

# 9<sup>th</sup> Conference on European Space Policy

## “Space Strategy for Europe: the road ahead”

Brussels - 24 & 25 January 2017 - Palais d'Egmont

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The 9<sup>th</sup> Annual Conference on European Space Policy “*Space Strategy for Europe: the road ahead*” took place in Brussels, Belgium, on 24-25 January 2017. The conference, organised by Business Bridge Europe, received the high patronage of: the European Parliament, the President of the European Commission, Jean-Claude Juncker, and the Vice Prime Minister and Minister of Foreign and European Affairs of the Kingdom of Belgium, Didier Reynders.

During a day and a half, in the conference venue of the Palais d'Egmont, representatives from the European Institutions (Parliament, Council and Commission), from European Space Agency (ESA) and other EU national space agencies, and, equally, from European Space industry came together to discuss the EU's new Space Strategy and the next steps to take for its implementation.

### Day 1 - Tuesday 24 January 2017

#### 09:00 – 09:45 WELCOME MESSAGE

**Jerzy Buzek** (Chair, ITRE Committee, European Parliament), replacing **Antonio Tajani** (President, European Parliament) in the Welcome session, opened the meeting by highlighting key points on how the European Union should use the “*Space Strategy for Europe*” proposed by the European Commission to increase Europe's competitiveness in space. Firstly, downstream markets for space services need to be strengthened. Secondly, entrepreneurship in Europe needs to be encouraged with European funds as a condition. Thirdly, innovation should be supported by bringing space and non-space businesses together through hubs and clusters. Moreover, access to space data needs to be improved, above all, by prioritising an “European Approach” to space and security. And, above all, an “*European Approach*” to space and security should be made a priority. To achieve these and other ambitious promises in the Strategy, the European Union, European space agencies and their Member States will need to work together in complementary activities and be ambitious with their space budgets, to successfully reach out to Europeans: to explain, inspire, and educate them on the importance of Europe's space policy for the whole European society.

**Chris Agius** (Parliamentary Secretary for Research, Innovation, Youth and Sport of Malta, Member State currently holding the Presidency of the EU Council) discussed the timeliness of the European Space Policy conference in light of the European Commission's Space Strategy, ESA Space 4.0, and ongoing work on Horizon 2020. As space-based technologies provide innovative solutions to our challenges, they could serve as a tool for the Presidency of the Council of the European Union to achieve its priorities on migration, the single market, security, social inclusion, neighbourhood, and the maritime sector to enhance the daily lives of all Europeans. In that respect, the Presidency plans to lead discussions in the Council with the aim of reaching a wide-ranging agreement, in the form of Council conclusions political guidance for the future of Europe in space. Hon. Chris Agius emphasised the need for capacity building to provide the right framework conditions for all EU Member States to make the best of the opportunities provided by space, but also the importance of bringing space technologies closer to more European citizens and companies. He stated that the EU would need greater unity in the form of a collective activity, such as pooling resources and combined efforts, in order to be resilient towards an increased competition and more demanding operational requirements. This could eventually allow for the united European space sector to achieve more than could ever be achieved individually.

**Federica Mogherini** (High Representative of the Union for Foreign Affairs and Security Policy and Vice-President of the European Commission) welcomed the call for unity, especially as issues on EU security continue to increase. With the EU's Global Strategy on Foreign and Security Policy in mind, space and security converge in two respects: firstly, in the need for cooperation and for some kind of common governance of space activities and, secondly, because space is essential to our own security and to our economy. So, as the High Representative said, quoting the Global Strategy, "we have a strong and clear interest to promote the autonomy and security of our space-based services". Currently, the race to space remains heated among many countries with diffused space capabilities. Yet, aside from the EU, few other actors are "investing truly in a rules-based global order" when it comes to space. As space is a global common, the EU and its Member States must all take responsibility to keep it safe, clean and accessible to all. They proposed some years ago to negotiate an International Code of Conduct for Outer Space Activities. This proposal has received support from a large group of countries, the EU and its Member States keep working to reach an agreement on a voluntary code of conduct. The European Union will also continue to work for the prevention of an arms race in outer space within the UN system. Europe should aim to become a "space power", by not doing so, it puts its strategic, economic and political interests in space at risk. Investing in European space capabilities will benefit its citizens and Member States. Furthermore, it will make Europe a stronger partner for its friends around the world that are demanding more and more from the European Union to be a security provider.

**Elżbieta Bieńkowska** (Commissioner for Internal Market, Industry, Entrepreneurship and SMEs, European Commission) stated that 2016 was a key year for space in Europe with a successful delivery of European objectives. Galileo and Copernicus have been developed on time and on budget, with both systems now operational. Most Copernicus services are already providing high-quality data for rescue teams in natural disasters. Moreover, Galileo initial services were launched on 15 December 2016, and the system is expected to become fully operational by 2020 - despite problems encountered on some satellites' clocks. But, in order to maximize the benefits of space for society and economy, Europe will need to shift its focus from building the infrastructure to building the space data economy. While public financing is expected to remain stable, the European Commission wants to promote risk taking among space start-ups. As for 2017, Ms Bieńkowska committed to start the implementation of

the actions within Space Strategy, in consultation with the EU, ESA, and Industry stakeholders to form a detailed plan to foster space-based applications. Also, the space-based infrastructure would continue being developed in 2017. Furthermore, with the mid-term evaluation of Galileo and Copernicus in summer 2017, appropriate resources for the financing, governance and evolution of the EU's flagship space programmes would need to be secured in the next MFF. Here, space is one of these concrete and positive examples of what we can do together in Europe - no single European country could do it on its own.

**Johann-Dietrich Wörner** (Director General, European Space Agency) further detailed ESA's achievements in 2016, noting the successful outcome of the ESA Ministerial Council meeting in December, where substantial funds were allocated to envelope programmes, and the adoption of the Resolution "Towards Space 4.0 for a United Space in Europe". Instead of seeking a complete autonomy, cooperation with partners worldwide was favoured as it would enable Europe's space sector to quickly respond to the changing landscape global competition, in terms of changing markets, actors and technologies (e.g. small satellite constellations, quantum technology, cyber-security, and security-overall). Whereas at ESA's inception in 1975, the Agency had full programme authority for its projects, processes, and funding, it now has a project-management role with EU projects (i.e. Galileo and Copernicus), a co-authority role in public-private-partnership (PPP) projects with industry, and also a project management role for some national projects lead by national institutions of the countries whose space capabilities are beginning to emerge. In some cases, ESA's strong relations with the global space community allows it to be an enabler in global cooperation. But, in order to achieve a "United Space in Europe", European institutions and agencies will need to cooperate, forming synergies and avoiding unnecessary duplication, to have a coherent European space activity. Moreover, it should seek to cross-fertilize its activities with other technology areas to create a seamless cradle of innovation, in collaboration with other entities worldwide.

