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Editorial

Dear Colleagues,

The first words of this Newsletter are dedicated to Peter Hulsroj, who left ESPI after five successful and eventful years as its Director. The last semester of his directorship was certainly an extremely productive period for the Institute: ESPI staff organised and took part in a considerable number of space-related activities, including evening events in conjunction with the sessions of the UN COPUOS, the 18th European Interparliamentary Space Conference, a workshop on Galileo, the 4th Manfred Lachs International Conference, and several presentations and lectures in relevant European institutions. An overview of all these recent activities is provided within this Newsletter.

Along with the multitude of activities organised in and outside of ESPI, the period was extremely fertile in terms of publications. Over the last six months, ESPI has published five ESPI Reports on the topics of European launchers, the contributions of space to Europe in the future, mechanisms for the development of international norms in space, the future of commercial space manufacturing in Europe, space for sustainable development; as well as three issues in the ESPI Perspective series, numerous blog posts and the 7th Volume of the “Yearbook on Space Policy” series.

Furthermore, within the next few months ESPI will be publishing a new book in the “Studies in Space Policy” series, entitled “The Necessary Distance: How Earth Observation Can Help Shift our Relationship with the Planet from Exploitation to Responsible Stewardship”, and five projects on the topics of GNSS governance, the GSA role in the European and global context, the rise of the private actor, India’s space programme, and space for sustainable development. A description of the ongoing and upcoming activities and events planned by ESPI as part of its Workplan 2016 is also provided within this issue.

Finally, the ESPI team would like to warmly welcome the new Director of ESPI, Jean-Jacques Tortora, which was elected by the General Assembly on 26 April 2016 and took up duty on 1 June 2016. Mr. Tortora is an aerospace engineer with a broad experience in the space domain and has served as the Secretary General of Eurospace for the past nine years. We are all confident that Mr. Tortora will continue to ensure a bright future for the institute, with the curve of significance and accomplishments steadily on the rise!

The ESPI Team

Recent ESPI Publications

ESPI Reports

January 2016

Europe in the Future and the Contributions of Space

by Marco Aliberti, Stefano Ferretti, Peter Hulsroj, Arne Lahcen

In this report, ESPI assesses how space can contribute to the challenges and needs of the future European society. The study starts out by looking at the evolving relationship between space and society at large. It thereafter identifies a set of unfolding mega-trends that are bound to generate profound transformations in the future European context and analyses how space-based solutions could play an important and at times essential role in responding to the ensuing challenges and related societal needs. The report builds on these findings to propose a way forward to structurally capture societal needs in the future, looking at the role of some potential instruments that could be developed to truly stimulate the “societal pull” and ensure the alignment between the proposed technological solutions and the needs from which they originate.



March 2016

The European Launchers between Commerce and Geopolitics

by Marco Aliberti and Matteo Tugnoli

Report 56 offers an in-depth reflection on the medium-term prospects for the European launchers, following the decisions endorsed at the 2014 ESA Ministerial. Specifically, it assesses the scope, implications, opportunities and constraints of the European strategy in the launcher sector with respect to the broader and rapidly evolving international context. To this effect, the report provides a detailed analysis of worldwide commercial and political dynamics shaping this domain, investigates key unfolding trends and their future impacts, and in turn assesses the ensuing challenges and opportunities to be faced by European institutions and industry in safeguarding its future competitiveness and optimizing the political benefits of Europe’s autonomous access to space.



May 2016

Mechanisms for the Development of International Norms Regarding Space Activities

by Anja Nakarada Pecujlic, ESPI Researcher

ESPI Report 57 offers a comprehensive overview of the main existing legal methods used to create hard international law norms, and their application in the space domain. First, the latest elaborated space treaty, the Cape Town Convention and Space Asset Protocol, are analysed in depth as well as the lessons learned. Secondly, the existing five space treaties and the reasons for their decline are addressed, followed by the description of the development of soft law and its insufficiency. Lastly, a number of international organizations are scrutinized in order to establish if their hard law norm creating mechanisms could be applied in the space sector. Built on these three pillars, the Report tries to provide an answer how to overcome the existing legal stalemate and efficiently create new hard law regulations.



