

## **Joint ESPI - FRS - IFRI - SWP Policy Memorandum: Towards a New Franco-German Partnership in Space**

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France and Germany have long been partners in space. However new attitudes and directions in their respective space programmes are affecting the nature of traditional Franco-German space relations in an evolving European space context. The longstanding partnership is at a juncture. In this context there is a need for a new dialogue to define what future directions the partnership should take. This joint memorandum initiated by the European Space Policy Institute (ESPI), and prepared together with the Paris-based Fondation pour la Recherche Stratégique (FRS) and the Institut Français des Relations Internationales (IFRI), as well as the Berlin-based German Stiftung Wissenschaft und Politik (SWP) aims to provide reflections on the state of current Franco-German space relations and to lay out issues to be considered in the months ahead by decision makers in both countries to provide a new impetus to the Franco-German partnership. It also aims to serve as an input to the upcoming ESA Council at Ministerial Level.

### **Introduction**

France and Germany have from the beginning of European space activities played a pivotal role in shaping European strategies and contents and are historically among the main promoters of a strong European space effort. The Franco-German axis is thus often referred to as the driving force of the European space endeavour. Furthermore, even with a geographically enlarged European Union (EU) and European Space Agency (ESA), the Franco-German relationship remains a major force shaping the priorities and broader agenda of Europe in space. However, the Franco-German partnership is a reality that needs to be strengthened with renewed political commitments as European space activities are at a crossroad due to the evolution of the global space landscape with increasing international competition. In this context, France and Germany must take the opportunity of the evolving space context to redefine and improve their relationship to foster stronger coordination and partnerships to develop bilateral cooperation in order to provide a new impetus to Europe in space.

## **The Franco-German relationship in the European and geopolitical context**

While the initial leadership in space activities was provided by Britain, France and Germany have become the major driving force of Europe in space. They are the main contributors to ESA with more than 50% of the overall contribution to the agency. Together, France and Germany have also a strong and interlinked space industrial base. They represented in 2007 an agglomerated 55% of the total European industrial employment and 60% of the European industrial turnover. The main actors at national institutional level in Europe are the national agencies of France (Centre National d'Etudes Spatiales, CNES) and Germany (Deutsches Zentrum für Luft- und Raumfahrt, DLR).

France and Germany have both played a crucial role in shaping European activities and strategies. The Franco-German partnerships allowed major progress in Europe due to the two countries' complementary engagement. France and Germany have a long and rich history of cooperation in space in the context of the European Space Research Organisation (ESRO), the European Launcher Development Organisation (ELDO) and ESA, but also outside these intergovernmental structures on a bilateral basis. Numerous missions have provided cooperation opportunities since the 1960s. During this period a series of partnership opportunities have involved numerous missions. In particular, the first communications satellites built by France and Germany in the context of the Symphonie programme are a successful example of this cooperation. There is therefore a strong foundation of experience to draw upon including successes, difficulties and few failures. The Franco-German relation has also been marked by a strong and deep cooperation on the industrial front.

France and Germany are today an engine for Europe in space not only in terms of budgetary commitments as they are the biggest investors in space activities at the continental level, but also political. For instance in the context of "their" presidencies of the Council of the European Union major activities were put forth such as the adoption in April 2007 of the GMES - Munich Roadmap and the adoption of the first European Space Policy at the fourth Space Council in May 2007 both under the German Presidency, as well as the first informal Space Council meeting that took place in July 2008 and the adoption of the Council Resolution - Taking forward the European Space Policy, adopted at the fifth Space Council under the French Presidency.

Europe with the help of France and Germany has also become over the years a centre of gravity in the international space context by its budget, but also its variety and extend of partnerships. France and Germany have for instance offices in various locations United States (CNES and DLR), Russia (CNES) Japan (CNES) Brussels (CNES and DLR) and are taking part and establishing many bilateral and multilateral cooperative ventures with partners from all continents.

A common Franco-German understanding is essential to any progress for European space activities. Despite uneven emphasise on different programmes,

without Franco-German understanding and their complementary engagement major European progress would be difficult. France and Germany acting in concert with other European partners might allow Europe to acquire the degree of clout and influence in the future space context alongside the United States and other space powers. Therefore despite current Franco-German issues in space activities particularly linked to different direction in space and a different conception and philosophy of the future of the European space governance it is important that both sides renew their commitments to this partnership to foster Europe's future in space. Indeed, as the global space context is currently in transition with new ambitions, policies and programmes of major space actors this is threatening the position of Europe in the "space hierarchy".

The European space context is also currently in transition with the increasing role of the European Union in space affairs, the enlargement of the membership of ESA, as well as the consolidation of the European space industry. This evolution is leading to a necessary modification of the European governance of space affairs. In this evolving context, France and Germany should thus take the opportunity to redefine their relationship towards stronger and more coordinated lines leading to deeper cooperation and institutional relationships. Franco-German space relations are therefore at an important juncture and there is a rare window of opportunity to reinvigorate the long-standing partnership for the benefit of Europe as a whole.

