



European Interparliamentary Space Conference (EISC) 2022

Plenary Session

Friday 16 September 9:00 – 17:30 CEST

Proceedings

On September 16th, 2022, the French Presidency of the European Interparliamentary Space Conference (EISC) hosted the EISC Plenary Session on the sustainable access to, and use of, space. It brought together delegations from Austria, Belgium, Estonia, France, Germany, Luxembourg, Norway, Poland, Portugal as well as representatives from the European Space Agency (ESA) at the French Senate in Paris.

OPENING SESSION

The Plenary Session was opened by Mrs. Sophie PRIMAS, Chairwoman of the Economic Affairs Committee, on behalf of the French Senate's President **Mr. Gérard LARCHER**. The President recalled the importance of having such a format for interparliamentary cooperation dedicated to space policies, especially on the eve of the opening of the International Astronautical Congress (IAC) in Paris.

Mrs. Sophie PRIMAS, as Chairwoman of the Space Policies Group at the French Senate, then explained why it was important to talk about the sustainable access to space and what it means for parliamentarians. She recalled the consequences of the war in Ukraine on cooperation in space as well as consequences on the European space industry, including launchers. She underlined that European strategic autonomy in the field of space relies primarily on a resilient and competitive industrial base, the commercial performance of companies, and regular investments in research and innovation. She further stated that a lack of infrastructures and systems adapted to our political ambitions could compromise our sustainable access to space.

Mr. Josef ASCHBACHER, ESA Director General, gave a keynote speech and presented ESA, its governance, the participation of Member States, and its programmes. He recalled that Ariane 6 was a priority and the main next step for ESA for access to space. He explained the reasons for the delays of Ariane 6, which are rather common in the space sector. He highlighted that the war in Ukraine revealed dependences and ESA is now striving to build more technological independence. He further outlined the role of ESA in contributing to economic growth and jobs, outlining that the total financial benefit to Europe from its space activities accounts for an estimated €53.5 billion. Mr. ASCHBACHER underlined the objectives of ESA for the next Ministerial Council (CM22), which include making Europe a space power by 2035, in the same league as the United States, China, and Russia. Realising this ambition requires a strongly increased investment at CM22 and an ambition at the Ministerial Council in 2025 (CM25) which will lift ESA's budget to up to 1/3 of NASA's. Regarding Space Safety and Sustainability, ESA is looking to establish European players on a growing market of space-traffic technologies and products; and prepare the European industry for a zero-debris policy and a circular economy in space.

Finally, he mentioned the High-Level Advisory Group on Human Space Exploration for Europe (HLAG), which is defining recommendations and considerations for the Space Summit 2023.

FIRST SESSION: EUROPEAN STRATEGIC AUTONOMY TO GUARANTEE SUSTAINABLE ACCESS TO SPACE

The session was moderated by M. Claude RAYNAL, Chairman of the Finance Committee of the French Senate, and brought together M. Philippe BAPTISTE, President of CNES (the French Space Agency); Mr. Stéphane ISRAËL, President of Arianespace; Mr. Riadh CAMMOUN, Vice-President of Thales Alenia Space.

Mr. Claude RAYNAL opened the session by outlining that the comparative advantages of Europe are being contested, in particular by the United States and China. Private actors are positioning themselves as key actors and emerging technologies change industrial models. He also recalled the massive public financial support from which the space sector benefits in other countries and regions of the world and thus called for a strengthening of the European preference on space infrastructure.

Mr. Philippe BAPTISTE recalled the history of the development of launchers in France and the importance of access to space in France, outlining that in 1961, Gen. De Gaulle created CNES and had a clear idea to develop an autonomous access to space to guarantee France's strategic autonomy. Today, launchers and access to space remain a major stake for CNES. While Vega is now an efficient launcher, which completes the array of European launchers, he underlined that Europe is in a difficult period due to the transition period between Ariane 5 and Ariane 6, as well as the war in Ukraine, which prevents to launch European satellites with Soyuz. He recognized that the development of Ariane 6 fell behind schedule. However, the launch pad is now completed, tests for the upper stage should take place in a few days, and combined tests remain to be completed. Beyond Ariane 6, it is also key to think about the future of launchers as the world has greatly evolved since the moment the Ariane 6 programme was established and designed. He clarified that a new launcher will not be developed in the near future but underlined the necessity to start thinking about the successor Ariane 6. Access to space will remain a necessary condition to be a space power.

