

Evaluation of the European Space Policy Institute (ESPI)

Final Report

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Executive Summary

In the 1990's, a committee appointed by the Council of the European Space Agency (ESA) put forward a report entitled "Investing in Space – The Challenge for Europe". Amongst other topics, this report recommended to create a European institute devoted to address space policy issues. It was then suggested that the institute should be established as a think tank, with the aim to contribute to longer-term issues in space to support the strategic decision-making processes in Europe. After three years of preparation and a competitive selection process with several European cities, the ESA Council decided in 2002 to select Vienna, Austria, as location for ESPI. Founders are the European Space Agency and the Austrian Space Agency (ALR/FFG), the latter representing the Federal Ministry for Transport, Innovation and Technology (BMVIT). The Institute was formally registered in late 2003 and the inauguration was celebrated in autumn 2005. The founding members ESA and ALR/FFG/BMVIT are the main sources of funding for ESPI, which includes annual grants, commissioned studies and staff secondments. But also further 13 members have contributed increasingly over the years.

For this evaluation, we analysed the genesis and development of ESPI as a „European“ policy institute in Vienna, its objectives and areas of activity as well as its impact on relevant national and international scholars and policy makers using a multi-level approach. There are methodological challenges concerning how to measure the influence (of a think tank) on policies in the medium- to long-term, which are discussed and addressed in the report.

ESPI is governed by three organs: (1) the General Assembly (GA), where members are represented, (2) the Advisory Council (AC), and (3) the Secretariat, composed of the Director and the Treasurer. The Director is the legal representative and chief executive officer of ESPI. The GA is the main decision making body, which consisted of 15 members in the year 2011. The strategy of ESPI is here to have a slow growth phase where only main stakeholders are approached for potential membership. The AC plays an important role in guiding the Secretariat, and especially helps the Director to devise a strategy to maximise the potential of ESPI. As there are some members of the AC who will come to their end of term soon, the GA and the Secretariat will need to devise a strategy on how to shape the AC in the future with a sufficient spread of competencies, actual influence and policy insights.

The decisive arguments for establishing ESPI as an association under private Austrian law were the relatively high degree of independence that is secured through its governance structure, the flexibility it offers for handling memberships, low capital needs, and the non-restrictive handling of the non-profit status. These arguments seem to be still valid today.

Between 2004 and early 2006, ESPI's efforts concentrated mainly on establishing the procedures and infrastructures of the Institute, on identifying potential members and partners, and on developing strategies for introducing the Institute to the European and global space policy community. This laid the basis for an intense growth phase in outputs and networking activities from 2007 onwards. Until the end of 2011, the Institute produced 128 products of some form, of which 39 are ESPI Reports with additional 11 non-published contract studies, and 60 journal publications. At ESPI's first autumn conference in 2007, the European Space Policy Research and Academic Network (ESPRAN) was launched. In 2008, ESPI published its first Yearbook on Space Policy with Springer Publishing House. Further support for networking activities were taken on in 2009, the European Interparliamentary Space Conference (EISC), and in 2010, the Integrated Applications Promotion (IAP) Ambassador Platform for Central and Eastern Europe. These networks and ESPI's memberships at four further international organisations and networks gave it rather high visibility.

The total budget of ESPI developed from € 228,000 in 2005 to € 609,000 in 2011. These numbers do not include contributions "in kind", i.e. the salaries of seconded personnel, which would raise the Institute's budget, but which cannot be easily quantified.

ESPI staff is either directly employed by the Institute or seconded by one of its member organisations. ESA seconds the director and one senior post (which is in fact split into two research fellow posts) to ESPI. The treasurer is seconded by ALR/FFG. Several national space agencies and ESA seconded further staff at irregular intervals. These were often resident fellows with relevant expertise to the Institute. In addition, internships and visiting appointments are offered by ESPI on a regular basis with stays of one to three months. The target of 12 staff members had been reached in 2008 and could be kept or even slightly increased since then. Between 2004 and 2011, 25 nationalities have been recruited into ESPI's team, also with a rather balanced gender split (45 % female, 55 % male).

One can observe a rather high turnover in staff, which is partly the case because seconded personnel are posted for two to three years and may be withdrawn from their assignments prematurely, which happened occasionally since the Institute started its operation. Further, ESPI's personnel have been relatively junior, which is also reflected in the judgement of interviewees that the quality of ESPI output has been somewhat variable.

Internships with ESPI have become highly sought after over recent years alongside with its increasing reputation. Still, one wonders whether a more formal relationship with educational organisations like universities, and even an international Masters and/or PhD programme, could benefit both, the educational experience of the young researchers and the ESPI.

The annual work plan (AWP) is the main guideline concerning the research carried out at the Institute. The content is developed and proposed by ESPI based on its mission and objectives. The process of finding research topics and shaping the AWP comprises inputs from its networks, the AC and the GA. ESPI finds itself often confronted with an array of ideas and opinions in these discussions, which have not only to be prioritised against the mission and objectives of the Institute, but also against the available expertise during the year and budget constraints. The final AWP is then approved by the GA. Some interviewees raised the issue that the topic selection for the AWP could be reflected on because they sometimes missed the policy focus. They suggest making the process more transparent and including more specific policy experts in the discussion and generation of topics. Since the first AWP, concerns have been raised that the whole of the AWP's include only specific projects, and that there is no general funding to enable the director and his staff to perform other types of activities from this funding source. This situation changed somewhat after 2009. The renewed ESA framework contract has allowed ESPI to use a share of € 50.000 on own initiatives and projects. However, some interviewees still demand more freedom to choose the activities more independently.

To comply with its remit for interdisciplinary dialogue, ESPI regularly organised and hosted book presentations, round table meetings and other events like art exhibitions. It hosted 12 events of international institutions and committees between 2008 and 2011. From 2007 onwards, ESPI has increasingly been invited by European universities and other academic institutions with special emphasis on space-related issues to hold lectures and presentations.

When it comes to judging the outcomes and impacts, we can observe a very high visibility of ESPI on the Internet, and also considerable sales numbers of its books. Citations in policy documents are somewhat hidden, because these are not always accessible. We could establish through anecdotal evidence that this seems to happen occasionally. Relationships with the European Parliament and national parliaments have increased over the years, and informal relationships with the EC do exist, but are clearly underdeveloped. When judging the impacts on Austria, we could establish that the presence of ESPI in Vienna does have positive economic effects that support the subsidy given by the Austrian authorities. We refer to chapter 6 of this report for the general conclusions and the policy recommendations developed by this evaluation.

Zusammenfassung

In den 90er Jahren wurde der Bericht "Investing in Space – The Challenge for Europe" von einem Komitee des Rates der Europäischen Weltraumorganisation (ESA) erstellt und einer breiten Öffentlichkeit vorgestellt. Unter anderem beinhaltete der Bericht die Empfehlung ein Europäisches Institut mit dem Fokus auf Fragen der Raumfahrt zu gründen. Diese Einrichtung sollte als Denkfabrik („Think Tank“) fungieren, die mittel- bis langfristig relevante Themen der Raumfahrt bearbeiten, und damit strategische Entscheidungsprozesse in Europa unterstützen, sollte. Nach einer 3-jährigen Vorbereitungsphase inklusive einem wettbewerblichen Ausleseverfahren, das mehrere Europäische Städte umfasste, entschied sich der ESA Rat im Jahr 2002 für Wien, Österreich, als Standort für ein Europäisches Institut für Weltraumpolitik (European Space Policy Institute - ESPI). Gründerorganisationen sind die ESA und die österreichische Agentur für Luft- und Raumfahrt (Austrian Space Agency, ALR/FFG), die das Bundesministerium für Transport, Innovation und Technology (BMVIT) repräsentiert. Das ESPI wurde Ende 2003 offiziell gegründet, die Einweihung fand im Herbst 2005 statt. Die Finanzierung des Instituts wird Großteils durch die Gründungsmitglieder ESA und ALR/FFG/BMVIT getragen, die ESPI mittels Förderzuschüssen, der Beauftragung von Studien sowie der Bereitstellung von Personal unterstützen. In den letzten Jahren erhielt ESPI zudem wachsende finanzielle und personelle Unterstützung durch seine nunmehr 13 Mitglieder.

Im Rahmen der vorliegenden Evaluierung wurden die Entstehung und die Entwicklung von ESPI als "Europäisches" Institut für Weltraumpolitik in Wien mit Hilfe einer Mehrebenenanalyse untersucht. Im Mittelpunkt standen dabei die Ziele und Aktivitätsfelder des Instituts sowie dessen Nutzen für und Einfluss auf nationale und internationale Experten und Entscheidungsträger. Die mit diesem Ansatz verbundenen methodologischen Herausforderungen, insbesondere hinsichtlich der Messbarkeit von mittel- bzw. langfristiger Politikbeeinflussung, werden in diesem Bericht ebenso diskutiert.

ESPI wird als Verein von drei Organen verwaltet: (1) der Generalversammlung (General Assembly, GA), in der die Mitglieder repräsentiert sind, (2) der Beirat (Advisory Council, AC), und (3) das Sekretariat, bestehend aus dem Direktor und den Kassier (Treasurer). Die Generalversammlung ist das zentrale Entscheidungsgremium des Instituts und bestand im Jahr 2011 aus 15 Mitgliedern. Bezüglich der Mitgliedschaften setzt ESPI auf eine langsame Wachstumsstrategie, wobei nur die wichtigsten Stakeholder der Raumfahrtcommunity für eine mögliche Mitgliedschaft angesprochen werden. Der Beirat spielt eine wichtige Rolle bei der Beratung des Sekretariats und unterstützt vor allem den Direktor bei der Entwicklung von Strategien. Da die Amtszeit einiger Beiratsmitglieder in Kürze abläuft, müssen sich die Generalversammlung und das Sekretariat eine Strategie überle-

gen, wie sich der Beirat in Zukunft zusammensetzen soll, vor allem hinsichtlich der Streuung von Kompetenzen und der möglichen politischen Einflussnahme.

Die wichtigsten Argumente für die Gründung von ESPI als Verein nach österreichischem Privatrecht war das relativ hohe Maß an Unabhängigkeit aufgrund der Governance-Struktur, die Flexibilität bei Mitgliedschaftsänderungen, der niedrige Kapitalbedarf und der Gemeinnützigkeitsstatus. Diese Argumente besitzen auch aus heutiger Sicht noch Gültigkeit.

Zwischen 2004 und 2006 konzentrierten sich die Bemühungen von ESPI hauptsächlich darauf, die Infrastruktur sowie die internen Abläufe des Instituts auf- und auszubauen, potentielle Mitglieder und Partner zu identifizieren sowie Strategien zur Einführung von ESPI in die europäische und globale Weltraumgemeinschaft zu entwickeln. Diese Vorgangsweise schuf die Basis für eine intensive Wachstumsphase ab 2007, gekennzeichnet vor allem durch einen hohen Forschungsoutput und wachsende Netzwerkaktivitäten. Bis Ende 2001 konnten 128 Produkte fertiggestellt werden, darunter 39 ESPI Reports, 11 nicht publizierte Vertragsstudien sowie 60 Publikationen in wissenschaftlichen Zeitschriften. Im Zuge der ersten Herbstkonferenz im Jahr 2007 wurde das European Space Policy Research and Academic Network (ESPRAN) gegründet. 2008 wurde das erste ESPI Jahrbuch zur Weltraumpolitik im Springer Verlag publiziert. Die Netzwerkaktivitäten wurden weiters durch die European Interparliamentary Space Conference (EISC) im Jahr 2009 und die Integrated Applications Promotion (IAP) Ambassador Platform for Central and Eastern Europe im Jahr 2010 intensiviert und ausgebaut. Durch die Mitwirkung an diesen Netzwerken und die Mitgliedschaft bei vier weiteren internationalen Organisationen bzw. Netzwerken konnte die Sichtbarkeit von ESPI deutlich erhöht werden.

Das Gesamtbudget von ESPI (ohne von anderen Organisationen befristet entsendetes Personal) stieg von €228.000 im Jahr 2005 auf €609.000 im Jahr 2011. Diese Zahlen beinhalten nicht den Personalaufwand für von anderen Organisationen abgestelltes Personal, welcher das Institutsbudget auf ein höheres Niveau heben würde. Die Kosten des Personals von anderen Institutionen können jedoch nicht quantifiziert werden.

