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Editorial

Dear Colleagues,

The first six months of the new directorship of Jean-Jacques Tortora, which took up duty on 1st June 2016, marked significant accomplishments for ESPI. In September, the Institute organised its 10th annual Autumn Conference, which brought together space policy experts and renowned academics to discuss the theme of “Space for Sustainable Development”. In parallel to this ESPI staff organised and took part in a considerable number of space-related activities, including the 4th International Conference on Sustainable Development in New York, the 67th International Astronautical Congress, the 18th European Interparliamentary Space Conference, the UN/UAE High Level Forum in Dubai, the 2nd EU-US Space Policy Conference, and several presentations and lectures in relevant institutions. An overview of all these recent activities is provided within this Newsletter.

Along with the plethora of activities organised in and outside of ESPI, the period was fruitful also in terms of publications. Over the last six months, ESPI has published two Reports, the “Space Policies, Issues and Trends in 2015-16” and “Engaging With Stakeholders in Preparation for UNISPACE+50”, a new issue in the ESPI Briefs series, the 9th Volume of the “Yearbook on Space Policy” and a new book in the “Studies in Space Policy” series authored by Harry Eyres. ESPI staff also published a number of articles and analyses within conference proceedings and the specialised press.

Furthermore, within the next few months ESPI will be publishing three new projects on the topics of the GSA role in the European and global context, the rise of the private actor, India’s space programme. A description of the ongoing and upcoming activities planned by ESPI as part of its Workplan 2017 is also provided within this Newsletter.

Finally, the Newsletter provides a list of upcoming events and opportunities available at ESPI. We wish you nice reading!

The ESPI Team

Recent ESPI Publications

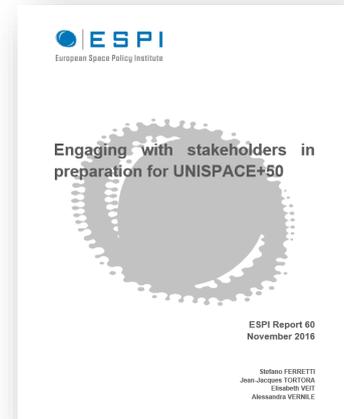
ESPI Reports

November 2016

Report 60: Engaging with Stakeholders in Preparation for UNISPACE+50

by Stefano Ferretti, Jean-Jacques Tortora, Elisabeth Veit, Alessandra Vernile

ESPI Report 60 highlights the importance of engaging with a large variety of actors in the preparatory activities leading to UNISPACE+50, the United Nations Conference taking place in 2018 and aiming at giving new impetus to the mandate of the COPUOS in the years to come. The preparatory activities of UNISPACE+50 represent an ideal platform for defining the new boundaries, as well as the opportunities and challenges that this sector will face in the future, including a greater involvement of new space actors, NGOs and the Civil Society. The report shows that their engagement is key for ensuring the success of the UNISPACE+50 goals.



November 2016

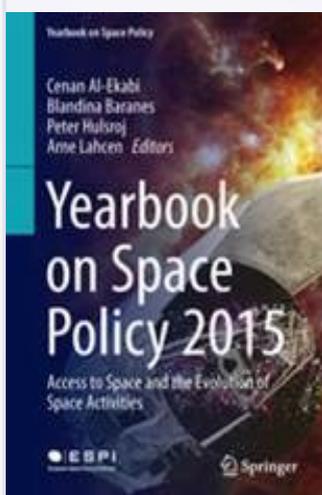
Report 61: Space Policies, Issues and Trends in 2015-2016

by Cenani Al-Ekabi, ESPI Resident Fellow

ESPI Report 61, the Space Policies, Issues and Trends in 2015-2016, provides a broad overview of the state of the space economy and of global space policies. This year's edition of the Space Policies, Issues and Trends report covers the period of mid-2015 to mid-2016. This flagship ESPI report seeks to put the space endeavour into a general context by providing an overview of space policy developments worldwide, while also looking at the economics and at how the policies in different fields and countries and regions are developing.



ESPI Yearbook in Space Policy 2015



Access to Space and the Evolution of Space Activities

The ninth volume of the "Yearbook on Space Policy" series edited by ESPI and published by Springer covers global space related developments in the Year 2015. The thematic focus of ESPI's Yearbook on Space Policy 2015, is on Access to Space and the evolution of space activities. The threefold structure of the yearbook remains the same as for earlier years. The first part deals sets out a comprehensive overview of the economic, political, technological, and institutional trends that affect space activities in Europe and throughout the world in the period. The second part approaches the overall theme from a more analytical perspective, covering a wide range of topics revolving around Access to Space. The third part carries forward the character of the Yearbook as an archive of space activities prepared in-house by ESPI, providing a comprehensive bibliography, chronology and data on ESA member states and relevant space nations. In its entirety, ESPI's Yearbook on Space Policy fills a niche in communicating space policy and space related issues to decision makers and to the broader public.