ESPI Reports

May 2016

The Future of European Commercial Spacecraft Manufacturing

by Cenani Al-Ekabi

This report assesses the future of European commercial spacecraft manufacturing of satellites that are bought through open competition in situations where European bidders are faced with non-European competition. After giving an overview of the global satellite manufacturing landscape, it uses Porter's Model for competitive advantage to assess the competing forces and how governments impact these forces, which helps to identify the strengths and weaknesses of European competitors. The report then outlines the risks and opportunities associated with building alliances with European, U.S., or Asian competitors and outsourcing/offshoring non-essential technologies to low-cost manufacturers in Central and Eastern Europe and Asia. The report then groups those strengths, weaknesses, opportunities and threats together in a SWOT analysis matrix, and compares the trade-offs in choosing one or several alliance and outsourcing/offshoring roadmaps to remain competitive in the future.



June 2016

Space for Sustainable Development

by Stefano Ferretti, Jörg Feustel-Büechel, Roy Gibson, Peter Hulsroj, Andreas Papp and Elisabeth Veit.

ESPI report 59 elaborates on how space can play a pivotal role in achieving the Sustainable Development Goals approved by the UN in 2015. After giving an overview of the changes precipitated by the SDGs and current and potential future areas of interaction, the report creates a map of stakeholders relevant for bringing the two fields closer together. It emphasises that demand-side actors, including governments, UN organisations, and NGOs, must be given the driving seat in determining requirements for successful projects. Supply-side actors in the space sector must engage in increased dialogue to foster consensus-building for a unified approach. The report critically analyses existing dialogue mechanisms and identifies practical tools for increasing cooperation between space and development actors. The report concludes by encouraging the creation of space programmes targeting sustainable development.



ESPI Perspectives

February 2016

ESPI Perspectives 75: Enabling SATCOMs in the EU Space Programme: Setting the CSDP Priorities Straight

by Alexander Kolovos, Professor at the Hellenic Air Force Academy

The Common Security and Defence Policy (CSDP) requires the autonomous ability to gather and transmit information in order to support EU-decision making and actions, and as such Earth observation, navigation and telecommunications are extremely relevant. The developing European Space Programme, however, has for a long time focused mainly on the first two domains. In 2013, the Satellite Communication dimension was identified by the Council as a missing element that had not been yet a part of the EU's space efforts. Latest developments in this field seem to finally pave the way to embed security related SATCOMs into the future European Space Programme. This Perspective sheds light on the historical dimensions of SATCOM for security purposes and the growing importance of this on a space policy level now and in the near future.

Recent ESPI Publications

ESPI Perspectives

April 2016

ESPI Perspectives 76: Space Diplomacy: Shedding Light on the Current Initiatives to Prevent Conflict in Outer Space

by Maximillian Bettman, Student at the Würzburg University, Germany

This Perspective looks at the most recent developments behind the two major initiatives to prevent conflict in Outer Space in order to answer the question whether the international community is going to adopt either of them in the near future. It argues that, due to seemingly unresolvable disagreements between the major space powers, neither the “Code of Conduct for Outer Space Activities” nor the “Treaty on Prevention of the Placement of Weapons in Outer Space and of the Threat or Use of Force against Outer Space Objects” is likely to be accepted. In line with this assumption, this Perspective offers some thoughts on alternative diplomatic efforts so as to ensure space safety, security and sustainability.

May 2016

ESPI Perspectives 77: Antiterrorisme Sans Frontières: Using the Global Commons of Space for a Common Response to a Common Threat

by Kiran Krishnan Nair, Research Fellow, Centre for Airpower Studies, New Delhi, India

ESPI Perspective 77 explores the international options for inhibiting the misuse of space capabilities under the aegis of an established international body like the United Nations. The sceptre of terrorism is on the rise across worldwide and affects the entire globe. The recent Paris terrorist attacks, for instance, were a dastard act not just on Paris or France but on all of humanity, as indeed is any terrorist strike across the world. The threat is common and demands a common response by all humanity. One element common to most of the terrorist attacks worldwide are the extraordinary levels of communication, coordination and networking, in part enabled by space capabilities. The global commons of space are inherently international in character as also is terrorism. Thus domestic responses would not suffice to address them. This Perspective assesses the role of space capabilities in the conduct of terrorist activities and explores options for the space community to take a common stance against terrorism.