**Jean-Loïc Galle** (President, Eurospace) was the final speaker to open the conference with a brief health-check report on the European space industry in the global competitive market. Sales have increased in all markets and product segments, with sales to European Institutions reaching €4.1 billion (with the highest growth coming from Copernicus and Galileo programme); moreover, exports of European systems for commercial and institutional customers outside Europe reached €2 billion and 26% of the overall sales. The improvement of sales has also supported the growth of employment in Europe and pointed to a constant improvement of our efficiency, with the average value of final sales per worker improved by 32% in the last decade. In commercial open markets, exports represented about 45% of the European industry's sales, marking Europe's unique position in competitive commercial markets. But as new challenges arise, such as the radical optimization of supply chains and the pursuit of cost-killing objectives by competitors outside Europe and maximum institutional investment by other space powers, the European space industry needs to remain at the top of the EU agenda to maintain Europe's position in space. In this light, two urgent priorities should be adopted: firstly, to increase focus in EU research and development programmes in order to fuel industry competitiveness, to better anticipate critical technology evolutions, to further reduce dependence situations, and to implement more In-Orbit Demonstration and Validation (IOD/IOV) projects. Here, the industry strongly supports the establishment of a Joint Technology Initiative (JTI) for space to follow technology suppliers, promoters, and users; to maximize impact of developments; and to

strongly improve the link between research and market expectations. The second priority should be developing synergies between space and security & defence, since the massive investment in defence programmes in all other space powers largely drive their industries' competitiveness, and these investments have so far been comparatively quite weak in Europe. However, as the security environment for Europe faces increasing challenges, space has a key role to support the EU Global Strategy in the form of security from space, and security in space.

09:45 – 11:00 FIRST SESSION:

New EU Space Strategy and new space: crucial stake for competitiveness

**Is the global vision for Space (EU space strategy and ESA CMIN) a decisive step to reach the two main political objectives, European autonomy and reinforced competitiveness of the European industry?**

After the welcome messages from the representatives of the European institutions, the Conference moved forward by analysing the European Space Strategy and the ways in which new space actors and partnerships, could help to raise the bar of competitiveness with the other space nations. The speakers went through the objectives of the strategy analysing them both from a financial and a political side.

The presence of the **Vice-President of the European Investment Bank, Ambroise Fayolle**, allowed an immediate overview on the importance of financing programmes that would support the enterprises and, in particular, Small and Medium Enterprises (SMEs) through a dedicated Fund for Strategic Investments (EFSI). Enhancing the role of SMEs, start-ups and young entrepreneurs, would facilitate further investments in the space sector. As foreseen by the Space Strategy, it would be beneficial for the space sector to set up a dialogue between the European Investment Bank and the European Investment Fund to ease the development of supportive mechanisms for the sector. A big step forward for the European industry would be indeed a capability to accept major risks and to continue to give financial support to the small companies, as envisaged in the so-called Juncker Plan.

In spite of the Space Strategy being praised because of the innovative measures proposed, many points remained unclear, especially regarding the budget allocation and the need for more funds related to R&T in the space sector. As the **MEP and Member of the BUDG Committee, Clare Moody** stated - there is a need to have additional funds for the space sector since a limited budget, such as the budget allocated for H2020, will be a soft target. Clare Moody stressed also the importance of being united in diversity. The space strategy should bring all the Member States to work together and to agree with each other to achieve a real success in space. This goal would be reached also if the citizens really understand the benefits that space brings to them on an everyday basis.

A cohesive European approach to space and security must be foreseen as well as an autonomous access to space. The **Executive Vice-President and Head of Space Systems at Airbus Defence and Space, Nicolas Chamussy**, stressed these two objectives. The autonomy, in particular, has its own relevance. As Mr Chamussy said, autonomy is not just related to launchers but goes beyond this: also sensors, Earth Observation, Space Surveillance, environment monitoring, frequencies and so on, are

the tiles of the same mosaic. He stated equally that European States should be stimulated to use more European launchers, more Copernicus data and European frequencies. This pro-active approach would stimulate the use of this data even by non-European States and will bring new investments. As representative from the industry, Mr Chamussy believes that the Space Strategy 4.0 would help the price competitiveness of the European space industry and would help to start a process of optimization and restructure of the European industrial complex, increasing also innovation and reliability. Moreover, space industries would need a long-term support to R&D. This support should be also given by nations and European bodies and the tool of diplomacy should be used as an implementation tool to strengthen the realisation of the measures taken by the industry.

**Marco Fuchs, CEO of OHB**, affirmed that the European space industry is very competitive, nevertheless it should also get some inspiration from the business ideas coming from New Space. Their different approaches and smart solutions to the space sector are something that could make the difference for Europe. By embracing the initiatives of new space companies, the industry would have benefits, innovating itself.

**Luigi Pasquali, CEO of Telespazio** estimated, for his part, that there is still a long way for the European industry to become really competitive. The new Space Strategy will help the industry to enhance its role, but this is just the starting point of a longer road. According to L. Pasquali, European States must develop a technology campaign in which the industry can find a place that in a give and take approach, would foster the sector innovation and competitiveness.

After a general consideration by the speakers, **Alain Charmeau, CEO of Airbus Safran Launchers (ASL)**, showed to the audience the numbers representing a European industry that could be highly competitive and that Europe can have an autonomous access to space. As he affirmed, Europe should advance fast in the developing of its space market. Arianespace is giving an important contribution to it, guaranteeing to the European launchers a relevant slice of the worldwide market (about 25%). Regarding the launching market, Mr Charmeau reported that 2016 was a fundamental year for ASL that has kept all its promises: the year was marked by the finalisation of the construction of the company on 1<sup>st</sup> July 2016 and by the joining of Arianespace in the ASL group on 31<sup>st</sup> December. During the year, 76 successful launches were made and 21 of them were made for the commercial market. This means that Europe can have a relevant position in the market despite the competition of USA, China and Russia. The structuring of the European institutional market, in particular with Ariane 6, will be a key factor for the customers and the company itself. A. Charmeau also affirmed that industries should reduce the costs and increase their performance. Innovation is the driving force and the only key element that would ease the affirmation of Europe as a space power in the future.