### **The Franco-German relationship in the field of space applications**

The call for Franco-German reconciliation coincided with the beginning of the space age in the 1960s. The "Elysée Treaty", signed by German Chancellor Konrad Adenauer and French President Charles de Gaulle in January 1963, started a wide-ranging cooperation effort between the two countries. In June 1967, Germany and France signed the Symphonie agreement, planning to build two geostationary communications satellites. Work was set up by Aerospatiale and MBB within the CIFAS consortium.

The failure of the first European launcher (ELDO's Europa) in 1972 casted a doubt on the European space effort as a whole and the Symphonie project was almost abandoned. However, France and Germany turned to the United States to have the two satellites launched by a Thor-Delta rocket. But this meant that all use of Symphonie for commercial purposes was forbidden. U.S. reluctance to allow a wider role to France and Germany in the Intelsat consortium (International telecommunications satellite consortium) had already irritated the European partners. The Symphonie issue led to the decision (strongly endorsed by France) to continue efforts to build an independent European launcher (Ariane). Symphonie A was launched in 1974 and Symphonie B in 1975. The success story of Symphonie was confirmed with the Spacebus agreement, signed in 1983. These generic satellite buses were sold in numbers. Other projects, such as the television satellites TDF 1&2 for France, and TV-Satellite 1&2 for Germany were conducted in the 1980s.

The Franco-German space cooperation framework evolved on several accounts in the 1990s and 2000s. This was first and foremost caused by a shift in the European balance of power. The European Union claimed new responsibilities in space with the Galileo and GMES programmes, and France was no more the sole leader of European space. Meanwhile, Germany had also become a more self-assured actor in space. This explains the German refusal to participate in the French Délégation Générale pour l'Armement (DGA)-led programmes such as Helios, Horus and Trimilsatcom in the 1990s. The creation of the European group EADS (European Aeronautic Defence and Space Company) in 2000 and of its subsidiary EADS Astrium in 2003 means that part of the Franco-German cooperation is managed within a single company. However to win future markets current governance issues within EADS regarding Airbus should not spread to EADS Astrium.

Indeed different trade-offs occurred between the two countries. Regarding Earth observation, France decided to focus on optical satellites (SPOT, Helios, Pleiades) while Germany develops radar capacities (SAR-Lupe, TerraSAR). This trade-off covers civilian as well as military programmes (GMES and MUSIS).

### **The Franco-German relationship in the field of human spaceflight and space exploration**

Europe (defined as ESA and its Member States) has a long-standing experience of human spaceflight and space exploration. Europe's involvement in human spaceflight started in the 1970s with Spacelab, a manned space laboratory which could be used in different configuration on Shuttle sortie missions. It was the first joint effort in manned exploration and was at that time, by far, the most complex enterprise done by Europe. Because of the high expenditures associated with human spaceflight, most European involvement in this domain was done in cooperation and has been related to ESA missions. However, France and Germany had different visions on the Spacelab programme. Germany, by far the largest contributor to the programme, wanted to retain as much control as possible in the user's hands, while France wanted to bind ESA Member States to a mandatory use of Spacelab, as well as Ariane.

In the second half of the 1980s, new European human spaceflight projects were approved the Man-Tended Free Flyer (MTFF), the Columbus Attached Pressurized Module, the Ariane-5 rocket and Hermes a mini-shuttle project. However, after changes in the financial and political landscape in the early 1990s following in particular the cost of German unification, Germany demanded a reduction in ESA 1990-2000 spending. Consequently either the German-led MTFF, Italian-led Columbus APM or French-led Hermes projects would have had to be cancelled. The Hermes project was finally terminated in 1993. Today's European human spaceflight activities are based primarily on its involvement in the International Space Station (ISS) programme. ESA is a major partner in the programme with the orbital laboratory Columbus launched in 2008, and the operational cargo system Automatic Transfer Vehicle (ATV).

Europe has a long-standing tradition of space exploration and has participated with outstanding success in activities in many robotic exploratory missions on its own and in partnership with other space-faring countries. ESA has since 2001 a long-term plan for exploration, the Aurora programme. However, since recent months several European countries are considering developing national robotic exploration missions. Currently the attention on robotic exploration missions of Germany focuses on the Moon as it is building a Lunar Exploration Orbiter (LEO) while France values a European participation to an international exploration programme including exploring the Moon and Mars as indicated by the French President in Kourou (French Guiana) in February 2008.

Space exploration has however, after a long hiatus, returned to the political agenda of a growing number of countries worldwide. It is an emblematic domain of space activities where traditionally only established space powers have been active. However, new actors are also demonstrating great interest in it, principally for international prestige reasons, with an increasing number making ambitious plans. But, while Europe has participated in many exploration missions on its own or in partnerships, unlike other major space-faring countries and particularly the United States, it does not enjoy strong political backing or support for space exploration. Up to now, Europe's space exploration programmes were based largely on scientific motives with limited political ambitions. But in the evolving space context it is indispensable for Europe to take a long-term political decision on future exploration programmes to link space exploration with "high politics". Space exploration is a political and global endeavour in which Europe can not be absent or play a minor role. It is the most emblematic domain of space activities and by proxy of technological capabilities, and therefore a mean to impress the world. France and Germany have thus an important role to play in this domain.