ESPI Mitarbeiter werden entweder direkt von der Einrichtung angestellt oder von einer der Mitgliedsorganisationen befristet entsendet. ESA stellt dabei den Direktor und eine Senior Position (die de facto auf zwei Junior Forschungspositionen aufgeteilt ist); der Kassier/Treasurer wird von ALR/FFG gestellt. Weiters werden in unregelmäßigen Abständen Mitarbeiter von nationalen Raumfahrtagenturen sowie der ESA an das ESPI entsendet. Dabei handelt es sich um Personen, die über relevante Expertise für die Aufgaben am ESPI verfügen. Von ESPI werden kontinuierlich Internships und Gastpositionen für Forscher mit einer Dauer von ein bis drei Monaten angeboten. Die ursprünglich angestrebte Anzahl von 12 Mitarbeitern wurde im Jahr 2008 erreicht und konnte seitdem beibehalten bzw. sogar leicht

erhöht werden. Zwischen 2004 und 2011 waren im Team des Instituts 25 verschiedene Nationalitäten vertreten, wobei eine relativ ausgeglichene Genderbilanz erreicht werden konnte (45 % weiblich, 55 % männlich).

Die mitunter hohe Personalfuktuation am Institut ist teilweise darauf zurückzuführen, das Personal, welches für einen Zeitraum von zwei oder drei Jahren für das Institut bereitgestellt wurde, vorzeitig wieder abgezogen werden kann, was seit Gründung des Instituts fallweise praktiziert wurde. Zudem rekrutieren sich ESPI Mitarbeiter weitgehend aus jungen Nachwuchskräften, ein Aspekt, der im Zuge von Expertengesprächen vor allem vor dem Hintergrund der variablen Qualität des Forschungsoutputs thematisiert wurde.

Mit der wachsenden Reputation des Instituts stieg zuletzt auch die Nachfrage nach Internships stark an. Vor diesem Hintergrund stellt sich die Frage, ob nicht eine formellere Beziehung zu Ausbildungseinrichtungen mit z. B. internationalen Master bzw. PhD Programmen zum Vorteil für beide Seiten – für die jungen Forscher und für das ESPI – genutzt werden könnte.

Der jährige Arbeitsplan des Instituts stellt den Leitfaden für die Forschungstätigkeit am Institut dar. Der Inhalt wird von ESPI auf Basis seiner Mission und Ziele ausgearbeitet und vorgeschlagen. Der Prozess der Themenfindung und die Gestaltung des Arbeitsplanes wird durch Beiträge und Diskussionen aus den Netzwerken, der Generalversammlung und des Beirats unterstützt. Nicht selten sieht sich ESPI im Rahmen dieser Diskussionen mit Ideen und Meinungen konfrontiert, die zwar der Mission des Instituts entsprechen, aber aufgrund von knappen personellen und finanziellen Ressourcen nach hinten gereicht werden müssen. Der finale Arbeitsplan wird von der Generalversammlung genehmigt. Einige der Interviewpartner regten an, über den Prozess der Themenwahl zu reflektieren, da manche Projekte in der Vergangenheit den Politik-Fokus vermissen ließen. Es wurde vorgeschlagen, den Prozess transparenter zu gestalten und Experten in die Diskussion der Themen verstärkt miteinzubeziehen. Bereits seit dem ersten ESPI Arbeitsplan wurden Bedenken geäußert, dass die ESA Finanzierung nur auf spezifische Forschungsprojekte ausgerichtet ist, die es dem ESPI nicht ermöglicht, verstärkt in andere Aktivitäten zu investieren. Im Jahr 2009 wurde dahingehend eine Änderung beschlossen: Der überarbeitete ESA Rahmenvertrag ermöglicht es dem ESPI nun, einen Anteil von €50.000 für eigene Initiativen und Projekte zu verwenden. Die Forderung nach mehr Freiheit und Unabhängigkeit bei der Auswahl der Aktivitäten findet sich dennoch in einer Vielzahl an Interviews.

Um die Entwicklung des interdisziplinären Dialogs voranzutreiben, veranstaltet ESPI regelmäßig Buchpräsentationen, Round-Table Gespräche und andere Veranstaltungen. Zwischen 2008 und 2011 war ESPI Gastgeber von 12 Veranstaltungen internationaler Institutionen und Komitees. Seit 2007 wird ESPI im wachsenden Ausmaß von Europäischen Universitäten und anderen akademischen Einrich-

tungen mit spezifischem Raumfahrtfokus für Vorlesungen und Präsentationen eingeladen.

Im Hinblick auf die Beurteilung der Ergebnisse und Auswirkungen von ESPI konnte eine hohe Online-Sichtbarkeit des Instituts sowie eine beachtliche Zahl an verkauften Büchern festgestellt werden. Zitationen in politischen Strategiedokumenten (EC, EP, ESA, Mitgliedsstaaten) kommen eher versteckt zu tragen. Dies vor allem deshalb, da diese Dokumente zumeist nicht öffentlich zugänglich sind. Aufgrund von berichteten Einzelfällen können wir jedoch schlussfolgern, dass dies zumindest gelegentlich stattfindet. Zwar wurden die Kontakte zum Europäischen Parlament und zu nationalen Parlamenten in den letzten Jahren deutlich intensiviert sowie informelle Beziehungen zur Europäischen Kommission unterhalten: Diese Verbindungen sind jedoch ausbaufähig. Dies ist nicht allein als Bringschuld von ESPI, sondern auch als Holschuld der EC, etc. zu sehen. Hinsichtlich der Auswirkungen auf Österreich konnte festgestellt werden, dass die Präsenz von ESPI in Wien zu positiven wirtschaftlichen Auswirkungen geführt hat, welche die finanzielle Unterstützung Österreichs rechtfertigen. Für die allgemeinen Schlussfolgerungen sowie die Handlungsempfehlungen wird auf Kapitel 6 dieses Berichts verwiesen.

1. Introduction

1.1. *Why evaluating ESPI?*

The importance of space science and technology and its potential impact on the society and economy has become a central theme for European policy makers in recent years. In the 1990's, a committee appointed by the Council of the European Space Agency (ESA) put forward a report entitled "Investing in Space – The Challenge for Europe". Amongst other topics, this report recommended to create a European institute devoted to address space policy issues. It was then suggested that the institute should be established as a think tank, with the aim to contribute to long-term issues in space to support the strategic decision-making processes in Europe. This should be followed up by building an international multidisciplinary research and expert network to create a unique and independent source of information relating to all space related policy issues.

After three years of preparation and a competitive selection process with several European cities, the ESA Council decided in 2002 to select Vienna, Austria, as location for the European Space Policy Institute (ESPI) to be set up. ESPI was founded in late 2003 by ESA and the Austrian Space Agency (ASA), since 2004 the Aeronautics and Space Agency (ALR) of the Austrian Research Promotion Agency (FFG), an agency of the Federal Ministry for Transport, Innovation and Technology (BMVIT). The Institute's inauguration was celebrated in autumn 2005. The founding members ESA and ALR/FFG/BMVIT are the main sources of funding for ESPI, which includes annual grants, commissioned studies and staff secondments. ESPI was subject to a short status report in 2007 (ESA/C(2007)74), which aimed to review the development of ESPI and to analyse the performance of the Institute. According to the conclusions of the report, ESPI had made considerable progress since its inception, and was, except some minor issues, on a good way to reach its objective as planned.

Following the current second agreement between ESA and BMVIT and the possible renewal of ESPI's contract, this first comprehensive evaluation of the Institute was initiated by the Austrian authority in charge, the Federal Ministry for Transport, Innovation and Technology (BMVIT). The evaluation shall provide an analysis of the implementation and development with special reference to the inputs, outputs and impacts created by the Institute to enable an informed decision on the possible renewal of the contract. In line with the terms of references (TOR), the evaluation pays particular attention to the outcomes and impacts of ESPI.

In the next section, we present an overview of issues that are specific to the evaluation of think tanks, followed by a presentation of the approach and methodology of this evaluation. Section 2 covers the analysis of the genesis of ESPI including the

theory of change underlying this initiative and a description of its governance structures. Section 3 concerns the development of ESPI with its inputs, activities and outputs generated up to the year 2011. Section 4 and 5 aim to capture the outcomes and impacts, before we conclude with the findings and recommendations in section 6.

1.2. Think tanks and public policy making

Think tanks, also known as “policy institutes”, have become a world-wide phenomenon in the policy-making arena, especially in the United States (McGann and Johnson 2005). Following the Anglo-American literature (see e.g. Stone 2005, McGann and Johnson 2005, Leeson et al. 2012), a think tank is defined as independent non-profit organization that conducts research and engages in advocacy to support and influence public policy-making. Think tanks are characterised by a highly diversified research and policy agenda that can address multiple policy arenas at the domestic, international and global scale. Traditionally, think tanks have been viewed as a “bridge” between science and policy-making, serving distinct functions which include some or all of the following (McGann 2005, 2007):

- mediating between the government and the public;
- building confidence in public institutions;
- serving as an informed and independent voice in policy debates;
- identifying, articulating, and evaluating policy issues, proposals, and programs; transforming ideas and emerging problems into policy issues;
- interpreting issues, events, and policies for the electronic and print media, thus facilitating public understanding of domestic and international policy issues;
- providing a constructive forum for the exchange of ideas and information between key stakeholders in the policy formulation process;
- facilitating the construction of “issue networks”;
- providing a supply of informed personnel for the legislative and executive branches of government;
- challenging the conventional wisdom, standard operating procedures, and “business as usual” of bureaucrats and elected officials.

These functions are to be pursued mostly by a portfolio of activities and outputs that contain in one or the other form books, monographs, reports, policy briefs, conferences, seminars, formal briefings and informal discussions with policymakers, government officials and key stakeholders.

The influence of funding sources on the “independence” of think tanks

Think tanks vary considerably in terms of size, organizational structure, scope of activity, prospective audience and political significance (e.g. Stone 2007). However, the question of affiliation, and thus the independence of a think tank, plays an important role when discussing its objectivity and credibility. According to McGann (2007), think tanks that are not affiliated with academic institutions, political parties, or interest groups are considered to be freestanding or independent. While only a few political party-affiliated think tanks exist in the U.S., it is the dominant model in Europe.

Think tanks may receive funding by governments, rely on private or corporate donors, or derive revenue from consulting or research work related to third-party projects (Singer 2010). It is claimed that funding sources may have an impact on “academic freedom” and “free-thinking” because the institution might feel to be obliged to the worldview of important donors. To cope with this issue to a certain extent, think tanks began to install boards for formal decision making on strategic issues and advisory councils. Still, there is a question-mark over how successful individual think tanks are in maintaining independence even in the presence of controlling institutions. The informal power to comply with the viewpoints of donors might be just too strong. Or, how one of the interviewees to this evaluation put it: *“It is a very difficult thing to do to maintain the reality and the appearance of independence when you are dependent on funding from organisations (who you’re studying)”*.

Stone (2005: 18) concludes on this issue: *“funding dependence on one client ... will raise questions about freedom to set research agendas and subtle forms of self-censorship in ensuring the delivery of desired research results. In the end, perfect and complete independence is neither possible nor desirable for organisations such as think tanks. Instead, independence, autonomy and scholarly freedom is based on strong professional norms, (institutional) relationships open to scrutiny and tolerant but vigilant political cultures.”*

A general trend over the last years has been the increasing specialisation of think tanks in key global policy areas (McGann 2007). These single issue think tanks focus their activities either on specific problem areas (e.g. global warming) or specific areas of public policy (e.g. national security or space policy).

Several think tanks address the issues of space and space policy in their portfolio of research activities. However, this is mostly connected to security and defence issues. Amongst the very few think tanks that specialise on space policy related issues is the Space Policy Institute (SPI) at George Washington University, the Secure World Foundation (SWF) in Washington, D.C./Broomfield, C.O./Brussels, BE and, since 2004, the European Space Policy Institute (ESPI) in Vienna, AT. Other institutions do have a somewhat different focus like for instance space law, etc.

Evaluating the influence of think tanks: Methodological challenges

Evaluating think tanks means to evaluate whether the profession of policy influencing produces results. Because the process of shaping policies is marked by a multitude of influences, linking policy decisions to individual influences is even in hindsight difficult, and sometimes impossible. Moreover, “policy influencing” is an activity that more often than not results in rather „soft” outcomes and impacts with a more long term view. While one can think of research methods and indicators for capturing more formal policy influencing mechanisms, this gets increasingly blurred in the case of informal policy influence. Capturing informal policy influence is even challenging at the output level. Some professionals argue that the most effective informal influencing is done if the opposite thinks afterwards that they themselves came up with the idea. Thus, it is not only that policy makers do not want to acknowledge that they were influenced by others or do not remember, they will partly not have realised that they were influenced in the first place.

