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The European Space Forum 2021:

Time to rethink Europe's space ambitions?

8 & 9 November | An Online Event

<https://euspaceforum.com/>

Europe has historically been at the forefront of space ventures. It is home to two of the world's most successful satellite manufacturers, the world's most reliable launch service provider and a number of the world's leading satellite operators. But the international space ecosystem is changing fast with global competition exploding and the number of ambitious new entrants increasing. Major technological shifts and disruptive business models are reducing the cost of accessing and using space. We are witnessing an unprecedented level of private investment both from private equity and terrestrial operators into space ventures. To keep pace, remain competitive and ensure its strategic autonomy in the space domain, Europe and its space sector must adapt to meet the challenges of this fast-evolving environment and take advantage of new opportunities arising.

Against the backdrop of the recent launch of EU's new Space Programme, this new annual conference will bring together key stakeholders from across the space and satellite sectors to debate how this can be achieved. Sessions throughout the event will be discussion-based and interactive, with speakers and audience members encouraged to speak freely, challenge each other and pool ideas, as we look to move towards the common goal of securing Europe's position as a major space player in this exciting new wave of space innovation.

Day 1 (8 November)

09:00 – 09:05

Welcome and Introduction

09:05 – 09:10

The Space Market Inflexion Point

by **Thierry Lefort**, Director, PWC Strategy& (Confirmed)

09:10 - 10:00

Opening Keynote Session

Keynote Speakers:

Thierry Breton, Commissioner of Internal Market, European Commission (Confirmed)

Josef Aschbacher, Director General, European Space Agency (ESA) (Confirmed)

Rodrigo da Costa, Executive Director, European Union Agency for the Space Programme (EUSPA) (Confirmed)

Stephen Spengler, Chairman, ESOA (Confirmed)

André-Hubert Roussel, President, Eurospace (Confirmed)

10:00 - 11:20 **Session 1: Delivering a Globally Competitive and Innovative European Space Sector**

The new European Space Programme was launched in June this year, against the backdrop of increasing concerns that Europe is falling behind more fleet-of-foot entrepreneurs in the US, as well as the financial muscle that China is putting behind its space programme. It aims to deepen member states' investments in satellite navigation, Earth observation, space situational awareness, and secure connectivity; and ultimately to ensure Europe's long-term competitive, innovative and autonomous positioning in space. This session will look at the challenges faced by the European space sector, and at what needs to be done to ensure Europe retains its position as a global player in a fast evolving, competitive space ecosystem.

- To what extent can the newly agreed EU Space Programme help Europe to meet its objectives of delivering a long-term competitive and innovative space industry, and becoming a global player in space?
- The evolving “new space” landscape and the emergence of reusable launchers and mega-constellations of small/micro/nano satellites has arguably seen US players take the lead over their European counterparts when it comes to the development of commercial constellation systems. How can European stakeholders come together to address this?
- Does Europe with its collaborative structure and approach have the ability to react and adapt quickly enough to a changing competitive market? What can be done to ensure a European space ecosystem that encourages the innovative, flexible and swift evolution required to react to competition?
- What can be done to close the public funding gap that is seen between Europe and the US (and China)? How can the collective agreement of all EU Member States to allocate additional budget to space infrastructures be achieved, when the reality at present is that the direct return will end up mostly in industries located in just 4 or 5 Member States?
- To what extent should Europe try and compete directly with other regions around the world and keep pace with emerging innovations in the US and China etc. or would we be better off to go our own way and develop unique initiatives based around key European strengths and benefits?
- Countries such as the US, Russia, China and India have historically chosen to invest heavily in supporting their space and defence sectors which has allowed them to drive present-day space technology and capacity development at an unprecedented pace. How has this compared with Europe and what impact has this had on European competitiveness? Is there a need to change the approach-to create a level playing field and will this impact the EU's standing worldwide, and that of European corporations, startups, and SMEs globally?