ESPI Perspectives: Opportunities to Publish

ESPI is calling for contributions to ESPI Perspectives. Since the Perspective series is an open format, we welcome contributions from both experts and the general public that are in line with the nature of the Perspective series. ESPI Perspectives are short papers, typically about five pages, presenting a concise analysis on innovative ideas in the field of space policy or societal impacts of space technology. Ideally, this takes the form of an existing unpublished paper or reflection. Depending on the nature of the topic, however, an inspiring idea can also be taken as a starting point for further elaboration. In the latter case further reflection in consultation with professionals in the field might take place during the writing process. All accepted ESPI Perspectives are reviewed and edited on a joint basis. This is necessary to ensure the consistency of our publication series. While ESPI Perspectives do not necessarily represent the views of ESPI, they can be very relevant for stimulating discussion in the field of space policy, or space-society relations in general.

Please direct proposals to: office@espi.or.at

Recent Events

19 February 2016. **Interview on Galileo / GPS**

In its 19 February issue, *Air & Cosmos*, the well known French weekly on air and space, devotes a part to the completeness of the last GPS block programme (GPS-IIF) and the preparation of the coming GPS III. The article summarizes in a concise manner the current status of the different GNSS constellations.

ESPI Resident Fellow Dr. Serge Plattard was interviewed on the recent developments of Galileo and the importance of the GPS/Galileo compatibility and interoperability.

AIR&COSMOS

19 February 2016. **Interview on Rocket Reusability**

In an interview with the Italian magazine *Fly Orbit News*, ESPI Resident Fellow Matteo Tugnoli discussed the topic of rocket reusability, one of the most anticipated technological breakthrough in access to space. The article discusses the evolving landscape of space launchers, spanning from the recent successful attempts of Blue Origin and SpaceX, to the plans of ULA and Airbus to possibly implement reusability in the future, and looking also at China and Russia's strategies in this respect. In the end, the article reflects on the prospects of Ariane 6 in light of these recent developments.

24 February 2016. **ESPI Senior Event at Hofburg**

On 24 February ESPI organized a Senior Voices event featuring Ambassador Dr. Peter Jankowitsch, former long serving Chairman of the UNCOPUOS, and Dr. David Kendall, the incoming Chairman. The event was arranged in cooperation with the Foreign Policy and United Nations Association of Austria and took place at lunch time at the Association's premises in the Stallburg, part of the Hofburg.

The full house witnessed a spirited and highly informative discussion on the current-state-of-play in the space domain, on what we can learn from the past, and on the future outlook. The event ended with a question-and-answer session. The video recording of the event can be found in ESPI website



7 March 2016. **ESPI Director attends GEO roundtable**



On 7 March the ESPI Director, Peter Hulsroj, participated in a roundtable organised by the Group on Earth Observations (GEO) on the topic "Supporting Implementation of the 2030 Agenda Through Knowledge, Data and Information". The issue was how international actors involved with Earth Observation can support the achievement of the Sustainable Development Goals of the UN. Mr. Hulsroj explained the background and objective of the ESPI project on Space for Sustainable Development, and stressed the need for the space community to strengthen the dialogue with non-space sustainable development actors in order to ensure that space is making the optimum contribution to the general sustainable development effort. Reinforcing the voice of the demand side is critical.

6-7 March 2016. **ESPI presents at Swiss Foundation**

On 6-7 March, junior Researcher Elisabeth Veit attended a Consultation Meeting by the Swiss Foundation for Mine Action to discuss drones in humanitarian action. The meeting was attended by 30-35 people from the drone and NGO sectors and included both presentations of case studies and structured discussions. Hurdles to effective utilisation were discussed as well as positive experiences of drone deployment. Ms. Veit gave a presentation on "Optimizing the interaction of ground and space-based data in disaster situations" which was well received by participants as a way forward. Ms. Veit also met with representatives of the ITU to discuss its role in coordinating space actors, and was invited to visit the Geneva offices of the United Nations by representatives of UNOCHA.



5 April 2016. **Student Visit from the University of Graz**

On 5 April, ESPI received a group of law students from the University of Graz. Following a brief introduction of the Institute activities by the Director, Peter Hulsroj, five ESPI Resident Fellows presented their most recent research results on the topic of "Mechanisms for the Development of International Norms regarding Space Activities"; "The Future of European Flagship Programmes in Space"; "The European Launchers between Commerce and Geopolitics"; and "Europe in the Future and the Contributions of Space".

Finally, a short presentation on the activities of the SGAC was given by the SGAC Director Minoo Rathnasabapathy.