### **The Franco-German relationship in the field of space security**

Alongside the diverse and important use for many areas of civil society, State security institutions (police and armed forces) are also gaining from the application of technology tested in space. This applies to France more than to Germany. Cooperation in the public security sector is gaining importance in a world which is becoming more globalised. France started working relatively early on developing and utilizing space security with the development of the optical reconnaissance satellites Helios 1 and 2. However, until 2007 Germany was only relying on commercial and foreign technology to ensure military security. This is nonetheless evolving. In particular, the German SAR-Lupe reconnaissance satellite system reached its full operational capabilities in 2008. Germany is also acquiring a communications satellite SATCOMBw 2. However, Germany and France's military systems still rely on additional civil capacities when needed.

What does the future hold? A satellite has a limited life cycle. This means early planning for the future is necessary, France and Germany's space technology, which are advancing in many areas, could be developed further. However, lessons from Galileo's project development phase would have to be learned. To build on the cooperation of the SAR-Lupe and Helios 2, an improved

replacement system could be more integrated particularly in the context of the MUSIS project.

These increases in the use of space, although useful and gratifying, they also lead to a raise in risks in terms of security. This not only applies to the increase in space traffic and debris, but also to the growing desire of new space powers. For this reason, it is important for Europe to develop its space situational awareness (SSA) abilities. France and Germany could also combine their specific capabilities in this field. Ultimately, further cooperation with other EU-partners or the United States could be considered.

France and Germany have already shown that complementary competences, especially in the field of security, can create synergetic advantages. This is proven by an increasing interest for cooperation of other EU-partners such as Italy, Spain or the United Kingdom. In the long run, this cooperation is not bound to the EU, but can also be expanded to include support from other contributors from around the world.

### **Issues needing attention**

It is important to replace the current perception and feelings of rivalry between France and Germany with more solidarity and complementary. The partnership across the Rhine should again provide a solid foundation for the European space project capable of withstanding short-term opportunism. Moreover, in the current geopolitical context and economic turmoil a relation able to withstand crisis and lack of confidence will be essential and the Franco-German pair, having gone through so much together, is well qualified to provide new ambitions for Europe. Despite the current economic turmoil and financial crises France and Germany should thus, with the help other European stakeholders, set the directions Europe should take and help to define its ambitions for the next decades. Furthermore, if there is to be a revitalization and enhancement of the Franco-German space relationship there are a number of pressing issues that should be addressed.

- The Franco-German entente should be rebuilt to provide a new ambitious vision for Europe's role in space in the context of ESA and the European Union.
- France and Germany should tighten their cooperation as much as possible over common interests and challenges, as well as develop ambitious programmatic elements particularly in the domain of human spaceflight and space exploration. European access to space needs also to be considered, as well as cooperation on Space Situational Awareness, where France and Germany possess the main assets in Europe..
- France and Germany should coordinate their international relations with partners from outside Europe more closely.
- While different forums allow for European discussions dedicated Franco-German space meetings should be put forward to draw political conclusions and consequent actions.
- The Franco-German partnership should be non-exclusive both regarding European and non-European partners.

- The harmonization of policies and national regulations without precluding specificities is an important issue to be considered, also leading to joint European approaches.
- The differing views on the issue of “fair geographical return” and tenders in the EU system should be addressed in time to be considered for the Financial Perspectives 2014-2020.
- It is important to cement a close working relationship between CNES and DLR. To achieve greater efficiency and avoid overcapacity and duplication increased joint planning and coordination is therefore needed.
- A revitalization of personnel exchange between DLR and CNES would considerably support joint understanding and coordination..

## Perspectives

Europe currently enjoys a strong position in the global “space hierarchy”, but this might not be everlasting. To maintain a leading space role, besides “political will” a series of ambitious programmatic elements is needed. Europe, including France and Germany, needs thus to develop a common vision and long-term strategic plan across a wide range of space sectors by having ambitious space plans and objectives to confirm Europe’s position as a leading global player. To pull its weight, Europe (the EU, ESA and their Member States) need however to make the most of their combined resources at both the European and national level and France and Germany have therefore an important role to play.

The “privileged partnership” between France and Germany is one of the cornerstones of European space activities. The Franco-German partnerships allowed major progress in Europe due to the two countries’ complementary engagement. However, to reduce this relationship solely to the “engine” that propels the European space activities is too simplistic due to existing differences in specific space domains. It is nonetheless a particularly appropriate time to discuss enhancing the Franco-German space cooperation with the successful launch of the Columbus orbital module and the success of the first cargo resupply vehicle (ATV) and the recent adoption of the first European Space Policy.

What is at stake has significance beyond the space activities of France and Germany. The future ambitions of Europe in space and its position in the “space hierarchy” depend on the relations between the two countries. Europe’s future agenda-setting power in the international system depends also on the state of the partnership as space activities are a symbolic representation of Earthly powers. In this respect, the overall political context can not be ignored as space relations can serve as a showcase of renewed ambitions and interests in the partnership. The renewed Franco-German partnership on space could therefore be used as a foundation to provide a new impetus for Europe through common ambitions.



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