assembly in its resolution 2345 (XXII), opened for signature on 22 April 1968, entered into force on 3 December 1968.

- The “Liability Convention” (1972). Convention on International Liability for Damage Caused by Space Objects, adopted by the General Assembly in its resolution 2777 (XXVI), opened for signature on 29 March 1972, entered into force on 1 September 1972.

- The “Registration Convention” (1975). Convention on Registration of Objects Launched into Outer Space, adopted by the General Assembly in its resolution 3235 (XXIX), opened for signature on 14 January 1975, entered into force on 15 September 1976.

- The “Moon Agreement” (1979). Agreement Governing the Activities of States on the Moon and Other Celestial Bodies adopted by the General Assembly in its resolution 34/68, opened for signature on 18 December 1979, entered into force on 11 July 1984.

7 OST 1967 Article VI:

States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty.

The activities of non-governmental entities in outer space, including the moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty.

When activities are carried on in outer space, including the moon and other celestial bodies, by an international organization, responsibility for compliance with this

Each treaties stresses that activities carried out in outer space should be devoted to enhancing the well-being of all countries and humankind, with an emphasis on promoting international cooperation.

For instance, Article I of the OST recognizes the freedom of exploration of the Outer Space and access to all areas of celestial bodies without discrimination of any kind, on a basis of equality. It adds that “States shall facilitate and encourage international co-operation in such investigation”.

In order to facilitate the application of such principle for the benefit of all countries, in particular developing countries, the UN General Assembly, in 1996, approved the “Benefits Declaration”⁸ that promotes International cooperation by any means, while taking into particular account the needs of developing countries: their need for technical assistance for reaching their development goals on Space capabilities, Space science and technology and their applications.

However, other measures of the OST maintain the unlimited State party’s jurisdiction, liability, authorization and continuing supervision and ownership rights over their national Space activities.⁹

Such national privileges may potentially restrict cooperation.

2.2. The International Telecommunication Union Rules (ITU)

Any Space vehicle, for the purpose of communicating with the Earth, has to have access to an appropriate bandwidth of the global radio-frequency spectrum. This right is to be assigned by the appropriate State in accordance with the radio-communication rules of coordination defined within the ITU framework. This international organization is a specialized agency of the United Nations (UN) of 193 Members States.

It should be noted that there is no formal coordination mechanism legally enforceable between the ITU & national broadband and orbital assignment procedure for a satellite and authorizations to operate and register the same vehicle under the OST regime as recalled above [2.1].

2.3. International or Regional Competition Law

Grounded in principles of non-discrimination and free access to the market general World Trade Organization (WTO) and European Union (EU)

Treaty shall be borne both by the international organization and by the States Parties to the Treaty participating in such organization.

8 The Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries. General Assembly resolution 51/122 of 13 December 1996.

9 Article VI as referenced in note [7] above for authorization and continuing supervision of private activities, article VII for third party liability caused by Space Objects, article VIII for national jurisdiction, registration and ownership regime on Space objects.

Competition Law can also restrict drastically industry-government cooperation in the Space sector, in particular:

- Public procurement law affecting any kind of national Space agencies contracts (purchase, partnership, concessions) to be awarded to domestic or foreign industry.
- Public aid law for any kind of State subsidies or support granted to the private sector, included privileged granted to the latter to access to governmental facilities and services.

These legal requirements were not significant up to now towards traditional interventions of national agencies with their research and development (R&D) activities and Space systems pre-competitive development programs due to the strategic character of such support to the industry.

The question however is more likely to be raised in the context of New Space where projects are initiated and mainly financed by private entrepreneurs who intervene in a sector that becomes completely competitive such as the Internet and its mobile applications.

2.4. National Requirements

Any private Space activity shall require a prior governmental authorization or licence in accordance with article VI of OST. In France this obligation has been transposed via the Space Operation Act of June 3rd, 2008.

Such authorization regime generally requires that the systems to be operated are compliant with the relevant technical regulations¹⁰ and do not jeopardize the security and the government's international interests.

In return, operators duly authorized can be guaranteed, from the licensing State, a liability indemnification ceiling (60 million Euros in France) for damage caused to third parties on the ground or in outer space during the launch.

In addition, governmental licences are required for:

- Frequency allocations for vehicle and payload telemetry.
- Exporting (or importing) Space vehicles or their components and associated services under relevant Export Control regime such as the US International Traffic in Arms Regulations (ITAR) that regulates the export and import of many Space-related articles and services. Such legislation are applicable from the first preliminary discussions for any Space cooperation (by the mean of a dedicated Technical Assistance Agreement – TAA) or for export even temporary for the need of test or for launching purpose.