This „attribution problem” is well-known in the evaluation literature, but is enhanced in the context of policy influence for the above-mentioned reasons: Thus, no credible counterfactual can be constructed, and it might be hard to uncover evidence on such kind of influence from the standard methods of social inquiry.

This is why authors in this field (e.g. Jones 2011, Stone 2005, McGann 2007) think of novel combinations and new methods to trace the often soft nature of policy influence. Such methods for measuring policy influence can include a mix of citation analysis (not only how many, but where with which target group, or which kind of policy document); internet analyses; user interrogation in different - partly novel forms; interviews / dialogues and participatory exercises with a variety of stakeholders; drawing on available grey and published literature, and analysing the raw monitoring data to a somewhat deeper level than in other evaluation types. But it will also be of interest who and how many attend meetings and public workshops and presentations, the extent and quality of media coverage and alike.

This has also impacts on the range of indicators that are used to capture „influence” or „policy relevance“. According to Stone (2005), examples are media recognition and coverage, number of commissioned research projects from business, stakeholder engagement and participatory research, network membership and affiliations, publication record, qualifications and experience of staff, policy training capacity, external funds raised, content, navigability and sophistication of web-site, impact on legislation, drafting of bills, writing speeches, appointment of institute staff to official committees, political patrons and connections, international organisation patronage and co-option of think tank staff, etc.

In a similar vein, McGann (2007) argues that the development of indicators depends on where in the classic policy making process the think tank is positioned (problem definition/problem perception, agenda-setting, policy selection and enactment, or implementation). The respective position determines which activities these think tanks will choose, and also which indicators will be suitable and available to measure their effectiveness. Some of these will relate to the use of information from the Internet. As McGann (2007: 37) argues: „*One of the most important tools for any think tank is its website*”. He develops a classification of indicators which are shown in the Annex to this report.

The nature of the policy process involves multiple actors, with policy processes running in parallel, and thus hard to influence and trace. This is why a single actor will often have less impact than alliances and networks, which coordinate their messages and tasks. Here it will then be again not trivial to disentangle the individual contributions of network partners.

For ESPI as a think tank with the aim to influence policy in the medium- to long-term, the above mentioned issues on measuring influence do apply and are perhaps even taken one step further, as its activities influence the policy process by raising (future) issues, enable the exchange of opinions, and influence the strategic thinking of key stakeholders, not necessarily influencing policy people on their immediate policy agenda.

1.3. Approach and methodology

With that said, we analysed the genesis and development of ESPI as a „European“ policy institute in Vienna, its objectives and areas of activity as well as its impact on relevant national and international scholars and policy makers using a multi-level approach. A key feature of this approach is that it allows for the structured analysis of specific perspectives of different stakeholder communities, similar to a 360° feedback, thus helping to answer the evaluation questions as laid down in the terms of references (TOR) for this evaluation.

The research design distinguishes conceptually between analyses at the micro, meso, and macro levels. The following tasks, which constitute the scope of work of this study, are thereby addressed:

1. At the micro level, the objectives of ESPI are assessed for coherence, clarity and relevance and evaluated against its contribution to the Institute’s overall mission. Furthermore, the Institute’s organisational structure, resources and its performance, in particular in terms of activities and provided products and services, are analysed.

2. ESPI's activities and outreach in Austria are part of the meso level analysis, which discusses the benefits for its host country and the influence on the national space sector.
3. The macro level analysis is concerned with ESPI's visibility and impact at the international level and how the Institute's work is perceived by relevant stakeholders. Key aspects are here the usage and perceived usefulness of ESPI's products / services and its networking activities on scholars and policy makers in the EU and beyond.

The applied methodology covered both, qualitative and descriptive-quantitative research methods and is consistent with the best practice "evaluation standards in research and technology policy" as formulated by the Platform Research and Technology Policy Evaluation. The evaluation started with a document/literature analysis to gain insight into ESPI as an organisation, the national and international space community and the way space policy (research) issues developed in recent years. This was accompanied by interviews of key stakeholders who were involved in the different governance structures of ESPI. Additionally, a series of open, qualitative interviews of national and international key players in the space sector were implemented concerning the performance of ESPI and the impact of its products and services on European space policy and beyond (a list of interview partners is provided in the Annex).

We found that the documentation of monitoring data, that ESPI provided for the evaluation, were of very good quality. The evaluators want to express their gratitude for this.

Finally, we want to make a methodological note concerning the M&E problematic of recording policy influence as discussed earlier in the report: It could be beneficial to add to the already detailed documentation of ESPI output an „uptake log“, where „uptake“ or influence by ESPI personnel are recorded. This would be a collection of informal and anecdotal evidence about the use of research or advice (when, who, topic, audience), but could provide useful information for an on-going monitoring and contribute to deeper analyses once a number of instances have accumulated, and should the occasion of another evaluation arise in the future.

2. Genesis

2.1. *The political and institutional context*

The importance of space and space-based technologies for daily life, the society and economy has grown considerably in recent years. Today, space plays a crucial role in a number of policy fields such as security and defence, navigation, sustainable development, culture and education. Space activities receive increasing attention because of its potential for economic growth and job creation, thus becoming a key element in the development strategy of a growing number of countries. In Europe, projects such as Galileo (satellite navigation) and the Global Monitoring for Environment and Security (GMES) aim to foster Europe's position as a space power at the global level, and to anchor space as a strategic policy area.

The European Space Agency (ESA), established in 1975, has been the most dominant player in Europe dedicated to the exploration of space, currently having 19 Member States. Through its various space-related programmes and activities, ESA supports the development of Europe's space capabilities and provides services and information regarding all areas of space activities. The European Union's (EU) engagement in space issues is more recent and is focused on space policy. After a longer development process, including several pilot efforts, the EU and ESA set a keystone in the year 2000 by declaring to jointly work on a new European Strategy for Space. In 2003, a "Green Paper" was released by the European Commission (EC) to stimulate the debate on the medium- and long-term future use of space for the benefit of Europe. Based on the results of the "Green Paper" consultation, the EC adopted a "White Paper" on European Space Policy in November 2003, which outlined future strategies and actions for space activities within the EU.

In November 2003, the EC and ESA signed a framework agreement, which entered into force on the 28th of May 2004. The agreement outlines the principles for future EC/ESA co-operations¹, also providing a legal basis for joint projects, the organisation of events and trainings, the exchange of personnel and other issues relevant for joint activities. In this respect, the agreement pursues the following goals:²

- Securing Europe's independent and cost-effective *access to space* and the development of other fields of strategic interest necessary for the independent use and application of space technologies in Europe;

¹ *The agreement identifies eight fields of co-operation, which are science, technology, earth observation, navigation, communication by satellite, human space flight and micro-gravity, launchers and spectrum policy related to space.*

² <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:22004A0806%2803%29:EN:HTML>

- Ensuring that the overall European Space Policy takes into particular account *the general policies pursued by the European Community*;
- Supporting Community policies by *using space technologies and space infrastructures where appropriate and promoting the use of space systems* in support of sustainable development, economic growth and employment;
- Optimising the use of expertise and available resources and contributing to *the consolidation of the close cooperation between the European Community and ESA*, thereby linking the demand and supply of space systems within a strategic partnership;
- Achieving greater *coherence and synergy of research and development* to optimise the use of resources available in Europe, including the *network of technical centres*.

The agreement also envisaged regular meetings between the EU Council and the ESA Ministerial Council (“European Space Council”), allowing for ESA, EU Member States and other stakeholders to participate and discuss the development of a coherent European space programme. The first Space Council met in November 2004, followed by six subsequent meetings up to 2010.

A formal European Space Policy was adopted at the fourth Space Council in May 2007, which has been jointly drafted by the EC and ESA, aiming at increasing coordination of their activities and programmes towards the exploitation and exploration of space. With the Lisbon Treaty, which came into force on 1st December 2009, the EU gained shared competence on space matters with its Member States. Main priorities³ for a future European Space Policy include the success of the two EU flagship space programmes, Galileo and GMES, but also developing partnerships and relations with ESA, Member States, international partners and other European bodies, developing an industrial space policy, the protection of space infrastructures, and space exploration. The recently adopted “Europe 2020” strategy also recognises the importance of space for the economy and society.

To support the production and development of space policy in Europe, especially considering the mutual interests and actions of the EU, ESA, the Member States and other intergovernmental bodies (e.g. EUMETSAT), policy makers are seeking independent advice to stimulate debates and to address future challenges, threats and opportunities with respect to exploiting the full potential of space.

³ Council of the European Union, *Towards a space strategy for the European Union that benefits its citizens*, 31.5.2011.
http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/intm/122342.pdf

This is where educated viewpoints, generated somewhat distanced from the day-to-day policy work, comes into play. These contributions stem mostly either from universities, consultants and/or think tanks.

2.2. The ESPI Initiative: A European think tank on space policy

In the 1990's, the Council of ESA appointed a Long-Term Space Policy Committee (LSPC) chaired by Peter Creola, which in its 2nd report entitled "Investing in Space – The Challenge for Europe" suggested as one out of twenty recommendations to create a European Space Policy Institute (ESPI).⁴ The report was approved by the ministers of ESA Member States at the ESA Brussels Council in May 1999. Discussions about how to set up and run such an institution followed.

In June 2002, the "Proposal for a European Space Policy Institute" was published by ESA (ESA/C(2002)72), outlining the focus, tasks and purposes of a European Space Policy Institute. This foundation paper stipulates that the institute should be established as a think tank, with the aim to increase the interest in space policy on a broad basis by building a virtual network of interdisciplinary scientists and aerospace practitioners to create an independent source of space policy analysis and a platform for discussing the broad portfolio of needs, abilities and long-term prospects of Europe in space. In terms of content, the institute should focus on the various aspects of the politics, international relations and security, the economics, finances, law, market development, culture and environmental aspects of space issues.

Prospective host countries were invited to present their ideas on how to set up such a European institute. Until May 2002, five countries expressed their interest in hosting a future ESPI. In December 2002, the ESA Council decided on the establishment of ESPI in Vienna, defining its role as an independent organisation to contribute its share to developing a European long term vision in space and the distribution of new ideas.

⁴ ESA/C(2007)74: *Report on the European Space Policy Institute (ESPI)*; ESA/IRC(2003)30, rev. 1, and Creola, P. (1999), *A long term space policy for Europe*; *Space Policy* (15): 207-211.

The official foundation of ESPI took place on the 26th of December 2003 by registering it as a non-profit association under Austrian private law, with ESA and ALR/FFG being its founding members. According to the legal statutes of the ESPI (§2; see also chapter 2.5), its purpose is to:

1. promote European space policy in the world by setting-up an active forum for the analysis and discussion of European needs, capabilities and long-term prospects in space activities;
2. facilitate European space policy research, academic interaction and the definition of long-term European orientations in astronautics;
3. establish a European and international cross-disciplinary network of researchers and experts in all sectors dealing with space activities to support an efficient and thorough exchange of ideas between the participants;
4. identify areas where the Institute may provide an approach to European space policy and, in this regard, address proposals and recommendations to European decision-makers and institutions in an appropriate form;
5. serve as a leading source of information for scholars, scientists, professionals and students who wish to meaningfully contribute to the development of European space policy;
6. facilitate the exchange of information and opinions between those interested in space policy research through publications, workshops and other means required to perform the tasks of the Institute;
7. support the training of young graduates interested in the development of space policy in Europe.

§3 of the statutes define the means to achieve the purpose of the association:

The non-financial means are (1) an online-database of space policy materials; (2) an inventory of space policy research in Europe; (3) an overview of the developments in space policy teaching in Europe; (4) access to all ESA libraries; (5) organisational support for research meetings and workshops and the provision of documents for the topics to be discussed in the course of such meetings; (6) production and circulation of publications about space policy research, recent developments in Europe, the activities of the Institute and other informative material; (7) lectures and professional events; (8), research infrastructures, including a library.

The financial means shall be raised by (1) one-off accession fees; (2) annual membership fees; (3) income from events and campaigns organised by the association; (4) donations; (5) legacies; (6) sale of services, and (7) other financial gifts or donations in kind.

2.3. Mission and objectives of ESPI

Following ESA's "Proposal for a European Space Policy Institute" document, and the legal statutes, ESPI's mission had been defined to be:

"The ESPI provides decision-makers with an informed view on mid- to long-term issues relevant to Europe's space activities. In this context, ESPI acts as an independent platform for developing positions and strategies."