The first session of the first day was closed by **Pierre Delsaux, Deputy Director-General at DG GROW**. He stated that the European Strategy for space is important today, firstly because it represents the result of discussions with stakeholders and, secondly, because space has the ability to unite people. Yet, a Space Strategy is not enough. Europe needs to deliver and deliver fast. P. Delsaux agreed that this will not be an easy task, but that all the players involved must contribute to the elaboration and development of the strategy's actions. Europe needs to act fast because the world outside is moving extremely fast and the competition is increasing. We need, continued the speaker, to act in a concerted manner and in a long-term perspective focusing on innovation. Europe should be competitive and efficient as much as possible and what we are doing today will be hand to the next generations. P. Delsaux concluded that another big challenge for the European space community is to raise people's awareness regarding the importance of space. This is a challenge, he admitted, but

with the support and the cooperation of industry, institutions, the Commission, ESA, EU Member States, we can make it. We need, he said, to deliver and this is the perfect time to do it.

11:30 – 13:00 SECOND SESSION:

Space services integration in a European connected society and economy

### **How will the space services be active for the modernisation of the European society?**

**Marian-Jean Marinescu** (MEP, TRAN Committee, European Parliament), was asked “*whether the EC’s Space Strategy fulfilled his earlier expectation that space policy be geared towards the imperative for integrated services and a common approach toward protection and security*”. He replied that it was a good start, but stated that open questions still remained in certain areas: e.g. access to space, the next generation of satellites, and the development of space applications that provide services all over Europe. He also emphasized that there are some questions still left on SST governance and on a European system to secure its satellites. Moreover, J.M. Marinescu addressed some other issues raised during the Conference, namely the problems recently encountered on some of the clocks on Galileo satellites and its financing, the future investment in R&D, and possible way of development of the proposed Joint Technology Initiatives (JTI). For the MEP, these questions, and more, require clear governance, especially when considering how to secure these new arrangements for cooperation on space technology dual-use geared toward defence and security purposes.

**Cora van Nieuwenhuizen** (MEP, ITRE Committee, European Parliament) discussed the importance of increasing the private sector’s involvement in the Space Strategy and establishing a stronger connection to the down-stream economy by raising awareness of the importance of space to European society. To do so, she emphasized that the general public needs to hear more about how space is affecting their daily lives, and not only the exploration to the moon and beyond. More specifically, European citizens should be informed that space sector is also about automotive navigation system, connectivity in telecommunications and the development of the European’s Digital Single Market (which would be impossible without investments in space infrastructures and satellites). Rather than describe the potential of space missions, these down-to-earth examples are much better for explaining the immediate benefits of space to the general public. The MEP concluded that these benefits need to be understood by the public first if we want more funds to be invested in space through the next Multiannual Financial Framework (MFF).

**Jadwiga Emilewicz** (Undersecretary of State, Polish Ministry of Economic Development), when asked whether Britain leaving Europe would have a negative impact (in funding or in policy) on what was designed to be an integrated space policy within the EU, replied that she did not think it would and that achieving these goals was in the interest of both the EU and UK. Ms Emilewicz, then, shifted the focus on how to achieve these goals in the Space Strategy; for instance, she suggested as a starting point that all European Institutions should be encouraged to use and facilitate access to space data and to spread its use in the public sector, through innovative downstream applications. Not only citizens can benefit from space applications: also public administrations, for example, can use space

data to tackle larger issues like pollution. Here, J. Emilewicz stressed, we should investigate on how fully implement data from Copernicus and Galileo. Following, the Undersecretary of State pleaded that regulatory measures should be put in place at European and national level to implement the goals of the Space Strategy and to introduce space technology into specific markets (e.g. mobile communication and critical infrastructure). Finally, J. Emilewicz added that secured funding will be needed if we wish to fulfil the ambitious goals outlined in the Space Strategy.

**Lowri Evans** (Director-General, DG GROW, European Commission) shared her optimistic vision about the Space Strategy, formed in consultation with the European Institutions and industry, and stated that the return of the investments in the space sector would be substantial if the ambitious nuanced actions contained in the strategy are executed. When asked whether the EU should increase its independence from the U.S. in the field of space, in light of the growing uncertainties surrounding the new Trump Administration, she expressed her high interest in maintaining the competitiveness of the European space industry against more subsidized competitors in the U.S. and other regions. In a follow-up question, on whether the goal of services integration in a comprehensive space policy was really achievable, and whether other players at national level and elsewhere have the will to engage as deeply as DG GROW in promoting the importance of space as a policy, Ms. Evans said that it would mainly depend on who we consider part of the space industry, as the space industry of the future would include new potential operators that use space data. If players at national level hope to achieve a return on investment in space, it will also depend on their ability to galvanize start-ups and non-traditional space actors in Europe, to create new added-values within the burgeoning services economy or, otherwise, leave it to American multi-national companies to succeed. To respond whether there are enough resources to fulfil the Space Strategy's goals, she said she would compete for the scarce resources of the public fundings, but that would need to raise awareness of the Strategy in the public domain and convince national treasuries of the significant investment return in this domain. Still on the funding front, L. Evans pointed out that before the Commission proposes a method for going forward beyond 2017, it will have to complete in mid-2017 objective assessments of the Copernicus and the Galileo Flagship programmes to see what has been achieved and where further funding is needed.

**Paul Verhoef** (ESA - Director of NAV) was asked about the main challenges in front of the European Space Strategy's implementation, considering that the strategy remains currently a set of goals and that start-up companies are still awaiting a critical mass of initiatives to be reached before making any kinds of commitments. In reply, Mr. Verhoef highlighted the launch of the initial Galileo's services in December as a noticeable sign that the system is progressing, shedding light on the expensive costs and extensive length of production. He also stated that ESA's next phase implementing the Strategy would be to focus on applications and the full integration of space within the terrestrial segments (e.g. autonomous driving). Moreover, he pointed out that ESA will set up a common front office between the applications areas of navigation, communication and Earth observation in ESTEC in the Netherlands (with the support of its specialists) to offer start-ups and non-traditional space actors that think space can offer a contribution to their solutions, an open door to the ESA system. Indeed, he said, ESA hopes to reposition itself in this new role, with a sector that is on the one hand confident with its capabilities, and on the other hand very open to the challenges which are ahead of it.

