

# ESA AND EU COOPERATION FOR A BETTER FUTURE OF THE EUROPEAN CITIZENS

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## ABSTRACT

The topic of this paper is the relationship between ESA and the EU. In the past, space research was technologically oriented, while nowadays it is turning toward a policy-driven orientation. In former times space policy was managed national and at intergovernmental levels while today there is a growing realisation of the importance of cooperation. ESA is facing considerable challenges and, in order to improve the implementation of its space policy and the effectiveness of its projects, it seeks to cooperate closer with other international actors. The cooperation between ESA and the EU is a relatively new initiative, thanks to the fact that the space policy has a rising position among EU policies. The Framework Agreement lays down the principles and priorities of ESA-EU cooperation. In the Green Paper was set out a range of ideas about the future use of space for Europe. The White Paper, which contains official set of proposals, provides the European Space Programme, for the carrying out of the European Space Policy. The establishment of the European Space Policy is a long process, but the ongoing ESA-EU relationship shows a possible way of incrementing the space activities in Europe.

## I.INTRODUCTION

European space activities, as seen from the point of view of the cooperation between ESA and the European Union are the subject of this paper. This theme has strong actuality and it has not analyzed exhaustively, at least to the extent that new points of view could only improve the level of the debate.

Why the European Union should interfere in space activities?

To answer this question, the importance that space activities have nowadays must be recognised and understood.

Space activities are sensitive issues, due to their impact on the economy as a whole. They contribute to raise the technological

and industrial level of the participating states. To a certain extent, the future of European technology relies on a strong space program.

Besides, our life is connected in many ways to the achievements coming out of space efforts. Space activities are increasingly becoming an instrument in the service of political, economic and social objectives. They create many opportunities to improve the standard of life.

In our fast-changing political environment not only space activities, but also Europe itself is changing. At the present time, the EU has competences in many fields of the European policy and it promises a whole, unfragmented Europe. Space and its technical outcome should also belong to a common Europe. In addition, the European space cooperation gives Europe bigger influence in the international scene. As space becomes more global in scope and

objectives, without collaboration Europe would not be able to keep its autonomy in key operational and technical areas.

Furthermore, we have to keep in mind that in the age of globalisation there are challenges that no single state can solve alone. For instance, security, terrorism, organized crime, climatic change or environmental problems

Some of these issues can be addressed with the help of the space technology, but the improvement or the solution of these problems is a common task. Different countries can win, only if they cooperate.

In this paper it is examined one of the possible cooperation alternatives within Europe.

The international organisations have a greater role than ever before in our global world. In Europe, the most significant organisation is the European Union. ESA has the same function in its specific field, Space.

If they fit their programs, policies and aims together, they could lead to a better understanding, improving the effectiveness in fighting the difficulties of the whole Europe as well as for the single states.

The focus of this article is not the technological side of the cooperation between these institutions, but the legal and political aspects of their collaboration.

## II. EUROPEAN SPACE RESEARCH AND SPACE POLICY IN THE PAST

In the past, space research was technologically oriented, nowadays it is policy driven. This has a positive effect and it should ensure a larger role for Europe in the future exploitation and exploration of space.

In past decades, space activities were managed at national and intergovernmental level and ESA played a coordinating role. Today there is a growing importance of the direct cooperation between international players. That is because states can no

longer initiate and execute a significant space program without some element of foreign participation.

Space research and space related matters have had a significant role in our society. This is not a new phenomenon; it goes back to the beginning of the 20<sup>th</sup> century. After WWII, there was a growing realisation among the countries of Europe that, alone, no one of them could really afford a successful operation in space. The space activities in Europe have never had the same extent and character than that of USA and in the former USSR. It was obvious that no single European state could manage to pay for an independent space program. Therefore, they chose the way of cooperation to achieve their goals.

## III. INTEGRATION PROCESS OF THE EU AND ESA

ESA and the EU have a completely different structure, regulation, decision-making mechanism as well as history.