¹⁰ Technical Regulation decree of 31st March 2011 implementing the decree 2009-643 of 9th June 2009 on the authorizations issued in accordance with the French Space Operation Act no. 2008-518 of 3rd June 2008.

- When appropriate, for telecommunication or broadcasting services or Earth observation data acquisition and dissemination.

3. Cooperation Mechanisms

Traditionally Space cooperation agreements are generated by governments or their Space agencies [3], on a bilateral or a multilateral frame, in coherence with their own strategic interests on the domain of science, technology, public services, domestic industry, diplomacy, security and defence.

The first step is to set up a “framework agreement” at the State level, between the governments involved [3.1] in close relations with their respective Space agencies as “implementing agencies”.

Such template agreements are generally prepared and implemented after their signature by such Space agencies according to their own legal competence [3.2]. Following steps on specific projects will be organized through “implementation arrangement” between agencies [3.3].

Cooperation can be also engaged or extended under alternative arrangements [3.4] such as Letters of Intent (LoI), exchanges of Letter of Agreement (LoA), Memorandum of Understanding (MoU).

All these agreements are built on common legal and contractual principles which are broadly summarized in [3.5].

Each Space agency is responsible for the implementation of its own work-package. Its achievement is managed in relation with its industry and/or the scientific community under contracts following its applicable procurement rules as defined in [5].

3.1. Framework Agreements (FA)

Such higher level framework agreements shall define:

- Fields of cooperation activities, in identifying domains of mutual interest for developing programs or projects in cooperation, priority themes for which agencies intend to lead joint projects in a near future
- Common terms and conditions which apply to any specific “implementing agreement” for every future joint project in the absence of opposite clause. This includes the following clauses: responsibilities, third party liability regime, exchange of staff, financial capacities, confidentiality, intellectual property, publication / communication, customs duties and taxes, export control, interpretation and dispute settlement...
- Cooperation governance which is traditionally entrusted to an Executive or Steering Committee in charge of:
 - o designing and reporting on the cooperation program and projects developed by the Parts (Parties)
 - o proposing and approving any further domain of cooperation

Framework agreements are concluded for a given duration, often with tacit renewal.

Normally such agreement as any intergovernmental agreement are negotiated by the ministry of foreign affairs or under its supervision by the national Space agency according to its statutes (see [3.2] below) and with respect to the relevant national regulations such as in France, the Administrative Circular of 30 May 1997 on Elaboration and Conclusion of International.¹¹

Intergovernmental Agreement engaging State finances or containing other substantial binding obligations or provisions that contradict common law shall be ratified by Parliament.¹² This ratification is a prerequisite for cooperation arrangement's entry into force. Such process may take several years and so being altered by political changes.

Such uncertainties do not suit with an efficient running of challenging Space projects. This constraint has led Space Powers, from the early beginning of the Space conquest, to favour:

- Cooperative agreement shaped in a "best effort" way and without exchange of funds between countries as detailed in [3.5] below.
- Full delegation to their respective agencies, at the national level [3.2] or at the regional level [4], of design and implementation of such cooperation projects.

3.2. Space Agency Competence

As another illustration of the dialectic relationship between competition and cooperation, Space agency's mission can be declined into:

- A "colbertist"¹³ mission toward the domestic research and industry Space sector. This allows to develop an autonomous and value added national capacity on the benefit of developing economic competitiveness and new applications of general interest, included security and environment.

11 In France, the Administrative Circular of 30 May 1997 on Elaboration and Conclusion of international agreement "*Circulaire du 30 mai 1997 relative à l'élaboration et à la conclusion des accords internationaux*" Journal Officiel de la République Française (JORF) n°0125 du 31 mai 1997 page 841.

12 In France, article 53 of the Constitution of 4 October 1958: "Peace treaties, commercial treaties, treaties or agreements relative to the international organization, those which commit the State Budget, those which amend provisions of legislative nature,(...) shall be only ratified or approved by virtue of Act (i.e. by the Parliament). They come into effect only having been ratified or approved".

13 "Colbertism" is a concept of command economy developed in France in the 16th century by Jean-Baptiste Colbert Ministry of finance and General Controller of Finance of King Louis XIV. Such policy is traditionally implemented through aids and subsidy to support exports, protectionism to control imports, and focussed public procurement toward potentially value added (manufacturing) industry...

- A *cooperative* mission, to further its current capacity and share risks and management skills, especially for ambitious Space programs.

For example, according to Article 2 of its 1961¹⁴ constitutional Act, CNES is in charge on the one hand to propose and implement research programs of national interest (in paragraph b and c), and on the other hand (the following paragraph d) to “monitor Space international cooperation related issues in relation with the Ministry of Foreign Affairs, and to ensure the implementation of international programs share allocated to CNES”.