**Rodolphe Belmer** (CEO, Eutelsat) was asked about his views on the developments of the Space Strategy now that the satellite services would be included within the EU's Telecoms Directorate. He conveyed strong support for the Space Strategy and noted its timeliness because, as representative of a satellite operator, he saw the potentialities of space applications development in meeting the needs of the mass market and delivering large benefits to the European consumers -through high-speed internet connections to households, helping to bridge the Digital Divide for all Europeans. The second service being quickly developed is the broadband in mobility, i.e. bringing mobile WiFi services everywhere in Europe and in the world. Navigation services are also growing, as are the benefits of satellite services when it comes to security. In order to make progress in these areas and enable stakeholders to invest in these services, there is the need to have a link between the space policy and the concrete markets. As a first step, space technology needs to be integrated within the standards that are being developed for 5G to enable the deployment of 5G throughout the EU. Secondly, a portion of frequency spectrum must be preserved for the satellite usage if we are to bring all those benefits discussed today; but we must make sure not to waste valuable spectrum on niche uses. Lastly, there is the need of coherence between the European policies and directives, especially in the case of the new set of directives which are expected to be issued by the EC regarding the telecommunication and the plan to bring high-speed Internet to European citizens. On this last point, he mentioned that 'Technology Neutrality' is no longer mentioned in the directive, which means that it is completely focused on terrestrial fibre deployment. Indeed, not having satellites included in the directive shows that we are still in need for more clarity, more coherence, more visibility, to be able to invest-to develop all of the commercial benefits of the Space Strategy.

**Evert Dudok** (Executive Vice-President, Head of CIS, Airbus Defence & Space) agreed that the industry wanted to have the frequency requirements of satellites as part of 5G initiative. But, first the standards would need to be right, so that so satellite can be an enabler even in non-digital divide situations. Echoing Cora van Nieuwenhuizen and Lowri Evans on the public leveraging better private investments, he said that more applications are needed and that if we get the best applications, then everybody will understand that investments in space is not only about sending a man on the moon, but affects the lives of everybody on a daily basis, and when seen in that context it will be much easier to get the budget discussion through. And, he added that even with the development of 5G, for certain applications, like the remotely piloted drones, the optical communications done by Copernicus will be a better solution. Moreover, in the case of societal challenges such as border security, maritime security, or surveillance, space applications can indeed provide better solutions.

As announced in recent years, satellite manufacturers are changing, and so is the market increasingly, driven by the needs of the "digital economy", said **Jean-Loïc Galle** (President & CEO, Thales Alenia Space). Indeed, he continued, the next decade will be marked by an exponential growth in societal needs. If we focus on the major "disruptions" that we are experiencing, the keywords are: connectivity, security and "big data". In his response to the question of what were the *solutions he proposes to meet these issues*, he stated that the boundaries between space infrastructures and space services were vanishing; moreover, the development of space services in all segments of activities is really the key for the growth of the space industry. But, for Mr J.L. Galle, a central problem for the space sector, for European citizens and the digital economy, lies in the understanding of how to efficiently use and interpret space data. Space could play an important role for maritime surveillance, for the support of civil protection forces and to manage and forecast natural catastrophes. However, to realize these capabilities will require connectivity (both mobile and fixed connectivity), which will be a major level of the growth of the European Industry. Rather than competing with terrestrial ground connectivity in

Europe, satellite and terrestrial communications technologies must be seen as fully complementary in the context of reaching rural areas and big cities respectively, and then working together to cope with the European digital divide.

**Carlo des Dorides** (Executive Director, GSA) shared his thoughts on new possible applications to emerge in the future which would help maximizing the EU's space investment, highlighting GNSS as one element of an overall multi-system providing positioning and navigation data. For instance, he expects the transport sector to develop along three main items: firstly, ubiquity (i.e. navigation and positioning data must be available with seamless continuity across canyons, mountains, tunnels, parking garages); secondly, ambient intelligence (i.e. it will need the capacity to interact with the external world and between users); and thirdly, positioning data becoming more secure and robust. He also expects incredible growth in the Internet of Things and, eventually, to see growth in a new frontier of "smart dust" (i.e. miniaturized sensors to help augment positioning and navigation data).

14:30 – 16:00 THIRD SESSION:

### European space policy as a tool for the EU diplomacy

#### **How will the expected actions reinforce the European position in international relations and economic diplomacy?**

The moderator, Jean-Jacques Tortora, Director of ESPI, opened the session by stating that the European space model was based rather on collaboration than competition, noting that non-European governments provide strong support to their space actors.

The first speaker, **Frank Proust** (MPE, Vice-Chair "Sky and Space" Intergroup, European Parliament) insisted on the interests Europe has in space, stressing that 2016 has been an exceptional year with 27 satellites launched from the European Space Port in French Guiana. The MEP also stated that EU industry's development of foreign markets, in general, and space industry, particularly, are a priority. This is exactly, he pursued, where the interest of economic diplomacy lies. He underlined that the space sector can be a tool for the economic diplomacy and Europe has the necessary means for promoting the companies internationally, supporting the EU champions, coordinating actions at institutional level and supporting smaller operators without being impressed by the new actors: SpaceX and the so-called "new space", neither be afraid of a "European preference". In the United States, China, and Russia, space is clearly regarded as a tool affirming their independence. Nevertheless, as emphasised the speaker, the European industry must be the first convinced of our means and potential! Along that line, all actors, in his mind, must work collectively, in particular the European Commissioners.

The second speaker, **Christian Leffler** (Deputy Secretary General of EEAS), reminded the audience that Europe has a global Space Strategy based on a holistic approach consisting in using all the instruments available via the well-known dialectic of sectorial policies, serving foreign policies and vice-versa. The EEAS is active at multilateral level within the UN COPUOS and in the preparation of "Unispace+50" facilitating the development of a framework for cooperation, as well as in preparing a 2017 conference

in Japan on space and natural resources. Speaking of the 2030 Sustainable Development Goals (SDGs), Mr Leffler highlighted the ways in which the EU can contribute, namely via Earth Observation programmes, technologies and PNT services, to help achieving these development goals. Mr Leffler also underlined the role of space in conflict prevention and post conflict reconstruction. Like his predecessor, he mentioned the importance of an “economic diplomacy” serving different policy areas for developing space activities. He advocated also for a better use of research programmes and, he too, called for a partnership with Brazil.

**Matthias Petschke** (Director, DG GROW) stated very clearly that Europe is a space power: “*We’re on the map and we are autonomous as far as possible*”. Europe has developed space programmes and is considered a serious actor in this field because of its space industry capacity. Looking at the space dependency of the civil society, the EU plays a major role in completing its two flagship programmes, Copernicus and Galileo, EGNOS services being already available since 2011. It is thanks, he stressed, to the visionaries of 20-30 years ago, that Europe is where it stands today, in other words: one of the world’s leading countries in the field of space. The speaker then focused on:

- *Bilateral activities*, mentioning the space dialogue with the United States, the EU request for having the Galileo signals to be used in the US, the industrial cooperation explored with Japan, a variety of cooperation agreements and also technology exports. The acceptance of EGNOS signals in a significant number of African countries is also a concrete result of the neighbourhood policy of the EU. Efforts are underway to have the Galileo / EGNOS services also accepted in some Asian countries.