They are independent from each other, they have an own functional system, own network of international and private relations and the members of these two organizations are not the same. At the same time, both institutions show a possible way for the European integration after the Second World War.

The history of the European closer cooperation, integration could lead far back in time. Especially after the First and Second World War plans were presented for a united Europe, in order to ensure internal security, peace and the external collective defence. More proposals were accepted to create a European integration but they were not always ready to be further developed. The most booming of them was the strategy of Robert Schuman and Jean Monnets. Their idea was that the six more central and important economic powers (West Germany, France, Italy, and the Benelux States) should unite in a

“small Europe” and govern under a supranational control.

According to this scheme, the European Coal and Steel Community (ECSC) was created with the signature of the Treaty of Paris in 1952. The political function of this economical organisation was also noteworthy.

In 1957, the European Economic Community (EEC) and the European Atomic Energy Community (Euratom) were founded with the signature of the Treaties of Rome.

These two treaties are the founding stone of the European Union. Later, the EU has developed to a direction of a political and economic union with adoption of the Single European Act and the Maastricht Treaty.

The Single European Act (1986) gave the EEC wide-ranging competences in the field of research and technological development, indirectly also in space related matters. The Maastricht Treaty (1992) significantly broadened this R&D competence.

The Treaty of Amsterdam (1999) gave further competence to the repertoire of the EU; it moved the organisation toward a creation of a European defence policy. The document stressed the sustainable development and environmental protection and it aimed “an area of freedom, security and justice”.

Each of these intentions had a potential space dimension. The Treaty of Nice (2001) further consolidated the legal bases for the Common Security and Defence Policy of the EU.<sup>1</sup>

As these treaties show, space activities had a solid legal justification in the structure of the European Union, as it is now.

ESA was created with the same intentions. In the middle of the 20<sup>th</sup> century the major concern of Europe was not to be a space competitor, but rather to avoid the return of the hostilities in the region.

the European Space Research Organisation (ESRO) and the European Launcher Development Organisation (ELDO) were established in 1962.

ELDO could not do any substantial progress. But ESRO, with the mission to achieve a joint expertise in space science, proved impressively successful. However, it was not comprehensive and it did not extend across the full range of civilian applications.

ESA was formed through the merging of ESRO and ELDO in 1975. Like its forebears, it had a restricted sphere of activity, its emphasis being on research and development. Moreover, ESA can only promote the peaceful use of space.<sup>2</sup>

Summarizing, ESA provided Western Europe with a basic collection of space capabilities, but without an overall sense of direction or commitment. On the other hand, during the years, the activities of ESA have heavily contributed to the formation of a European identity.

ESA succeeded in bringing together the primary scientific, industrial and public policy elites of this field.

Besides, the impression of the success of the Ariane launcher and the Meteosat satellites was also far reaching. The people of Europe could identify themselves with their own launcher and satellites, just as the Americans did with the Space Race a generation before.

#### IV. THE MOTIVES OF THE COOPERATION

By the early 1980s the potential capabilities of space had grown beyond the limits of ESA.

At the same time, Western Europe had hardly any equivalent of the military space capabilities of the superpowers of the time. The recognition of these limits led to a redefinition of the European interests. The only way out of the problems seemed an increase in cooperation.

Moreover, the mix of space policy and international collaboration raised difficult questions.

ESA challenges are the high costs and risks of space programs, high competition in the sector, inefficiency of present agreements, and international instability.

Today, the traditional cooperation in space with international partners is often replaced by competition, particularly in fields where space technologies have a strong commercial connotation. In order to face this competition, Europe must act as a unity.

The European space activities made by ESA and national agencies, suffer under the insufficient attempts to exploit the applications of space technology, the lack of industrial competitiveness in many sectors and the relatively low levels of the European space budget. The overall European space spending is still less than one-fifth of the total space expenditure of the USA.

Besides, the weakness of the European industry shows the fragmentation of the European market, the national regulations and the slow harmonisation progress of technical standards.