Editors: Cenani Al-Ekabi, Blandina Baranes, Peter Hulsroj, Arne Lahcen

Publisher: SpringerWienNewYork - January 2017

ESPI Briefs

January 2017

China's 2016 White Paper on Space: An Analysis

ESPI Brief No. 7 provides an overview and reflection on the new White Paper on Space Activities released on 27 December 2016 by the Information Office of China's State Council. The brief highlights what can be and cannot be found in the White Paper and puts it into perspective as compared to previous editions and to China's broader policy goals. You can read it on ESPI website.



Voices from the Space Community

November 2016

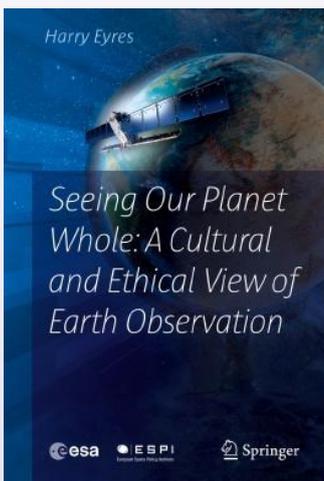
Space – A Soft Power Tool For Europe

Tomas Hrozensky, PhD. Student at the Matej Bel University in Banska Bystrica, Slovakia and Visiting Scholar at the Space Policy Institute of the George Washington University, produced a new contribution for the series “Voices from the Space Community (previously known as ESPI Perspectives). The paper elaborates on the concept of Space as a soft power tool for Europe.



Studies in Space Policy

ESPI Studies in Space Policy Book Series



Seeing Our Planet Whole: A Cultural and Ethical View of Earth Observation

This new volume of the “Studies in Space Policy” series produced by ESPI and published by Springer shows how our new-found ability to observe the Earth from “the necessary distance” has wide and profound cultural and ethical implications. First of all, it is the outcome of speculations and investigations of human beings in relation to their home planet carried out over millennia. In particular, it reveals a split between the ancient idea of the Earth as nurturing mother and the more recent conception of the Earth as a neutral resource able to be infinitely exploited by humankind. The 1968 Earthrise photograph, showing the beauty and fragility of the Earth, helped spark a worldwide environmental movement; now the comprehensive coverage of global change provided by satellites has the potential to convince us beyond reasonable doubt of the huge alterations being wrought upon the Earth and its climate system as a result of human actions, and of the need to act more responsibly.

Author: Harry Eyres

Publisher: SpringerWienNewYork - January 2017

Other Publications by ESPI Staff

Aliberti, Marco, Lauren Napier and Christopher Beischl. "Orbital Congestion: Assessing the Prospects for Effective Governance Structures Through Regime Theory" Proceedings of the 67th International Astronautical Congress, 26-30 September 2016, Guadalajara, Mexico, Paper IAC-16.E3.IP.3.

Aliberti, Marco. "China's Marathon in Space: Peril or Opportunity?" China Policy Institute: Analysis, 3 November 2016.

Ferretti, Stefano. "Space as an enabler of sustainable development". Proceedings of the 4th International Conference on Sustainable Development, 21-22 September 2016, New York, USA.

Ferretti, Stefano. "Sustainable Development: Challenges and Opportunities for Space in Listening to the Field". Proceedings of the UN/IAF Workshop on Space Technology for Socio-Economic Benefits: "Integrated Space Technologies and Applications for a Better Society", 23-25 September 2016, Guadalajara, Mexico.

Ferretti, Stefano and Alfredo Roma. "Optimizing the Interaction between Drones and Space Infrastructures" Proceedings of the 67th International Astronautical Congress, 26-30 September 2016, Guadalajara, Mexico, Paper IAC-16-B5.2.8.

Ferretti, Stefano and Elisabeth Veit. "Space for Sustainable Development" Proceedings of the 67th International Astronautical Congress, 26-30 September 2016, Guadalajara, Mexico, Paper IAC-16-E3.1.15.

Ferretti, Stefano, Barbara Imhof, and Werner Balogh. "Future Space Technologies for Sustainability on Earth" Proceedings of the 67th International Astronautical Congress, 26-30 September 2016, Guadalajara, Mexico, Paper IAC-16-D4.2.1.

Froehlich, Annette. "Les Travaux du Comité des Utilisations Pacifiques de l'Espace Extra-Atmosphérique des Nations Unies en 2016". Revue française de droit aérien et spatial Vol. 279, nr. 3, 2016.

Plattard, Serge. "Europe needs to enhance its stand on the security of space activities". Europe's World, 13 December 2016.

Plattard, Serge. "Despite this setback, space entrepreneurs will continue to boldly go". The Daily Telegraph, 3 September 2016, p. 18.