In addition, according to its statutory decree,¹⁵ CNES can be authorized by its Board of directors “to undertake, for the implementation of its program of international relations, negotiations which can lead to the conclusion of International Administrative Arrangements (see below [3.2] Implementing agreement and MOU).

Space agency implements its national or international projects through contracts or partnerships concluded with the industry following an open competition process (see [5] below).

Thus, contractual authority is of the essence of Space agency’s capacities to execute its mission and program.

For NASA this remits is granted by “The National Aeronautics and Space Act”.¹⁶

Pursuant to the “*other transactions*” authority¹⁷ NASA may enter into a great number of agreements (*Reimbursable, Non reimbursable, and Funded Agreements*) legally enforceable with diverse groups of people and organizations, both in the private and public sector, included foreign partners.

In addition, the Space Act¹⁸ authorizes NASA to engage in international cooperative programs as follows: “The Administration, under the foreign policy guidance of the President, may engage in a program of international cooperation, in work done pursuant to this chapter, and in the peaceful application of the results thereof, pursuant to agreements made by the President with the advice and consent of the Senate.”

On its side CNES, under its 1961 founding act, received a full contractual capacity to enter in any form of agreement, with an additional ability to initiate

14 Act N° 61-1382 of 19 December 1961, now codified under the Research Code, in article L331-1 to L331-8.

15 Décret n°84-510 du 28 juin 1984 relatif au Centre national d’études spatiales, article 4-13.

16 The “Space Act” of 1958 now codified under 51 U.S.C. § 20101 and seq.

17 See “The Space Act” above, 51 U.S.C. § 20113(e).

18 § 20115.

the establishment of commercial companies, included subsidiaries.¹⁹ This spin-off possibility has been used, mainly during the eighties',²⁰ to further implementation of its potentially commercial programs as entering in an operational phase that exceeds its sphere of competence as a governmental agency.

Last but not least, we must consider the financial autonomy and judicial personality of Space agencies.

Under approval of its national Parliament, Space agency receives from government a budget allocation which can be broadly broken down into three major parts:

- Programs included international cooperation projects and associated operations.
- Investments of general interest on the ground: laboratories, scientific and technical centres, test bench, launch base, mission centre, ground station network general facilities.
- Staff and other operating expenses, included maintenance.

Some agencies are branches or administrations of their government with a strong delegated authority (NASA). Others like CNES have a full legal capacity, with own judicial personality distinct from that of the State, even if closely controlled by the latter. Others have an intermediate status (DLR, JAXA...).

Such distinction potentially affects the agency's capacity and status, in particular for:

- Private or public ownership status on the agency assets.
- Staff regulation (civil servant or not).
- Autonomy of expenditure commitment (necessity or not of prior approval or signature by governments representatives or controllers).
- Financial and legal soundness in their agreements with third parties.
- Disputes as a matter of immunity or court's competence.

All this differences of status between Space agencies have to be duly taken in account while negotiating international cooperation agreements, in particular in the clauses of responsibility, management, liability, financing commitments, exchange of staff, confidentiality, waivers of claims, termination and settlement of litigation (see [3.5] below).

19 Act N° 61-1382 of 19 December, 1961 establishing CNES as codified the Code of Research Code of Research article L331-2c: To ensure the implementation of the aforementioned programs, either by creating laboratories and technical establishments, or by means of research agreements conclude with other public or private bodies, *or by financial participations*.

20 December 1980: setting up of Arianespace SA (a Limited Company) that becomes the European commercial launch service provider. Nowadays Arianespace is to be controlled by Airbus Safran Launchers. - 1983, establishment of Spot Image Company, to exploit the Earth Observation SPOT satellite family capacity, now part of Airbus and Space Group.

As an example, the Cross Waiver of Liability in the agreement between the United States of America and France had to be adapted in 2007 to integrate expressly CNES, as French Implementation Agency, given the fact that it has a judicial personality distinct from that of the French State.

As a matter of fact, for any damage to third parties resulting from their common cooperation, participating Launching States (France or USA) are sole potentially “liable” for indemnification to the “State victim”, jointly and severally under Space treaties (the 1972 UN convention²¹). It has been then necessary to associate CNES at the level of States otherwise it could be regarded as a third party (like subcontractors...) with respect to such clause.

3.3. Implementing Arrangements (IA)

At the second step, in explicit application of a framework agreement, an Implementation Arrangement (IP)²² is to be concluded to define the terms and conditions applicable to any project.