The demand for space programs became increasingly more user- and commercial oriented. The commercialisation of space demands more flexibility and closer-to-market approaches.

Another well-known global issue, of which we had recently terrible examples, and to which space activities can be beneficial if there is a massive cooperation between states and organizations, is security.

In the international context, the increasing competition from Russia, Japan and China, the recent geopolitical developments and the variability of economic cycles, have made clear that only greater international cooperation is the way forward for major space activities and, in general, to increase European effectiveness.

ESA realised all this and, as a response, it has begun to build up a closer cooperation with other international actors.

#### IV.a. International cooperation practices

The evolving relationships and political agreements between space agencies and other organisations have shown that importance of cooperation is growing. Space activities have experienced significant growth in terms of institutional involvement.

Several new forms of international relations have appeared and extended. There are various types and forms of cooperative practices and there are many examples of committees and working groups created as an outcome of technical cooperation arrangements. They are varied and diverse in their schemes as well as in their decision-making authority. Such relationships, originally created purely for reasons of scientific progress or for the general exchange of information, have acquired political and economic importance. Their legitimacy, stability and success, give them their power.

#### V. EU FORMER SPACE POLICY

For a long time, European and national space agencies have played a central role in defining space policies and implementing them. The development of space technology and industry has been almost exclusively carried out under the framework of ESA. In the meantime, the EU has been left as a bystander.

The emergence of the logics of finance and commerce has changed this system. Given the limited financial resources, space agencies could no longer guarantee the best programs, so they were involving themselves in collaborative programs. Besides, the commercialisation of the space market called the EU to play a more important role in the European space collaboration.

According to the external and internal changes after the 1980s, the EU realised the importance of space. It began to extend its competence in areas such as research, environment and security.

It was then natural that the paths of ESA and EU would cross each other. Space had become such an important arena for scientific, technological and industrial achievements with long-term civilian and military payoffs and gains, that Europe should gather together its capability and capacity in order to meet these challenges. Furthermore, both of the institutions have common purpose, to achieve and secure European integration.

#### VI. ESA AND EU COOPERATION

Some sort of closer relationship between ESA and the EU has been under discussion for some years.

The first movement toward their connection was the meeting of the Ministers of the European Space Conference in 1971.<sup>3</sup> Then, the President of the Commission participated as an observer, but this contact was very superficial, both organisations having to deal with their own problems.

The European Commission cooperated only on a case-by-case basis with ESA until the mid 1980s.

In 1988 the European Commission first formulated a comprehensive space-strategy. This was the document "*The European Community and Space: a coherent approach*".<sup>4</sup> The Commission evaluated the strength and weaknesses of the European space effort. It underlined the lack of a strong overall policy, integrating economic, industrial, social and defence considerations.

The document stressed the areas of research, telecommunication, environment, agriculture, industrial development; it made lots of proposals to boost the

collaboration with ESA in a number of fields.

In 1989, after the meeting between the EC Commission President and the ESA Director General, working groups were built in 5 areas: external relations, industrial policy, Earth observation, telecommunications and research and technology.

After the end of the Cold War, space applications came to foreground again. The Commission asked experts, headed by Roy Gibson, to look at various aspects of space in which the EU should play a role.

*The Gibson Report*<sup>5</sup> produced in 1991, urged the development of a complex policy. Gibson recommended that the EU and ESA should better coordinate their research and technology activities.

The ESA ministerial meetings in Munich 1991 and in Granada 1992 were the turning point in the history of ESA and of international space cooperation in Europe. After long discussions, ESA declared its intention to be the number two behind the United States in space matters and the member states concluded to further cooperate.

The Commission issued the next communication on space in 1992. The paper "*The European Community and Space: challenges, opportunities and new actions*"<sup>6</sup> collected together the new ideas to the performance of the strategic goals of the 1988 Communication. Furthermore, the Space Advisory Group (SAG) was created, which was an ad hoc consultative body including representatives from both organisations. It provided opportunities for representatives of ESA, EU and member states to meet and discuss issues concerning European matters. Its activity was limited to identifying the areas where coordination was necessary.