Plattard, Serge. "The SpaceX explosion is just a setback. Nothing can stop the privatization of space", The Telegraph, 2 September 2016.

Plattard, Serge, and Xavier Pasco "Keeping the International Code of Conduct and kicking!". Proceedings of the 67th International Astronautical Congress, 26-30 September 2016, Guadalajara, Mexico, Paper IAC-16-A6.8.1.

Plattard, Serge. "Les systèmes de positionnement par satellite: des enjeux stratégiques et économiques". Les Grands Dossiers de Diplomatie n°34, August-September 2016, pp. 92-95.

Plattard, Serge. "Can Global Navigation Satellite Systems Signals Qualify to Become a World Public Good?". In: *2015 Chinese Yearbook of Space Law*. June 2016, pp. 29-39. ISBN 978-7-5012-5252-7 (Translated in Chinese by Kong Dejian, PhD candidate at University of Leiden).

Recent Events

1 September 2016. **Organisation of the 1st ESPI - GRULAC cooperation meeting**



On 1 September 2016, Dr. Annette Froelich organized, in her capacity as Resident Fellow of ESPI, the first GRULAC-ESPI meeting. GRULAC, the Group of Latin America and Caribbean Countries, is one of the five regional groups at the United Nations representing 17% of all UN members. At the UN Committee on the Peaceful Uses of Outer Space (UNCOPUOS), one of the largest Committees in the UN, 14 of its 83 member states belong to GRULAC. The workshop, which was the starting point for further closer cooperation on space communication and studies, explored common points of interest and mutual

understanding in view of the upcoming UNISPACE+50 conference. A detailed analysis on the space situation in Latin American countries and ways of interaction with European space partners is intended as an effective result of this close collaboration, to be presented at the next UNCOPUOS sessions.

15-16 September 2016.
ESPI Autumn Conference
Space for Sustainable Development

On 15 and 16 September, ESPI hosted its 10th Autumn Conference, entitled “Space for Sustainable Development”. The Autumn Conference is an annual ESPI event which takes place in September and includes a meeting of the authors of the upcoming Yearbook on Space Policy as its centrepiece activity.

The ESPI Director, Jean-Jacques Tortora, gave the welcoming address, underlining the importance of using space technology for sustainable development with the reference to UN Agenda 2030 and its Sustainable Development Goals. The opening was enriched by a keynote speech of Vittorio Prodi, who presented the political, environmental and social implications of technology and development in everyday life. Five speakers provided their insights during the first Session, entitled “Space as an Enabler”. Justin Loiseau (MIT) presented the results of randomized evaluations to the effectiveness of programmes aimed at reduce poverty and innovative solutions for capacity building. Following this, Jennifer Frankel-Reed (USAID) elucidated the audience on the NASA-US Agency for International Development joint activity. Professor Petra Dannecker (University of Vienna) depicted also the necessity of new development models and cooperation. Doctor B.S. Bhatia (ISRO), portrayed the Indian approach to the use of space applications. And finally Ambassador Didier Lenoir (EEAS) exposed the European approach to the sustainable development making use of Copernicus and Galileo. During the evening, speakers and guests of the Conference were given a guided tour of Vienna, and enjoyed the dinner offered by FFG at Museumsquartier, which was part of the annual FFG Forum event.



The second day was opened by a key note speech from Simonetta Di Pippo (UNOOSA), on the topic of Space and the UN 2030 Agenda on Sustainable Development. Luc St-Pierre (UNOOSA) chaired Session II of the Conference, which revolved around the theme “Sustainable Development and Space”. The first speaker, Mahama Ouedraogo (African Union), presented the new African space policy and strategy, reporting examples and achievements. Then the experiences of NGOs in the field were presented by Andreas Papp (SOS Children Villages) and Edith Rogenhofer (MSF), who described the use of Earth Observation as support tool for working in the field, stressing the importance of data accessibility, interoperability

and free, full and open policy. The morning session was closed by Josef Aschbacher (ESA), who explained how EO can support the sustainable development goals of zero hunger, clean water and sanitation, sustainable cities and communities, climate action, life below water and life on land.

In the afternoon, the third Session, chaired by Alfredo Roma (ESPI), was titled “Financial and non- financial aspects of sustainable development”. The first speaker, Professor Yun Zhao (CCL), offered an overview on the Chinese perspective on sustainable development through the example of the China-Brazil cooperation. After him, Edward Anderson (World Bank), presented the social and economic value of using drones. Then, representatives from the private actors took the floor. Jean-Francois Bureau (Eutelsat) highlighted the importance of satellites based services for sustainable development activities. Later, Dara Dotz (Field-Ready) described how solutions to logistical challenges in remote areas of the world can benefit of 3D printing technology transfers from space. Right after Christine Leurquin (SES) explained how SES is involved in sustainable development, vis-à-vis the activities of O3B, in particular stressing the importance of connectivity for commerce, health, education and economic growth. The last speaker, Andrew Zolli (Planet Labs), underlined the importance of imaging the whole earth every day and make global change, visible, accessible and actionable.