13 April 2016. **ESPI Evening Event "Space Mining"**



On 13th of April ESPI organized an evening event on one of the currently hottest topics in space law – "Space Mining between the Space Treaties and the US Commercial Space Launch Competitiveness Act". The subject was discussed by four experts: Dr. Philip De Man (Leuven University), Prof. Tanja Masson-

Zwaan (President of IISL), Prof. Gbenga Oduntan (Kent Law School), Robert D. Richards (CEO, Moon Express), representing a variety of views.

The ESPI event coincided with the decision of the UN COPUOS Legal Subcommittee to adopt a new agenda item "General exchange of views on possible legal models for activities in exploration, exploitation and utilisation of space resources", proving the importance of the topic, and the readiness of important stakeholders to address it in a substantive way.

The event drew a full house and involved a discussion with the audience following the presentations. At the end, the Director summed up that there seems to be a high degree of consensus that activities like space mining should be enabled, even if there were very different views on how this should be done. So, much more discussion is necessary, and it is pleasing to see that after a long period of neglect this issue has come on the front burner again.



23 April 2016. **ESPI supports the European Inter-Parliamentary Space Conference**



From 18 to 19 April, ESPI Director Peter Hulsroj and ESPI Resident Fellow Matteo Tugnoli participated to the XVIII EISC workshop, held in Sinaia, Romania. This year, the Romanian Presidency of the European Interparliamentary Space Conference, supported by ESPI, selected the theme "Space Security" for its workshop and plenary session. The April workshop in particular aimed at providing an overview of current initiatives, an update on the implementation and

adherence to existing regulatory frameworks and instruments and ultimately a view of the way ahead to the security, safety and sustainability of space activities.

Opening speeches were given by Mr. Valerian Vreme, MP and Chairman of the Subcommittee for Space of the Romanian Chamber of Deputies, followed by several representatives of the Romanian government and institutions. The workshop continued with five thematic sessions, during which representatives of national parliaments and space agencies, as well as European institutions and research centers, addressed and discussed present issues of space security, as a result of the current challenges and their impact on the present and future space activities.

Mr. Marius-Ioan Piso, President and CEO of the Romanian Space Agency and Mr. Valerian Vreme gave the final remarks for the workshop, which was attended by more than 60 participants, and was concluded by a guided tour of the nearby Cheia Satellite Communication Center. The agenda of the XVIII EISC Workshop and further information about EISC can be found at the EISC website.



19 April 2016. **ESPI Workshop on Galileo**

On April 19 ESPI held a workshop on the policy stakes of European space-based infrastructures, looking specifically at Galileo, the European positioning, navigation and timing system that is being deployed. Under Chatham House rules the different stakeholders involved in this European programme had the opportunity to exchange views about how the programme was moving along and the challenges to meet throughout the value chain, from the manufacturer to the end user.



The workshop was structured around three sessions: i) The view of the manufacturing industry: Maintaining a competitive offer, ii) Challenges of operating a critical infrastructure, iii) Exploiting Galileo for the benefit of the European economy; and a Round table on the way to the success of Galileo, meeting the challenges. Twenty one out of the 32 participants were chairs and speakers. Participants found ESPI particularly well suited as a neutral platform for bringing together actors from different segments of the value chain to interact and express in a rather frank manner their views on the progress of this EU flagship endeavour.

3 May 2016. **ESPI presents at Conference at ASI**

On 3 May 2016, ESPI Resident Fellows Marco Aliberti and Matteo Tugnoli delivered a lecture on the findings of the ESPI Report “The European Launchers between Commerce and Geopolitics” at the Italian Space Agency (ASI) in Rome. The conference, jointly organised by ASI and the Italian Society for International Organisation (SIOI), was attended by a number of representatives of Italian public institutions and space-related industries.



After keynote speeches by Gabriella Arrigo and Arturo de Lillis from ASI, Mr. Aliberti introduced the topic of access to space in Europe, by examining the key axes of new European launcher strategy as they emerged from the 2014 ESA Ministerial. Mr. Tugnoli then shifted the focus to analyse the most recent developments in the space transportation sector of the major spacefaring nations and emerging countries. Building on this, Mr. Aliberti and Mr. Tugnoli jointly provided a detailed analysis of the worldwide commercial and political dynamics shaping this domain, including key unfolding trends and their future impacts. Thereafter, they assessed the ensuing challenges and opportunities to be faced by Europe in safeguarding its future competitiveness and optimizing the political benefits of Europe’s autonomous access to space. Following the presentation, the conference sparked an enthusiastic discussion with the audience.

