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The European Space Agency as mechanism and actor of international cooperation

Submission by the European Space Agency

I. Introduction

The European Space Agency (ESA) is an international intergovernmental organization of 20 Member States and a model of international cooperation in the exploration and use of outer space. States cooperate *through* ESA, and ESA cooperates *with* other partners. In the first case, ESA can be considered a mechanism of international cooperation among States. In the second case, ESA is an actor of international cooperation. This paper presents ESA's structure, functioning and role in international cooperation in the peaceful exploration and use of outer space, at the occasion of the fifty years anniversary of European cooperation in space.

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The European Space Agency as mechanism and actor of international cooperation

Conference Room Paper prepared by
the ESA Legal Services Department
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Introduction

The European Space Agency (ESA) is an international intergovernmental organisation of 20 Member States[1] and a model of international cooperation in the exploration and use of outer space. States cooperate *through* ESA, and ESA cooperates *with* other partners. In the first case, ESA can be considered a mechanism of international cooperation among States. In the second case, ESA is an actor of international cooperation. Both cases have in common that space activities are undertaken on a large multilateral basis. This paper presents ESA's structure, functioning and role in international cooperation in the peaceful exploration and use of outer space, at the occasion of the fifty years anniversary of European cooperation in space.

Part I
ESA as mechanism of international cooperation

1.1 Origin, motivation and purpose

Two decades after the end of the second World War, political cooperation between European States had matured to the extent that the time was ripe for cooperation in the domain of science, including space. After the establishment of a European Organization for Nuclear Research (CERN) in 1954, two intergovernmental space organisations were set up in 1964[2]: the European Space Research Organisation (ESRO) and the European Organisation for the Development and Construction of Space Vehicle Launchers (ELDO); they had different missions, different membership and different methods of contract management. In addition, in the 1960s a European Conference for Satellite Telecommunications (CETS) was operative in the frame of the Intelsat Agreement negotiations, and a European Space Conference (ESC) was established. At the beginning of the 1970s, political agreement was reached to revise the ESRO and ELDO Conventions and to eventually create a new space organisation, ESA, through an institutional merger between the two predecessor institutions. In 1975, ESRO and ELDO were merged to become ESA.[3]

The motivation to seek institutionalised cooperation in space activities is described in the preamble to the ESA Convention: "The States parties to this Convention, CONSIDERING that the magnitude of the human, technical and financial resources required for activities in the space field is such that these resources lie beyond the means of any single European country, […]".[4] The main impetus is hence to pool resources in order to enable space activities. Such, the preamble to the ESA Convention

[1] Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland and United Kingdom;
[2] The ESRO Convention entered into force on 20 March 1964 (after a European Preparatory Commission for Space Research – COPERS – had been established in 1960 and the ESRO Convention has been opened for signature in 1962); the ELDO Convention entered into force on 29 February 1964 (after a diplomatic conference for adopting the Convention held in fall 1961).
[3] In practice, the transition and merger took place with the dissolution of one of the two organisations (ELDO), its activities being absorbed by the other one (ESRO) and then together transferred to the third, new one (ESA), representing a singular case of succession of States' obligations under international law.
[4] Preamble, sentence 1, ESA Convention 1975;

reminds that the exploration and use of outer space are resource-intensive, making forms of cooperation an interesting, if not imperative, choice.

The purpose of ESA is to provide for and to promote, for exclusively peaceful purposes, cooperation among European States in space research and technology and their space applications, whether for scientific purposes or operational space application systems.[5] The *"raison d'être"* of ESA is *cooperation*. Such cooperation shall be achieved through four lines of action:

a) by elaborating and implementing a long-term European space policy;
b) by elaborating and implementing space activities;
c) by coordinating the European space programme and national programmes;
d) by elaborating and implementing an appropriate industrial policy.

ESA is therefore mandated to be operative in the fields of *space policy, space activities and space coordination*. Member States and ESA shall facilitate the exchange of scientific and technical information; ESA shall take into account space transport systems developed through its programmes or by a Member State, shall make its facilities available to any Member State for the latter's national space programmes and shall provide assistance to Member States outside its own programmes but within its purpose. ESA is therefore not only a space agency in the meaning used by space-faring States. It is a facilitator of national programmes, an integrator of national programmes and the creator, coordinator and manager of the European space programme.

ESA's activities are limited to "exclusively peaceful purposes", a well-known term in the context of international space law. It is understood that the legal interpretation of this term is to be undertaken in consideration and respect of public international law, having due regard to instruments such as the Charter of the United Nations, the Outer Space Treaty and customary international law.

1.2 The mechanism

The mechanism of European space cooperation formally chosen as of 1975 is that of an international intergovernmental organisation (IGO) called the European Space Agency. ESA is a derived subject of public international law with international legal personality[6]; it is capable of having and enforcing rights and duties, and it is entitled to actions and responsibilities distinct from the ones of its Member States. With the choice of setting up a dedicated IGO, European space cooperation became *permanent* and *institutionalised*. The Treaty establishing ESA is commonly known as "the ESA Convention".

1.3 The ESA Convention: an international treaty

The "Convention for the establishment of a European Space Agency", opened for signature on 30 May 1975 and entered into force on 30 October 1980[7], is an international treaty containing 26 articles and five annexes[8].

[5] Art. II ESA Convention;
[6] The international legal personality of an IGO can be concluded from the existence of all main elements required for an IGO by the doctrine of public international law. In the case of ESA, such a conclusion is pre-empted by the ESA Convention clarifying that: "The Agency shall have legal personality." (Art. XV para.1 ESA Convention);
[7] The five years period between signature and entry into force was owed to political issues that still had to be resolved.