Moderator: (Confirmed)

Panel Discussion:

- **Paraskevi Papantoniou**, Head of Unit, Space Policy, DG DEFIS, European Commission (Confirmed)
- **Géraldine Naja**, Director Industrial Policy, Commercialisation, Procurement, ESA (Confirmed)
- **Michal Brichta**, Head, Slovak Space Office – Industry Branch (Confirmed)
- **Jorge Potti**, General Manager of Space, GMV (Confirmed)
- **Massimo Claudio Comparini**, Deputy CEO, Senior Executive Vice President Observation, Exploration and Navigation of Thales Alenia Space and CEO of Thales Alenia Space Italia (Confirmed)
- **Emmanuel Franc**, Senior Vice President, Sales & Business Development, Arianespace (Confirmed)

11:20 – 11:40 **Break**

11:40 - 12:50 **Session 2: The Future of Space Data**

The European space sector is creating ‘treasure troves’ of space data, which if harnessed correctly, could revolutionise our understanding of a wide array of industries and environmental phenomena. Currently however, the data that is created is not being fully exploited in Europe, and is often instead being harvested by US companies. The ability to observe, gather and process data from space is a critical factor in Europe’s ability to compete in today’s data-driven, global economy. This session will look at what needs to be done to overcome challenges surrounding aspects such as red tape, lack of common specifications and concerns over reliability, security and privacy of data; and ensure that the right tools are in place to enable European companies to fully exploit the opportunities that data can offer.

- What new services and business models are set to be driven by the huge volumes of data from space, and how can Europe ensure that we are in a position to exploit the added value this data provides?
- How can Europe encourage companies to take up and use more of the troves of data available from the EU’s flagship Copernicus and Galileo programmes, as well as any future EU-wide or individual member states’ programmes?
- What work needs to be done to ensure the reliability of data that is generated and that it can be verified and is traceable? Is there a need for an increased regulatory framework and standards to ensure the consistency of data and to support the uptake of the services and technologies that it enables?
- What impact can technologies such as edge computing and AI help to increase the efficiency of data gathering and processing in space, and what impact could this have on the future of space exploration?
- How are other countries and private sector initiatives using the kind of data that the EU is wasting? How can the EU ensure the data on offer is made more attractive and accessible to companies that may want to use it?
- How will the use of EU data by EU companies and public sector organisations help towards achieving strategic autonomy and goals set out in other key strategy areas?
- To what extent are satellite and space companies making the most of the benefits offered by metrics and data generated around their services and how can this be improved?

Moderator: **Jack Parrock**, Independent Journalist working with Euronews (Confirmed)

Panel Discussion:

- **Ambassador Sorin Ducaru**, Director, SatCen (Confirmed)
- **Mark Dowell**, Lead for European Commission Knowledge Centre on Earth Observation, European Commission, Joint Research Centre (Confirmed)
- **Evert Dudok**, Executive Vice President Communication, Intelligence and Security, Airbus Defence & Space (Confirmed)
- **Joel Toussaint**, Director of European Institutions, NATO, Space and Defence, HPE (Confirmed)
- **Daniel Zavala-Araiza**, Senior Scientist, MethaneSAT (Confirmed)

12:50 – 13:30 **Lunch Break**

13:30 - 14:45 **Session 3: Securing the Future of Copernicus**

Established in 2014, the European Commission's Earth Observation Programme 'Copernicus', provides Europe with a continuous, independent and reliable access to satellite Earth Observation data and information. It is established as a world-leading system, but in today's fast evolving space environment, there is a need for it to continually evolve and adapt in order to keep up with the hugely competitive and dynamic field of earth observation. This session will look at the challenges and opportunities ahead, and at what needs to be done to secure the long term future of this flagship programme.