9-13 May 2016. **ESPI presents at ESA Living Planet 2016**

From 9 to 13 May, ESPI participated to the ESA Living Planet 2016 in Prague, the world’s biggest conference on Earth observation to date. The event brought together scientists and users to present their latest findings on Earth’s environment and climate derived from satellite data. It provided an opportunity to introduce missions in development from ESA – such as the Sentinels, Earth Explorers and meteorological missions – as well as from national space agencies. Scientific themes covered include oceanography, solid Earth and geodesy, atmosphere, climate and meteorology, the cryosphere, hazards, methodologies and products, near-Earth environment and land applications.

At the event, ESPI Resident Fellow Stefano Ferretti fostered synergies and dialogue with relevant space actors around the theme Space for Sustainable Development, while ESPI Senior Researcher Harry Eyres presented an overview of his upcoming book “The Necessary Distance: How Earth Observation Can Help Shift our Relationship with the Planet from Exploitation to Responsible Stewardship”, which was produced in close collaboration with the ESA Directorate of Earth Observation.



10 May 2016. **ESPI presents at University College London Space Policy Workshop**

On 10 May, University College London (UCL) put up a space policy workshop on “New approaches for achieving greatest benefit in a changing world” with the aim to provide an environment for key thinkers and policy makers to challenge current approaches and consider alternatives to future space policy related development. ESPI Resident Fellow Serge Plattard made a presentation entitled “Operating in a safe, secure, and sustainable space environment”.



Through five sessions and a plenary speakers addressed a range of issues including the focus on technology planning, exploration, the necessity to demonstrate economic impact for a range of applications more concretely, and the challenging threats to space activities and national security. Based on these approaches, the meaning of measuring the benefit of space in a more inclusive manner, beyond standard metrics, was the challenge that had to be met by the different speakers. The outcomes of this event will be published in a report next summer to be circulated to policy makers in the UK government and parliament, heads of space agencies, EC, and other selected decision makers in the space arena.

The workshop, held under the Chatham House rule, was attended by 35 persons, including several postgraduate students.

May 2016. **ESPI builds a Dialogue Platform on Space for Sustainable Development**



In May 2016 ESPI has started to build a dialogue platform in order for the Space community to set up innovative ways of working together with development user communities. Collecting the needs on the field is key to reap the maximum benefit of space-based infrastructures, in particular when space aims to truly support sustainable development efforts. A wide variety of stakeholders from the Space, NGO and UN communities, engaged with ESPI in May 2016 to develop an integrated approach that collects the needs on the field and translates them into technological solutions that support sustainable development on a global scale. Key questions under consideration by ESPI and its partners include how NGOs are currently using Space assets, which requirements are filled by cooperation with Space stakeholders, and how the interaction between the fields may be improved. Both theoretical reflections on a range of development activities, including health, energy, humanitarian emergencies, and security, as well as strategies on the creation and management of Space-NGO programmes, represent possible ways forward. This activity is part of the wider ESPI initiative “Space for sustainable development”, carried out by Resident Fellow Stefano Ferretti and Junior Researcher Elisabeth Veit, and it aims at creating a holistic approach to the filling of user needs by the use of space technology and services, in line with the Sustainable Development Goals set in the UN Agenda 2030.

23 May 2016. **ESPI Director speaks on New Space in Berlin**

In May On 23 May the ESPI Director, Peter Hulsroj, made a presentation on New Space at the German Association for Foreign Policy in Berlin. The title of the presentation was Consequences of Commercial Use of Space: Current European Measures and Interests, and was accompanying another presentation on New Space by Professor Stephan Hobe of University of Cologne.

26-28 May 2016. **ESPI presents at the 4th Manfred Lachs International Conference**

McGill University organized from the 26 to the 28 of May a conference in Montreal, Canada with the topic “Conflicts in Space and the Rule of Law”. Experts from all five continents gathered for the two day conference to discuss relevant issues and to mark the official kick off of the project “Manual on International Law Applicable to Military uses of Outer Space”. Throughout the two days there were eight sessions with over thirty speakers that addressed a variety of issues in regards to space security, governance and threats to the peaceful uses of outer space. ESPI Director Peter Hulsroj and ESPI External Consultant Anja Nakarada Pecujlic gave a presentation titled “Space through the lens of Neutrality” which underlines the burning need for such a Manual and was very well received by the participants. The papers will be published in the Conference Proceedings and a few selected papers will be part of the upcoming handbook.