As founding treaty, it is ESA's most important legal document. In several Member States, it has been and remains the legal reference text guiding space activities. It was approved by the Conference of Plenipotentiaries held in Paris on 30 May 1975. Founding States are Belgium, Denmark, France, Germany, Ireland[9], Italy, The Netherlands, Spain, Sweden, Switzerland and the United Kingdom. The Convention entered into force on 30 October 1980 with the deposit of the instrument of ratification by France, in accordance with Art. XXI para.1 ESA Convention. The name "European Space Agency" and the ESA logo are protected by Art. 6ter 1.b[10] of the Paris Convention for the Protection of Industrial Property.

Since the entry into force of the ESA Convention in 1980, the founding States have been joined by other European States through accession following a decision of the ESA Council taken by unanimous vote of all Member States (Art. XXII para.1 ESA Convention): Austria and Norway (1986), Finland (1995), Portugal (2000), Greece and Luxembourg (2005), the Czech Republic (2008), Romania (2011) and Poland (2012). Other States have expressed interest in acceding to the ESA Convention in the future; they are being prepared through a special mechanism[11] to eventually become Member States. The relation between ESA and Canada is based on a Cooperation Agreement.[12]

Membership in ESA, as in any other IGO, entails rights and obligations. All Member States shall participate in the so-called mandatory activities (see below) and contribute to the fixed common costs of the Agency (Art. I para.3 ESA Convention).

The content of the Convention can be structured along four building blocks:

a) purpose, activities and programmes of ESA;
b) industrial policy;
c) organs, financial and administrative set-up of ESA; and
d) treaty-technical articles.

All acts of ESA find their legal basis and extent of competence in the ESA Convention.

1.4 The organs of ESA

The foundation of will and the exercise of assigned competences of an IGO materialise through at least one organ, traditionally two: an executive organ and a collegial organ (the latter regularly but not always being the law-making organ). The organs of ESA are the Council and the Director General assisted by a staff (Art. X ESA Convention).

1.4.1 The Council

The Council is ESA's "supreme organ, the legislative, the decision-maker"[13]. As plenary (i.e. collegiate) organ, it can take various forms:

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[8] Annex I (Privileges and Immunities), Annex II (Financial Provisions), Annex III (Optional Programmes Covered by Article V, 1 b of the Convention), Annex IV (Internationalisation of National Programmes) and Annex V (Industrial Policy);
[9] Ireland was the only State of this group not having been Member State of the predecessor organisations ELDO and ESRO.
[10] "Marks: Prohibitions concerning State Emblems, Official Hallmarks, and Emblems of Intergovernmental Organizations";
[11] "European Cooperating States" agreement between ESA and the respective State;
[12] Cooperation Agreement between the European Space Agency and the Government of Canada, signed on 15 December 2010 and in force until 31 December 2019; Canada shall benefit from all activities executed under ESA's General Budget, except the basic technological research programme, can participate in ESA's mandatory and optional activities, shall contribute to ESA's budget according to a specified key and can participate in ESA's delegate bodies meetings according to specified rules.
[13] G. Lafferanderie, European Space Agency, Kluwer Law International, The Hague 2005, p.57;

a) Council at delegate level: At working level during its quarter-yearly meetings, the Council is composed of delegates nominated by their respective governments (and sometimes assisted by advisors).
b) Council at ministerial level: In its form as Council at ministerial level, it is composed of the ministers competent for space of ESA's Member States. Such Council meetings are held regularly, usually every two to four years, depending on political considerations and developments.

The decision competence of the Council is independent from its actual composition. Although important programmatic decisions are usually taken during Council meetings at ministerial level, the Council at delegate level can equally form and express the will of ESA. It remains the same plenary organ in different compositions. The Council and its competences are described in detail in Art. XI ESA Convention; its working and voting methods are laid down in the 'Council Rules of Procedure'. Since the amount, complexity and duration of ESA space programmes is such that the Council could impossibly prepare and follow all of them, the Convention foresees the possibility to establish *subordinate bodies* "as may be necessary for the purpose of the Agency". The establishment and terms of reference of such bodies, and the cases in which they have powers of decision, shall be determined by the Council by a two-thirds majority of all Member States (Art. XI para.8.b ESA Convention). While the Convention explicitly foresees the establishment of one such subordinate body, the Science Programme Committee (SPC), to which the Council "shall refer any matter relating to the mandatory scientific [i.e. *space science*] programme"[14], other additional bodies, such as the various Programme Boards and Committees, have been established. Together, they allow the respective expert delegates of ESA's Member States to cooperate in an efficient manner.

The ESA Convention provides for the decision-making mechanisms (unanimity, majority voting) needed to form the will of the Agency. At the same time, the Council is a forum of inter-governmental cooperation, namely when it comes to the decision on the content of optional activities, manifested through a Programme Declaration. In such cases, ESA Member States agree *between themselves* on a programme (within the purposes and using the scientific and technical means of their common Agency); in other words, it is not the collective that acts, although debate and decision are usually done in the *physical* setting of a Council meeting. It is important to distinguish these two forms.

1.4.2 The Director General

The second organ of ESA is the Director General. This function includes being the chief executive officer and legal representative of ESA (Art. XII ESA Convention). The selection of a person for the post of Director General of ESA follows a defined procedure under the authority of the Council. The Director General is elected with two thirds majority of all Member States.