- *Multilateral activities*, including the **International Telecommunication Union (ITU)**, with the International COSPAS-SARSAT Programme and the International Maritime Organisation (IMO) which was recognized a year ago, the Galileo signals as a standard aid for ship navigation. For these activities, he recalled, the European Commission’s DG MOVE and DG COMP are involved as well. Furthermore, he pointed out a number of challenges to come, including adapting the existing set of regulations, namely, implementing the European space strategy, securing budgets, preparing for the next MFF and the mid-term review of the current one. Technical issues have also their share with the recent declaration of Galileo initial services delivered on time. Because of the rapidly changing international environment, the EU has to improve its resilience; in this regard, the negotiations with the United States on the European PNT system are progressing.

**Joseph Aschbacher** (Director of EOP, European Space Agency) indicated that ESA builds up its international capacity through technical partnerships, experts’ knowledge and services. The chain of data-information-diplomacy is a particularly valuable tool to serve the EU and ESA member states. He emphasized that ESA considers that Europe has the best Earth monitoring system in the world. In addition, the 17 PB (petabytes) of data must be considered as a serious bargaining chip, giving the European clear leverage for negotiation. In this context, the speaker reminded the ongoing cooperation with Japan on Earth-Care and with the United States via the EU-Eutelsat-NOAA agreement. It is worth mentioning also, he said, the role of ESA in the Committee on Earth Observation Satellites (CEOS) and in the International Charter on natural disasters (a founding member with CNES) which now involves 16 member agencies dedicated to provide data for civil protection. To conclude, Joseph Aschbacher underlined the importance of space as a “diplomatic tool” to position Europe, supported by the European Space Strategy, favouring technology exports by European industries.

**Martin Van Schaik** (SVP Sales & Marketing, Thales Alenia Space) pointed out that the EU industry's competitiveness depends on "its capacity to win contracts on the open non-European market" as the European, internal market is "insufficient to ensure its stability". The speaker gave examples of how the EU or any kind of governmental support can lead to a successful contract with a non-EU country, a concrete illustration of economic diplomacy: - the support of the EU delegation in Dacca and of DG GROW, has been crucial for recently concluding the sale by TAS of a telecom satellite to Bangladesh; - same for the sale of a navigation augmentation system to the Korean KASI involving an American company. These successes could not have been achieved without the help of the European institutions, ESA, French national authorities together with CNES and the KARI. This is an excellent example showing how public actors, at European or national level, can successfully support the private sector. Furthermore, he insisted on the additional concrete measures in which the European Commission, and namely DG GROW, could support the space industry: high-level political support, a flexible instrument in the R&D programme, a raise-awareness campaign and encouragement to DG DEVCO in order to "offer adequate support to training in space-related activities".

**Stéphane Israël** (Chairman & CEO, Arianespace) wondered about the European weaknesses that could be successfully tackled with the help of the EU. He noted that in 2016, 26 out of 86 launches were purely commercial; 25-27 % of Arianespace (AE) clients were institutional, whereas these figures climb to 67 % for SpaceX. Looking at a launch price, the President of Arianespace considered that the prices charged by his company are reasonable. For SpaceX, it's becoming difficult to say which is the right price, since for a comparable payload, the price depends on who is the client: commercial, DoD, or a science user. As an example, the price for launching SWOT is 112 M\$. It has to be recognized that since the Lisbon Treaty, there has been an increase of institutional launches and a real European willingness to use Ariane 6 and Vega C for these types of launches: 5 times per year with Ariane 6 and 2-3 with Vega C are planned. Furthermore, it should be beared in mind that the Euro/dollar exchange rate, the so called "hidden diplomacy", is a serious uncertainty since costs are labelled in Euros, while sales take place in US dollars. Indeed, if the President of the European Central Bank does not fix directly the exchange rate between these two currencies, quantitative easing may have an influence. According to the speaker, a clever protectionism should be put in place to preserve the competitiveness of the European launchers. We also need an economic environment that favours business, particularly in France and in Italy. In conclusion, Stéphane Israël called for a dynamic back-up policy to be worked out and confirmed the launch in 2018 by Arianespace of the James Webb telescope.

16:30 – 18:00 FOURTH SESSION

## Space as a key tool at the service of the European Security & Defence Policy

### **How will the space programmes contribute to the political priority of the European Security and Defence (incl. migration and border surveillance)?**

The moderator, Andrea Bonanni, correspondent of the Italian *La Repubblica*, introduced the session by asking to the speakers three questions: how much we depend today on US technology for space security? If the Brexit severs British contribution to European programmes, can the European industry fulfil the gap? And, as far as dual use technology is concerned, are the civilian technologies sufficient, or should a real security and defence programme be started for Europe?

**Christian Ehler** (MEP, Vice-Chair, SEDE Subcommittee, European Parliament) said that in European Member States, contrary to many other countries in the world, authorities tend to separate civilian and defence activities. So far, no European tank nor European aircraft carrier exist, but satellite may offer an ideal point of application for a European military significant asset. He emphasized that 70 % of European citizens agree to have more funds contributing to security, which would also increase the stance for more European independence.

**Philippe Brunet** (Director Space Policy, DG GROW, European Commission) underlined the actions already undertaken by the European Commission in the field of space such as the creation of the European Defence Fund or the adoption of the European Defence Action Plan with its two areas of importance: Copernicus and GovSatComs. For the latter, he insisted also that the Commission has been working together with EDA, ESA and EEAS on a high-level civilian military need document that could be endorsed by the Council in the early 2018, as the Commission would hope. The speaker indicated that the continuation of the cooperation for Jason 3, Jason CS and, with NASA, on Earth observation, knowing that this important NASA activity could be shifted to NOAA with which a new cooperation agreement would then had to be signed. Moreover, he stressed that dual-use research activities concern actions and programmes. For the FP9 that will come into force after 2020, there are two conventional pillars: firstly, the *Joint Technology Initiative (JTI)* addressing de-orbiting, orbit servicing, launcher critical technologies, and smart digital satellites; secondly, the *European Institute of Innovation & Technology (EIT)*: a KIC dedicated to space should be created. As to the Brexit implication on the EU space programmes, it is only possible to say that the line defined by the Commission will be followed.