11 June 2016. **ESPI presents at International Symposium at Vienna University**



On 11 June, ESPI Resident Fellow Marco Aliberti delivered a presentation entitled “Europe and China in World Affairs: Turning Constraints into Opportunities through Space” at the international symposium “Looking to the Future: Changing International Relations and Legal Issues Facing Space Activities” in Vienna. The Symposium was jointly organised by the George Washington University Space Policy Institute, the Beijing Institute of Technology – Space Law and the ECSL National Point of Contact for Space Law Austria. This well-attended event comprised three major panels in which the speakers addressed a wide range of issues in areas of international relations, space law and the changing private sector, and the long-term sustainability of space activities. After the presentations, held under Chatham House rule, the symposium sparked enthusiastic discussions and exchange of ideas with the audience.

13 June 2016. **ESPI presents at UN COPUOS**

On the fourth day of the Fifty-Ninth session of the UN Committee on the Peaceful Uses of Outer Space, Dr. Stefano Ferretti, ESPI Resident Fellow made a technical presentation on Space for Sustainable Development. The technical presentation highlighted the major findings of the ESPI Report 59 on Space for Sustainable Development. The report aims to provide key stakeholders with an overview of the current and potential contributions of space to the achievement of the Sustainable Development Goals. It argues that a fruitful and close dialogue among all the development actors and the space community should be established in order to exploit the full potential of space assets and services. The presentation was well received by COPOUS delegates and



15 June 2016. **Student Visit from ASI-SIOI Master**

On 15 June, ESPI hosted a group of students from the Master in Space Policies and Institutions programme organised by the Italian Space Agency (ASI) and Italian Society for International Organization (SIOI). In the framework of their professional visit to Vienna, the students visited ESPI and received a presentation of the Institute activities by the new ESPI Director, Jean-Jacques Tortora. Following this, five ESPI Fellows presented their most recent research results: Serge Plattard presented the upcoming report “The Governance of GNSS”; Cenani Al-Ekabi gave a presentation about his research on “The Future of Commercial Spacecraft Manufacturing in Europe”; Arne Lahcen elaborated on the relationship between space and society; Stefano Ferretti made a presentation on “The Contributions of Space for Europe and Sustainable Development”, and Alessandra Vernile, discussed her research project on “The Rise of the Private Actor”. Finally, a presentation of the activities of the SGAC, hosted at ESPI premises, was given by SGAC Director Mino Rathnasabapathy.

15 June 2016: **Welcoming Reception by the New ESPI Director**

In occasion of the recent appointment of Jean-Jacques Tortora as the new Director of ESPI, a welcoming reception took place on 15 June 2016 at the premises of the institute in Vienna. The event was kick-started by Min. Rat Mag. Ingolf Schädler, Head of Division “Innovation” of the Austrian Ministry for Transport, Innovation and Technology (BMVIT), with a speech on the relevance of space and of ESPI for Europe. This was followed by the welcoming address of the new ESPI Director and a cocktail reception with the guests of this well-attended event.



Ongoing and Future ESPI Activities

Ongoing ESPI Studies

The Future of the GNSS Governance

Project led by ESPI Resident Fellow Serge Plattard

As the Global Navigation Satellite Systems (GNSS) are moving ahead with two operational constellations, GPS and GLONASS, and two others in development, Beidou and Galileo, by 2020 the end users will have the possibility to use signals provided by these constellations for a large variety of applications. In addition, two regional systems are also gearing up: the Japanese Quasi Zenith Satellite System and the Indian Regional Navigation Satellite System. Thus the users should have the ability to use multi-GNSS receivers to increase performance in positioning, navigation, timing and velocity determination. In a sense, the signals delivered by the GNSSs will progressively acquire the status of a world public good, becoming indispensable for everyday life but with an imbedded fragility. If consensual governance among the providers, as a start, is not reached by then, we might be dealing with a complex system of systems whose management is not fully foreseen today. In view of this perspective, it is fair to ask if manufacturers and users destined to work together are setting the proper pace towards a soothed environment rather than having to live in a maze of competing technological specifications and management regimes.

After describing the current status and the development of GNSS, the study addresses the importance of the governance issues such as compatibility, interoperability, commonality of standards, interchangeability, dedicated constellations and the providers-users interaction. The role of the UN-ICG as a very useful informal platform for exchange of information is also underlined.