Another group, the Space Coordination Group (SCG) was organized in 1992. Since the policy responsibilities for the space

sector are divided among different Director Generals (DGs) of the Commission, this group was formed with the intention that representatives of each affected DG would meet, discuss, and coordinate the Commission's program related to space.

The dynamic change in space activities required the EU to act further. The European Space Forum was organised in 1995, which gathered the representatives from the EU, ESA, industry and the user community. It was an important step in the history of European space collaboration because it provided an opportunity to formulate a comprehensive European strategy. The issues discussed in this forum were immediately reported to the SAG in order to take appropriate actions.

The further noteworthy communications were the "*Research and technological development: achieving coordination through cooperation*" (1994)<sup>7</sup> and the "*The European Union and Space: fostering applications, markets and industrial competitiveness*" (1996)<sup>8</sup>. This later document confirmed the strategic importance of space sector for the EU and elaborated proposals to defining European space policy.

In the paper "*Towards a coherent European approach for space*" (1999)<sup>9</sup>, the Commission recommends a consensus-based approach for a policy framework of future space projects. ESA agreed with this approach and asked the Commission to publish jointly a European strategy for space.

The "Joint Space Strategy Advisory Group" (2000) including members of ESA and EU prepared strategic documents with a focus on four subjects: space based information and communication services, science, research and space exploration, CFSP considerations, access to space.

This joint consultation exercise produced a preparatory strategic document which was adopted as "*Europe and space: Turning to*

*a new chapter*".<sup>10</sup> The jointly developed "*European Strategy for Space*" was based on an overall vision of the technological, political and economic importance of space for an integrating European Union. The strategy provides a reference for Europe to structure its future efforts in space domain. It focuses around three objectives: strengthening the space activities to ensure a broad technology base, enhancing scientific knowledge and demand-driven exploitation of the space capabilities.

It emphasised the demand-driven use of space for benefiting markets and society. The other stress of the document was on the intention for using space for European security.

Besides, the strategy centres on two joint project: one of them is the realisation of the Galileo (civil global navigation satellite system), the other is the creation of the Global Monitoring for Environment and Security, (GMES).

In line with this communication the Joint Task Force (JTF) was created for developing programs defined in the strategic document, producing proposals for the implementation of the space strategy and issuing annual reports. The first report of JTF focused on three subjects: a knowledge-driven economic growth, an independent Europe and more involvement of citizens in policy-making.

In order to enhance the European capability and autonomy, the report proposed the setting up of "Space Council" (a joint meeting of the EU Council and ESA Ministerial Council) and with its help to develop a "European Space Policy".

In 2000, it was called a group of high-level executives "*Three Wise men*" in order to provide independent advice for promoting the evolution of the ESA-EU relationship and the necessary institutional changes.

The report of the group was "*Towards a Space Agency for the European Union*",<sup>11</sup> which includes many suggestions in

order to create strong space collaboration in Europe. The most important of them are that the European Council should define the European Space Policy, the EU should be the space agency of Europe, the European Commission should define the regulatory framework under which space activities are carried out and it should be a contributor to ESA programs.

Finally, after more than ten years communication between the institutions the *Framework Agreement* (2002)<sup>12</sup> laid down the principles and priorities of ESA-EU cooperation. The eight fields of cooperation according to the document are science, technology, earth observation, navigation, communication by satellite, human space flight and micro gravity, launchers, spectrum policy related to space.

Under the Framework Agreement a cooperative structure was attempted to establish. The paper committed the two bodies to work together in formulating a space policy, for whose implementation ESA would operate as the space agency of Europe. ESA would act both for its own member states and for the EU.

The problem of this document that it does not really go beyond a project-oriented cooperation, it does not define specified tasks and duties for the organisations.

To put into practice the common space policy, a series of workshops was organised on space matters. The initiative of these workshops was to support the ESA-EU link with clarifying fundamental issues and determining Europe's space policy formation.