Finally, the ESPI Director drew the conclusions of this event, reporting the findings and remarking how the Conference achieved all its objectives. The outcomes and the proceedings of the event were collected and distributed later in the year, as well as presented in the short term to the next United Nations/United Arab Emirates- High Level Forum: “Space as a Driver for Socio-Economic Sustainable Development” in Dubai in November and, later on, within the framework of UNISPACE +50 in 2018.

21-22 September 2016. **ESPI participates at the International Conference on Sustainable Development 2016**

On 21-22 September, ESPI Resident Fellow Dr. Stefano Ferretti presented the paper “Space as an enabler of sustainable development” at the International Conference on Sustainable Development, organized at Columbia University by Prof. Jeffrey D. Sachs, Director of Sustainable Development Solutions Network.



International Conference on Sustainable Development

The conference, titled “Moving Forward: The SDGs in Practice” provided insights to identify and share practical, evidence-based solutions that can support the achievement of the Sustainable Development Goals (SDGs). The ICSD 2016 was well attended by key stakeholders from government, academia, the United Nations, international agencies, NGOs, and grassroots organizers to share practical solutions towards the achievement of a more sustainable and inclusive society.

2-4 October 2016. **ESPI supports the European Inter-Parliamentary Space Conference**



From 02 to 04 October 2016, ESPI Director Jean-Jacques Tortora and ESPI Resident Fellow Matteo Tugnoli participated to the XVIII EISC Plenary Session, held at the Palace of Parliament in Bucharest, Romania. The topic of the XVIII European Interparliamentary Space Conference, under the Romanian Presidency, was “Space Security”, encompassing both security in space and security from space.

Following the introductory speeches from the XVIII EISC Chairperson, Mr. Valerian Vreme, MP, and from Marius-loan Piso, President of ROSA, and the welcoming remarks from representatives of the Romanian government and institutions (including the Minister of Communications and for Information Society, Ms. Popescu) the Conference continued with four thematic sessions.

The first was dedicated to the road towards an European Space Strategy, with a keynote speech by the ESA Director General, J.D. Woerner, and presentations by Mr. Morsillo of ASD-Eurospace and Mr. Counet of EUMETSAT. In the afternoon, the second session, “Space and Security for Europe” was introduced by Mr. St-Pierre (UNOOSA), and followed by interventions from representatives of NATO (Mr. Alatululu), ESA (Mr. Moeller), EEAS (Mr. Martins) and EDA (Mr. Di Domizio). Lastly, Matteo Tugnoli (ESPI) presented the EUISS study “Space security for Europe” on behalf of its authors. The third session envisioned a roundtable between Head of Agencies and Delegations, and finally the fourth session was dedicated to interventions from representatives of the space industry. The first day of the Plenary was then concluded a wrap-up given by the ESPI Director, Mr. Tortora and a tour of the Palace of Parliament.

On the second day, the closed session between EISC Full Members parliamentarians took place, during which was discussed and approved the request of Norway to become Member of the EISC. Further debate revolved around the future presidencies of the EISC, and was concluded with the approval of the final Resolution. The overall conference was well attended, with parliamentary delegations from France, Italy, Germany, Belgium, Poland, Estonia and Romania.

Further information and documentation on the XVIII EISC Plenary can be found at: www.eisc-europa.eu

26 September 2016. **ESPI contributes to a special issue of “Diplomatie”**

The widely circulated French magazine “Diplomatie” published in its August-September 2016 special issue two articles respectively authored by ESPI Director Jean-Jacques Tortora, formerly Secretary General of Eurospace, and by Senior Resident Fellow Serge Plattard. The first article, titled “Les nouveaux défis de l’industrie spatiale”, analyses the new challenges for the space industry, whereas the second one “Les systèmes de positionnement par satellite: des enjeux stratégiques et économiques” addresses strategic and economic issues of satellite navigation and timing systems.



23-30 September 2016. **ESPI at the 67th International Astronautical Congress, Guadalajara, Mexico**

During the 2016 International Astronautical Congress “Making space accessible and affordable to all countries”, held in Guadalajara from 26 to 30 September 2016, ESPI’s Resident Fellows Dr. Stefano Ferretti and Dr. Serge Plattard participated in IAF committees, Global Networking Forums, and technical sessions where the outcomes of ESPI studies were presented.