IP resumes measures expressed in “the framework agreement”, completes and modifies them whenever necessary, as long as it does not distort the essential principles. It contains a number of technical provisions related to project established:

- Precise description of the mission.
- Detailed definition of the technical responsibilities shared by parties, from the development to the end of exploitation of the Space system, with a reference to the Project Implementation Plan (the PIP) appended.
- Management of the project including settlement of dispute.
- Relation with third partners (other agencies involved, scientific community, users...).
- Exchange of staffs.
- Intellectual property.
- Customs and tax.
- Export control procedures in each country.
- Care of goods stored in the other party’s facility (risks of loss, third party liability, maintenance costs).
- Registration of the Space vehicle (satellite, station...).
- Ownership on equipment (instruments vs satellites).
- Data policy on satellites measurements or images (right of access and use, price, IPR...).
- Third party Liability for damage on the ground or Space.
- Recording of frequency band.

21 Article 9 A. (1) of the Agreement between the United States of America and France, signed at Paris on January 23, 2007.

22 Called in France *Arrangement Administratif International* for “International Administrative Arrangements”.

3.4. Other Forms of Arrangement

For more flexibility, the followings formula LoI, LoA and MoU can be used by Space agencies outside existing agreement above (FA or IP) or in addition of such agreements for specific or detachable projects.

Attention should be paid on the fact that these type of instruments, in particular the “memorandum of understanding” (MoU) can create confusion between parties of different Law systems on the binding character of the signed commitment.

A MoU may not always be considered as legally binding instruments but as “gentleman agreement” in some Anglo-Saxon countries.

In countries such as France the international law approach is to recognize any commitment taken in the name of the government the value of an international agreement creating legal obligations.

Parties shall therefore ensure that they are committed at the same level.

For this purpose, an Administrative Circular of the General Secretary of Government of 1997²³ invites expressively French delegations to consider with precaution the negotiation of such form of agreement.

3.4.1. The Letter of Intent (LoI)

The letter of Intent is a flexible and simple means to formalize the kick-off of discussions between agencies.

It recalls number of points already understood or agreed only informally.

It formulates the parties’ willingness to cooperate and objectives to be discussed.

As such it is the first written expression signed at the high level between the parties.

LoI often contain precautionary measures on exchanges of information and confidentiality rules.

3.4.2. The Letter of Agreement (LoA)

The LoA stands for a cooperation agreement in the form of exchange of letters.

LoA is often used within the framework of a cooperation program where an agency proposes to another to participate under conditions laid down in it.

Such form is rather similar to an adhesion contract, given the fact that the response (acceptance), to form the agreement, is to be drafted strictly under the same words as those used in the first issued letter. However, basically agencies’ teams have scrupulously negotiated the LoA’s wording before engaging the signature process toward their respective management.

23 See note [11] above: Administrative Circular of 30 May 1997.

3.4.3. **The Memorandum of Understanding (MoU)**

This type of arrangement is commonly used between agencies to cooperate on a particular project in a specific domain, outside or in the margin of any intergovernmental agreement or existing framework agreement between agencies.

MoU's content is generally more detailed as related to LoA and rather comparable to that of IA described in [3.3] above. However MoU's legal enforceability is more questionable as mentioned above.

3.5. **Common Features**

Irrespective to their various legal forms (FA, IA, LoI, LoA, MoU...) as described above, all these arrangements broadly have a similar architecture and contains the same type clauses as described below:

- *Civil and scientific main purpose*, but not exclusively for example the Russian-French 2003 cooperation agreement on Soyuz in Guiana which have an operational and commercial scope. It also exists among Europe States Dual or Defence cooperation's arrangements on satellite observation meeting Ministries of Defence and Space agencies such as Pleiade, Helios, CSO Musis...
- *Best effort obligation*, as opposed to "performance obligation" among States or between their respective agencies as a response of budgetary procedure constraints or to by-pass any parliament ratification as mentioned in [3.1] below.
- *Full sovereignty of respective agencies on project achievement*. Each agency has to organize at its own expense in its own country or sphere of competence the implementation of its work package: "in house", procurement to industry, partnership agreement... (see [5] below).
- *No exchange of funds*: in line with their "best effort obligation" above, parties' commitments are limited to the only works of interface, coordination and integration of their respective contributions. Thus, parties' contributions focus only on proper achievement of their technical work packages.
- *Monitoring and governance of interface coordination* fall within the competence of dedicate steering committee.
- *Prohibition or limitation of technology transfer* that leads to very protective clauses of intellectual property, exchanges of knowledge limited to the strict needs of the cooperation such as interface knowledge as set in the Project Implementation Plan mentioned in [3.3] above. Thus, technology transfer, except rare exceptions, is out of purpose of such international cooperation.
- *Confidentiality* toward third parties unless otherwise agreed.
- *Open data or non-discriminatory data policy* for data obtained from Space instruments for any user. However it remains exceptions in

some scientific projects in favour of the selected Prime Investigators (PI) who may receive a limited exclusive period of use of data at the beginning of the mission in orbit, period generally associated with the calibration and validation process of data.