The GSA Mission in a European and Global Context

Project led by ESPI Resident Fellow Serge Plattard

Since 2010 the status of the European GNSS Agency (GSA) is to be the regulatory and executive agency for Galileo. The achievement of a fully operational Galileo system is the GSA's major strategic objective which includes an economically viable system and its security. Moreover, the ultimate goal is to bring Galileo to a leading satellite navigation system for civilian applications. Today, the mission of the GSA is well delineated, GSA being entrusted with a number of specific tasks and responsibilities mainly dealing with the security of the programme, the commercialization of the European GNSS, market support for EGNOS, providing a source of GNSS market information to the Commission, and promotion of new applications of the European satellite navigation systems. However, the current status of the GSA may not be adequate to bring the GSA to a level comparable, for example, to the US administrative instances ensuring that the GPS responds to national needs (civilian and military) and remains a highly reliable and competitive system (cf. the National Executive Committee for Space-Based PNT and its National Coordination Office). In international fora the EU representation remains poor, compared to those of the three others global providers.

Based on the currently ongoing study on global GNSS governance and systems coherence the proposed project will analyse the contours of the present mandate of the GSA, will place this within the European and global architecture of GNSS authority, and reflect on the adequacy of current arrangements in view of the desire to position Europe centrally in the debates both on contemporary and future issues. In this respect also the ability of the GSA to channel the wishes of European user communities towards global carriers of authority will be analysed and maximum benefit taken from the 2013 project on the general organisation of user communities in Europe.

Ongoing ESPI Studies

The Rise of the Private Actor

Project led by ESPI Resident Fellow Alessandra Vernile

A much discussed phenomenon in recent times has been the rise of the private actor in a domain that historically has been dominated by state activity, at least outside telecommunication. Entrepreneurs like Elon Musk have shaken up views on how and who to do things. Although the private actor in the United States is not as independently and extensively involved as the public debate would have it, an asymmetry is evolving with more and more prominence given to the private actor in the United States, with Europe in a middle position, and many emerging space-faring nations (and Russia) being firmly in the traditional 'state activity' camp.

The project will seek to cut through the fog of the current rhetoric to map the actual evolution of space stakeholder categories, thus hoping to give the best possible input to an analysis of how stakeholder evolution could be reflected in policy and governance, and possible asymmetries accommodated. In this context an attempt will also be made to assess how categories of stakeholders will evolve in the future in order to allow for definition of forward-looking and sustainable policies. The project will also look at their configuration and evolution within different segments of space activity. Policy discussions have tended not to make the related distinctions, and top level governance has tended to be universalist, and did thus not cater much for the differences in stakeholder categories within the various space specializations. Yet, it would seem that, for instance, governance in domains of pure commercial activity would have to become purely regulatory, whereas in domains like exploration where the public purse is likely to be significantly in demand, governance might go beyond the regulatory to provide broader mechanisms for co-existence and cooperation. In other words, given the variety of uses of space and the fact that often the same orbits and facilities are used by different kinds of users, better governance might have to have two elements: a shared minimum set of norms, and accoutrements tailored for the specific specialization. It seems, for instance, anomalous that in the area of telecoms where private industry is overwhelmingly predominant, no independent voice is given in UNCOPOUS when matters relevant to this industry are discussed. This stands in contrast to the ITU where private actors have a formal role, despite the character of ITU as an intergovernmental organization.

India in Space - Between Utility and Geopolitics

Project led by ESPI Resident Fellow Marco Aliberti

India has traditionally taken a very utilitarian approach to space. India was an 'early adopter' and has built a huge infrastructure with ISRO, yet the point of space exploitation by India was until recently almost entirely to gain utilitarian benefits. Space was a very useful tool to address many of the societal issues facing a huge and developing country. Things started to change with the launch in 2008 of the Indian space spacecraft Chandrayaan-1 to the Moon. And lately India has scored a huge success with the Mangalyaan Mars probe, launched in 2013 and entering a Mars orbit in 2014 - the first country to reach a Mars orbit in the first try. What is more, plans abound on human spaceflight and daring exploration missions.