Mr. BAPTISTE also explained why the development of micro launchers is important for CNES: (1) learning new things; (2) master reusability, which does not necessarily mean that the successor of Ariane 6 will be reusable, but this is a major technology to have and understand; (3) developing green launchers that are more sustainable and better comply with environmental criteria. Micro-launchers enable to advance on these issues.

Additionally, it is critical to think about the institutional framework in which CNES and Europe work. He mentioned the principle of geographical return, which is a great way to create a true European space sector by encouraging new countries to invest in space with the guarantee to have a return on investment and the development of a technical expertise in their countries. However, Mr. BAPTISTE also highlighted that the price of the launcher may be negatively impacted by the model of geographical return.

Mr. Stéphane ISRAËL explained that the French and European visions in space, including in the field of launchers, are rather aligned, which makes the development of programmes simpler. He also mentioned that access to space is a strategic need to face other geopolitical powers, but it is an ever greater need to face private actors.

Arianespace was long a dominant actor on the commercial market. While it is not the case anymore, Arianespace remain a major actor. Arianespace launched the most important scientific mission of the decade: the James Webb Telescope. Arianespace is a respected actor at the international level. It signed the Kuiper contract with Amazon because Arianespace was regarded as the only trustworthy international partner outside the United States. This is a particular moment as Europe has to consolidate Vega-C and Ariane 6 and organize its competition with new actors. He outlined that only heavy launchers are profitable in the long-term. He recognized the importance of ESA's resolution of 2021 on launchers, which sets the conditions for the first three years of exploitation of Europe's new launch vehicles, Ariane 6 and Vega-C at Europe's Spaceport in French Guiana. Similarly to Mr. BAPTISTE, Mr. ISRAËL highlighted the need to think about the future of launchers, explaining that the current pace of launches could justify the need to integrate reusability.

Regarding the current situation in Ukraine, Mr. ISRAËL recalled that the cooperation with Russia is a circumstantial problem rather than a structural problem for Arianespace.

Mr. Riadh CAMMOUN explained the work conducted by Thales Alenia Space in the manufacturing of satellites and orbital systems. He also underlined the need for Europe to have space capabilities to face critical challenges such as climate change and high-intensity conflicts such as the war in Ukraine. He emphasized the critical role of space in support of military operations for Command, Control, Communications, Computers (C4) Intelligence, Surveillance and Reconnaissance (ISR) and the synchronization of weapon systems. Satellite communications are essential to provide robust and protected communication between commanders and the battlefield as well as between battlefields. He underlined the need for a sovereign European constellation.

He further explained that Copernicus also contributes to strategic autonomy in Europe by enabling decision makers to have independent data on the state of climate change and evaluate risks independently.

He recalled that autonomy in space is enabled by industrial autonomy by maintaining know-how and expertise, establishing autonomous supply chains, accelerating innovation cycles, and preserving economic sovereignty in a context of high inflation. He also highlighted that investments in Europe are too low compared to the U.S.

Climate change, wars, and foreign anti-satellites (ASAT) capabilities threaten our space systems, which call for the development of a secure connectivity initiative, a secure navigation system with anti-jamming and anti-spoofing capabilities to complete Galileo, the update of early warning systems, the update of Copernicus in 2035, the development of European space situational awareness (SSA) capabilities, software defined satellites, and orbitography analysis capabilities to better attribute and assess an attack.

Speeches of delegations

Mr. Christian HAUGLIE-HANSSEN, Head of the Norwegian Space Agency, recalled Norway's experience, which held the EISC Presidency in 2020 and 2021. He explained that it enabled Norway to work with other European state actors in the field of space.

Mrs. Lene WESTGAARD-HALLE, Norwegian MP, mentioned the interest of Norway in discussing about strategic autonomy and the need for Europe to stand together. Norway supports strategic autonomy in space and supports broader cooperation, but geopolitical realities illustrate how European capacities in access to space can be affected. She mentioned that it is important to have a free market, to unleash the possibilities for businesses to flourish and that it is key to have the right

technologies at the right time. However, Europe needs to step up. She explained how Norway could contribute:

- The Andøya Space Center can give Europe a continental access to space to launch small satellites. It is an infrastructure already in place, with a first launch scheduled at the end of 2022.
- The Svalbard Island, which is a key area to place ground antennas for downloading data of satellite in polar orbits at each visit.