- *Absence of guarantee* as a result of latent defect or willingness fault, in particular in case of failure during the launch or defective functioning in orbit.
- *Cross waivers of claims* between parties and their associates (Space agencies, scientific partners, subcontractors...). This exception to the common principle of enforceability of contracts (where each breach is to be sanctioned by the judge) can be added to the other drastic limitation of Parties' contractual responsibilities set in the above clauses of "best efforts" and "limited guarantee"
- *Settlement of dispute* decided at last resort exclusively by the parties, on the basis of the arrangement' terms and conditions. The competence of national courts has to be excluded for the interpretation of such arrangements.

4. International and Regional Integrated Organization: The European Approach

Since the early beginnings of 1960's, as they were designing guidelines for their national Space policy, European western countries have committed themselves to work towards the establishment of a European Space organization framework.

This lead in 1962 to the creation of both:

- European Launcher Development Organisation (ELDO) on 29 March.
- European Space Research Organisation (ESRO) on 14 June.

After the dissolution of ELDO following the launchers Europa's failures, the European Space Conference (ESC) meeting in Brussels decides in 1973 the famous "package deal" of three new programmes: L3S (Ariane), Spacelab (module of Space station), and MAROTS (Satcom) and the creation of the European Space Agency (ESA) which Convention was signed on 30 May 1975. Nowadays with the success of its achievements, ESA has become one of the major Space player in the world and remains a unique model of organization creating and managing Space international cooperation.

The European Union on its side which was established since 1958 in the so called European Economic Community (EEC) has expanded progressively its competence in the Space domain:

- firstly with the Single European Act (of February 1986 to include a competence in Research and Technological Development fields

- (RTD) that is to be implemented through multiannual RDT Framework Programs (nowadays the 8th named “Horizon 2020”).
- Secondly in acting from the 90’s as proxy of “users” of Space application and/or through its regulatory authority or sectorial policies in the fields of agriculture, environment, transport, telecommunications. This lead UE to support, altogether with ESA, the Global Monitoring Environment and Security initiative in Earth Observation (GMES now become Copernicus), or the European Navigation Satellite Positioning Systems EGNOS and Galileo. It also leads on the regulatory side, from 1994,²⁴ to the liberalization of satellite telecommunications that lead to the abolition of monopoly of national historical telecommunications operators such as French Telecom, British Telecom, Deutsche Telecom (*etc.*) followed by the privatisation of their common monopolistic international satellite organization such as Eutelsat, Inmarsat, Intelsat.... Other regulatory initiatives of European commission have shaped indirectly the legal regime of Space applications, in particular as relates Earth observation from Space, such as: the Directive of 11 March 1996 on the legal protection of databases,²⁵ the INSPIRE Directive in May 2007, establishing an infrastructure for spatial information in Europe to support environmental policies and the regime protection of personal data in 2016.²⁶
 - Last but not least, Article 4.3 the Lisbon Treaty (2007) on the Functioning of the European Union entrusted EU with a capacity in Space Policy and Programs as a specific “shared competence” with its Member States (MS). Article 189 of the same treaty allows UE to design and implement a European Space program and calls for a development of appropriate relationship with ESA. However, art. 189 deprives UE of legal capacity to harmonize MS’ National Space legislations, in particular those derived from Space Treaties as recalled above in [2.1 and 2.4].

24 European Commission Directive 94/46/EC of 13 October 1994 amending Directive 88/301/EEC and Directive 90/388/EEC of 28 June 1990 in particular with regard to satellite communications, OJ L 268 of 19.10.1994: 15.

25 Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, Official Journal L 077 27/03/1996 P. 0020 – 0028.

26 The European Commission proposed in January 2012 a comprehensive reform of data protection rules in the EU. On 4 May 2016, the official texts of the Regulation and the Directive have been published in the EU Official Journal in all the official languages. While the Regulation will enter into force on 24 May 2016, it shall apply from 25 May 2018. The Directive enters into force on 5 May 2016 and EU Member States have to transpose it into their national law by 6 May 2018.

These distinct European organizations in terms of status, competence and membership design together dedicated cooperation framework for the purposes of programs like Galileo (positioning) and Copernicus (observation) programs, both for the development and exploitation phase.

Basically ESA and EU competences are rather complementary on the benefit of Space activities, thus without prejudice of their Member States' competence which remain intact.