Dr. Serge Plattard presented one paper co-authored with Xavier Pasco on the International Code of Conduct, and co-chaired session A6.8 “Policy, Legal, Institutional and Economic Aspects of Space Debris Detection, Mitigation and Removal”. He also moderated the Global Network Forum “Aiming at a Resilient and Sustainable Space Security System” supported by Mary Ann Liebert, Inc. Publishers, and chaired the IAF Committee on Space Security, events which were all very well attended. In addition, Dr. Serge Plattard represented ESPI at the General Assembly of the IAF.

Dr. Stefano Ferretti participated, as panellist, to the Global Networking Forum “Space Architecture and System Engineering: different disciplines or the same?”, and to the IAF CLIODN, GEOSS, Security and Entrepreneurship & Investment committees. In addition to this, he presented four papers at the conference.

The papers authored by ESPI Resident Fellows Marco Aliberti and Cenani Al-Ekabi were also presented during the Congress.



23-25 September 2016. **ESPI presents at UN/IAF Workshop on Space Technology for Socio-Economic Benefits, Guadalajara, Mexico**

From 23 to 25 September, ESPI participated to the United Nations - International Astronautical Federation Workshop on Space Technology for Socio-Economic Benefits: "Integrated Space Technologies and Applications for a Better Society". The workshop, organized by UNOOSA and co-sponsored by the European Space Agency and with contributions from the International Academy of Astronautics (IAA), the Committee on Space Research (COSPAR) and the International Institute of Space Law (IISL), was hosted by the Mexican Space Agency in conjunction with the 67th International Astronautical Congress, with the main objective to enhance the capabilities of countries in using space science, technologies and their applications in support of sustainable economic, social and environmental development.

On the first day, ESPI Resident Fellow Dr. Stefano Ferretti presented “Sustainable Development: Challenges and Opportunities for Space in listening to the Field”.

7 October 2016. **Interview on the Chinese Space Programme**



In an interview with the Italian magazine Fly Orbit News, ESPI Resident Fellow Marco Aliberti commented on the launch of the Chinese space laboratory Tiangong-2, one of the most attended developments for the Chinese space programme in 2016. The article discusses the recent achievements of China in space and its implications at international level. During the interview, Mr Aliberti was asked to elaborate on the long-term objectives of its human spaceflight programme and on the strategic issues associated with, including Beijing’s proposal to open its future Space Station to the international community and what the actual cooperation possibilities could be. Mr Aliberti also discussed the current postures of ESA and European Member States (particularly the Italian Space Agency) vis-à-vis China and how these might evolve in the coming years.



14 October 2016. **ESPI presents at BG Vöcklabruck–Zukunftsdialog**

On 14 October ESPI Researcher Elisabeth Veit participated to the “BG Vöcklabruck – Zukunftsdialog”, a well-attended initiative that included speakers from various fields, including Education, Research, Economy and Politics.

The event was organized by the Bundesgymnasium Vöcklabruck of Graz, in the frame of the celebrations for the 25th anniversary of the Austromir mission (2-10 October 1991), and focused on the theme “Weltall und Kommunikation – Entwürfe zur interaktiven Zivilisation im 21. Jahrhundert”. ESPI Researcher Elisabeth Veit gave a presentation on “The contribution of European Space activities to the achievements of the UN Sustainable Development Goals” (“Der Beitrag der europäischen Raumfahrt zur Erreichung der UN Sustainable Development Goals”).

19 October 2016. **Director of ESPI invited at Austrospace General Assembly**

On 19 October, ESPI Director was invited to participate in the Austrospace General Assembly meeting held in Seibersdorf Laboratories facilities, Austria. Austrospace is a non-profit organization providing comprehensive information about Austrian space activities and representing common interests of Austrian suppliers and users of space technologies vis-à-vis Austrian authorities and international organizations.

The Director presented the mission of the Institute, its organisation and the perspectives for potential synergies with local representations of international organizations and industry. The presentation gave rise to interesting exchange of views with the high-ranking representatives gathered on this occasion on the evolution of the space sector, and the challenges ahead regarding future developments of the European Space policy.

19 October 2016. **Visit of the German Armed Forces to ESPI**

On 19 October, five officers of the German Armed Forces visited the premises of the European Space Policy Institute in Vienna. The Director Jean-Jacques Tortora and ESPI Resident Fellow Dr. Annette Froehlich gave a talk on the outstanding issues in space security and on the relevance and use of space applications for security purposes. Moreover, the activities of the Committee for the Peaceful Use of Outer Space of the United Nations (UNCOPUOS) in Vienna and the relevant UN space related treaties were highlighted and widely discussed.



23-24 October 2016. **ESPI at the 1st International Space Forum at Ministerial Level (ISF), Trento, Italy**



On 24 October, Ministries of Science, University and Research, Space Authorities, Space Agencies and International Organizations representatives, senior space experts of 35 countries from Africa, Americas, Asia, and Europe met in Trento (Italy) at the 1st International Space Forum at Ministerial level. ESPI Resident Fellow Dr. Stefano Ferretti participated to the forum, entitled “Space Science and Academy for Global Challenges”, which fostered open and productive discussions on how Space Science and Academy can concretely contribute to the sustainability of the future space programmes for peaceful purposes.