M. Klaus Peter WILLSCH, German MP, declared that it is important to make sure that Ariane 6 launches, important to think about the future and reusability. In the field of space sustainability, it is important to make sure that space can be used by future generations and nations. Space safety and space traffic management (STM) are vital. He outlined that we cannot have things going to space in an unregulated fashion. What goes into space has to be addressed through maximum efficiency. He further highlighted the need to adopt the same approach as household waste for space waste. In addition, he said that it was vital to keep the ESA structure as it gives smaller countries access to space with the geographical return.

Dr. Therese NISS, Austrian MP, highlighted that the growing space economy brings many opportunities as well as challenges. The issue of space debris threatens space operations and infrastructures and there is a need to ensure that SATCOM, Navigation, and Earth Observation (EO) remain accessible. Regarding STM, international standards and guidelines similar to aviation are welcomed. Deorbiting should become standards and there is a need to protect our space assets. The use of space for monitoring climate change and sustainability in space are key pillars in the new Austrian space strategy.

She underlined the need to set the right conditions for research, and development, and investment to increase the financial benefits. She outlined that Austria would like to contribute, in particular in the field of EO and SATCOM. In addition, she paid tribute to the speech of the ESA DG on fostering education in Science, Technology, Engineering and Mathematics (STEM) and training future talents, in particular women.

Finally, on behalf of the Austrian delegation, she announced the willingness of Austria to hold the Presidency of EISC in 2023.

M. Timo SUSLOV, Estonian MP, outlined that space becomes more relevant than ever before. In Estonia, there are more investments in space and the country increased its participation in ESA programmes and that the Estonian industry also develops technologies with ESA. He recalled that Estonia adopted a new space policy in 2020 focusing on 3 main fields to develop: (1) Cybersecurity; (2) Artificial intelligence; (3) Innovation. He also mentioned the importance and need to develop Space Traffic Management.

M. Pawel ARNDT, Polish, MP, recalled the importance of Polish space activities for the sustainability of space infrastructure and space cleaning. For example, he mentioned research projects conducted at the Warsaw Aviation Institute and the Polish Space Research Center.

M. Alexandre QUINTANILHA, Portuguese MP, highlighted the significant challenge that we are facing to have public support for research in space, stressing the need to communicate about the

impact that space research can have with specific examples. It is also important to emphasize the impact space can have on protecting values and democracy. He outlined that the number of new space projects is high in Portugal, top students are attracted to space, which is the result of a continued effort to involve the public on the impact of science and knowledge.

SECOND SESSION: THE DEVELOPMENT OF "NEW SPACE" TO ENSURE SUSTAINABLE ACCESS TO SPACE

The session was moderated by Mrs. Gisèle JOURDA, Member of the Foreign Affairs, Defence and Armed Forces Committee of the French Senate. It brought together Mr. Alain WAGNER, Vice President of Airbus Defence and Space; Mr. Xavier PASCO, Director of the Foundation for Strategic Research; Mr. Nicolas CAPET, President of Anywaves and Vice President of the Young European Enterprises Syndicate for Space (YEES).

Mrs. Gisèle JOURDA first recalled the positive dynamics at work in favor of New Space in both France and Europe. She also explained that the role of public actors should not be limited to financing private space companies. The access and use of space by an increasing number of actors as well as the strategic competition taking place in this domain calls for organizational and regulatory efforts that can only be undertaken by public actors.

Mr. Alain WAGNER reminded the audience that elected officials and citizens are affected by space issues. On average, citizens use satellites 40 times per day. He also claimed that Airbus is the only space company, which is active throughout the entire value chain. and also acts as a subcontractor for start-ups such as Loft orbital.

Traditional actors and New Space should not be put against each other. Traditional space actors have to adapt their practices. He also explained that New Space is not limited to new entrants in the space sector but also consist of ensuring that public institutions evolve. He challenged the idea whether institutions were ready to adapt and sign long-term anchor tenant contracts with start-ups.

Finally, he mentioned the importance of paying attention to hostile takeovers and ensuring that successful start-ups are not being bought out by non-European countries or funds so as to protect the investment made by public actors.

Mr. Xavier PASCO explained the history of New Space in order to better understand this phenomenon. He described New Space as a phenomenon, which appeared in the 2000s, consisting of the spontaneous emergence of a new industry with new industrial and commercial models as well as new methods and technologies, which were often previously developed outside the space sector and imported in the space industry. However, he underlined that New Space was not that new and that it was rooted in a post-Cold War context in the U.S, in which previous military investment in space had to be transformed and in which the new information and communications technologies (NICT) sector met the space sector, leading to the emergence of start-ups. He explained that New Space did not emerge in a silo, but was rather the result of a political will, which can be illustrated by the decision to let civilian actors use remote sensing, etc.