**Miguel Angel Panduro** (CEO, Hisdesat) focused straight on the importance of command, control and intelligence. The speaker considered that a milsatcom constellation should also be part of the EU space programme. In that respect, he indicated that in 2017, the PAZ satellite, operated by his group, will offer precise information for multiple applications for dual-use missions from its polar orbit. He called also for an acceleration of space investments already by now for the European industry to remain competitive.

**Johannes von Thadden** (Senior Vice-President, Head of International & Space Institutions, Airbus Defence & Space) pledged for reinvigorating the European defence funding and capabilities: "Europe has to become relevant for its defence". He wondered whether Europeans would be ready to allocate

2% of their GDP for defence and security. He underlined that a Defence Action Plan existed already and suggested that it should be now simply implemented. He argued: the Govsatcoms concept is rolling, the EU should thus decide on whether we are moving ahead or not? In his opinion, a Strategic Defence Action Plan would be welcomed, but insufficient to meet the internal and external security challenges. Also, money is needed to follow the priorities that are set. Mr von Thadden shared his view that in the JTI mentioned by Mr Brunet, de-orbiting should be the priority. Furthermore, there should be also a “European preference” for using Ariane launchers of similar lift-off capabilities compared to non-European launchers.

**Carlos Suarez** (Executive Vice-President Indra), before focusing his intervention on space protection, indicated that the election of President Trump was a wake-up call for the necessary European investments in defence, and that Brexit was not a good piece of news for the European Space & Defence industry. Moreover, the speaker noted that the dual-use must be considered as an integral part of Copernicus, communication satellites, and space surveillance and tracking (SST). For the latter, he acknowledged the creation of the consortium made up of five European countries and noticed that the Italy-Spain programme for a high-resolution radar could be used as a BMD asset for Europe. In conclusion, he underlined once more the importance for Europe to develop its own SST assets.

**Jorge Domecq** (Chief Executive, European Defence Agency) indicated that the level of ambition for security, including space, was set in June with the Global Strategy presented by the High Representative Federica Mogherini and adopted in October by the EU ministers. He insisted on the importance of a dual approach when building up space capabilities, stressing that there is no need to pay twice for comparable technologies. In particular, according to the speaker, security issues should be taken into account right from the inception of any space programme. His opinion is that the critical space technology programme with ESA and the Commission is to be continued, identifying the needs for a European non-dependence. On this line, he indicated that the Govsatcom Initiative is very concretely oriented towards the practice of pulling and sharing. Nevertheless, he considered that a move forward is needed, with the possibility to maintain and promote in Europe a group of industrial capacities in R&T, in particular to feed the Govsatcoms project. Moreover, Mr Domecq said that EDA has received a clear signal from the UK that the Brexit conditions should not affect their level of commitment to the EDA, as recently showed with an increase of their contribution to the budget of the Agency.

**François Rivasseau** (EU Special Envoy for Space, Director, Security policy and conflict prevention, EEAS) argued that, if the aim is to develop a European security & defence, the EU should start with space, because it is precisely in space that the EU has a unique qualification. He added that the dependence on the United States is worrying, in particular when it comes to SSA and SST and related issues, including cyber-attack threats. But, he noted, no answer was given as to when Europe would have its own means of SST, if not comparable to the US, but at least putting Europe on a stand to be recognized as a real partner by the US. This dependency might become acute when the US will not be willing anymore— let us say in 5 to 10 years - to provide other parts of the world with space data for free. To meet these challenges, the effort made by the Commission has to be acknowledged, but is far from what is needed. Moreover, he added that maintaining a free and safe access to space is also essential for Europe. As for the dual-use, he said that everything is by nature dual-use in space. He also noted that the Europeans having started space programmes for civilian purposes, moving progressively to defence programmes, followed the reverse track of the United States, which started first with strong military programmes. This explains in part the still lacking security culture in the European space

programmes. During the Q&A debate, the speaker indicated that an international entity might be necessary for space traffic management and that this should be discussed at the UN COPUOS. For Mr Rivasseau, space debris removal is crucial and, indeed, he shares Mr Brunet's view that it should be a priority in the next MFF. As far as the so-called Brexit is concerned, Mr Rivasseau indicated that keeping UK in the space programmes is a mutual interest; an encouraging sign is the recent speech of Prime Minister Theresa May indicating that space could benefit of a special treatment.

## 18:00 – 18:15 CLOSING ADDRESS OF THE DAY

The first day of the deliberations was concluded by the President of the Italian Space Agency (ASI), **Roberto Battiston**, and the Chair of the Executive Board of German Aerospace Center (DLR), **Pascale Ehrenfreund**.

**Roberto Battiston** affirmed that space is a global common and, for Europe, it has always been a tool to enhance the EU global space policy. Indeed, space means a better life, an improvement of the everyday activities and a boosting factor for the economy of countries. Nevertheless, the EU citizens must be informed about what space is doing for them. To achieve this goal, European actors should work together. The interplay between ESA and the EU is necessary as the two are complementary; ESA started its activities before the EU did, developing technologies and sciences. To advance in the field of space, said the President of ASI, we need to attract young entrepreneurs and move towards a more concrete space policy and a common technological policy that is necessary to tackle new needs. Only a united Europe can succeed. For this reason, he added, we have gathered all our efforts to guarantee an independent access to space, a major transparency regarding the public investment and a set-up of regulatory rules to allow the institutional and the private market to compete.

**Pascale Ehrenfreund** agreed with the conclusions made by Battiston and stated that 2016 was a great year for the European space sector but she hoped for 2017 to be even better - it should be the year of action. Firstly, the European space industry should be more inclusive toward New Space initiatives, which represent a new way to engage with space activities. Then, competitiveness should be boosted, fostering the development of the space market both for industry and research. Another subject touched by Ms Ehrenfreund, was the importance of connectivity and digital divide, and the need to have long term stability and adequate funding schemes to guarantee a long term evolution of the European systems Galileo and Copernicus. The same actions should be taken regarding the "space diplomacy" and the collective defence system; these must be ensured through a multilateral cooperation and the protection of the European space assets. In conclusion, Pascale Ehrenfreund stressed the concept that all the stakeholders have to participate in the discussions about the future providing inputs. She added that Europe needs to find its own identity in space and for space.