1.5 The distinction between mandatory activities and optional activities as central element of the cooperation mechanism

Art. V ESA Convention is a central stipulation, introducing a special mechanism of inter-governmental cooperation that is seen by many as key to the functioning of ESA: *the distinction between mandatory activities and optional activities.*

[14] For the distinction between mandatory and optional programmes, see below chapter 1.5.

Mandatory activities (Art. V para.1.a ESA Convention) are a set of defined activities to which all ESA Member States are obliged to contribute. They include a) "basic activities" such as education, documentation, future projects studies and technology research; b) the elaboration and execution of a scientific programme "including satellites and other space systems"; c) information collection and dissemination and assistance for the harmonisation of programmes; and d) regular contact with space technology users to keep informed of their requirements. Mandatory activities are suggested by the Director General as ESA's executive organ to the Council through the "Director General's proposal for the Level of Resources for the Agency's Mandatory Activities", covering a timeframe of five years. The level is approved by Council by unanimity of Member States; the execution is based on a majority decision.

'Optional' activities (Art. V.1.b ESA Convention) are activities that are decided by some or all ESA Member States – not by ESA as IGO – based on national and cooperative interests, i.e. when the need for such activities arises. Their scope is outlined as "including" the design, development, construction, launching, placing in orbit and control of satellites and other space systems, and the design, development, construction and operation of launch facilities and space transport systems. The legal and administrative mechanism necessary to set up optional programmes is detailed in Annex III ESA Convention.

The legal difference between the two activity types is such that mandatory activities are decided and carried out by ESA as IGO while optional programmes are decided by some or all ESA Member States on inter-governmental basis and through an international agreement ("Programme Declaration", see below); however, they too are carried out by ESA as IGO, based on an ex-ante acceptance of the respective activity by the Council by a majority of all Member States ("Enabling Resolution") and acceptance of the related "Implementing Rules" adopted under the Convention and containing specific programmatic modalities. Those ESA Member States participating in an optional activity are called "participating States".

Optional activities allow ESA Member States to configure the type and extent of their ESA involvement, beyond their obligations emanating from the ESA Convention, and thus their cooperation in outer space activities according to political, strategic, industrial and scientific interests. The mandatory activities in turn are important because their scientific and technological content is a stable contributor to knowledge, innovation and competitiveness in Europe. Mandatory and optional activities have allowed ESA and its Member States, over decades, to get the right "programmatic blend" responding to ESA's purpose laid down in Art. II of the ESA Convention, namely to provide for and promote cooperation among European States in space research and technology and their space applications.

1.6 Other activities

In the area of space applications, ESA can carry out *operational activities* for (other) agencies (Art. V para.2 ESA Convention). To this end, it can place its own facilities at the disposal of those agencies, launch "operational application satellites", place them in orbit and control them, as well as carry out other activities if requested by users and approved by the Council. ESA can also make its own facilities available to any Member State that asks to use them for its own programmes (Art. IX para.1 ESA Convention). This is done at the cost of the requesting State and only insofar as ESA activities are not jeopardised. Likewise, ESA can make its assistance available to Member States that "wish to engage in a project" outside ESA programmes (but within the purpose of ESA; Art. IX para.2 ESA Convention).

For both ESA and Member States programmes, the ESA Convention foresees what can be called an "efficiency precept": In implementing their respective programmes, both shall "endeavour to make the best use" of existing facilities and services, and refrain from setting up new facilities or services without having examined the possibility of using the existing ones first (Art. VI para.2 ESA Convention).

1.7 ESA as source of law-making

1.7.1 Overview of acts

The ESA Convention is the prime source and overarching structure for a wide variety of acts, including many which contain legal obligations. The Council approves mandatory activities, determines the Agency's Level of Resources, adopts Resolutions and Recommendations, accepts optional programmes, adopts annual work plans and the annual general budget, adopts Rules and Regulations[15], approves the audited annual accounts and decides on the admission of new ESA Member States. The powers of decision are codified in the ESA Convention and related texts such as the "Council Rules of Procedure". The Director General, as "chief executive officer of the Agency and its legal representative" (Art. XII para.1.b ESA Convention), takes all necessary measures for the management of the Agency, including the issue of administrative and other instructions which are binding for ESA staff and the delegation of authority in defined cases. The Appeals Board settles employment issues between the Agency and staff members in the absence of a recourse possibility to national jurisdiction. Most interesting from an international cooperation perspective are the various types of international agreements, including treaties, that can be concluded a) under the ESA mechanism or b) with ESA.

1.7.2 ESA at the creation of international law

Art.2(1)a of the Vienna Convention on the Law of Treaties (VCLT) contains a widely accepted definition of the term 'treaty', suggested by the International Court of Justice (ICJ) to reflect customary international law[16]: *a "treaty" means an international agreement concluded between States in written form and governed by international law, whether embodied in a single instrument or in two or more related instruments and whatever its particular designation*. Following this constitutive approach, and being aware that the VCLT applies to treaties between States, it can be stated that

a) under the ESA system, new treaty law is generated every year; and that
b) ESA itself is not necessarily and not always party to any such treaty or agreement.

1.7.2.1 Programme Declarations (*contracting parties: ESA Member States)

In the case of setting up an optional programme, the legitimated parties are some or all ESA Member States reaching agreement (the "Programme Declaration") among each other. The Council as organ of ESA can only accept (the principles of) such a programme ex-ante (when it verifies that the scope and objectives are in accordance with the ESA Convention), take note of the related Programme Declaration once it is submitted to it as information, and approve the related implementing rules (since the latter concern the execution of the programme, which is undertaken by ESA, not by the Participating States; the execution must therefore be in accordance with the ESA Convention and such implementing

[15] such as Financial Regulations, Staff Regulations, Procurement Regulations, General Clauses and Conditions for ESA contracts, Security Regulations, Rules on Information, Data and Intellectual Property or Rules on Arbitration (beyond those already contained in the ESA Convention); these core documents are publicly available (www.esa.int).
[16] e.g. ICJ Rep 249 [263] 2002;

rules). Programme Declarations for ESA optional programmes are international agreements.[17] They are concluded under the frame of the ESA Convention which stipulates the legal conditions for their formation, execution and termination.