He identified two waves in the emergence of New Space: (1) a first wave: the emergence of major commercial space companies such as Digital Globe at the end of the 1990s and the beginning of the 2000s; (2) a second wave: the emergence of start-ups in the 2000s in a new dynamic with the

creation of a private sector and public actors, which have to be reformed. The emergence of this private sector needs public and traditional actors to thrive and survive.

For New Space to emerge, several conditions are required:

- A performing space sector.
- A downstream sector, which bring an added value such as the NICT sector. New Space in the U.S is largely supported by digital giants (e.g., partnerships between Amazon and Kuiper; SpaceX and Microsoft, etc.).
- Developing the sector through initial and massive public orders.

Mr. Nicolas CAPET recalled the evolution in the space industry in the past years, going from a market which was the sole domain of institutions to a more commercial market. He explained that the space sector was no longer a niche market. He also reminded that NICTs are developing the downstream sector, which is a turning point that Europe should not miss.

He recognized that European start-ups are well supported by institutions. However, he highlighted that this support does not sustain an industry. There is a need for a market. The institutional market is very important and enables to reinvest to develop new technologies and remain world leaders in some areas.

Mr. CAPET echoed the speech of Mr. PASCO and outlined that the emergence of New Space and the support to start-up was planned over a period of 20 years in the United States. They anticipated the use of public procurement as a way to stimulate and support companies to deliver commercial products and services. Public procurement through market mechanisms such as public orders rather than subsidies are important tools to support start-ups.

He also underlined the need to ensure that space companies remain in Europe. He explained that European start-ups are being contacted on a monthly basis to develop their capabilities abroad. He warned that traditional actors and institutions also have to adapt their practices to ensure that these start-ups stay in Europe.

Speeches of delegations

Mrs. Els AMPE, Belgian MP, recalled that what happens in space is months ahead of what is happening on Earth, taking the example of communication with some Russian satellites, which were already failing in the fall of 2021, months ahead of the invasion.

Mr. Klaus Peter WILLSCH, German MP, underlined that New Space was a critical sector of Germany's space policy. He recalled that Germany has a new government and based on the coalition agreement, a new space strategy is likely to be drafted. Germany will also resume efforts on space law. He also shared a personal opinion on the importance of regulations for STM and making sense of existing regulations.

Mr. Sven CLEMENT, Luxembourgish MP, highlighted that there is a legal gap and a lack of harmonization of the legal basis for the activities of New Space. New Space actors can sometimes end up in uncertain situations regarding the law. It is important to assure a level playing field and ensure that European space actors discuss about the same things by using the same terms. Many legal rules should be developed to make space activities durable.

THIRD SESSION: THE FIGHT AGAINST SPACE POLLUTION TO ENSURE MORE SUSTAINABLE USES OF SPACE

The session was moderated by Mr. Jean-Francois RAPIN, Chairman of the European Affairs Committee of the French Senate. It brought together, Mr. Christophe BONNAL, Space Debris Expert at CNES; Mrs. Luisa INNOCENTI, Responsible for the Clear Space programme at ESA; Mr. Gérard BRACHET, Former Chair of the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS).

Mr. Jean-François RAPIN recalled that the multiplication of public and private uses of space and the arrival of new actors led to a more intensive use of space. He insisted on the need to collectively prepare the new European regulation on space traffic management and to accelerate efforts in the fight against space pollution.

Mr. Christophe BONNAL explained the issue of space debris, describing that the number of catalogued objects dramatically increased. Over the past ten years, the number of active satellites was multiplied by 7 and multiplied by 12 in Low Earth Orbit (LEO). The number of debris doubled in 15 years. 97.5% of debris come from only three countries, namely the United States, China, and Russia. He further explained that there is a peak of debris at an altitude of 800 km in heliosynchronous orbit.

Beyond the increasing number of launches, two events can explain the dramatic increase of debris: (1) the Chinese ASAT test, which generated around 3500 debris; (2) the collision between the satellites Iridium 33 et Cosmos 2251, which generated around 3000 debris. However, in 2022, no major debris-generating event took place, but there was an increase in the number of debris due to collisions in between debris (Kessler Syndrome). In this context, operators made the decision to launch their satellites at specific altitude, which are less populated such as at 1200 km. Mr. BONNAL further mentioned that it was the first time that an operator was reaching an orbit/a specific altitude for sustainability reasons rather than efficiency reasons. Other operators attempted to reach lower altitude at 600 km (e.g., Planet, SpaceX, etc.) where debris can re-enter the atmosphere within 15 years. At the altitude of the ISS and the CSS, the risks of collisions were multiplied by 54. He also highlighted that any satellite, which is launched today has to cross inhabited orbit twice during its lifecycle (launching; deorbiting). The space density between 700 km and 1100 km is entirely saturated by debris, therefore the Kessler syndrome has already started.