In addition such organization have in common to maintain a stable and predictable governance regime of cooperation for Space projects between European partners, on a voluntary basis (ESA optional program) or mandatory basis (UE programs and ESA scientific program).

Basically, we may underline a certain complementarity between status and missions of such European organizations:

- *The European Space Agency* is a permanent cooperative organization with judicial personality specialized in Space programs. As a consequence, each ESA' program decision (a "Program Declaration") taken by Members States Board in the framework of ESA Council is legally equivalent to an International Treaty signed by the same State parties, without any formality of ratification (see[3] above).

ESA in itself has the capacity to enter in specific international arrangements of any form cooperation agreements or contracts. For example, ESA represents and supersedes the European partners in the International Space Station MoU signed in 1998 with NASA.

ESA can also cooperate with national Space agencies of its Member States on its own programs (ex: in hosting in its European platform scientific instrument achieved at a national level), or delegate operational tasks to national Space agencies (ex: to CNES the management of the Guiana Space Centre or for ATV or Galileo in-orbit operations...).

ESA is then a flexible and efficient organization to initiate and run ambitious cooperation in relation with Space industry on innovative systems.

Last but not least, from the point of view of the ministries of finance and economy, the "*geographical return principle*" characterizing ESA rules of contract award (i.e. apportionment of contracts to MS's industry proportional to such MS's budget allocation to the ESA program) remains a secured guarantee of good use of national budget. The money invested in ESA optional programs development basically remains in the running domestic economy, less the operation cost internal to ESA. Moreover, on a macroeconomic point of view, the return on public investment may be leveraged on Gross Domestic Product (GDP) if the recurrent operational systems maintain for

decades the same geographical industrial return, as it happens in the non-reusable launcher exploitation phase.

Finally, it results from ESA statute the same virtuous dialectic rule as mentioned in introduction about the “competition – cooperation” tandem. In one hand ESA is fully invested by its establishing convention²⁷ in a cooperation mission within its members states, or toward its members States and third countries, and, on the other hand, preserves national interests and competition within the European industry as a result of the geographical return on procurements.²⁸

- *The European Union* provides on its side the necessary regulatory framework and a political and integrated dimension to the European Space efforts.

UE framework is appropriate to:

- The assessment of needs of the user’s communities and consequently to design new Space application programs consistently with European policies in research (RDT), environment, transport, agriculture, common infrastructures... In other words, the EU competence on Space activities is more focused on Spacecraft’s

27 Signed on 31 December 1975. See article II Purpose: “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:

- 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.

28 ESA establishing Convention of 1975 above, article VII industrial policy: “The industrial policy ... shall be designed in particular to: ...c) ensure that all Member States participate in an equitable manner, having regard to their financial contribution, in implementing the European space programme and in the associated development of space technology; in particular the Agency shall, for the execution of its programmes, grant preference to the fullest extent possible to industry in all Member States, which shall be given the maximum opportunity to participate in the work of technological interest undertaken for the Agency”.

payload capacity of services onto the Earth than Space vehicle operations as such.

- Recurrent investments, integrated programs forwarded to ground solutions such as Copernicus or Galileo. Operating costs of European facilities.
- Global governance of programs on the long run altogether with proposition and implementation of the associated regulation.

It has to be underlined finally that beside the top down approach of its RDT Framework mechanism (i.e. TFEU's article 182), other legal instruments such as articles 184 and 185 allow the European Union to participate in cooperation arrangement of European interests initiated by Member States in a way that can be likened to ESA regime for optional programs or scientific ESA project open to voluntary national contributions.

However, such legal vehicles for research cooperation with Member States have not been experimented already for Space projects.

5. International Cooperation Implementation with Industry

As set in [3] above, the implementation of each work package of a Space project under international cooperation arrangement is to be managed at the level of the relevant Space agencies involved.

According to their legal capacities such agencies award contracts to the industry and scientific partners to satisfy their international commitments.

Contract is the legal vehicle privileged by such agencies, as compared to public aids or grants, because it allows a better monitoring on industry's performances and schedule.

Originally procurements rules were quite flexible for national Space agencies' purchases as they were awarded to an emerging domestic industry. CNES for instance under its 1960's functioning rules²⁹ was exempted to comply with the public procurement code, being just invited to take into account such code principles in its contracts.

This period is now over. Public procurement regulation have been strengthened all over the World and be extended, beside governmental administrations to all bodies even private entrusted with a public mission or largely financed or controlled by public sector.