- What is the long-term vision for Copernicus? How can the required funding be secured to deliver this?
- In what ways is Copernicus going to need to adapt to the rapidly evolving private earth observation sector? Should it look to compete directly (in very high resolution optical images for instance); or would a better approach be to seek synergies and work together with commercial earth observation providers? Is there a need to consider cheaper, smaller, more agile solutions, or constellations of small satellites?
- To what extent can the measures put in place as part of the new EU Space Programme or in the scope of the EU Financial Regulations (pre-commercial procurement, innovation partnerships etc) help to deliver this?
- How is the post-Brexit relationship between the EU and UK developing with regards to the UK's involvement in Copernicus and other key EU space programmes? How can it be ensured that agreements are put in place for the benefit of all parties?
- What factors have contributed to the market uptake of Copernicus services and the development of downstream markets arguably being slower than the Commission initially predicted, and what can be done to address this?
- What work has been done to investigate why Copernicus services were slow to be adopted by public institutions? Is it a question of accessing the data, processing them, their quality/traceability/reliability, or some other reasons?
- What 'success stories' have been seen from the numerous downstream companies that have benefitted from Horizon 2020 grants to develop services based on Copernicus data? Are there any specific 'success factors' or patterns that can be identified as key for a service to become financially sustainable?
- Where are we with standards, norms (quality, traceability etc.) and regulation relating to the services and overall use of Copernicus? Is there a need to increase this to improve market take-up, in particular in the case of the use of Copernicus data for public services (monitoring

the implementation of regulations, serving as evidence in courts, or when the usage is critical)?

Moderator: **James Black**, Research Leader, RAND Europe (Confirmed)

Panel Discussion

- **Christophe Grudler** MEP, European Parliament (Confirmed)
- **Simonetta Cheli**, Head of Strategy, Programme and Coordination Office, Directorate of Earth Observation Programmes, ESA (Confirmed)
- **Marc Tondriaux**, Chairman, European Association of Remote Sensing Companies (EARSC) (Confirmed)
- **Paul Counet**, Head of Strategy, Communication and International Relations and Chef de Cabinet, EUMETSAT (Confirmed)
- **Philippe Pham**, SVP & Head of Earth Observation and Science, Airbus Defence and Space (Confirmed)

14:50 – 15:30 **Showcase Sessions 1**

- **Eurospace** Showcase Session on “European RDT and innovation: empowering the supply-chain” by **Pierre Lionnet**, Director of Research and **Jean-Charles Treuet**, Head of Technology Strategy
- **SpaceTec Partners** Showcase Session on Global Space Investor Roundtable
 - **Carla Filotico**, Partner, SpaceTec Partners
 - **Thomas Tanghe**, Partner, SpaceTec Partners
 - **Bogdan Gogulan**, CEO & Managing Partner, NewSpace Capital
 - **Elodie Robin-Guillermme**, Founder of Alidade Ventures
 - **Hidetaka Aoki**, Director, Global Brain
 - **Martin Duursma**, Partner, Main Sequence Ventures
- **SES** Showcase Session on “Innovating for a Better World” by **Steve Collar**, CEO, SES (Confirmed)

15:30 – 15:50 **Break**

15:50 - 17:20 **Session 4: Delivering the Goals of The EU “Secure Connectivity Constellation”**

The latest initiative of the European space programme is an EU constellation for secure connectivity, comprising of hundreds of internet-beaming multi-orbit satellites that can provide secure high-speed connectivity for everyone in Europe based also on quantum encryption. The aim is for this ambitious new 'mega constellation' to offer an initial service by 2024, enabling the EU to enter the race to beam the internet to Earth from space, and provide a service alongside a number of private sector projects including SpaceX's Starlink constellation, Amazon's Project Kuiper, Telesat Canada's Lightspeed and OneWeb in the UK. This session will look at the key aims and objectives of the project, and with speed of the essence, the realistic timeframe ahead. It will explore the best way forward in order to give this ambitious project the best chances of success in this hugely competitive space.

- What are the key aims and objectives of the European Constellation, and what is it hoped will be achieved? What can public sector involvement in the initiative add that would not have been possible had this been solely a private sector commercial project?