This mission is followed up by three interdependent goals: (1) to elaborate and disseminate scientific analyses on the politics of space technologies with a medium- to long-term view; (2) to support the opinion forming and decision making processes on the European level; and (3) to consolidate the relations between civil society, researchers and experts in the space sector.

The activities and measures to follow up on these goals mirror the purposes of the legal statutes (§2), are broad and a classic example for think tank activities. It can be summarized by the verbs analysing, discussing, collaborating, supporting, hosting, informing, and training. Alternatively, it can be summarized under the three headings: research, networking and education. These activities are shown in the following figure and will be described in more detail in later chapters in connection with the output and outcome indicators.

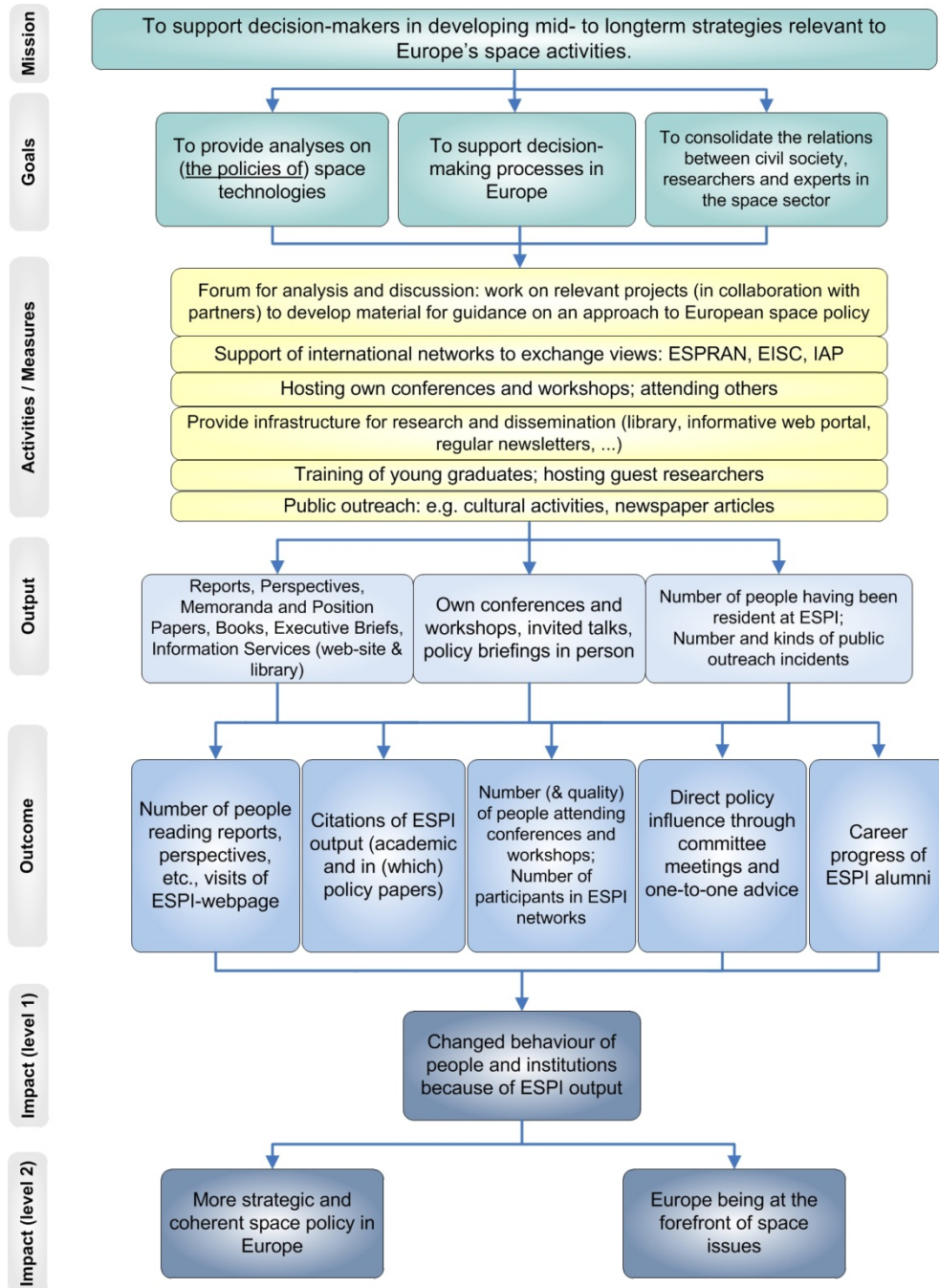
The outputs of ESPI can be rather precisely defined as long as they describe some formal influencing mechanism/tool, following on from the activities. It becomes more difficult in the case of informal influencing, as one cannot expect from administration taking a note from each informal conversation.

A distinction between output, outcome and impact levels is not always easy to understand and should thus be defined. In this context, e.g., a publication is an output of ESPI; if (many) people read the publication (and influences their thinking), it has become an outcome; if people act differently because what they read, it has become an impact.

Impact level 1 captures indicators of behaviour change; impact level 2 is the final, strategic and macro effect that underlines the rationale for setting up policy in the first place. Here, ESPI is one actor of many and can thus have only a shared responsibility.

Figure 1 on the next page summarizes the theory of change behind this policy intervention in the form of a logic chain from the mission to impact levels. The aim of this exercise is to draw on a realistic understanding of what forces tend to affect the desired target impacts. Based on this, it tries to link into this the way the Institute aims to influence the target. The result is a pathway of causal links that show how policy change is aimed for.

Figure 1: From mission to impact: A logic chart of ESPI



Source: Austrian Institute for SME Research

The mission – goals – activities nexus appears to be consistent and resonates with stakeholders. Only goal number three on the consolidation of relations between civil society, researchers and experts in the space sector seems to be somewhat blurred. Stakeholders partly question the role of civil society therein on the ground of whether an institute of this size and resources can deliver this in a credible way.

The above output and outcome levels give us already a sense of issues discussed in chapter 1.2 on methodological challenges for capturing the effects of policy influencing. Some of the effects are rather easily quantified, but the closer one gets to the impact level, the more diffuse and qualitative it becomes. Conceptually, the overall nexus from mission to impact is given.

At this stage, the earlier discussion on methodological challenges for evaluating policy influencing shall be exemplified by focussing on impact level 1. For example, Jones (2011: 2) identifies five key dimensions of possible policy impact, starting with very soft policy influences (based on Jones and Villar, 2008; Keck and Sikkink, 1998):

1. Framing debates: this is about *attitudinal change*, drawing attention to new issues and affecting the awareness, attitudes or perceptions of key stakeholders.
2. Encouraging *discursive commitments* from policy actors: Here, language and rhetoric is important.
3. Securing *procedural change*: This is change in the process whereby policy decisions are made. This could, for example, open new spaces for policy dialogue.
4. Affecting *policy content*: while legislative change is not the sum total of policy change, it is often an important element.
5. Influencing *behaviour change* in key actors: policy change requires changes in behaviour and implementation at various levels.

The above categorisation can actually also be interpreted to be a causal model of behaviour change in a policy setting, starting with attitudinal change eventually leading to behaviour change. But it also shows us that, even if change in policy content or behaviour may not have happened yet, there are preliminary stages which can build up to the final target. These might be worthwhile to capture in an evaluation context, which will only be possible in a qualitative way.

Beyond this, a further influencing factor should not be forgotten (but it very often is): think tanks like ESPI should increase the *competence of personnel and interns*; they will finally move on to the public and private sectors and contribute to potentially better policy outcomes.

Following from this discussion, one can conclude that evaluating policy influencing means that usual impact indicators do not capture the more invisible features of influence that may occur through (informal) professional contacts. Especially if they are built over time and develop into relationships of trust allowing „insider“ access to policy communities. In this case, informal contacts do potentially have considerable impact, but are often not pictured using indicators.

2.4. Governance

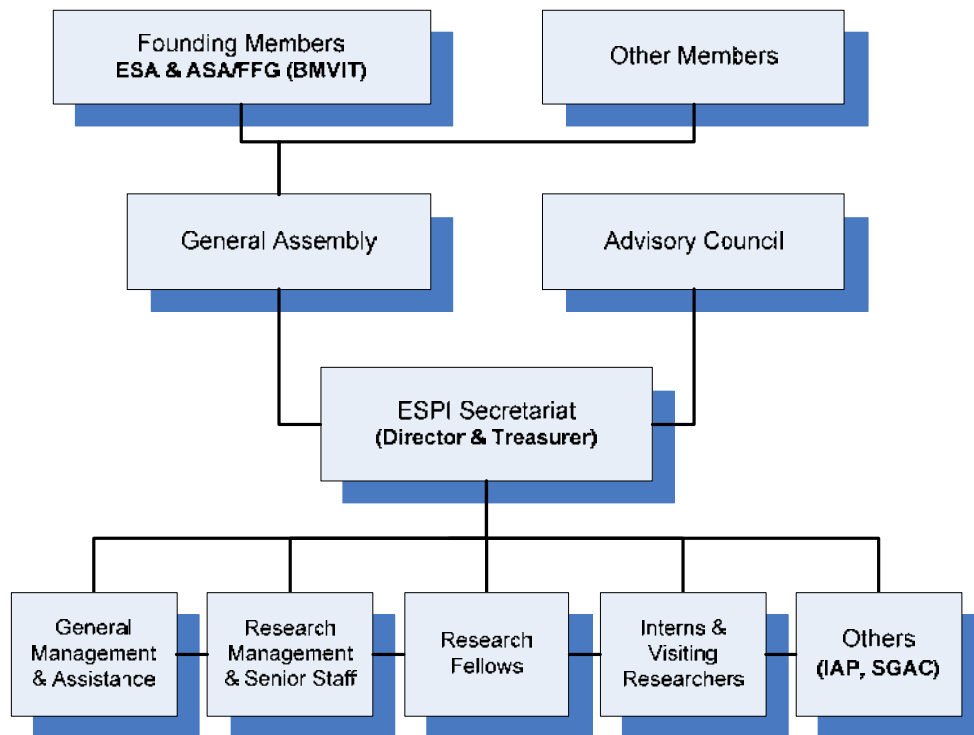
ESPI is governed by three organs: (1) the General Assembly, where members are represented, (2) the Advisory Council (before 2007: Steering Committee), elected by the General Assembly, and (3) the Secretariat, composed of the Director (before 2007: Secretary General) and the Treasurer. The Director is the legal representative and chief executive officer (CEO) of ESPI.

The General Assembly (GA) is the supervisory body of ESPI. It is composed of representatives from the member organisations and meets normally twice a year. Its remit is, amongst others, to approve the budget, the staff policy, the activity report, elect and dismiss the Secretariat, to decide on fees and define the general long-term guidelines for the Institute. It is currently composed of the founding members ESA and FFG and thirteen ordinary members. The latter are a mix of national space agencies (ASI, CNES, DLR, etc.), intergovernmental bodies (EUMETSAT), Space Manufacturing Industry (Thales, Arianespace, etc.) and commercial operators (Eutelsat, SES, etc.).⁵ The strategy of ESPI is here to have a slow growth phase where only main stakeholders are approached for potential memberships.

The Advisory Council (AC) gives the Secretariat medium-term orientations with respect to the research and network activities of the Institute. For including new members, the Secretariat suggests a list of names that are voted on in the General Assembly. The AC is elected for three years, and is currently composed of ten former political leaders and high level managers/scientists with a background in space activities. The AC plays an important role in guiding the Secretariat, and especially helps the Director to devise a strategic three year plan to maximise the potential of ESPI given the budgetary constraints. As there are some members of the AC who will come to their end of term soon, the AC together with the GA and the Secretariat will need to devise a strategy on how to shape the AC in the future with a sufficient spread of competencies and policy insights.

⁵ See http://www.espi.or.at/index.php?option=com_content&view=article&id=10&Itemid=12

Figure 2 ESPI organisational chart



Source: Based on the ESPI Annual Report 2004

Since the beginning, when ESA started to draw up plans for a ESPI (see e.g. ESA/IRC(2003)30, rev. 1), there were plans to potentially involve the European Commission (EC) as an important stakeholder. The Advisory Council (AC) includes now the former Director General of the EC as the chair of the AC since its inception, and more recently also the EC Principal Adviser for Space and Security Policy, European External Action Service. Considering the approval of the Framework Agreement between ESA and the EC and the increasing importance given by the EC to space and space-related issues, its involvement could increase opportunities for both, the EC because it could influence the kind of analyses that are done at the ESPI including quality control; and it could contribute to build a critical mass of outstanding space policy capabilities for Europe, and thus benefit in the future from high quality analyses that go beyond the standard level of consultants. Further, it could be important for ESPI because it benefited from additional insight in the EU strategy finding processes. Beyond the engagement at the level of the AC, the EC is advised to take up the opportunity to engage more intensely with the ESPI.