After that, the *Green Paper*<sup>13</sup> laid out a number of relevant issues, raised questions and called for comprehensive consultation on the space subject. It emphasised the importance of the establishment of a stable and transparent regulatory framework in the context of ESA-EU cooperation. The paper deals with a number of specific areas

such as independent access to space, industrial and technological base, commercial market and institutional demand, maintaining scientific excellence, budgetary and financial resources.

The aim of this document was to set out a range of ideas and initiate a debate about the future use of space for Europe. Several workshops were formed in the European capitals focusing on these specific themes.

Then, based on the results of the Green Paper, action plan was presented in the form of the *White Paper*<sup>14</sup>. It contains the official set of proposals. According to the paper, an extended space policy, driven by demand, shall activate additional social, economic and commercial potential of space technologies. This space policy should respond to the political objectives of the EU. The document stressed that additional efforts shall be made with regard to infrastructure and the existing scientific and technical basis of space activities.

The White Paper laid down the way of the implementation of the European space policy. According to the paper, it would come in two phases. The first phase (2004-2007) is dedicated to the implementation of the activities covered by the Framework Agreement. This should enable the two organisations to set common objectives and joint initiatives. ESA should be the implementing agency of the EU for space matters. The second period (2007-onwards) will start after the coming into force of the European Constitutional Treaty. ESA should then be positioned within the EU framework.

Besides, the White Paper provided the European Space Programme, including a list of recommended actions for the carrying out of the European Space Policy. The European Space Programme would be the platform to define priorities, set objectives, allocate roles and

responsibilities and frame the annual budget.

At the moment, the European Convention,<sup>15</sup> which is still strongly discussed, expected to establish a space policy as a shared competence between the EU and its member states, in order to reinforce the position of Europe in space. It is important to notice that, according to this space policy, the member states are not prevented from exercising their own competences.

#### VII. CHALLENGES OF THE COORDINATION

ESA and the EU have different structure, regulation and decision-making procedures.

ESA is an intergovernmental organisation, while the EU has a supranational character. ESA committed itself to coordinate the national and European space programs and its activities are for "exclusively peaceful purposes". With regard to space activities, the EU has no clear definitions and rules. However, it is currently trying to strengthen the European security and defence with the help of space tools, which is in contrast with ESA peaceful objectives.

ESA members are almost, but not completely the same, as those of the European Union. The exceptions are Switzerland and Norway for ESA and Greece and Luxembourg for the EU.

Problems are increasing, if they wish to continue their active participation. The non-EU members would have to adopt EU laws, if they want to take part in European space actions. On the other hand, non-ESA members would have to accept the involvement in space activities following considering their EU membership.

Furthermore, there is an issue for members of both institutions. ESA, as an international organisation, is not bound by EU laws. The difficulty of the common

members of the institutions is to know whether they are themselves bound by the EU laws or they are allowed to participate in ESA and to implement its policy.

ESA is governed by its own Convention and its Council, which is composed of representatives of member states, takes the decisions. So, there is no link to the EU decision-making procedure.

One of the big differences between ESA and the EU is their institutional arrangement. ESA activities are divided into mandatory and optional programs. So, its framework allows governments to participate in programs optionally and guarantees an industrial return according to the scale of their contribution (fair return). The EU framework is largely based on the "acquis communautaire" and all member states should adopt them in order to form a coherent organisation and a single market. Besides, the EU has its own budgetary system with its own resources.

Many of the smaller countries are protected by the present ESA policy and their technological programs heavily depend on the ESA framework. The fair return and the optional participation enable the member states to choose whether and how much they would contribute to ESA programs according to their will and capacity. There is a possibility that they would be destroyed in a worldwide competitive market if they could not get a fair return. Besides, the EU open competition approach may forbid the members to continue applying their somewhat protectionist policy.

#### VIII. POSSIBLE FORMS OF COLLABORATION

Building on its achievements and its technical expertise, ESA will remain the principal programming and funding agency. However, it should be strengthened as the central focus for a European space policy, using its successful



mix of mandatory and optional programmes and representing Europe in space matters.