- What are the next steps and the likely time frame ahead? Given the importance of speed of implementation, are there ways that the normal EU legislative procedures can be streamlined to help the project come to market as quickly as possible?
- The EU has always prioritised cooperation over competition – does cooperation with OneWeb or with Telesat, also to benefit from their priority in frequency filing, present a useful opportunity to go to market quicker rather than going it alone in a market that is arguably already further developed today than what the EU can achieve in the next 5 years?
- In order to give itself the best possible chance for success, the EU constellation needs to set itself apart from other private sector projects in terms of service offerings and additional benefits that it delivers. How can this be achieved, and how can partners work together to make the most out of the key strategic assets that Europe offers?
- Quantum encryption is an important new area for technology development but still years from being operational both in space and via terrestrial. How will this and other technologies be integrated into the EU constellation to deliver the secure and resilient connectivity required by critical infrastructures without unduly complicating the overall system?
- The Commission has commissioned a study with a few well-established players, but has also launched a tender for a concept study on alternative ‘New Space’ solutions for the same purpose. Is it realistic to expect emerging and smaller companies to deliver a project that hopes to compete with projects being developed by giants such as SpaceX, Amazon, etc.? What is the Commission hoping that these “new space” companies can bring to the project that cannot be offered by experienced operators and primes (technological innovation, cost-effectiveness, industrial innovation, more creative business models...)?

Moderator: **Aarti Holla-Maini**, Secretary General, ESOA (Confirmed)

Panel Discussion:

- **Gustav Kalbe**, Head of Unit, High Performance Computing & Quantum Technology, DG CONNECT, European Commission (Confirmed)
- **Christophe Allemand**, 4S Strategic Programme Manager, ESA (Confirmed)
- **Chris McLaughlin**, Chief of Government, Regulation & Engagement, OneWeb (Confirmed)
- **Ferdinand Kayser**, Strategic Advisor to the CEO, SES (Confirmed)
- **Jean-Hubert Lenotte**, Chief Strategy and Resources Officer, Eutelsat (Confirmed)
- **Marc-Henri Serre**, Vice President, Telecommunications Business Line, Thales Alenia Space (Confirmed)

[Day 2 \(9 November\)](#)

Session 5: Enabling the Safe, Secure and Sustainable Use of Outer Space

We are potentially on the verge of a space revolution, with the prospect of tens of thousands of satellites set to launch into space in the next decade. This will generate a swathe of new opportunities for players across the space sector, but at the same time will also create a number of key challenges for organisations working to ensure a secure and sustainable future for space. The next sessions will focus on 2 of these specific challenges: (i) increased collision risk between active and defunct space objects; and (ii) the potential attack surface for cyber criminals targeting space services and assets becoming exponentially larger. They will explore how space traffic management, cybersecurity and other relevant policies are evolving to keep pace.

09:10 - 10:20 **Session 5i: Space Traffic Management: Challenges and Opportunities for Europe**

Space is getting increasingly crowded, not just by active and defunct satellites but also from the huge number of space objects left as a result of launches of various space ventures and from past collisions. At the same time an unprecedented 10,000 or more satellites and other space objects may be launched in the coming decade, which will also have an impact in the LEO object population (upper stages etc.). Against this backdrop of an increasingly overcrowded Earth orbit, this session will look at challenges in managing space traffic and at the approaches that are needed to deliver a space ecosystem that is safe for all.

- What new strategies, innovation, and debris mitigations measures are being considered to help tackle the challenges of dealing with a huge increase of space debris?
- The EU SST (Space Surveillance and Tracking) framework is designed to protect and provide services for European public and private operators. To what extent can an EU-only system ensure the best service for its constituents, and is there a need for increase co-operation with international partners to solve this global problem?
- Space traffic management has traditionally been considered an issue to be covered by individual member states, but recently is being looked at more at a European level. What work is being done on developing a common European approach to space traffic management, and how can national and EU policymakers move forward to ensure the EU SST system has a place in the global quest to ensure the most robust STM system possible?
- To what extent is there a need for international cooperation and coordination in space traffic management, and what work is being done to coordinate norms and standards relating to space traffic management? What role can Europe play on a global level to help lead the way in this key area?
- Is there a need for an overhaul of current regulation and licensing frameworks relating to the launch and monitoring of new constellations, and to international guidelines on space-debris mitigation?
- How can the private and public sectors come together to tackle the challenges (for example with the ESA-led 'ClearSpace-1' mission or the Canadian NorthStar project), and how can stakeholders work together to improve the overall understanding of the space debris environment and the challenges that it provides?
- Can Space Traffic Management provide a potential new service market for European companies?