2.5. Legal structure

The ESPI was formally established on the 26th of December 2003 as an international non-profit association under private Austrian law (ZVR-number: 313957060). This means it has its office in Vienna, but performs its activities all over the world.

Founders are the European Space Agency and the Austrian Space Agency (ALR/FFG), the latter representing the Federal Ministry for Transport, Innovation and Technology (BMVIT).

The appropriate legal form of ESPI was under discussion after the proposal to establish the Institute was approved by the ESA Council. When considering the different options, the most important principles that were applied for the reflection on the possible legal forms and the respective implications are ESPI's independence, its non-profit character, and the role of the co-founders and members. Mainly the three following legal forms were discussed: (1) an association under private Austrian law, (2) a limited liability company (GmbH), and (3) a foundation.

The consideration evolved rather quickly to the conclusion that the options foundation and GmbH were to be ruled out and that the most suitable solution to establish ESPI was to found an association under private Austrian law.

The reasons why the association was chosen were mainly because of its flexibility and because a non-profit status was possible. The founding members can be legal entities, plus the association has to provide for at least two organs for a check and balance relationship between a general assembly of all its members, and an „Organwalter“ (responsible for the administration and its legal representation). The „Organwalter“ (in ESPIs case called Secretariat) needs to be composed of at least two natural persons (normally the director and a treasurer). The general assembly may also establish a supervisory board (in ESPIs case initially called Steering Committee, but later changed to Advisory Council), which needs to be composed of at least three natural persons. All these organs needed to be appointed within a year after establishment, thus being rather convenient for finding the appropriate people and member organisations. The association is liable with its own assets. Though, a personal liability of its members and its Secretariat for the association's liabilities is possible in case of their own personal commitment in the corresponding legal transaction. A liability of the Secretariat towards the association is given in case of negligence. Capital needs are low and establishing and dissolving memberships are easy.

The option to found a limited liability company (GmbH) was excluded mainly because of the rather complicated procedures foreseen in the case of changes in the management structure and shares. In addition, there exists a blocking minority in the general assembly in case of a >25% participation of one member. Potential revenues can also influence the non-profit status negatively.

The main reason for excluding the idea of a foundation was that according to Austrian law, the foundation's capital needs are relatively high and needs to be provided on the occasion when the foundation is established. Furthermore, the foundation is not structured to have revenues in any form and it has quite restricted possibilities for enlarging its membership.

Several interview partners closely involved in the governance of the ESPI still support the idea of an association also now several years in its development, mainly because they judge that a flexible set-up is important for running such an organisation.

Still, under a private law setup, ESPI does not enjoy the privileges and immunities of an international organisation like ESA is entitled to (but ESA secondees do). And an international organisation could potentially increase the buy-in by multilateral organisations like EC or others. Thus, it seems to be justified to reflect shortly on this option.

Given the mission and target groups of ESPI, it could be possible to develop ESPI's legal structure into an intergovernmental organisation (IGO), where the members are primarily made up of sovereign member states. IGOs are subject to international law. Privileges and immunities do not apply automatically, but need to be negotiated separately and laid down in an agreement under international law or decree. The next argument, of easier buy-in by multilateral organisation like the EC and others could be possible, because, for instance, the EC seems to have a rule that it does not become member of other private organisations, but it does of international organisations (like the UN). This option can only be explored with those organisations, whether they would support this idea. A further argument on the upside of this option is that members are required to have rather active involvement in an international organisation. On the downside of this option, we can see that some of the current members were not allowed to be members of an international organisation, and that the decision-making and administrative procedures would increase to an extent that could not be managed by an institution of this size. Thus, it would need to be set up at a different scale with higher budgets involved. All in all, and reflecting on the mission of the Institute, it is first not easily conceivable whether ESPI would benefit from this legal status to an extent that it would outbalance possible downsides, and second, it is also unclear who would provide the necessary budgets against the background of the current European financial state.

2.6. Conclusions

The conclusions of the individual chapters are presented in an evaluation question – answer format, where the evaluation questions were assigned to individual chapters throughout this text.

Basically, the rationale for founding a ESPI with the aim to contribute to the discussion on a European space strategy somewhat distanced from the big actors in the field (EU, ESA, national space organisations) is persuasive.

The genesis of the foundation and development of ESPI up to the year 2011 needs first to be interpreted against the political background, which is marked by historical shifts on European and international levels. Internationally, new powers in space are emerging, which need to be incorporated in discussions on future developments in space, and the European Commission has considerably increased its engagement on space issues during the last decade. This means also that more money is spent, which increases again the range of technological possibilities. This development towards a more complex environment on space issues reinforces the need for independent advice on a range of issues including policy strategy and the weighing up of different technological advancements.

- Which actors participated in formulating the mission and goals of ESPI?
Are there any trade-offs?

The two founding members ESA and the Austrian authorities represented by ALR/FFG (BMVIT) have mainly shaped the initial phase of setting up the institution, with enlarging its membership base once the legal entity had entered into force. The two founding members need to be credited with putting emphasis on the criteria of independence of the Institute in choosing the legal structure and the governing bodies of the Institute.

The envisaged role of ESPI by the ESA Council (ESA/C(2002)72) does essentially overlap with the legal statutes of the ESPI. Thus, no conflict of interest can be observed from this side. In terms of the process, the membership base could be increased by further 13 members by 2011. Still, there is potential to enlarge its membership base, also beyond countries of the EU. It seems curious that one mayor player in European space policy is missing, namely the European Commission (EC) as a very important actor in European space policy. It would seem rather compelling that the EC had something valuable to contribute to such an institute, and the EC could benefit from the opportunity to influence the strategic topics of ESPI, including to ensure that ESPI output is properly noticed by its own staff. As there seems to be a rule in the EC that it does not become a member of another organisation, one should think of opportunities to collaborate in a different way.

- Are the explicit and implicit goals in line with the Institute's mission? Is the mission – goal – activities – impact nexus consistent?

Because the Institute's mission and goals are defined structurally, they are adaptable in terms of content. This enables ESPI to change its emphases as the space-related themes develop over time and upon the decision of the General Assembly.

The mission – goals – activities nexus of ESPI appears to be consistent and resonates with stakeholders. Only the goal number three on the consolidation of relations between civil society, researchers and experts in the space sector is somewhat criticised. Stakeholders partly question the role of civil society therein on the ground of whether an institute of this size and resources can deliver this in a credible way. Conceptually, the overall nexus from mission to impact is given.

- What are advantages and disadvantages of the chosen legal structure for being able to fulfil its role and mission?

The advantages and disadvantages of the different options were discussed above and are not repeated here. The decisive arguments for establishing ESPI as an association under private Austrian law were the relatively high degree of independence that is secured through its governance structure, the flexibility it offers for handling memberships, low capital needs, and the non-restrictive handling of the non-profit status. These arguments are still valid today. Still, the legal entity of an international organisation could bear benefits towards the engagement of supranational organisations like the EC, UN, OECD, but makes the handling of memberships more complex and the European focus would be widened. The main trade-off seems to be flexibility versus status due to the involvement of supranational organisations. Overall, it is not easily conceivable whether ESPI would benefit from this legal status to an extent that it would counteract possible downsides, and who would provide the necessary budgets against the background of the current European financial state.

One could also imagine ESPI having been founded as (or being integrated to) a department of ESA or a Joint Research Centre of the EC. While it seems that being a department of ESA would have no potential advantage, one could argue that being an official department of the EC would facilitate its formal influence towards Brussels. But also in this case, ESPI would lose its current status as a relatively independent platform for discussion that is guided by the opinion of its members.

3. Development of ESPI

In the following, we discuss the development of the Institute from 2004-2011 including a short history, its resources, activities, and outputs.

3.1. A brief history and milestones

After its foundation in late 2003, the Institute started to operate in September 2004, when Serge Plattard was appointed as ESPI's first Secretary General (now Director) for a three-year term. It was also agreed that Kai-Uwe Schrogl assumes Directorship after this period. The initial Steering Committee (now Advisory Council) was formed and voted on by the General Assembly. In early 2005, ESPI moved into its own premises. The inauguration event took place in September 2005, closely followed by ESPI's first Vienna conference.⁶

Between 2004 and early 2006, ESPI's efforts concentrated mainly on establishing the procedures and infrastructures of the Institute in Vienna, on identifying the potential members and partners, and on developing strategies for introducing the Institute to the European and global space policy community. ESPI established a library focussing on space policy and space-related matters, and the Director suggested the first annual work plan (AWP), which constitutes a funding requirement set by ESA. The AWP lists activities and research studies to be carried out during the year. Follow-up AWP's were produced during the years, outlining a growing number of proposed activities and research projects.

In 2007, Kai-Uwe Schrogl was appointed as ESPI's second Director. The change in Directorship was prepared by a six month overlapping period. In the following, a strategy document called "ESPI – Perspectives 2010" was presented by the director, which outlined key objectives and corresponding goal to be achieved until 2010. At ESPI's first autumn conference in 2007, the "European Space Policy Research and Academic Network (ESPRAN)" was launched. In 2008, ESPI published its first Yearbook on Space Policy with Springer Publishing House. Further support for networking activities were taken on in 2009, the European Interparliamentary Space Conference (EISC), and in 2010, the Integrated Applications Promotion (IAP) Ambassador Platform for Central and Eastern Europe.

By the end of 2009, a renewed three-year strategy ("ESPI Perspectives 2013") was presented for adoption. The Director's mandate was extended until Peter Hulsroj joined ESPI's as its third Director in mid-2011 (with no overlapping period).

⁶ ESPI international conference: „New paradigms for governing the European space activities“

Table 1 Milestones in the development of ESPI

Date	Milestone
Dec. 2003	Founded in Vienna by ESA and the Austrian authorities (BMVIT, represented by ALR/FFG)
Sept. 2004	Appointment of "Secretary General" (Director) (S. Plattard)
Autumn 2005	Official inauguration and 1 st ESPI conference in Vienna
Nov. 2005	1 st ESPI report – A New Paradigm for European Space Policy: A Proposal, with the second report in Nov. 2006
2007	Appointment of 2 nd Director (K.-U. Schrogl)
	1 st ESPI autumn conference
	Launch of the European Space Policy Research and Academic Network (ESPRAN)
	Start of publishing brief position papers named ESPI Perspectives
	"ESPI – Perspectives 2010": New guideline for ESPI's activities and development
2008	1 st Year Book on Space Policy with Springer
2009	Start of the continuing support of the European Interparliamentary Space Conference (EISC)
	K.-U. Schrogl testifies at a hearing for the Committee on S&T, U.S. House of Representatives as one of three think tanks on space issues
2010	Start of the network: Integrated Applications Promotion (IAP) Ambassador Platform for Central and Eastern Europe
2011	Appointment of 3 rd Director (P. Hulsroj)
	1 st ESPI Executive Brief
	39 th ESPI report – "The Socio-Economic Benefits of GMES", which earned considerable attention

Against this backdrop, the development of ESPI can be distinguished alongside the terms of the directorships. Under the directorship of S. Plattard, ESPI became operational in Vienna. It took time to develop the infrastructural aspects, the processes and governance of the Institute, and to introduce ESPI at various international occasions and events. Thus, the Institute's output experienced a relatively restrained onset in its first years. Different players in Europe reacted positively to the idea of the Institute, but assumed a waiting position to see how ESPI is developing before making decisions whether to join ESPI as a member or partner organisation.

When K.-U. Schrogl joined ESPI as its second Director, the institute had already reached a certain degree of visibility among scholars and decision makers in government and industry. The felt shortage in publications and other written statements had been addressed by a new mid-term strategy ("ESPI – Perspectives 2010"), which set challenging targets to be reached by the year 2010. It followed a period of intense networking and production of outputs, especially given the budgetary constraints of the Institute.

Given this intense phase up to the year 2011, our interviews uncovered some cautious concern by stakeholders in the ESPRAN network about the future development of the Institute because they felt that it will be hard to keep up the pace in the future given its resources. By now, they are used to a continuous stream of information disseminated by ESPI, which leads to some concern if the visibility recedes somewhat. On the other hand, a number of scholars argued that this may be due to a re-positioning strategy of the Institute, arriving from a (publications and activities) growth phase at a “consolidation and refinement” phase.

The target set for ESPI to become one of the leading think tanks on space issues world-wide needs to be matched with the resource base to enable it to strive for this goal in a credible way. This is why we discuss in the following the two decisive issues of budgets and staffing.