The EU will play an active role in implementing the European space policy and it will bring all actors and competencies together around common political objectives.

To achieve these goals, the EU should create the right political and regulatory conditions for space activities. So far, it is not apparent to what degree the EU will participate in space policy-making. In addition, it should play a greater role in setting standards and liberalizing the European market and helping develop the relevant technologies.

## IX.CURRENT TASK OF THE ESA-EU

### LINK

#### IX.a.European Space Policy

The relationship between ESA and the EU is fairly new and incomplete. It must be further built up through interactions between administrations at national, intergovernmental and European level.

Above all, Europe needs a fully coordinated, long-term, policy for space. Europe has not yet succeeded in the formation of a coherent space policy. All sectors of the space community should be part of this framework, including the public and private sectors, commerce and industry. This policy should ensure the best exploitation of space to serve the needs of society.

Besides, they have to establish the right regulatory conditions for space activities in line with and support of EU policies. To implement the European space policy, both ESA and the EU have to develop an appropriate institutional arrangement. Up to now, there is no adequate institutional links, which would allow a proper practical performance of the common activities. It has to set up the respective roles of ESA

and EU in terms of space activities. In addition, there must be greater coordination of the institutions and have to make clear the division of the responsibilities in order to avoid duplication.

#### IX.b.Security considerations

The growing challenges in terms of security have led to a complete reappraisal of the role of Europe in space. It has to pay more attention for defence and security considerations of space. It is clear that the distinction between defence-related and civil research no longer makes sense. Galileo and GMES have also security impact.

Space has an important military application too and there is a growing convergence between civil and military space technologies. Space offers capabilities to help filter the sources of future conflicts and facilitate the efficient fight against diverse security issues. As the examples show, space systems could be part of the European Security and Defence Policy (ESDP). However, it is inconsistent with the ESA convention “exclusively for peaceful purposes”.

The European security cooperation in space also should proceed and fortify. There is no single institutional focus to the performance of the common management up to now. Perhaps it would be possible through a reinforced WEU and a better supported Common European Security and Defence Policy. The European governments should actively encourage civil and military coordination in space.

#### IX.c.Central Eastern Europe and Russia

At present, the enlarged EU has 25 member states with new frontiers, new responsibilities and new needs.

To enhance a European space policy it has to pay more attention to the new member states of the EU and to the other states of

Central Eastern Europe as well as to Russia.

These countries are culturally and historically part of Europe and it is also the interest of Europe to integrate them into its political and economic system.

Most of the Central Eastern European countries are impatient to join ESA. However, none of them are well prepared to the accession. They possess highly qualified scientist and engineers, but they are falling far behind the members of ESA on the technological and industrial front. Their full integration into ESA appears today unlikely. A slower integration process with special association agreements (European Cooperating State Agreement), which are in effect between these states and the organisation, seems realistic at the moment.

It is a difficult question to decide which role could and should Russia get in the European cooperation. As this essay shows, in the space field there seems hardly to be any other issue than cooperate. It is obvious that the space potential of Russia, despite its political and economic instabilities, will have a strong influence on the future of space activities around the world. Therefore, it is good to keep open all options of cooperation.

#### X.CONCLUSION

To summarise, space is a unique area, providing opportunities and bringing benefits to all. The technological and industrial success achieved by ESA can be fully exploited through a close ESA-EU relationship. An overall, consistent space policy and a coherent, efficient institutional structure will promote more beneficial and profitable space activities in Europe.

Although the ESA-EU link has progressed to a great extent, it will still take a long time to formulate a common European space policy as well as a coherent and

integrated institutional framework. There is still much uncertainty in the definition, approval and implementation of this cooperation, like the position, role and mode of operation of the institutions. However, it must be emphasised that only an effective harmonization will give both institutions the ability to face their challenges. An undefined relationship between ESA and the EU will not be fruitful for the future Europe.

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