Moderator: **Nikolai Khlystov**, Lead, Space, World Economic Forum (Confirmed)

Panel Discussion:

- **Christoph Kautz**, Head of Unit, Secure Connectivity, Space Surveillance & Applications, DG DEFIS, European Commission (Confirmed)
- **Jacob Geer**, Head of Space Surveillance and Tracking, UK Space Agency (Confirmed)
- **Mark Dickinson**, Deputy CTO & VP Space Segment, Inmarsat (Confirmed)
- **Miguel Angel Molina**, Strategy & Business Development Manager, GMV (Confirmed)
- **Aarti Holla-Maini**, Secretary General, ESOA (Confirmed)

10:20 – 10:40 **Break**

10:40 – 11:50 **Session 5ii: Securing Space: Addressing Cyber-security in the Space Ecosystem**

Like any other increasingly digitised critical infrastructures, satellites and other space-based assets are vulnerable to cyberattacks. While the satellite industry has a proven track record in providing secure solutions well beyond those of other commercial communications technologies, the number of satellites and their applications continues to rise. So too will our dependency upon them and in parallel the cyber threat will grow. This session will look at the impact that cyber threats can have on space systems and how space stakeholders can work alongside the cybersecurity industry to meet the threats. It will look at how Europe can take the lead globally in setting the standards for cybersecurity on space, and at the co-ordination that will be required between member states, EU institutions and international partners in order to deliver a secure space ecosystem.

- What security benefits can a space based systems offer to downstream users and services that are not available through other commercial communications technologies?
- To what extent are satellites and other space-based assets vulnerable to cyber attacks, and what can be done to protect these as well as the many ground-based critical infrastructures that support and/or depend on space services?
- To what extent do legacy assets that were possibly deployed before cyber security became a priority pose a problem, and what can be done to overcome this?
- What new challenges are emerging from the increased threat surface created by large and mega-constellations that are being deployed today and planned for coming years?
- What role could quantum encryption and other key technologies play a part in helping to secure space, and how can Europe lead the way in the development and use of these new technologies?
- What role will individual member states have to play in mitigating risk and delivering cyber resilience? Is there a place for an EU-wide regulatory framework or accreditation system specifically focussing on cyber-security in space?
- To what extent are space cybersecurity standards and regulations already in place in Europe, and how does security in space fit within broader frameworks such as the Common Foreign and Security Policy (CFSP) and the Common Security and Defence Policy (CSDP)?
- What work is being done on developing international cooperation and partnerships to secure the international space supply chain? How can Europe ensure that it is in a position to lead in this area and help to deliver a global space cyber security regime?
- How will strong security protocols interact with the goals of strategic autonomy and competitiveness on the global stage?

Moderator: **Dr Beyza Unal**, Deputy Director, International Security Programme, Chatham House (Confirmed)

Panel Discussion:

- **Florent Mazurelle**, Principal Security Strategy Officer, Foresight, Strategy & Coordination Department, ESA (Confirmed)
- **Graham Wright CBE**, Senior Vice President Security and Cyber, Inmarsat (Confirmed)
- **Marnix Dekker**, Cybersecurity Expert, ENISA (Confirmed)
- **Pascal Rogiest**, Chief European Institutions Officer and Managing Director, RHEA System Luxembourg (Confirmed)
- **Daniela Petrovic**, Delivery Director, Darwin Innovation Group (Confirmed)

- **OneWeb** Showcase Session - “Low Earth Orbit, the Future of Connectivity in Europe”
by **Franck Delille**, General Manager, Bigblu Nordics, **Peng Zhao**, Director, Government and Policy, OneWeb and **Steve Petrie**, Director, Carrier and Enterprise, UK & Europe, OneWeb
- **Airbus** Showcase Session - Collaboration and Innovation in New Space: The Case for Open Platforms
by **Sean Wiid**, CEO, Up42
- **ESOA** Showcase Session - Space Sustainability - The Time to Act is Now
by **Aarti Holla-Maini**, Secretary-General, ESOA; **Dr Sara Lucatello**, Vice President, European Astronomical Society and **John P Janka**, Chief Officer, Global Government Affairs & Regulatory, Viasat.