The project will start out by looking at the historical path of India in space and where this path has crossed those of external partners. It will then look at India's rationales for engaging in space with a narrow focus, and how the support for the narrow focus was structured politically. The change in approach of recent years will thereafter be analysed in the context of the changing geopolitical situation and in the context of domestic Indian politics. The study will conclude with an extensive analysis of India's path forward, the toolbox India has at its disposal for indigenous versus cooperative endeavours, how India can be assumed to choose its partners, and in which fields, and to which extent India is being driven towards a rethink of its strategy by the glaring light of China's ambitions, not only in exploration, but through the use of tools such as APSCO.

Given the shared democratic values of India and Europe one would assume that there is fertile soil for far more extensive cooperation between them. And India's demographics and current strong path towards prosperity spell mutual opportunity. Surely Europe cannot afford to ignore a future behemoth! A central part of this final analytical part will be to see what the opportunities of Europe are to create mutually beneficial cooperation with India, both at the pan-European and individual nation level, and to which extent Europe can be a catalyst also for broader multilateral cooperation.

Ongoing ESPI Studies

Space for Sustainable Development

Project led by ESPI Resident Fellow Stefano Ferretti and ESPI Junior Researcher Elisabeth Veit

ESPI's ongoing Space for Sustainable Development project investigates the innovative aspects of the 2030 Agenda for Sustainable Development. Approved by the UN General Assembly in 2015, the Agenda includes 17 new Sustainable Development Goals (SDGs) as the successors of the Millennium Development Goals. The drastic changes incorporated into the goals, including an emphasis on holistic solutions which take into consideration the long-term economic, social and environmental needs of communities, mark a departure point for a new theoretical approach to development. Meeting the challenges posed by this new approach will require multi-stakeholder and inter-disciplinary solutions to be found.

The project investigates the potential involvement of Space in the development process. It reviews existing cooperation activities between the fields as well as at opportunities and potential avenues for significant contributions which have remained underused, with the aim of identifying a set of policy recommendations for the creation of an inter-disciplinary dialogue mechanism. Part of the project has thus involved creating an extensive overview of relevant "Demand Side" actors, and surveying how the SDGs will be managed and monitored in their context. The diffuse range of "Supply Side" actors have also been reviewed. From this basis, the project has moved on to identify existing mechanisms and forums through which the two fields are already interacting. A key player in this context is the European Union. Other examples which have been studied include the International Charter on Space and Major Disasters.

What is clear is that High-Level Forums are a necessary pre-requisite for fostering cooperation within the space sector and establishing a dialogue with the development community. Research on the parameters and requirements of a Space-Development platform is ongoing and involves a variety of stakeholders. Report 59, an executive summary on "Space for Sustainable Development" released by the Institute in June 2016, offers first insights into how this may be achieved.

ESPI Recurrent Activities

Also this year ESPI is preparing the Yearbook on Space Policy, reflecting the Autumn Conference of the year before, and preparing the 2016 Autumn Conference. In view of the recently adopted UN Post-2015 Development Agenda, the selected overarching theme for the 10th Autumn Conference is "Space for Sustainable Development". To elaborate on the theme, the Institute will bring together eminent professionals in the relevant fields. Their findings will be presented in the second part of the Yearbook on Space Policy - which will be published in 2017 by SpringerWienNewYork - in the form of external contributions.

Furthermore in 2016 ESPI will continue to support EISC and the ESPRAN network.

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www.youtube.com/user/ESPIfilm/



www.linkedin.com/company/european-space-policy-institute

ESPI Upcoming Events

ESPI 10th Autumn Conference: “Space for Sustainable Development”

ESPI, Vienna, Austria
15-16 September 2016

Other Upcoming Events

July 2016

14 July
5th Annual Space Event
Washington D.C., United States

8 July
M2M - IoT over satellite: challenges and opportunities
ESA ESTEC, The Netherlands

September 2016

7 September
8th European Cubesat Symposium
London, United Kingdom

12 - 16 September
Earth Observation Open Science Conference
ESA ESRIN, Frascati, Italy

26 - 30 September
67th International Astronautical Congress
Guadalajara, Mexico

August 2016

18 August
Satellite Finance Conference
San Francisco, CA, United States

28-August - 1 September
CubeSats and Nanosats for Remote Sensing
San Diego, CA, United States

October 2016

3 - 7 October
European Space Power Conference
Thessaloniki, Greece

12 - 13 October
7th International Conference SECESA 2016
Madrid, Spain

25– 27 October
International SpaceWire Conference
Yokohama, Japan

Conferences, Symposia and Workshops organised by ESA
available at:

<http://www.congrexprojects.com/list-of-events>

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