The forum was organized under the auspices of the International Astronautical Federation (IAF), represented by its president Mr. Jean-Yves Le Gall, the International Academy of Astronautics (IAA), represented by its vice-president Dr. Francisco Mendieta, and the Italian Space Agency (ASI), represented by its president Prof. Roberto Battiston. The Italian delegation

provided the first statement and, following the statements of all the delegations, the forum was concluded by the approval of the Trento Space Statement, which can be accessed through ESPI website.

3 November 2016. **ESPI contributes to Special Issue of the China Policy Institute**

In its November issue, the China Policy Institute, a major centre of expertise on contemporary China based in the School of Politics and International Relations at the University of Nottingham, published an article authored by ESPI Resident Fellow Marco Aliberti. The article, entitled "China's Marathon in Space: Peril or Opportunity?" elaborates on China's long-term objectives to build a space station and addresses some of the ensuing geopolitical issues at stake for the international community.



10 November 2016. **ESPI at Public Hearing on Space Strategy at ITRE Committee**



On 10 November, the Director of ESPI was invited to speak at the public hearing on the Space Strategy for Europe organised by the Committee on Industry, Research and Energy in the European Parliament in Brussels. The specific topic he addressed was "Improving Industry Competitiveness".

20-24 October 2016. **ESPI Director at the UN/UAE High Level Forum in Dubai**

From 20 to 24 October, ESPI Director participated to the High Level Forum: Space as a Driver for Socio-Economic Sustainable Development, co-organized by UNOOSA and the United Arab Emirates in Dubai. Mr. Tortora co-chaired the Breakout Session 4 on Space Diplomacy and gave a speech in Panel 2: "Making a difference: Working Together Towards Sustainable Space", where he addressed the space security, safety and sustainability nexus with Sustainable Development on Earth. In doing so, he also summarized the outcomes of the 10th ESPI Autumn Conference, which revolved around the theme "Space for Sustainable Development".

15 June 2016: **ESPI Presents at NEREUS Workshop, Matera, Italy**

On 14 and 15 November ESPI Resident Fellow Dr. Stefano Ferretti took part in the workshop "When Space Meets Agriculture - Fostering Interregional collaborations, investments and definition of user requirements" organized by the Network of European Regions Using Space Technologies (NEREUS) in Matera, Italy. NEREUS aims to explore the benefits of space technologies for European regions and its citizens and to spread their applications, while promoting the regional dimension of European Space Policy and programs as well as end-user needs.



ESPI was invited to chair the second session of the workshop and to address the topic "Space Technologies for Agriculture". The workshop aimed to promote a better understanding of the significance and potential of Europe's space systems, Copernicus and EGNOS/Galileo, for the agricultural sector. Other sessions in the workshop discussed Rural Development Programmes of selected NEREUS regions and explored opportunities to set synergies for the development of space applications for the agriculture sector. Moreover, the workshop presented the main strands of the European Agriculture Policy which linked the space community to the agriculture community.

Participants at the workshop included farmers, policy makers, entrepreneurs and researchers from both the agriculture and the space sector. It also provided a dedicated brokerage event designed to enable matchmaking between participants through bilateral meetings.

7 December 2016: **ESPI at the 2nd EU-US Space Policy Conference in Washington D.C.**

The EU-U.S. 2nd Space Conference took place on 7 December at the premises of the George Washington Space Policy Institute (SPI) in Washington DC. The event gathered high-ranking representatives from the European Commission, the US Administration as well as from industry and organisations playing a prominent role in the shaping of the EU-U.S. relations in Space. ESPI Director, Jean-Jacques Tortora participated in the panel related to Security with a presentation entitled "Using Space in a Secure and Safe Environment Opportunities for Like-Minded Partners".



Ongoing and Upcoming ESPI Activities

Ongoing ESPI Studies

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.

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

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.

European Access to Space: Addressing full spectrum capabilities

Project led by ESPI Resident Fellow Matteo Tugnoli

With the approval of the Ariane-6 programme, Europe has initiated the development of a new launcher that will ensure its autonomous access to space for all foreseeable public space programmes of the next decades. It will also give European industry the means to continue to ensure space launch services on a commercial basis. Ariane-6 is will thus provide Europe with a competitive offer for all medium-range launch service needs.

This project will then focus on the two ends of the market: small and super-heavy launchers. The recent evolution of worldwide launch records clearly demonstrates the dramatic increase of the number of micro-satellites projects, although Europe seems to be still lagging behind in this matter. The question then is to analyze the structure of the associated launch service market. As a matter of fact, the strategy for launching most of these satellites is mostly based on piggybacking or on launch in batches. From a economic standpoint, this raises the question of the existence - or not - of a market for small launchers dedicated to microsats. Then the question is to devise whether such market could be handled on a purely private basis or if there are any governmental stakes that might justify a public initiative in this domain.