## Day 2 - Wednesday 25 January 2017

### 09:00 – 09:15 OPENING OF THE DEBATE

The second day of work was opened by the statements of **Didier Reynders**, Deputy Prime Minister and Minister of Foreign Affairs and European Affairs of the Kingdom of Belgium. He stated that space industry would help Europe to deal with the everyday challenges: from migration to security and from terrorism to climate change. Europe has to invest in space infrastructure and, in particular, in a European defence industry in EU. Indeed, there is the need to organise a real defence industry and to have a European pillar in NATO. Furthermore, a free and open access to space is needed as well as the EU needs the industry to reduce the costs. These adjunctive measures, argued D. Reynders, could contribute to enhance Europe's own capacities and self-sufficiency

**Maroš Šefčovič**, Vice-President of the European Commission, reaffirmed the ideas of the previous speaker and reminded to the audience that 2016 was just the beginning of a new era for space. For him as well, 2016 has been the best year that Europe has ever had. But beyond the technical achievements, Europe still needs to show that its industry can work together with other sectors, in order to achieve the goals that Europe set up. Moreover, M. Šefčovič stressed the necessity to develop a strong European defence reliant on satellite data. This poses the issue related to the budgetary allocations: it is important to consider in 2017 how the budget for the next seven years should be framed. In the end, the Vice-President reminded that in 2017, the EU will have to find practical ways to accomplish all the milestones of 2016 and this must be done through communicating the positive impacts that space has on the citizen's daily-life and on the European economy.

### 09:15 – 10:30 FIFTH SESSION:

A fully evolving European SatCom industry addressing new technological challenges and new needs

**How will the space programmes contribute to the preparation of the future telecoms (5G, frequencies, Govsatcom, telecom for aeronautics, UAVs)?**

**Constanze Krehl** (MEP, REGI committee, European Parliament), as Rapporteur of the European Parliament own-initiative Report on the "Space Strategy for Europe", described how the Commission's document achieved substantial progress in defining Europe's own ambitions. She noted that the European Parliament is in the position to further strengthen this Strategy by supporting the demands for more funding for the space policy in preparation of the next MFF. But to do this, the public sector will need to develop more business cases intended for the industry and the end user. The public administration must also begin using data from European space systems. When asked about the way forward beyond the Space Strategy Communication, Ms Krehl noted that concrete actions are needed,

for instance in the ways in which the telecommunications industry could use the satellites. But in order for the EU to create a competitive European space industry and policy, she added, it will need more private investments from industry as well. She concluded, indicating that the concrete ideas put forward during the European Space Policy Conference, will also be integrated in her Report which will be presented in Committee at the end of March 2017.

**Pears O'Donohue** (Director, DG CONNECT, European Commission), when asked about the role of SatCom in the overall Digital Agenda for Europe, noted that DG CONNECT understood what satellites and the satellite industry have to offer to the Digital Single Market. He explained that in the next generation of communications, the satellite industry will play a more prominent role, while the terrestrial industry will be on the defensive. This is because 5G is not just a linear continuation of 4G, but a vision for a platform of technologies which integrates different communications systems to create a 360-degree type of connectivity environment for all sectors. Here, the satellite industry is already placed to act as a key player in meeting the needs of specific vertical industries. In order to achieve the aim to have all major transport paths enabled with 5G by 2025, and to have at least one 5G city in each Member State by 2020, the satellite community will need to participate in the discussions. When further asked about the way in which DG CONNECT manages the competition and the complementarities between the space and terrestrial infrastructures, Mr O'Donohue replied that managing competition was not their domain; however, he could respond to the issue of complementarity, saying that 5G is part of the Internet of Things vision, that extends beyond the boundaries of terrestrial communication services, and has fluid inter-operability, so that the best communications technologies are available for the specific application of the industry or of the citizen. The Commission will help the satellite industry to find its place in this new vision, but hopes it will be alongside the terrestrial communications sector.

**Magali Vaissière** (ESA-Director of TIA) talked about the outcome of the December 2016 ESA Ministerial Council meeting and responded to whether ESA have received the means to adequately prepare the European space industry to tackle the upcoming major challenges that are foreseen. Remarking that the meeting was an overall success, she focussed on SatCom, highlighting that it received €1.2 billion - split into €700 million for envelope programmes e.g. core competitiveness and integrated applications programmes, and €500 million in support to project developments in partnerships, e.g. partnerships with satellite operators and other new opportunities. Ms Vaissière went on to describe a new cofounded activity known as "GovSatCom Precursor programme", in cooperation with the European Defence Agency (EDA) and DG GROW. This should lead to innovation in both system and ground segment developments, the creation of new services, and thus enable more effective pooling and sharing of SatCom capabilities coming from both commercial and institutional actors for civil protection and maritime security. ESA has also initiated industrial procurement actions for another project named "Pioneer" to provide Europe with effective means to perform IOV/IOD of new technologies systems and services by 2018. She considered that the next step in Europe's Space Strategy in SatCom will be to increase cooperation and partnership between the ESA programmes, industrial partners and the European institutional programmes, with the EU increasingly emerging as an anchor customer of space services and also as an enabler of communication technology for both space and non-space sectors.

**Karim Michel Sabbagh** (President and CEO, SES) pointed out the ways in which the space industrial base in Europe could address the new and diversified requirements for connectivity, and how the European policy narrative could eventually facilitate this effort. Beginning with the fact that the

European industry (i.e. operators, manufacturers, service providers, etc.) brings together an unparalleled 230,000 professionals in a single market and that the value satellite industry brings year-out is close to €60 billion, or 21% of the value of the space industry globally. However, Europe is lagging behind when it comes to bring connectivity services into its infrastructure. In order to meet the coming demand for aeronautical, and government-related services, SES, for its part, said K.M. Sabbagh, will have to double down its investments to create new applications. In the context of GovSatCom, he added, some form of PPP with the EU will be needed to overcome regulatory barriers and develop the right platform.

**Arnaud de Rosnay** (Head of Telecommunications Satellites, Airbus Defence & Space), while considering whether the expectations of the Space Strategy documents for SatCom Industry have been captured, highlighted examples where some improvements could be possible, including the digital divide where a gap remains and is poised to increase with 5G bringing high speed in cities and leaving low speed in rural areas. The EU could help by aggregating the demand and thus become a sort of an anchor customer to guarantee Internet access for these people. The EU needs to further consider how to aggregate the demand for GovSatCom, as national programmes on security already exist. And because the SatCom industry must compete on price, value for money and innovation, the industry needs stable support from the EU, in addition to the investment and support from ESA, to maintain its position as an innovation leader. Additionally, the EU should adapt its economic diplomacy. Finally, on 5G, Mr de Rosnay added that it is fundamental that it should be technologically neutral, and thus it should not matter if it comes from space or terrestrial networks.