12:35 - 13:15 **Lunch Break**

13:15 - 14:30 **Session 6: The New Space Race: Devising a Space Industrial Policy to Deliver the Next Generation of European Space Systems**

In the past decade we have witnessed the acceleration of venture capital and private finance backed new space projects that are creating a new layer of opportunities for the space infrastructure industry (satellite and launcher manufacturers). These opportunities, coupled with digitalisation and rapid technological development, have fuelled the emergence of new players in the sector, that represent today about 10% of the total space industrial capacity worldwide. This environment is usually labelled ‘NewSpace’. How strong are these opportunities and how are European players positioned to take advantage of these? What new challenges and threats could this environment pose? This session will explore both the opportunities and the challenges ahead, and the role that the private and public sector needs to play in order to ensure that Europe remains at the forefront of this new space race that is being seen.

- How is the global space industry evolving? What should be the approach in Europe as we move towards this next generation of space and satellite technologies?
- What should be the long-term objective for the space sector in Europe and what do policymakers need to be doing in order to best support the delivery of these goals?
- What are new space companies looking to achieve, and how can they be integrated into more traditional space supply chains?
- What are the biggest challenges facing Europe’s emerging space industries and entrepreneurs today, and what support do they need in order to build and create a world leading NewSpace sector? Are the challenges that they are facing inherently different from the ones faced by more traditional industries? Is there a need for specific measures for emerging space industries or, rather, for a renewed space industrial policy in general?
- How can public bodies balance the promotion of start-ups and ‘new space’ approaches alongside that of the more ‘traditional’ space sector? What are they hoping that these new players can add that existing players are not able to?
- What new opportunities are emerging and what role do the public and private sectors in Europe each need to play to ensure that the European space sector is in a position to take advantage of these?

- What regulatory questions are raised by the emergence of new innovative space companies and business models, and how can a forward-looking regulatory framework be delivered promotes competition and encourages innovation to flourish?
- To what extent can the Financial Framework Partnership Agreement signed between ESA and the European Commission earlier this year help to centralise efforts to support the continent's emerging space industries and deliver the required funding to secure Europe's leadership position in space?

Moderator: **Thierry Lefort**, Director, PWC Strategy& (Confirmed)

Panel Discussion:

- **Marc Serres**, CEO, Luxembourg Space Agency (Confirmed)
- **Guillaume de la Brosse**, Head of Unit, Innovation, Start-ups & Economics, DG DEFIS, European Commission (Confirmed)
- **Antonio Abad**, Chief Technical Officer, Hispasat (Confirmed)
- **Stella Guillen**, Chief Commercial Officer, Isar Aerospace Technologies (Confirmed)
- **Nicholas Nelson**, Principal Researcher and Head of European Operations, Georgia Tech Research Institute (Confirmed)

14:25 - 14:30 **Session Closing Remarks** by **Pierre Lionnet**, Director of Research, Eurospace (Confirmed)

14:30 - 15:30 **Celebrating European Innovation in Space**

Keynote Presentation by **Timo Pesonen**, Director General, DG DEFIS, European Commission (Confirmed)

A final opportunity to watch a series of short showcases and presentations introducing the innovative companies and projects that have been shortlisted for the 'Innovation in Space 2021' award (these have been available to watch on-demand for the duration of the event), and to vote for your favourite.

The 'audience vote' will be taken alongside the votes from a panel of experts (including representatives from the European Commission, ESA and leading space and satellites trade associations), and the inaugural winner of the award will be announced.

The top 4 finalists are as follows:

- iSSI® (intelligent Space System Interface) Modular Coupling Kit (from iBOSS GmbH)
- Isar Aerospace Technologies GmbH
- OKAPI:Orbits GmbH
- CogniSat™(Ubotica Technologies Ltd)

15:30 Award Presentation Ceremony

The winner of the **Innovation in Space Award 2021** to Europe's most innovative space project or company of the year will be presented by **Timo Pesonen**, Director General, DG DEFIS, European Commission (Confirmed)