29 Ministry Order (*arrêté*) on Financial Functioning of August 29th, 1963 (JORF 14/09/1963) – article 8 “The general conditions of signing, financing and monitoring contracts are fixed by the Board of directors. They are inspired by the State procurement regulation”. This sentence also appeared in the Order of July 20th, 1990 concerning the operating procedures of the CNES until its modification by the article 5 of the Order of July 4th, 2007 (JORF July 17th, 2007).

As a consequence in Europe, following the European Union directive of 2004,³⁰ CNES, as its counterparts, has been subjected³¹ to the common regime of governmental procurement.

Originally, such classical formalized procedures for governmental purchase rules were not designed to facilitate innovative solutions, in particular on behalf of Space projects. Indeed, pursuant to such Public Procurement process, Contracting Authorities, among which Space agencies, are strictly required to fix in advance toward industry, in the contract notice published in the Official Journal, their system or mission requirements as well as their contractual terms and conditions.

Then such regulation prohibits any “post offer” negotiation between the “Contracting Authority” and the tenderers as “Economic Operators”.

Fortunately, all over the World, regulations have evolved in the past years towards new competitive and cooperative procedures supporting innovation between public and private sector that may also benefit to Space projects.

In Europe, mention is to be made on the effort of flexibility engaged under the 2014 Directive³² as to allow constructive negotiations in a competitive process of contract award, according to the following procedures:

- “*Competitive procedure with negotiation*” (Article 29) which allows discussions with any candidates in order to clarify requirement and to improve tenderers’ proposals up to their Best And Final Offer (the BAFO) submitted for the Contracting Authority’s final selection.
- *Competitive dialogue* (Article 30) Contracting Authority shall open, with the participants selected, a dialogue the aim of which shall be to identify and define the means best suited to satisfying its needs. Contracting Authority may discuss all aspects of the procurement

30 Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts.

Article 5 of this directive named “Conditions relating to agreements concluded within the World Trade Organisation” recalls the predominance of rules from such international organisation, in particular the “most favoured nation clause” brought forward by the Agreement on Government Procurement (AGP), concluded in the framework of the Uruguay Round multilateral negotiations.

31 Following entry into force of the Ordinance N° 2005-649 of June 6th, 2005 relative to contracts concluded by certain public or private persons not subjected to the State procurement regulation.

32 Directive 2014/24/EU of European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC (see note [27] above). On the list of procedure see articles 26 to 32: Choice of procedures (26), Open procedure (27), Restricted procedure (28), Competitive procedure with negotiation (29), Competitive dialogue (30), Innovation Partnership (31), Use of the negotiated procedure without prior publication (32). Directive transposed in France by the “Ordonnance n° 2015-899 du 23 juillet 2015 relative aux marchés publics”.

with the chosen participants during this dialogue. In other words it becomes possible to renegotiate the technical and contractual requirement originally set in by the Contracting Authority, to have a better idea on strengths and weakness of potential solutions, provided that such authority ensures equality of treatment among all participants. To that end, Contracting Authority shall not provide information in a discriminatory manner which may give some participants an advantage over others.

- *Innovation Partnership* (Article 31) forward the dialogue mechanism above in order to support R&D activities through partnership between the Contracting Authority and Economic Operator(s). In the procurement documents, the Contracting Authority shall identify broadly the need for an innovative product, service or works that cannot be met by purchasing products, services or works already available on the market. It shall indicate which elements of this description define the minimum requirements to be met by all tenders. The information provided shall be sufficiently precise to enable economic operators to identify the nature and scope of the required solution and decide whether to request to participate in the procedure. Then Contracting Authority may decide to set up the innovation partnership with one partner or with several partners conducting separate research and development activities.

Regardless of the use of such formal procedure above specially designed for negotiation between public and private sector, a Space agency, as Contracting Authority can always exempt itself from application of such ordinary framework for governmental purchase based on the exceptions expressly provided for in the latter.

In particular, under 2014 EU directive, Contracting Authority *shall not be required* to follow an open competitive process in the following case:

- *Single economic operator* (Article 32). Direct or restricted consultation is possible, where the works, supplies or services can be supplied only by a particular economic operator... for *technical reasons* or for protection of exclusive rights, including intellectual property rights...;
- *Award organised pursuant to international rules* (article 9). This faculty can be used in execution of an international cooperation agreement rules or in application of specific international organization rules such as the one on European Space Agency for example.
- *Service contracts awarded on the basis of an exclusive right* (article 11). The directive shall not apply to public service contracts awarded by a contracting authority to another contracting authority or to an

association of contracting authorities on the basis of an exclusive right which they enjoy pursuant to a law, regulation or published administrative provision which is compatible with the TFEU. This exemption can be utilized concretely toward a company already entrusted with a concession of public service in the relevant country (ex: for Earth Observation data distribution...).