At the other end of the spectrum, the foreseen discontinuation of Ariane-5 will leave Europe without any heavy-launcher capabilities. This implies that it would rely on non-European sources to provide for the transportation segment for all future potential space exploration endeavors, including the Moon village currently promoted by ESA. The project will thus consider all the various options available to mitigate such reliance, from an increased role of private actors to new schemes for international cooperation in this area traditionally not open to cooperative schemes.

Upcoming ESPI Studies

Space for Society

Project led by ESPI Resident Fellow Stefano Ferretti

The challenge of space for society has clearly been taken up by ESA DG through its Space 4.0 initiative. As a matter of fact, new innovation models are increasingly spread across sectors and disciplines, including Space, which is becoming an integral part of many societal activities (e.g. telecoms, weather, climate change and environmental monitoring, civil protection, infrastructures, transportation and navigation, healthcare and education).

Building up on the outcomes of ESPI studies “Europe in the future and the contributions of Space”, “Space for Sustainable Development”, and “Challenges and Opportunities for Space in listening to the field”, it is clear that it is timely to have a fresh look at the wider perspectives and strategies to be implemented in actionable programmes in the coming years. The project will review the achievements of the ESA Ministerial Conference and of the EC Space Strategy for Europe, and propose a roadmap, involving key stakeholders and representatives of the civil society in selected areas, in order to map out the available options and summarize the ideal programmatic conditions for successful implementation. Special attention will be given to ways to improve the dialogue with NGOs and civil society so as to make them aware of the potentialities of space, and how Space actors may listen to the field and collect its needs, in order to fully design, implement and exploit future space programmes.

For example, it will be investigated how new Copernicus services will capture citizen’s needs, and to what extent targeting sustainable development may open up opportunities for Europe to play a new role worldwide. It will be assessed how Galileo may be used beyond its original intent, addressing new needs and services (e.g. new vehicles like drones and self-driving cars). Satcoms are also on the verge of an evolution with the emergence of new applications related to the connectivity of objects, together with the emergence of high-flying drones or balloons to potentially provide link to underserved areas. Thus, the project will consider the conditions to be met so as to ensure that satellite operators will be able to come up with competitive new connectivity concepts and business cases, with mobile applications and innovative services to be made available to the users at an increasing pace.

Hence, the report will identify how space is increasingly becoming the link among systems of systems, and how its enabling function may therefore represent the new element actively contributing to a sustainable future.

Looking for an Enhanced Role of Europe in Space Security

Project led by ESPI Senior Fellow Serge Plattard

The project will embrace the various current concerns regarding security of access and security of operations in space, their treatment within the established venues, and offer possible lines along which Europe could be key to unlock the standstill situation on the matter. After analysing recent reports dealing with this topic and going through a number of interviews, the study will come up with a set of concrete recommendations and propose initiatives regarding short and medium term European space policy evolution in these matters in terms of debris mitigation, in-orbit avoidance and space weather forecasting.

The report will particularly highlight the necessary continuity from Space Surveillance and Tracking (SST) to Space Situational Awareness (SSA) and ultimately to Space Traffic Management (STM), and will reflect on the institutional as well as technical means necessary to ensure a consistent implementation of the required regulations. The dual nature of the threats currently dealt with separately by the Conference on Disarmament and the COPUOS will be analysed in detail. Indeed this institutional allocation is a major stumbling block preventing real progress towards tangible solutions enhancing space security.

The study plans also to include a discussion with COPUOS scientific and technical sub-committee representatives via a workshop focusing on NEOs detection and avoidance schemes.

Upcoming ESPI Studies

Legal implications of active debris removal

Project led by ESPI Resident Fellow Annette Froehlich

The Space Debris Mitigation guidelines were elaborated at various levels to avoid space debris or to reduce potential space debris in the course of future space missions. Even if this is a good initiative for a long sustainable use of outer space, it is vital to resolve the problem of the existing space debris in outer space as well. From a scientific and technical point of view various studies are ongoing to analyse the feasibility of active debris removal. Nevertheless it has to be highlighted that outer space is an international area where various actors with different legal and political concepts are operating, a situation that leads to different approaches concerning such activities.

The project will therefore analyse the various legal and political concepts to ensure a peaceful use of outer space, which is of utmost importance to ensure a pragmatic approach to the resolution of this issue. This might also lead to a better understanding and acceptance of the European initiative of the International Code of Conduct of Outer Space Activities.