3.2. Budget

The total budget of ESPI developed from € 228,000 in 2005 to € 609,000 in 2011 (see Table 2). These numbers do not include contributions “in kind”, i.e. salaries of the seconded personnel, which would raise the Institute’s budget to a higher level, but which cannot be easily quantified. The legal statutes of the Institute stipulate (see chapter 2.4) that the financial means shall not only be raised by subsidies by its founding members, but instead also with ordinary memberships, i.e. one-off accession fees and annual membership fees, but also from income from events and campaigns organised by ESPI. Further candidates for funding sources are donations, legacies, the sale of services, and other financial gifts or donations in kind.

The founding members ESA and the host country representatives ALR/FFG/BMVIT took on the lion share of ESPI’s funding, and split the costs of setting up ESPI in 2004 by each giving a one-off start up subsidy of € 150,000, plus yearly grants of initially € 150,000 in case of the BMVIT, which were raised to € 172,000 from 2008 onwards. The BMVIT basic subsidy is earmarked to cover facility costs (rent, furniture and office). It has also contributed to the Institute “in kind” by seconding the Treasurer.

ESA has funded ESPI with an additional recurring grant that is paid out based on the fulfilment of an annual work plan (AWP), which is decided upon by the General Assembly and was first drawn up in 2005. The AWP specifies the number and thematic area(s) of studies, workshops and other activities to be carried out per year, also giving indication of the necessary human resources and the budget. ESA has also contributed to the Institute “in kind” by seconding the Director and one senior researcher position, the latter in fact being split up into two research fellow positions.

On the basis of the ESA status report on ESPI in 2007, which approved that the Institute had gone through a positive development, a further four-year contract was signed for the period 2008-2011. The agreed € 150,000 from the ESA framework contract were split into around € 100,000 for research projects and € 50,000 were kept flexible from 2009 onwards, providing the Institute with a certain freedom to use this money also for other (networking) activities than research in its pure sense.

So far, membership fees have contributed a share of 20 % to the total budget; conferences and other outreach activities amount to around 5 %. The rest is taken up by contract research work for especially ESA, but also others. One needs to distinguish two kinds of ESA contributions: First, a yearly subsidy of about € 150,000 of which annual work plan is decided on by the GA. Further money of a varying size is given against thematically specified commissioned studies by different ESA departments.

The funding based on individual projects amounts to about € 185,000 for the period 2004-2011, stemming from eight different institutions.

Table 2 Funding (without secondments)

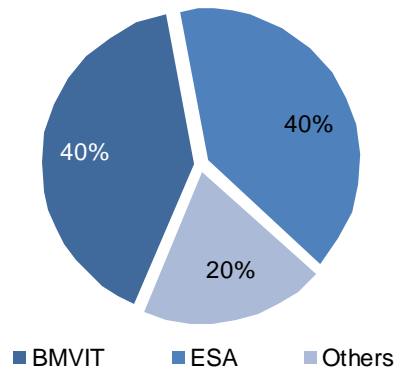
	2004	2005	2006	2007	2008	2009	2010	2011
A. Basic funding (in TSD €)								
ALR/FFG/BMVIT	150	150	150	150	172	172	172	172
... start-up contribution	150	-	-	-	-	-	-	-
ESA (Workplan)	-	73	112	87	153	158	152	140
... start-up donation	150	-	-	-	-	-	-	-
Membership fees	-	-	36	51	67	74	84	84
Other sources ¹	-	5	26	14	21	31	59	33
Sub-total A	450	228	325	302	413	435	467	429
B. Commissioned studies (in TSD €)								
ALR/FFG/BMVIT	-	-	46	69	-	41	-	-
ESA	-	-	-	113	131	131	30	132
Other sources ²	-	-	-	15	48	44	30	48
Sub-total B	-	-	46	197	179	216	60	180
Total A,B	450	228	371	500	591	650	527	609

Note: The table does not always represent actual money flows in the respective years, but the allocated budget per year.

¹ E.g. own conferences, library/reference centre project;

² Organising conferences for others, workshops and other outreach activities, commissioned studies.

Figure 3 ESPI total budget contributions by origin (2004-2011)



Note: The category „Others“ includes membership fees and commissioned studies by other stakeholders than the founding members.

Source: Monitoring data: ESPI; Calculations: KMFA

Austria has funded ESPI so far with 40 %, further 40 % were paid by ESA, and further 20 % originated from third-stream-party funding (excluding secondments).

The funding based on individual projects by third parties amounts to about € 184.000 for the period of 2004-2011, stemming from eight different institutions.

Apart from the founding members, who contribute “in kind” by seconding the Director and two research fellows (ESA) and the Treasurer (ALR/FFG), ESPI members are required to pay membership fees. Since 2006, ESPI was successful in recruiting 13 additional members reaching €84.000 in membership fees in 2011. In general, ESPI aims to attract new members on a regular basis, but considers only key actors from the space community to be eligible. Academic institutions or institutions from outside Europe are not primarily targeted.

In turn, ESPI members influence the decision making in the association via the General Assembly and participate in workshops, send researchers, students, etc. Members are also encouraged to detach staff to ESPI and to actively seek for joint activities as well as support ESPI through their own networks and contacts.

ESPI receives also funds through commissioned studies. In this context, ESPI offers its expertise with the organisation and management of conferences, meetings and workshops, in which the Institute usually assumes also an active role, i.e. facilitations, presentations, or discussions. In addition, ESPI has been commissioned by several agencies⁷ in recent years to conduct particular studies. Except for ESA studies, the share of commissioned studies and other projects has increased to a relatively modest level. This needs to be seen against the background that ESPI has a conflict-of-interest issue which keeps it from participating in project consortia

⁷ BMVIT, ESA, DLR, JAXA, ESF, SWF, TEKES

to bit for, e.g., EC Framework Projects and others. Because of the funding situation, ESPI could offer relatively competitive day rates that would lead to a market distortion. This is why the General Assembly decided that ESPI can only be part of such consortia if it offers its service to all consortia for a call at the same conditions. Probably because of this rule, no such project has materialised so far.

Mission costs of seconded personnel (ESA, CNES, DLR), not FFG, are to be borne by ESPI.

3.3. Staffing

The original plan by ESPI (of the year 2004) suggested reaching and maintaining a staff of 12 members, including the Director, a Treasurer and two assistants. During the early implementation process, a staff profile was developed for being able to meet the mission and objectives of ESPI. Accordingly, the research staff should be of an appropriate mix of people in different skill and thematic categories with various space-related backgrounds. Accordingly, there should also be a mix of experience and seniority in staff to ensure the appropriate skill levels for different tasks to eventually produce high quality output.

In terms of general roles at the ESPI, the staff can be broadly categorised as follows:

- **General Management & Administration:** The administrative set up of the Institute is headed by the Director and the Treasurer. Support is provided by Administrative and Management Assistance. The Director is the CEO of the Institute and thus also responsible for the ultimate delivery on the goals of the Institute and the personnel. The Treasurer is mainly responsible for the financial dealings, the yearly accounts and a report on activities, but also assists the Director. The Communications Manager is responsible for maintaining and establishing the library and information services, communications to the public, media and publisher of the Institute's work.
- **Research Management & Senior Staff:** The Director is also involved in the research projects, and manages projects as well as the staff. Also experienced (Senior) Researchers joined ESPI to lead specific research projects.
- **Fellows:** Resident Fellows work on projects in the framework of ESPI's (multi-)annual work plan (AWP). Associate fellows reside outside ESPI and support the institute with research work on a regular basis.
- **Interns and Visiting Researchers:** Interns usually spend one to three months at the institute and support the Resident Fellows. Interns may be

promoted to become a Project Manager, leading one selected project. Visiting Researchers primarily conduct research for their own projects.

ESPI staff is either directly employed by the Institute or seconded by one of its member organisations. ESA seconds the Director and one senior post (which is in fact split into two junior posts) to ESPI, and has currently a framework contract of around € 150.000. The treasurer is seconded by ALR/FFG. Seconded personnel receive their salaries from their institution of origin, and have also the right to return to their original organisation. ESA and several national space agencies seconded further staff at irregular intervals, i.e. the German DLR, the French CNES and the Italian ASI. These were more often resident fellows with relevant expertise to the Institute. In addition, internships and visiting appointments are offered by ESPI on a regular basis with stays of one to three months.

The rationale behind secondments is that the seconding organisation benefits from up-skilled and better networked staff members when returning to their home organisation, and the receiving organisation (ESPI) benefits from experienced staff members who can introduce the viewpoints and contacts from their respective organisations of origin.

If one counts only ESPI staff, employed and seconded, without interns and visiting researchers, one can conclude that the target of 12 staff members could be reached in 2008 and be kept or even slightly increased since then.

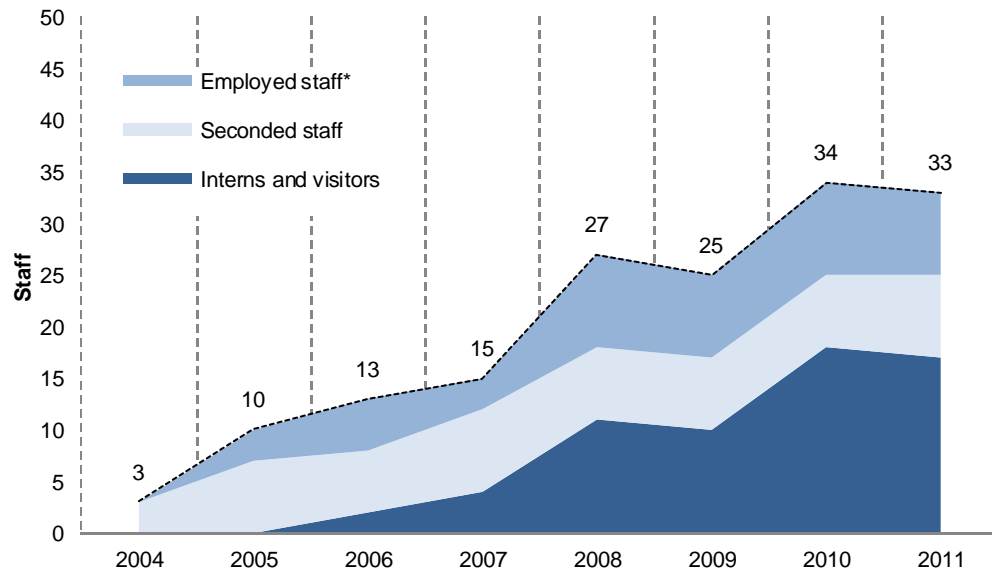
Table 3 Staff fulltime equivalents per year; without Interns and Visiting Researchers

	2004	2005	2006	2007	2008	2009	2010	2011
Fulltime equivalents	1.9	7.9	10.8	10.0	12.8	11.8	14.3	14.1

Source: Monitoring data: ESPI; calculations: KMFA

If one only counts the ESPI staff per head, without any relation to how long they stayed at the Institute, one realises a substantial increase after 2007. The following figure also shows, that this increase builds on employed staff and over time especially on interns/visitors.

Figure 4 Staff development 2004-2011 per head and contract nature; in absolute numbers without any relation to their presence during the year



* Including Project Managers.

Source: Monitoring data: ESPI; calculations: KMFA

The steady increase in non-permanent staff (Research Fellows, Interns and Visiting Fellows) resulted in a highly diverse staff profile in terms of competences, skills and nationalities. Between 2004 and 2011, 25 nationalities have been recruited into ESPI's team, also with a rather balanced gender split (45 % female, 55 % male).

The following table shows the numbers per head along the different staff categories. We can learn that senior research staff is mostly seconded, and administrative support is directly employed by ESPI. Staff at the level of research fellows was initially mostly seconded, but developed into a more balanced relationship over time. Thus, the majority of research power originates from seconded staff.

Table 4 Development of ESPI staff by functional categories, per head

	2004	2005	2006	2007	2008	2009	2010	2011
General management & administration								
...employed	-	2	3	3	4	3	3	3
...seconded	2	2	1	1	1	1	1	1
Project management* & senior staff								
...employed	-	-	-	-	-	-	-	-
...seconded	1	3	3	4**	3	2	1	1
Fellows								
...employed	-	1	1	0	4	4	5	4
...seconded	-	2	2	3	3	4	5	6
Sub-Total	3	10	10	11	15	14	15	15
...seconded	100 %	70 %	60 %	73 %	47 %	50 %	47 %	53 %
Interns*** & visitors	-	-	3	4	12	11	19	18
Total	3	10	13	15	27	25	34	33

* including the Director

** including an overlapping period of the two Directors of 6 months

***including Project Managers

Please note that the above numbers describe staff working for ESPI for some undefined time during the year, thus inflate the actual research power of the Institute.