1.7.2.2 Other international agreements and treaties (*contracting parties: ESA + ESA Member States; ESA + Third Parties; ESA + ESA Member States + Third Parties)

ESA can conclude international agreements, including international treaties, with third parties, be it ESA Member States or other subjects of international law, such as States (represented through governments, governmental agencies or other institutions competent to enter in a respective agreement), or inter-governmental organisations. In these cases ESA becomes contracting party and assumes legal rights and obligations by which it is bound as organisation. Here, ESA can be considered an *actor* of international cooperation with legal capacity to be party to and creator of international commitments and acts. This capacity comes as the necessary complement to the inter-governmental mechanism. Details are described under Part II.

1.7.3 Legal guarantees and political justification

Under the umbrella of the ESA Convention, the establishment of international agreements – treaties, implementing agreements, memoranda or exchanges of letters with legally binding provisions – is significantly facilitated: Thanks to the inter-governmental mandate and the effective and clear legal system, it is possible to create, modify, re-arrange, add to or terminate European space programmes without going through the lengthy ratification and incorporation processes foreseen for new international obligations at national level. Considering that such mechanism is already contained in the national laws of ratification of the ESA Convention itself, the States representatives are empowered by their national law to conclude such international acts. Also this is an important aspect of flexible decision-making, indispensable for space cooperation.

While the legitimacy for such acts derives directly from the ESA Convention, the political legitimation is further enhanced by the fact that the Council is not only meeting at delegate level, but regularly at ministerial level. In a Council meeting at ministerial level, the governments of ESA Member States are therefore represented at highest political level, enabled to exercise their decision-making competence.

1.7.4 Legal and contractual capacity under national law

The legal and contractual capacity of inter-governmental organisations is widely accepted in national jurisdictions, especially in those of the Member States of the respective IGO. For the part of ESA, this acceptance is directly rooted in the acceptance, through ratification, of the ESA Convention by its Member States: "[ESA] shall in particular have the capacity to contract, to acquire and dispose of movable and immovable property, and to be a party to legal proceedings."[18] This is of utmost importance for ESA: It is only through this capacity that ESA can fulfil its purposes of implementing space activities and programmes as well as the appropriate industrial policy through placing industrial contracts.

[17] They may also be seen as treaties in the sense of Art.2(1)a VCLT. The actual qualification does not change the assertion that Programme Declarations contain mutual commitments and legal obligations between States and trigger the application of the fundamental principle of "pacta sunt servanda".
[18] Art. I sentence 2 of Annex I to the ESA Convention;

1.8 Budget

Like other IGOs, ESA achieves it purposes through contributions paid by its Member States. The obligation to pay such contributions is laid down in Art. XIII ESA Convention. The household of ESA is not based on one global budget. Instead, two elements must be distinguished:

a) Mandatory activities: Member States contribute to the cost of the mandatory activities in accordance with a scale adopted by Council every three years. This scale is based on the average national income of each Member State for the three latest years for which statistics are available.
b) Optional activities (programmes): Participating States contribute to the cost of each optional programme on the basis of the average national income and their specific interest to invest in that programme.

In both cases, however, the ESA Convention stipulates that "no Member [or participating] State shall be required to pay contributions in excess of twenty-five percent of the total amount of contributions".

1.9 Industrial policy

The ESA Convention not only tasks the Agency to elaborate and apply an industrial policy appropriate to its programmes (Art. II para.d ESA Convention) but it also lists the objectives of such a policy[19]: a cost-effective response to requirements of the European and the coordinated national space programmes; the improvement of the "world-wide competitiveness of European industry"; free competitive bidding "except where this would be incompatible with other defined objectives of the industrial policy"; and the safeguarding that all ESA Member States participate (in ESA) in an "equitable manner, having regard to their financial contribution". To meet these objectives, the Convention (Annex III) lays down a series of provisions. In placing contracts, ESA shall give preference to industry and organisations of the Member States or, in the case of optional programmes, to industry and organisations of *participating* States. As an expression of the industrial policy, the Council has the power to approve adapted Procurement Regulations. The actual industrial contracts are awarded directly by the Director General, representing the Agency (except in specific cases which necessitate a Council decision).

The geographical distribution of industrial contracts follows a set of special rules, among which the principle of fair geographical return (or "juste retour principle") is described as follows: *"A Member State's overall return coefficient shall be the ratio between its percentage share of the total value of all contracts awarded among all Member States and its total percentage contributions. (…) Ideally the contribution of contracts placed … should result in all countries having an overall return coefficient of 1 (…) provided that it shall be never lower than 0.8."*[20] The fair return principle has, ever since the establishment of ESA, allowed an equitable participation of European States in the common and concerted exploration and use of outer space.

As a progressive method of cooperation and tool of coordination of national policies, ESA's industrial policy remains inherently dynamic, which is why numerous Council meetings (both at

[19] Art. VII para.1 ESA Convention; this list is demonstrative insofar as the Convention expressly authorises the ESA Council to define other objectives by unanimous decision of Member States.
[20] text elements of Art. IV, Annex III to the ESA Convention;

ministerial and delegate level) have resulted in decisions on ESA's industrial policy, from adjusting the return coefficient limit to elaborating and refining a system of "checks and balances" in the best interest of ESA Member States.