Space Economy

Project led by ESPI Resident Fellows Alessandra Vernile, Marco Aliberti and Cenani Al-Ekabi

This project represents a follow-up of the activities performed in 2016 on “The Rise of the Private Actor”, which focused on the analysis of the ongoing multiple initiatives undertaken by private companies in many different areas of space infrastructures, including access to space, space imagery, connectivity, space travels, mining, etc. This project will then focus on the consequences that such initiatives will have on the development model for future space programmes, in particular pertaining to agency/industry relationship, governance and risk sharing scheme.

It will also aim at anticipating the medium term evolution of space markets that such evolution might initiate and propose a vision of the space economy by 2030: evolution of categories of stake holders, characterization of potential markets, identification of bottlenecks within different segments of space activity, and so on. Towards this, ESPI will make this topic the overarching theme of the 2017 ESPI Autumn conference, that will be jointly organized with the OECD. The adequation of the current legal framework to the evolution of the space economy will also be analysed in order to suggest recommendations regarding the most desirable evolutions necessary so as not to hamper its development. This could pave the way for a dedicated study to be initiated as an outcome of this event.

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 2017 Autumn Conference. The selected overarching theme for the 10th Autumn Conference is “Space Economy”. To elaborate on the theme, the Institute will collaborate with OECD to 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 2018 by SpringerWienNewYork – in the form of external contributions.

ESPI will also continue in 2017 to elaborate and issue the Space Policies, Issues and Trends (SPIT) publication.

Furthermore in 2017 ESPI will continue the tradition of having events linked with the meetings of the committee and sub-committees of COPUOS, and will continue to support EISC and the ESPRAN network.

Opportunities at ESPI

Vacancies

Coordinator of Studies

ESPI is looking to fill the position for Coordinator of Studies at the European Space Policy Institute. This position is for a limited duration of four years, with the possibility of extension, under an Austrian employment contract. The closing date for applications is 27 January 2017.

To review the details of the vacancy, please visit ESPI website or send an e-mail to office@espi.or.at

Research Intern

ESPI is looking to employ a Research Intern for a minimum of three to a maximum of six months at the premises of the Institute in Vienna, to support an upcoming study on the topic of European Access to Space. The closing date for applications is 1 February 2017.

To review the details of the vacancy, please visit ESPI website or send an e-mail to office@espi.or.at

Voices from the Space Community: Publish With Us!

Starting from November 2016, the well-known ESPI publication series “ESPI Perspectives” has been overhauled and retitled “Voices from the Space Community”. While this new series retains many key aspects that made its predecessor a successful and popular publication, with more than 70 contributions over the years, a number of changes were adopted in order to ensure the quality of the series, a faster publication process, and ultimately a broader participation and free exchange of ideas.

In its “Voices for the Space Community” series ESPI welcomes the submission of short papers, from both experts as well as young professionals, students and the general public, presenting a concise analysis on innovative ideas in the field of space policy. Topics can also cover the space economy, the societal impacts of space technology, outstanding issues in space law as well as space security, and more. To ensure a smooth review and editing process, which will be conducted on a joint basis with the author, we highly recommend not to exceed four pages in length, and to provide exhaustive references. We further invite authors to submit their paper using the template available at the ESPI website.

For further information, and to submit your “Voice”, please write to: matteo.tugnoli@espi.or.at

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<http://twitter.com/ESPIspace>



www.youtube.com/user/ESPIfilm/



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

ESPI Upcoming Events

ESPI Evening Event: "India in Space: The Forward Look Towards International Cooperation"

ESPI, Vienna, Austria

1 February 2016

ESPI Evening Event on "Near Earth Objects: Creating International Synergies"

ESPI, Vienna, Austria

April 2016

Other Upcoming Events

24-25 January 2017
9th Annual Conference on the European Space Policy
Brussels, Belgium

February 2017

30 January - 6 February
54th Scientific and Technical Subcommittee UN COPUOS
United Nations, Vienna, Austria

7-8 February
20th Annual FAA Commercial Space Transportation Conference
Washington D.C., USA

16 – 18 February 2017
3rd ORF Kalpana Chawla Space Policy Dialogue
New Delhi, India

April 2017

3 April
33rd Space Symposium
Colorado Springs, USA

24 - 28 April
Astrobiology Science Conference 2017
Mesa, AZ, USA

March 2017

14 March
Disrupt Space
Berlin, Germany

24- 25 March
European Space Generation Workshop 2017 (E-SGW 2017)
Paris, France

27 March – 7 April
56th Legal Subcommittee UN COPUOS
United Nations, Vienna, Austria

May 2017

5 May 2017
5th Manfred Lachs International Conference on Global Space Governance and the UN 2030 Agenda
Montreal, Canada

9 May
Humans to Mars Summit
Washington DC, USA

15-19 May 2016
5th IAA Planetary Defense Conference
Tokyo, Japan

Conferences, Symposia and Workshops organised by ESA

available at:

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

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