Source: Monitoring data: ESPI; calculations: KMFA

At the start in 2004, ESPI staff consisted only of the Director (seconded by ESA) and the Treasurer plus an assistant (seconded by ALR/FFG). This changed already in 2005 by taking on significant powers on relatively senior levels. But over time, finding and maintaining a certain level of seniority in its research staff proved to be an on-going challenge for ESPI. This was an issue discussed during the interviews and we can also observe this from the monitoring data, with this category even decreasing over the last few years. This development was counteracted by researchers at the fellow level from 2008 onwards. Also the number of interns and visitors increased substantially.

A major reason is the slow process to get qualified persons seconded, in particular for a longer period. Because secondments are provided on a voluntary basis, the ESPI Director has limited influence on the timing and the actual background of secondees, thus making strategic planning and project management challenging. In other words, he is faced with the challenge of matching strategic topics against the in-house capabilities, where these capabilities are influenced by the seconder organisation, less by the ESPI Director.

This sharp increase in interns and visiting researchers can partly be explained by following up on ESPI's purpose to train young graduates, but partly also out of the need to provide research power for an organisation with stretched resources (and a lack of senior researchers). The interest in Internship openings has become very high (reaching up to 100 applications per position, which reflects positively on the reputation of ESPI) and the selection process aims to fit the needs of the applicants and workforce.

Because the majority of ESPI's staff, in particular interns and visiting researchers, but also secondees spend only a restricted period at the Institute, a relatively high staff turnover was noted throughout the years. The following table visualises this for the category of research staff only (including the position of the Director, who is appointed for three-year terms). The first category shows seconded staff, the second category employed staff; dark shaded bars illustrate senior research positions.

Table 5 Research staff 2004-2011, by seconding organisation and employed staff by ESPI

	2004	2005	2006	2007	2008	2009	2010	2011
ASI								
ASI2								
CNES								
DLR1								
DLR2								
ESA1								
ESA2								
ESA3								
ESA4								
ESA5								
ESA6								
ESA7								
ESA8								
ESA9								
NSC								
ESPI1								
ESPI2								
ESPI3								
ESPI4								
ESPI5								
ESPI6								

* Does not include interns, visiting researchers and project managers (56 staff between 2005-2011).
 Dark shaded bars are senior research positions, light shaded bars are research fellows.
 Source: Monitoring data: ESPI; calculations: KMFA

One reason for the high turnover is that seconded personnel may be withdrawn from their assignments prematurely, which happened occasionally since the Institute started its operations. Planning in 2009 was particularly challenging as three of the research staff was replaced: Two ESA fellows left the Institute earlier than expected and the CNES fellow was detached to another assignment. For ESPI, the availability of seconded personnel plays a crucial role for project planning, selecting topics and maintaining a consistent level of quality. From 2008 onwards, ESPI succeeded to constantly employ three research fellows on its own. Though, also these changed. From 2009 onwards, only the Director was left as a senior research post.

This needs also to be seen in the light of comments made by some interviewed experts, who questioned the quality of some reports. Overall, quality assurance for more important research reports was structured along the lines that comments were sought for draft reports. But this will not have been able to implement in any case given the resource constraints and high output levels in recent years. Select-

ed on-going and continuing projects were also presented to the AC and the GA during their meetings.

Training of graduates

Young researchers have increasingly been integrated in the Institute as part of their training at their home university for a short period (Visiting Researchers) to use ESPI's library facilities, or work on ESPI projects (Interns) (see chapter 3.3).

There is no formal educational link of ESPI with a university with a space policy focus. The training within ESPI is mainly based on the access to its library facilities, one-to-one coaching of young researchers with mainly the Director and other senior staff, and attending talks, workshops and conferences.

Internships with ESPI are highly sought after. Still, one wonders whether a more formal relationship with educational organisations like universities, and even an international Masters and/or PhD programme⁸, could benefit both, the educational experience of the young researchers and the ESPI. The former could benefit from an even more international exchange between universities and more applied research organisations, and thus eventually in their career prospects. The latter can currently choose from a multitude of applicants due to its increasing reputation, and pick from this pool the best candidates. Still, with more structured university links, the scientific background of the candidate pool could likely be broadened. This initiative is too much to be envisaged by ESPI on its own; it would need to be initiated by some universities, perhaps together with ESA/EC, where ESPI would be part of the network. This recommendation mirrors somewhat Peter Creola's suggestion of the year 1999 to set up a "European space education programme". While he saw this to be developed within ESA, we would rather see it to be developed on a broader basis, where universities and applied research institutes are in the driving seat and ESA is one of several partners. There should be benefits to establishing a common masters and PhD programmes beyond Europe.

Concerning the promotion system within the Institute, Interns may be promoted to become project managers after they have proven themselves. Furthermore, project managers may advance to (resident) fellows, but this option is only available in exceptional circumstances. Four Research Interns, two Research Fellows, and one Administrative Staff were promoted up to 2011.

⁸ *There seems to be no programme, where Universities in several countries contribute to a broad international educational experience of students in space policy related fields.*

3.4. Activities

Against the backdrop of the Institute's mission and objectives, ESPI developed and launched a range of activities since its foundation, which can be distinguished alongside the general functions of a think tank (McGann 2007), including producing research reports, books, articles and policy briefs, disseminating its outputs via the ESPI web-site, presentations/workshops/conferences, media appearances, briefings and network exchanges.

The following table gives an overview of the products and services developed by ESPI during its first eight years of existence.

Table 6 Overview of ESPI's products and services

	Timeframe	Comment
ESPI position papers		Short position papers for varying target groups, prepared by ESPI and/or together with partners on topical issues.
<i>... Flash Reports</i>	2007-2008	Short paper on space issues covering innovative ideas.
<i>... Perspectives</i>	2008-	Short papers, presenting concise analyses and comments or innovative ideas in the field; prepared by ESPI staff as well as by guest authors (replaced Flash Reports).
<i>... Executive Briefs</i>	2011-	Very short paper with the purpose to draw the attention of decision makers and others to issues which might otherwise not receive the attention they deserve.
<i>... Specials and Memoranda</i>	2007-	Brief records and communications that present outcomes of conferences and memoranda to promote decision-making processes and cooperation; cover often transdisciplinary, aspects of space policy and generally contain recommendations.
ESPI reports, books and academic publications		Combine analysis with strategy, vision and policy recommendations on a variety of space-related topics.
<i>... Annual Work Plan studies</i>	2005/06-	Prepared in the course of AWPs; endorsed by ESPI's General Assembly, published as ESPI reports.
<i>... Commissioned studies</i>	2005-	Commissioned by members and external partners. Partly published as reports and partly not published.
<i>... Yearbook on Space Policy</i>	2008-	This is an edited reference publication analysing issues and trends in space policy and the space sector as a whole; authors are from ESPI and the ESPRAN network; published by Springer Wien/New York.
<i>... Studies in Space Policy</i>	2009-	This edited volume shall become the European reference book series in Space Policy. Authors are from ESPI and other external researchers. The series shall be complementary to the Space Policy Yearbook insofar as it highlights topics concerning governance, international relations or applications

	Timeframe	Comment
		from a transdisciplinary perspective; published by Springer Wien/New York.
<i>...policy-related journal publications</i>	2005-	Excerpts of ESPIs research are presented to address policy communities via their professional journals.
<i>...academic journal articles</i>	2006-	To address academic communities.
ESPI networking and dissemination services		
<i>... Homepage</i>	2007-	Continuously updated information about ESPI's activities and products as well as documents and other information material on space policy.
<i>... ESPRAN News-letter</i>	2008-	Published quarterly, the newsletter covers the activities of ESPI and ESPRAN network partners, plus news related to space policy issues.
<i>... ESPRAN Autumn Conference</i>	2007-	The ESPRAN network meets annually at ESPI for an autumn conference discussing and analysing trends and perspectives in space policy.
<i>... EISC conference support</i>	2009-	ESPI is tasked by the Presidency of the European Interparliamentary Space Conference (EISC) to support the management of this initiative and to organise the annual conference. ESPI maintains also the EISC website.
<i>... IAP Ambassador Platform</i>	2010-	Support of the Integrated Applications Promotion – Ambassador Platform for the CEE Countries.
<i>... representations at international organisations</i>	2005-	UNCOPUOS, WIA, UNECOSOC
<i>... other networking activities</i>	2007-	Presentations at summer schools, universities, etc. at irregular intervals.
<i>... Space Breakfasts</i>	2006-07	Forum where outstanding personalities presented their views on important space issues.
<i>... Vienna Talks</i>	2007-	Evening events with talks on strategic and cross-disciplinary issues; partly transmitted via the internet; replaced the Space Breakfasts.
<i>... Supporting roles</i>	2007-	E.g. advisory role to the national EU presidencies with regards to space related matters since 2009.
<i>... Workshops (at ESPI)</i>	2008-	Serve as forum for the dissemination of research findings and the discussion of current space-related trends.
<i>... Others</i>	2005-	Provision of a space policy library and offers associated services (databases, calendars).

Source: Monitoring data: ESPI; Compilation: KMFA

The annual work plan (AWP) is the main guideline concerning the research carried out at the Institute. The content is developed and proposed by ESPI based on its mission and objectives. The process of finding research topics and shaping the AWP comprises inputs from its networks, the AC and the GA. ESPI finds itself often confronted with an array of ideas and opinions in these discussions, which have not only to be prioritised against the mission and objectives of the Institute,

but also against the available expertise during the year and budget constraints. The final AWP is then approved by the GA. One can also spot some discussions on the trade-off between medium- to long-term orientations versus addressing current issues that are prevalent at the level of the EC. Nevertheless, the overwhelming attitude seems to be that involvement in day-to-day policy issues would be detrimental not only towards the mission of the Institute, but could also hamper its reputation.

Since the first AWP, concerns have been raised that the whole of the AWPs include only specific projects, and that there is no general funding to enable the Director and his staff to perform other types of activities from this funding source. This situation changed somewhat after 2009. The renewed ESA framework contract has allowed ESPI to use a share of € 50.000 on own initiatives and projects. However, some interviewees still demand more freedom to choose topics more independently.

In 2008, the flash reports were replaced by the ESPI Perspectives as is shown in Table 6 above. The Executive Briefs are a recent invention to approach high level decision makers with little time to make them aware of certain issues that do not merit to be investigated in research projects.

The two book series are published with a very reputable publishing house, which have the potential to become the standard works in the field if the quality is kept high enough, and where ESPI can find another outlet for its research outputs. No own academic journal was launched so far. Given the quite narrow band of outlets on space policy, this could be something to be explored, perhaps in cooperation with a University.

Assignments

In addition to its services and products, a central element of ESPI's mission is to build up and coordinate research networks dealing with space policy issues (covering various dimensions, including economics and law). Established at the first ESPI Autumn Conference in September 2007, ESPI maintains a "European Space Policy Research and Academic Network (ESPRAN)", which operates as platform for the exchange between individual researchers and institutions involved in space policy and related fields. The aim of ESPRAN is to foster a cross-fertilisation of ideas and to open dialogues with research partners in Europe and overseas, to get closer to users and to include industries with relevant activities. Thus, ESPRAN is served by ESPI through a newsletter four times a year and the autumn conference, but ESPRAN should serve also as a source from which ESPI receives inputs for its work and from which it recruits participants for other activities.

Individuals that have formally participated in the conference become ESPRAN members. The current member status is 250. As would be normal for a new network, interaction between network members has been low initially. ESPI was successful to recruit ESPRAN members for different kinds of activities. With its increasing publicity, ESPI did notice a growing interest in its visiting researcher announcements by 2009. Also in 2009, ESPI received 150 applications for its vacancy notice for two ESA Research Fellows. ESPRAN network partners interviewed by us during this evaluation emphasised the usefulness of past endeavours including the newsletter, but also mentioned that it has gone somewhat quieter recently.

Furthermore, ESPI supports the European Interparliamentary Space Conference (EISC) since 2009, a forum for discussing and coordinating the position of European parliaments in the field of space policy. Established in 1999, the forum aims to facilitate the exchange of opinions on the space policies and at promoting mutual understanding of national policies. Currently, the parliaments of Belgium, the Czech Republic, France, Germany, Italy, Luxembourg, Poland, Romania, Spain and the United Kingdom are full members of the network. ESPIs support for the EISC includes, e.g., organising the annual conference, preparing and conducting workshops, and maintaining the EISC website.