1.10 Results: an overview of facts & figures of space cooperation through and with ESA

ESA has today about 2200 staff members, deployed over its headquarters, establishments and centres in Europe and additional offices and stations around the world, including the European space port in Kourou, French Guyana[21]; it manages a budget of app. 4100 Million Euro in 2014[22,23], has developed and in part operated a fleet of more than 80 satellites and spacecraft (including substantive contributions to the International Space Station), has developed six types of launchers, manages about 60% of all public space spending in Europe, spends about 85% of its budget on contracts with European industry and performs activities and programmes in all major fields including space science, robotic exploration, Earth observation, navigation[24], telecommunication, launchers, technology, operations and human spaceflight. Currently, some 80 programmes are executed in parallel. As a treaty-making party, ESA has concluded so far more than 400 international agreements with governments, space institutions and IGOs.

Milestone exploration missions such as *Giotto*, performing the first-ever fly-by of a comet (1986), *Huygens*, performing the first soft landing on the surface of a planetary body beyond Mars (2005), or *Rosetta*, tasked to deploy the first ever landing unit on a comet (later in 2014) stand next to one of the world's leading Earth observation programmes (with state-of-the-art Earth science and application missions including the *Earth Explorers* as well as the *Sentinel* fleet of satellite 'families' to be deployed as of 2014) or ESA's long-term involvement in establishing the first permanently inhabited, international human outpost in Earth orbit – the *International Space Station*.

Many of these achievements are not successes of ESA alone. They are equally owed to partners around the world who contributed with their knowledge, experience, technical capacities, financial resources, space and ground infrastructure or political support. Many of these realisations are thus a reminder that ESA is not only a mechanism but also an actor of international cooperation.

[21] co-operated with France (on the basis of a special agreement);
[22] 3339.3 Million Euro own budget for ESA activities and programmes and 762.7 Million Euro managed budget for programmes implemented for other institutional partners (European Union, EUMETSAT and others);
[23] In 2012, ESA's mandatory activities represented 15% of the total cost, optional programmes 59%, programmes financed by Third Parties 14%; 4% were associated to General Budget and 8% were other budgetary items (Source: ESA Annual Report 2012, ESTEC, Noordwijk 2013).
[24] The largest part of ESA's current navigation programmes is financed by the European Union.

Part II
ESA as actor of international cooperation

2.1 The general framework of ESA for international cooperation

Like any other aspect of ESA, the Agency's general framework for international cooperation derives from the Convention. Although international cooperation is not listed as one of the *purposes* of ESA, it is explicitly or implicitly referred to in various stipulations – notably Art. XIV ESA Convention – and it is evident that cooperation is a central *instrument* to achieve the purposes of ESA.

Art. XIV ESA Convention empowers ESA to cooperate with a) other international organisations and institutions and b) with Governments, organisations and institutions of non-member States. It suggests that such cooperation may take the form of participation in the mandatory scientific programme or in optional programmes. Any cooperation is approved by the Council with unanimous vote of all Member States. This requirement of unanimity ensures that any international cooperation is based on a common, solid political mandate from *all* ESA Member States. Cooperation arrangements under the Convention can even include granting a voting right to a non-member State or international organisation in particular cases. There are other forms of cooperation such as according associate membership to non-member States[25], and the wording of Art. XIV[26] leaves room for further ways of cooperation.

The second level of the Agency's general framework for international cooperation is a Council Resolution of 1977, "Resolution on the Agency and its External Relations"[27]. Two years after signature of the ESA Convention, the Council at ministerial level recognised, through this Resolution, the importance for ESA to set up, maintain and develop relations with non-member States and international organisations and the necessity for harmonising such cooperation activities with those of ESA Member States; furthermore, it provided a basis on which the Agency must conduct its international cooperation activities:

a) The Director General proposes annually a list of international cooperation actions to the Council;
b) The Council approves this list unanimously ("[h]aving considered the political, industrial, economic and financial aspects of the envisaged cooperation");
c) Later modifications are subject to unanimous approval by Council;
d) Requests or initiatives emanating from non-member States or international organisations must be reported by the Director General to the Council who can unanimously accept them and define related modalities;
e) The Director General keeps the Council informed of agreement negotiations or executions and reports to the Council a detailed account of all external relation activities "at least once a year".

In line with this basis, a comprehensive list of ESA's international relations activities is proposed to Council each year, usually in December, for the coming calendar year, after it has been examined and recommended by the International Relations Committee (IRC; see below). The Council is then invited to approve the directions the Director General intends to follow in carrying out international relation activities during the coming year.

[25] This option has been chosen in the case of Canada.
[26] "… cooperation may take the form of …";
[27] ESA/C-M(February 1977) Res.4, 15 February 1977; in addition to the legal basis for international cooperation activities described above, the quoted Resolution also lays the basis for the ESA's contacts and actions with "external markets".

2.2 The International Relations Committee (IRC) of ESA

Being one of the subordinate bodies[28] established[29] by the ESA Council, the IRC meets three to four times during a calendar year to exercise the following functions:

a) to assist the Council in concerting Member States' space policies … with the aim of arriving at common positions in international bodies
b) to prepare the Council decisions relating to ESA's international relations
c) to provide the Council with opinions regarding international relations
d) to submit views and recommendations to other delegate bodies of ESA or the Director General

To that end, the IRC receives reports and information, e.g. progress reports on the negotiation of international agreements, information notes on space activities of non-Member States and international organisations or notes on questions of international law including space law.