- *Public contracts between entities within the public sector: the “In House” exception* (Article 12). A public contract awarded by a contracting authority to a legal person governed by private or public law and controlled by the Contracting Authority(ies). This faculty may be used toward Space Agencies’ branches or subsidiaries.
- *Research and development services* (Article 14). This regime addresses more specifically the interest of Space agencies provided that both of the following conditions are fulfilled: (a) the benefits *does not* accrue exclusively to the contracting authority for its use in the conduct of its own affairs (i.e. IPR ownership is not fully transferred to the Contracting authority); and (b) the service provided *is not* wholly remunerated by the contracting authority (i.e. are also financed by the Economic Operator).
- *Procurement involving national defence or security aspects* (Article 15 and 16). This exemption, beside defence systems and their sensitive technology may be used also in civil-defence projects (i.e. Pleiade dual Earth observation satellites in Europe...) or in procurement of civil technology involving military export control.

Despite such enhancements options or exemption faculties that benefit to cooperation with or among the private sector, we may assess that the current legal framework remains inadequate to support the projects that have been previously designed and financed by the private sector.

6. Conclusion: Toward New Cooperation Mechanisms to Associate Industry

It has to be recalled firstly that nor the U.N Treaties on Space activities than ITU or WTO mechanisms were designed to facilitate direct or independent access to Space activities.

Secondly, as regards Space Policy’ design, associated resources and regulations, the power of initiative remains largely under the lead of governments and their Space agencies (top down approach) included at the international level, for Law and regulation making (COPUOS, CEOS, GEOS, COSPAR, IADC, Internal Charter on Space and Major Disaster...).

Thirdly, Competition Law limits nowadays Space agencies’ ability to support challenging projects initiated and mainly financed by private entrepreneurs

who intervene also in others sectors fully competitive such as internet industry and its mobile applications.

In these circumstances, new bottom up mechanisms need to be conceived to stimulate and secure in a balanced way international cooperation involving private and public actors.

From a lawyer practical point of view, these challenges, common to all the Space stakeholders, may be faced on focussing on the following matters at the national, regional and international level:

1. *New legal instruments of public-private cooperation* to secure public support (contracting and/or financing) on behalf of private initiative projects of general interest such as human missions to Mars, mining asteroids, prevention of collisions with Near Earth Objects, spatial meteorology, suborbital transport, Space debris removal...
2. *New mechanism of Space Law building*, involving the private sector as to facilitate consensus and legal certainty in undertaking such challenging projects.
3. *New mechanism for Space Governance* (and Space Policy elaboration) involving the Private sector.

Regardless to their national context, the following initiatives in France may be outlined as examples covering the above areas:

1. About *new legal instruments*, the “Future Investment Program” (*Plan d’Investissement d’Avenir – PIA*)³³ set up in 2010, managed by the Commissariat-General for Investment under the authority of the Prime minister, established a new bottom up mechanism in order to finance innovative and exemplary projects proposed by industry for example in the domains of the digital technology, the energy, environment, the factory of the Future. The global envelop assigned to this program stands nowadays at 57 billion of Euro. This program may include projects in Space systems or services areas, for which CNES as a Space agency may be selected as facilitator and/or Contract Officer on behalf of the Government. (Satellite Electric Propulsion, Microcarb and Merlin satellites on climate monitoring...).
2. On *Space governance*, a High Level Committee the CoSpace (for State Industry Consultative Committee on Space) was established in September 2013 by the Minister in charge of Space affairs, involving representatives of competent ministers,³⁴ CNES, ONERA,³⁵ prime

33 For more details on CGI an PIA see: www.gouvernement.fr/investissements-d-avenir-cgi.

34 Ministry of Foreign Affairs, Ministry of the Economy and Finance, ministry of the Industrial Recovery, the Ministry of Ecology, of the Sustainable development and the Energy, the Ministry of the Defense / D.G.A.)...

manufacturers (Airbus Defence and Space, Thales Alenia Space SNECMA...), Space equipment manufacturers, Space operators, scientific community, Space application users in order to associate the latest to the design of new Space policy and programs.

3. On *Space Law making* the “Collective for Space Care” initiative launched by CNES in June 2014, unites on a voluntary basis Space operators public and privates and any other partners who jointly acknowledge their responsibility for complying with international treaties and principles pertaining to Space matters, pursuant applicable Space legislations, and applying the best practices derived from them. This collective structure may also serve as a consultation forum to prepare next evolution of the Space Law.

The challenge remains now to consolidate and follow such initiatives at the European and international level to respond to the future needs of Space cooperation.

35 For “Office National d’Etudes et Recherche Aérospatiales”, the French Aerospace Lab.