He also outlined that applying the current Inter-Agency Space Debris Coordination Committee (IADC) guidelines would be insufficient. The rule to deorbit within 25 years should be reduced to 5 years. It is important to avoid collisions between maneuvering satellites, but it is insufficient as collisions cannot be avoided between non-maneuvering satellites. He outlined several priorities: handling the situation now and implementing the long-term sustainability (LTS) guidelines, starting Active Debris Removal (ADR), taking into account the specificities of New Space, establishing standards, improving tracking and cataloguing objects, defining preserved zones for inhabited space stations.

Mrs. Luisa INNOCENTI underlined that Earth's orbits are a finite resource. She echoed Mr. BONNAL's speech, outlining that deorbiting after 25 years is too long. Even if this rule is successfully applied by 90% of operators, it would still not be enough. The application of such rules has to be integrated in the design of satellites. She presented ESA's objectives to adopt a net zero pollution by 2030. She underlined that we should not end up in a situation where public actors adopt virtuous behaviours and where private actors continue to pollute. All actors should respect such rules.

By 2030, operators should be capable to deorbit or conduct ADR operations if de-orbiting is not possible. By 2050, there should be a circular economy in space.

She explained ESA's zero debris approach and its transversal actions:

- Evolution of ESA policy: introduce a requirement for removal in case a spacecraft fails.
- Upgrade platforms: system level development and integration of innovative technology.
- Removal services: demonstrate reliable services, establish standard interfaces.
- Improving operations.

She presented the ClearSpace-1, which is an ADR mission. However, there is no business case for ADR at the moment while the business case was proved for life extension. ClearSpace is a demonstration mission to prove that Europe has the capabilities to do it. Nonetheless, ESA cannot depollute space on its own. New rules have to be established to create the business case for ADR. She believes that there are higher chances that technologies will demonstrate the business before the adoption of rules.

Mr. Gérard BRACHET explained the process, which led to the adoption of the LTS Guidelines by UNCOPUOS. This process started in 2002. He explained that in 2007, it was extremely hard to convince diplomats, including French ones. In 2007, a proposition was made to add the long-term sustainability of outer space to the agenda of UNCOPUOS. In 2010, a working group was established. It took 8 years to adopt the LTS Guidelines. Therefore, the LTS Guidelines are based on assessments, which are now obsolete. In addition, he highlighted that during this process, European countries converged thanks to the action of ESA, which was organizing informal meetings to allow delegations to discuss and exchange on the issue, although it was not within its mandate. Today, we are in an implementing phase and the French Law on Space Operations of 2008 is part of it. A group at UNCOPUOS is following the implementation.

Speeches of delegations

Mr. Klaus Peter WILLSCH, German MP, highlighted the need to accelerate actions on space sustainability. This issue has to be tackled at the international level. UN guidelines are hard to implement due to the difficulty to monitor the implementation. We should have an efficient and sustainable system for STM. The military use of space should be taken into account. The adoption of norms at the European level should be intensified. He also underlined the G7 and the G20 as potential fora for cooperation and diplomacy to reach agreements. He recalled that the European Space Surveillance and Tracking (EUSST) consortium was a major multilateral actor, providing a good basis to further develop directives regarding STM.

We should avoid the accumulation of space waste, we need to work with the Institute for Solar Physics, to have better information in real time, cooperate with the European Space Operations Center (ESOC), put in place experimental systems and simplify the use of data.

Mr. Piotr WOLANSKI, Polish MP, explained the activities undertaken by Poland in the field of space sustainability, which include technologies for green propellants, green propulsion, hypergolic rocket engine, small satellites, solid rocket motor for desorbitation of large satellites, throttleable green propulsion components, etc.

Additionally, Poland suggested with France to invite Ukraine to the next EISC plenary session and invite them to join EISC as an associate member. This proposition was particularly welcomed by the German and Belgian delegations. France also underlined the interest of Finland and Portugal in EISC.

The EISC Resolution was successfully and unanimously adopted by consensus.