The terms of reference of the IRC also foresee that the government representatives participating in the Committee's work shall hold 'concertation meetings' during meetings of (other) international organisations and institutions, whenever necessary. This is the basis on which ESA annually organises meetings among its Member States in preparation of and during the sessions of the UN COPUOS and its two Subcommittees.

2.3 Treaty-making power

Treaty-making power is an important aspect of ESA's international legal personality. It is only through this power that ESA can be a fully-fledged actor in international space cooperation. While it is argued that IGOs possess a limited treaty-making power independently from a formal authorisation by their member States, the ESA Convention expressly foresees this possibility in Art. XIV para.1: "The Agency may, upon decisions of the Council taken by unanimous votes of all Member States, cooperate with other international organisations and institutions and with Governments, organisations and institutions of non-member States, *and conclude agreements with them to this effect*."

2.4 Legal instruments used by ESA as partner in international cooperation

There are several forms of legal instruments used by ESA when defining rights and obligations in the relation with cooperation partners. While they can all be qualified as international agreements in substance, as long as they correspond to some basic elements of definition (international / agreement / between subjects of international law / in written form / governed by international law), they differ in their purpose, designation, character and depth of detail, and the legal basis as well as administrative procedure necessary to draw up the instrument (including an eventual delegation of authority from the Director General to conclude the agreement for ESA). Instruments include[30]:

[28] Art. XI para.8.b ESA Convention;
[29] Resolution ESA/C/I/Res.2 (24 June 1975), later modified through Resolution ESA/C/XLIX/Res.2 (30 June 1981)
[30] This list is not exhaustive, and designations are not always uniform.

a) Cooperation agreements
b) Other international agreements
c) Implementing arrangements (usually dependant on the existence of a higher-level agreement)
d) Memoranda of Understanding (as far as they contain legal obligations)
e) Exchange of letters (as far as they contain legal obligations)

The distinction between Cooperation agreements and individual implementing arrangements is a peculiarity of the ESA system. While the first type establishes the legal framework and outlines the principles of cooperation with a certain partner – purpose, areas of cooperation, modalities of implementation, liabilities, settlement of disputes – the latter instruments particularise a concrete project-based cooperation to be undertaken under the general framework. Cooperation agreements require unanimity at Council level, while for the approval of the "detailed arrangements", a two-thirds majority of participating States suffices. Like this, ESA can react rapidly to cooperation needs expressed by partners with whom cooperation in principle is already established and formalised.

Opposite to the case of ESA Programme Declarations, ESA is party of any international agreement with a third party governed by public international law (its Member States are not). That means that to the effect of concluding any such agreement, the Council acts as collective organ of ESA forming and expressing a distinct will (i.e. the will of ESA). ESA, represented by the Director General, can then enter into the agreement, with all legal consequences.

2.5 ESA cooperating with non-member States

Considering that, by 2014, more than sixty States have national space programmes, international cooperation by ESA with non-Member States is not only a strategic consideration but a necessity. This cooperation is executed along a set of constantly evolving strategic guidelines[31] balancing cooperation and competition objectives and providing the basis for the Agency's international activities. The guidelines include securing an ESA participation in resource-intensive and complex programmes important for the European space sector (e.g. the International Space Station); leveraging ESA resources; securing operational support to ESA missions (e.g. through ground stations located outside ESA Member States' territory); optimising data access and mission exploitation; and serving global objectives (e.g. space data and services provision to developing countries). Non-Member States cooperation in Europe focuses on States participating in the "European Cooperating States" (ECS) programme, a scheme established to implement a step-wise approach preparing candidate States for an accession to the ESA Convention (i.e. for ESA membership); there is also manifold cooperation with other European States. Outside Europe, ESA focuses on cooperation frameworks and activities with its main international partners, in particular the USA, Russia, China, Canada and Japan, while also cooperating with many other States in the Mediterranean and Asia-Pacific regions, Latin America and Africa.

2.6 ESA cooperating with international organisations

ESA maintains relations and engages in international cooperation activities with several IGOs around the world. Among them are:

[31] These guidelines are also valid for cooperation activities with international organisations.

2.6.1 European Union (EU)

The EU is an important partner for ESA.[32] The cooperation between ESA and the EU has been formalised through the "Framework Agreement between the European Space Agency and the European Community[33]", an international treaty signed between the two organisations in 2003 and entered into force in 2004 (currently running up to 2016). Its purpose is defined in Art.1 as the development of an "overall European Space Policy" and the establishment of a framework for "appropriate (…) cooperation" between ESA and the EU. Cornerstones of this cooperation are:

a) […] due regard to their respective tasks and responsibilities and their respective institutional settings and operational frameworks (Art.2.1);
b) […] each Party […] in compliance with its own prerogatives, legal instruments and procedures (Art.4.1);
c) […] reference to the competencies and capabilities of the other (Art.4.3);
d) […] financial contribution[s] made by one Party […] shall be governed by the financial provisions applicable to that Party (Art.5.3);

Fields of cooperation include all areas of space activities: science, technology, Earth observation, navigation, satellite communication, human spaceflight, micro-gravity research, launchers and space-related spectrum policy. The main method of cooperation are so-called "joint initiatives". In addition, "Space Council" meetings have been established as joint and concomitant meetings of the Council of the European Union and the ESA Council at ministerial level. After cooperation on EGNOS[34] (operational since 2009), ESA and the EU currently focus their cooperation on two EU "flagship programmes", Galileo and Copernicus, for which ESA provides technical and procurement capabilities indispensable for the EU to carry out a space programme.