**Jurry de la Mar** (Director, T-Systems International) discussed the main issues that were raised by the Digital Single Market, including access, security (i.e. trust in online platforms and cloud computing and data economy). He informed the audience that the Copernicus platform has already about 60,000 registered users and transfers 1 petabyte of data monthly. Here, he stated, the user-led services to combine these data capabilities should be supported by the industry.

09:45 – 11:00 SIXTH SESSION:

How should the EU facilitate and fund the future of the space market?

### **Road map for implementation and related financing**

The last session of the second day searched for measures to fund European space market in the light of the space strategy.

The first statement of the day was from **Inés Ayala Sender** (MEP, member of the BUDG committee). She said that industry should take advantage of the financial opportunities offered by the European Union in the frame of the Space Strategy and on the basis of the Monti Report on the potential new “own resources” of the EU budget. All the Member States should together, she pleaded, find a way to

ameliorate the conditions of life of the people and for this reason the investments for R&D must be increased in all the relevant sector for society, namely the space sector.

**Philippe Brunet** (Director at DG GROW) stated that the European Union has a driving role for the whole European space sector that it fulfils through financing (second largest budget in the world dedicated to the space policy) and through documents such as the recently adopted Space Strategy. He offered his view on the future developments of the European space market. Firstly, he affirmed that EU will finance industrial projects and space research, with the aim to innovate the old systems. He then insisted on the need to continue the development and improvement of Galileo and Copernicus programmes and to put this goal as a key priority for the EU. In particular, he explained that Copernicus' final aim must be reshaped on the basis of the results of the Cop21 and Cop22, including CO2 and carbon sink management and the activities of research in the Arctic. Referring again to Copernicus, Mr Brunet stated that by 2018, the EU will develop platforms gathering stakeholders from the data sector to make available to them European space data. It is necessary, according to the Director, to set up new Joint Technology Initiative (JTI) regarding smart satellites and digital/hybrid satellites, orbiting services and de-orbiting and new infrastructures and technologies for launchers. This pilot project proposed by the European Parliament has already been approved for this year and will serve as a basis for further reflexions with the European actors. Moreover, Ph. Brunet mentioned the possibility of using the satellite imagery for Defence and Security purposes. Finally, he named also several instruments that are and will be used that are not directly linked to the space sector, but will certainly have an impact on it: such as supporting the emersion of ecosystems in the EU, SME instrument, Horizon 2020, COSME or fostering the development of regions as the local authorities could eventually become the first client for the space solutions proposed.

This intervention was followed by the speech of **Rainer Horn** (Managing Partner at SpaceTec Partners). He affirmed that Europe has a risk-taking capacity today of 25BEuro, increased from the initial 5BEuro thanks to the Juncker Plan. According to Mr Horn, the European Investment Bank and the European Investment Fund should help emerging companies to find financial appropriate structures, such as PPPs and Private Equity. The difference between Europe and US, according to the speaker, is related to the different relationship between the key entrepreneurs and the venture capitalists. Nevertheless, Europe could become the perfect ecosystem for young entrepreneurs, they would simply need more "smart capital" to lubricate the system and a framework that would enhance the PPP.

**Eric Morel de Westgaver** (Director of the Industrial, Legal and Procurement Services IPL, ESA), insisted on the need to set up new initiatives and tools to offer to the space community and the EU could take a good example of what has already been done in the US. The speaker recalled the ESAs' activities such as the grant challenge mechanism to facilitate innovation and the thematic innovation platform that gathers people together from different domain, as the one created on cybersecurity. These two measures can represent, according to him, a good pattern of work, allowing all the stakeholders to enter in the space domain on the basis of the geographic proximity. Mr Morel de Westgaver concluded asking for the reinforcement of the synergies between EU and ESA funding.

**Alan Bories** (Senior Vice President of the Strategy and Business Development, OHB) insisted on the need to have more funds allocated to space programmes, both from the public sector and the private one. In particular, some infrastructures should be funded by the public sector, but in other cases, it needs to have also the support of private funding. A business case, he considered, could be the telecommunications sector. He affirmed, in the end, that European investors should intervene on the downstream sector as the new space trends are suggesting to do.



## 12:30 – 13:00 CLOSING ADDRESS

**Geneviève Fioraso** (former French minister for Research and Space, ESPI Advisory Council) spoke as a representative of the Advisory Council of the European Space Policy Institute (ESPI) in the closing address of the conference, reflecting on the evolution of the global space sector and the stakes for Europe in this fast-evolving framework. Regarding applications, their diversity and benefits for the economy and for citizens, as noted by the speaker, have been dealt with during the Conference and should now be related with citizens to create a favourable environment for increased investment in space. Nevertheless, there are some areas, mentioned Ms Fioraso, that deserve further developments. Firstly, according to her, we need to set greater European ambitions in space that extend beyond the aggregated ambitions of individual European member states. Secondly, new space companies would require benefits from a relaxation of constraints inherent to public procurement if they are to dramatically increase their effectiveness in the development phase, and to radically optimize recurring and operational costs. Finally, “New space” comes with new threats, with the multiplication of initiatives and actors, and will require additional resources to maintain an equal hand in international negotiations. While there are still many areas to explore, in terms of reflection regarding the European Space Policy, it cannot be devised in isolation. This situation should therefore be faced with reflections and initiatives taking place in the rest of the world, in the US of course, but also in China, Russia, Japan, India and in all the other nations that might not have strong space capabilities, but nevertheless increasingly rely on space infrastructures and the associated applications and services.

**Monika Hohlmeier** (MEP, Chair, "Sky & Space" Intergroup, European Parliament), the final speaker for the Conference, highlighted the strengths of the European space sector and of the Commission’s Space Strategy, despite being in the midst of a very challenging time, considering Brexit and the UK’s potential contribution to the next MFF. She stressed the need to increase space investments beyond Horizon 2020 allocations, in order to place Europe on equal footing with Russian, US and Chinese institutional investments in their own space sectors. If the rest of the global space actors play a subsidies game, Europe should consider following the same rules, in order to make the market fair once again. Moreover, Ms Hohlmeier stressed that the EU will have to integrate a defence and security sector in the next MFF, which will require a clear definition of which projects are the ones with a European added value. EU has a choice to make on whether it should depend on the US or rather only on itself. The European space sector needs to create more opportunities, through PPPs or through the industry. Some parliamentarians are promoting space sector ideas, but they concentrate rather on a political framework, while it is up to space sector to come up with the content.

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