2.6.2 European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT)

EUMETSAT is an IGO with the purpose of providing weather and climate-related satellite data, images and products to the National Meteorological Services of its Member and Cooperating States and other users. Its foundation in 1986 was directly linked to the successful establishment of a European satellite-based meteorological programme through ESA (the first geo-stationary "Meteosat" mission had been launched in 1977) and its long-term, operational character which necessitated its "outsourcing", coupled with the establishment of a new, specialised IGO. Today, the relation between ESA and EUMETSAT is covered by a series of programme-related agreements for the development, by ESA, of new meteorological missions and their handover, after launch, to EUMETSAT for their exploitation.

Similar cases of proliferation of ESA activities of longer-term, operational character are associated with the establishment of or hand-over to the European Telecommunications Satellite Organisation (Eutelsat) or Arianespace.

2.6.3 United Nations Organisation and related organisations

ESA entertains contacts, including the carrying out of cooperative activities and the exchange of relevant information, with several organisations under the frame of the United Nations system. These organisations include the International Telecommunications Union (ITU), the Food and Agriculture

[32] The Treaty on the Functioning of the European Union (Lisbon, December 2007) introduced a "space competence" of the EU existing in parallel to the national space competence of EU Member States (Art.4(3) TFEU).
[33] now European Union;
[34] European Geostationary Navigation Overlay Service;

Organisation (FAO), the World Meteorological Organisation (WMO) and the United Nations Educational, Scientific and Cultural Organisation (UNESCO). ESA's activities with these organisations range from the provision of information and data (e.g. remote sensing satellite data) or technical assistance to the organisation of training sessions, the support of public events or the participation in international coordination activities, all being elements in promoting space and human development. ESA was also an active supporter of the UNISPACE conferences in 1982 and 1999.

2.7 ESA as partner in international initiatives

ESA is an actor in the frame of regional or global space-related initiatives and institutions. Such, the Agency was a founding member of the international coordination mechanism 'Committee on Earth Observation Satellites' (CEOS). ESA also founded, together with the French Space Agency (CNES), the International Charter Space and Major Disasters, a cooperation mechanism between owners and operators of Earth observation missions to allow for rapid access to satellite data in the event of a natural or man-made disaster, helping disaster management authorities and relief organisations around the world. ESA is a partner in many other cooperative initiatives, for example in the fields of space debris mitigation[35], space system standards[36], etc.

ESA also plays a role in regional cooperation and capacity building. In 2002, the Agency launched the TIGER initiative to respond to the need for action in Africa stressed by the Johannesburg World Summit on Sustainable Development. Through TIGER, ESA is assisting African partners in the collection, analysis and use of water related geo-information for improved Integrated Water Resources Management. TIGER has grown into an international collaborative effort which, during meanwhile 12 years of operation, has assisted more than 150 African water authorities and research institutes in 42 States. In Asia, ESA has launched the DRAGON initiative, a cooperation between ESA and the People's Republic of China exploiting Earth observation data for geo-science and applications development.

2.8 Dispute settlement in the wake of international cooperation

The most common method defined for dispute settlement in international agreements between ESA and its international partners is arbitration, although it was never actually enforced. Disputes between ESA Member States or between ESA and one or more of its Member States shall first be settled by or through the Council; as a second line of action, arbitration through a dedicated Arbitration Tribunal can be requested (Art. XVII ESA Convention). The award of such a tribunal, which is to be set up and run according to rules of the ESA Convention and special procedural rules decided by Council, is final and binding.

2.9 ESA and international space law

The emergence of international space law, whether through treaty or custom, is another manifestation of international space cooperation through the rule of law. ESA takes an active role in this

[35] ESA has co-founded the Inter-Agency Space Debris Coordination Committee (IADC); see below chapter 2.9.2.
[36] ESA has long been a supporter of space standardisation, in particular through its commitment to the European Cooperation for Space Standardization (ECSS), established to develop a coherent set of standards for all European space activities.

field, notwithstanding it not being a State. In 1975, the ESA Council decided to accept the rights and obligations provided for in

a) the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space,
b) the Convention on International Liability for Damage Caused by Space Objects and
c) the Convention on Registration of Objects Launched into Outer Space.[37]

The related decisions were taken in the form of Council "Declarations" unanimously approved by the then ESA Member States, considering that the majority of them were parties to (or had signed) these international treaties, and acknowledging that the establishment of rules and procedures for outer space activities would contribute to the "strengthening of international cooperation". As of the moment of its foundation, ESA therefore applied and supported space law not only as normative necessity but also as instrument of international cooperation. ESA is committed to respect its resulting international obligations and to give a guiding example where possible.

2.9.1 The internal regulation of ESA's international liability for space activities

The consequences of ESA's international liability for space activities are regulated in Council Resolution ESA/C/XXII/Res.3 from 13 December 1977 ("Resolution of the Council of the European Space Agency on the Agency's Legal Liability"). The main principles are:

a) If the injured State is an ESA Member State, it shall always present its claim for compensation firstly to the Agency.
b) If a claim is addressed to ESA, the Agency shall conduct the proceedings.
c) If a claim is addressed to a Member State, the Agency may join the proceedings and "substitute itself for the State involved if the latter so requests"

The question of internal (horizontal) regress, e.g. distribution of financial burden between ESA and its Member States, is regulated in Art. III of the Resolution as follows: "(…) the expenditure made by the Agency in respect of compensation for damage will be charged to the States participating in the programme concerned, proportionally to their financial contributions to the said programme on the date when the damage occurred if it occurred during the programme, or on the date of termination of the programme if the damage occurred after that date."

2.9.2 The internal regulation of space debris mitigation

ESA has taken an active role in the establishment of international space debris mitigation mechanisms and standards, through its involvement in the Inter-Agency Space Debris Coordination Committee (IADC) and through its endorsement of the European Code of Conduct for Space Debris Mitigation of 2004. The Director General's instruction "Space Debris Mitigation for Agency Projects"[38] fully aligns ESA's space debris mitigation policy to ISO standard 24113 "Space Systems – Space Debris Mitigation Requirements" (issued in May 2011 and later adopted by the European Cooperation on Space Standardisation (ECSS) initiative as the ECSS-U-AS-10C standard in 2012). The Instruction establishes the ESA standard for the technical requirements on space debris mitigation for Agency projects, it sets out the principles governing its implementation and the definition of internal responsibilities.

[37] International organisations cannot be party to the Outer Space Treaty.
[38] The first such instruction entered into force in April 2008; it has been replaced by an updated instruction in March 2014.

2.9.3 The internal regulation of space object registration

ESA is presumably the first IGO to specify the internal procedure responding to the obligations of Articles II and IV Registration Convention through a dedicated, legally binding[39] act: the Director General's Administrative Instruction "ESA Space Object Registration Policy", to enter into force in March 2014. This document lays down the procedure and associated responsibilities for internal and external registration of ESA space objects. It is based on the best practice of the Agency and shall guarantee – at any time – up-to-date, accurate and centralised information about space objects launched under ESA's responsibility and associated liability. It is complemented by an updated ESA-internal register of space objects maintained by ESA's Legal Services Department and technically associated to the Agency's DISCOS[40] database.

2.9.4 The internal regulation of and external cooperation in space mission frequency assignment

As space agency developing and implementing space missions, ESA is following a detailed internal procedure for frequency assignment, in full respect of the international instruments and practice established under the frame of the ITU. Also in this case, an administrative act – the Director General's instruction "ESA Frequency Assignment", entered into force in February 2004 – has been issued as formal basis of action. Besides, ESA is contributing to the deliberations of the ITU and takes part in the European coordination process for the World Radio Conferences. Together with NASA, ESA has created the informal "Space Frequency Coordination Group" (SFCG) of space agencies, national institutions and international organizations, to which it provides the permanent Executive Secretary.[41] ESA has also entered into international agreements on the use and protection of radio frequencies with States on whose territory ESA ground stations are located.

2.9.5 UN COPUOS

ESA/ESRO has been an observer to the UN COPUOS since 1973 and a permanent observer since 1975. It actively promotes the importance of the UN COPUOS and its deliberations. ESA also acts as facilitator, through the IRC sessions and ad hoc meetings, for the coordination of positions among its Member States.

2.9.6 European Centre for Space Law (ECSL) and other initiatives

The ECSL was established in 1989 based on the initiative of ESA's Legal Department. Its purposes are, inter alia, to complement, coordinate, exploit and further develop European efforts and resources in space law research, to promote knowledge of and interest in space law; to facilitate information and ideas exchange "across disciplinary and national lines with the aim of improving both the technical understanding of those concerned with space-law research and the legal understanding of those concerned with the production, use and operation of space technologies"[42]; to identify areas in which regulation is appropriate, to discuss and propose principles and draft norms which may be promoted at national or European level; and to promote the establishment and development of national centres for space law. The ECSL is guided a Board and run by an Executive Secretariat hosted by ESA.

[39] Within the ESA legal system, the Director General's administrative instructions and policies are binding for all ESA staff, who, in applicable cases, have to ensure the correct implementation of such acts in ESA's relation with third parties.
[40] "Database and Information System Characterising Objects in Space", a state-of-the-art space object catalogue maintained by ESA's Space Debris Office at the European Space Operation Centre (ESOC) in Darmstadt, Germany;
[41] The objectives of the SFCG include the adoption of agreements that allow space agencies to make best use of allocated frequency bands, while avoiding interferences, and to identify common long-term targets related to spectrum use.
[42] Art.2 para.3 ECSL Charter;

ESA, based on an early Council decision, also determined the creation of the European Space Policy Institute (ESPI)[43] which is tasked to provide decision-makers with an informed view on issues relevant to Europe's space activities. ESPI is supervised by a General Assembly comprised of representatives of its member institutions and supported by an Advisory Council of renowned personalities. ESA continues to support the Institute in various ways, including the secondment of staff.

ESA is a full member of and contributes to EURISY, an association connecting space and society, founded in 1989 under French law.

Conclusion

a) ESA is a *mechanism* of international cooperation in outer space activities, taking the form of an international intergovernmental organisation with international legal personality recognised by its Member States and many other States of the international community.
b) Because of its legal personality, ESA is also an *actor* of international cooperation in outer space activities, cooperating with institutional and State partners around the world, often using instruments of international law as foundation for such cooperation.
c) The ESA legal and industrial policy system allows for the necessary *flexibility* of taking into account the particular interests of its Member States while at the same time guaranteeing the necessary *stability* of a core European space programme.

ESA has been a flexible mechanism, an innovative actor and a reliable cooperation partner in the exploration and use of outer space for half a century. The ESA Convention has proven to be a robust basis for enabling the functioning of this multilateral mechanism comprising meanwhile twenty European States, and growing.

Legal Services Department
European Space Agency
March 2014

[43] ESPI is an association under Austrian law and has its office in Vienna. It was established by ESA and the Austrian Research Promotion Agency in November 2003; the ESPI statutes were signed in 2005 and updated since.