Since 2010, the ESPI assumes the role as Ambassador Platform for the ESA Integrated Applications Promotion (IAP) Programme for Central and Eastern Europe (CEE). The IAP programme, also called ARTES 20, aims to develop sustainable services in strong cooperation with end users and relevant stakeholders. The platform supports the IAP programme by raising awareness and stimulating projects in regions of CEE. In particular, awareness events and workshops that inform user communities and relevant decision-makers on the potential and opportunities of the IAP programme are organised, but also a host of other activities come along with this role (networking with other APs, presenting own research results, hosting a community portal, a web-site, media and PR).

Other networking activities include the frequent support of summer events and summer schools over the years (e.g. Forum Alpbach, European Centre for Space Law, International Space University, etc.) and ESPIs on-going cooperation with the Space Generation Advisory Council (SGAC). The Council is a non-governmental organisation and network for students and young professionals interested in outer space, aiming to present ideas and perspectives to the United Nations (UN), space agencies, industry and academia. Currently, the network has over 4.000 members in 90 countries. Since 2006, ESPI hosts the SGAC office, respectively its Executive Director, at its premises to enable them closer contact with COPUOS and the United Nations Office for Outer Space Affairs. ESPI and SGAC agreed in the past on shared research positions to be able to work jointly on topics of mutual interest.

Finally, ESPI is also represented at four international organisations and networks, which will be shown in the chapter 4.1.

3.5. Outputs

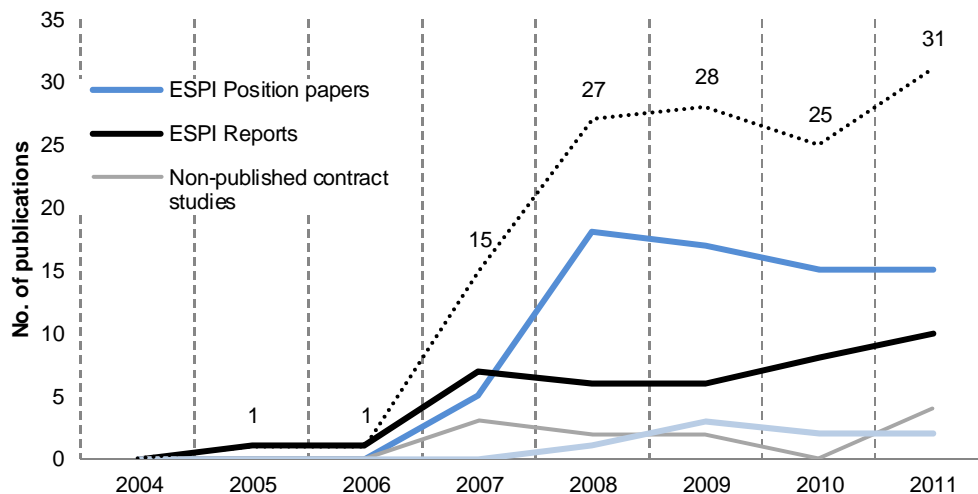
The output section is presented along the reasoning of the logic chart as presented in Figure 1 and the categories developed in Table 6.

Table 7 ESPI products

Position papers	2004	2005	2006	2007	2008	2009	2010	2011	Total
Flash Reports	-	-	-	3	1	-	-		4
Perspectives	-	-	-	-	12	13	13	13	51
Executive Briefs	-	-	-	-	-	-	-	1	1
Specials and Memoranda	-	-	-	2	5	4	2	1	14
Total of ESPI position papers	-	-	-	5	18	17	15	15	70
ESPI Reports	-	1	1	7	6	6	8	10	39
Non-published contract studies	-	-	-	3	2	2	0	4	11
Edited books	-	-	-	-	1	3	2	2	8
Grand total	0	1	1	15	27	28	25	31	128

Source: Monitoring data: ESPI; Calculations: KMFA

Figure 5 ESPI products

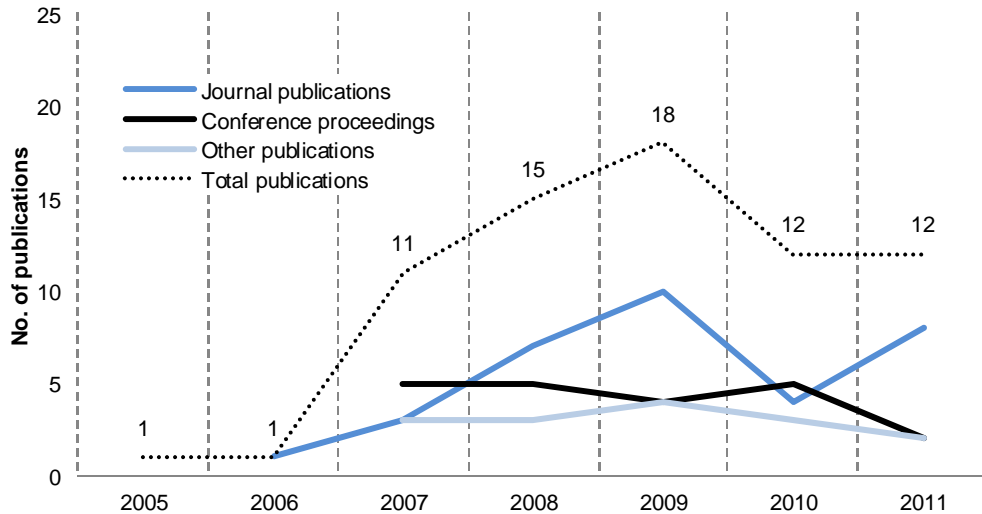


Source: Monitoring data: ESPI; Calculations: KMFA

The publication of ESPI position papers was started in 2007 and was kept at a high level from 2008 onwards, mainly determined by its core publication, the ESPI Perspectives. ESPI Reports consist of research reports following the annual work plan as agreed by the GA, and have increased considerably from the year 2007 onwards. Additionally commissioned studies are done for different members and ex-

ternal stakeholders and vary over the years. Until the year 2011, the total amount of ESPI Reports amounts to 39 with additional 11 non-published contract studies. The books category consists of the two book series that were started in 2008 and 2009, respectively.

Figure 6 Publications in journals and conference proceedings



Source: Monitoring data: ESPI; Calculations: KMFA

Of the 70 journal publications between 2004 and 2011, around 50 (74 %) appeared in refereed academic journals, the remaining 26 % in policy publications. The two main outlets were the refereed academic journals *Space Policy* (18 articles), the conference proceedings of the Annual International Astronautical Congress (IAC; 16), but also *Acta Astronautica* and the *German Journal of Air and Space Law* (5 each). Other publications are book chapters and commentaries in selected magazines targeted to policy circles. This relatively high output for a young Institute can be explained by having a substantial share of doctoral students present at the Institute from 2007 onwards and the guidance by the Director. There is a high focus on a narrow selection of refereed journals, but they seem to be the rights ones for this policy context. Still, when it comes to influencing different academic communities, perhaps a somewhat wider spread to related journals would be advisable.

Table 8 ESPI events, 2005-2011

	2005	2006	2007	2008	2009	2010	2011
ESPI (joint) conferences ¹	1	1	3	1	6	3	4
ESPI (joint) workshops	-	-	-	2	1	3	5
Total	1	1	3	3	7	6	9
<i>Events held in Austria</i>	100 %	-	100 %	100 %	71 %	67 %	78 %
Participants per event ²	86	n.a.	57	43	45	50	53
<i>... % international visitors</i>	n.a.	n.a.	44 %	35 %	29 %	45 %	40 %

¹ Including the annual autumn conference of the ESPRAN network from 2007 onwards.

² The number of participants was only available for events hosted at ESPI in Vienna. For 2011, the number of participants of two events could not be determined. The median value is used to minimise the effects of outlier values.

Source: Monitoring data: ESPI; Calculations: KMFA

Between 2005 and 2011, ESPI organised and co-organised 30 events, of which 24 were hosted in Vienna at its premises, and in some cases at other venues in Austria. Not included are presentations of study results in Brussels which happened frequently between 2007 and 2011.

ESPI staff attended the following conferences, workshops, and roundtable meetings, etc. within this period (see also the respective table in the Annex).

Table 9 Representation at national or international events, 2004-2011

	2004	2005	2006	2007	2008	2009	2010	2011
Events in Europe	2	4	8	24	21	18	31	21
<i>... thereof in Austria</i>	100 %	25 %	50 %	29 %	14 %	39 %	23 %	29 %
Events outside Europe	-	3	-	2	5	3	3	5
Total	2	7	8	26	26	21	34	26

Note: This includes conferences and events where ESPI had a speaker/chair, or ESPI organised the event and was also involved somehow to develop / document the content (e.g. EISC).

Source: Monitoring data: ESPI; Calculations: KMFA

The second directorship from 2007 onwards shows a considerable increase in representations with an increasingly international focus in terms of locations of events.

ESPI as a platform for interdisciplinary dialogue

Aiming to promote an interdisciplinary dialogue, ESPI regularly organised and hosted, either at its premises or at other locations in Austria or abroad, book presentations, round table meetings and other events like art exhibitions.

ESPI provided a platform to present and discuss the achievements and results made in European space policy during the EU Council presidencies. Since 2009, the Institute co-hosted five joint events together with the Ministry of National Development of Hungary (2011), the Embassy of Belgium in Vienna (2011), the Permanent Mission of the Czech Republic (2009) and the French Cultural Institute in Vienna (2009) with the aim to reflect on the countries' space policy.

ESPI also hosted 12 events between 2008 and 2011 of international institutions and committees, such as the International Academy of Astronautics (IAA) Regional Meeting (2008), the meetings of the Board of Directors of the International Institute of Space Law (IISL) in 2009 and 2011, and a panel discussion held by the Delegation of the Russian Federation to the UNCOPUOS Legal Subcommittee (2011).

From 2007 onwards, ESPI has increasingly been invited by European universities and other academic institutions with special emphasis on space-related issues to hold lectures and presentations (total: 15).

Between 2007 and 2011, eight book presentations on various space-related topics took place in Vienna, one in Salzburg and one at the Frankfurt Book Fair (2011). The majority of the book presentations were accompanied by side events such as guest presentations and (moderated) round table discussions.

Since 2008, ESPI has arranged annual art exhibitions at its premises with some relation to space on a yearly basis, which showcases the work of young and emerging artists. The exhibition is open to the public for some time, usually several weeks, and is accompanied by an opening event.

Other interdisciplinary events in Austria include joint evenings of ESPI and the Arnold Schönberg Center (2011), bringing together space, contemporary music and the arts, as well as a cooperation with the Filmarchiv (movie archive) Austria, which hosted an evening on science fiction in Austrian movies (2010). In addition, some conferences and workshops held at ESPI aimed specifically to bring together participants from various backgrounds, as, for instance, the ESPI conferences on "European Autonomy in Space" (2011) and on "European Identity through Space" (2009). ESPI also welcomes international delegations and visitors at the institute and acts as a platform for discussion and cooperation (e.g. Latin American & European Roundtable in 2009). This can be seen to contribute to ESPI's goal on "fostering the dialogue among researchers, policy makers and citizens".

Between 2006 and 2007, six so-called „Space Breakfast“ events were held, which were later replaced by the „Vienna Talks“, the latter being an evening event format to discuss contemporary issues with inspirational speakers at irregular intervals.

There were further representations with non-scientific audiences as the opportunities arose, which are listed in the Annex.

ESPRAN members regularly participate at ESPI conferences and workshops, in particular at ESPIs annual autumn conference, which is held at the Institute's premises since 2007. Since 2008, an ESPRAN newsletter is published four times a year, giving an overview on ESPI events, publications and activities, providing information about new publications related to space policy and information from other ESPRAN members.

Since 2009, ESPI supports the European Interparliamentary Space Conference (EISC), a forum for discussing and coordinating the position of European parliaments in the field of space policy with the preparation and operation of the annual EISC Conferences. It maintains their web-site, but also sends speakers to events during the conference. The conference happened three times so far.

Since 2010, ESPI assumes the role as Ambassador Platform for the ESA Integrated Applications Promotion (IAP) programme for Central and Eastern Europe (CEE) with a host of activities that come along with this role (running conferences and workshops, networking with other APs, presenting research results, hosting a community portal, web-site PR).

By the end of 2007, ESPI welcomed its first “visiting researcher”. Since then, 13 visiting researchers spent between one to three months at the Institute. These were students and researchers from Universities in Germany, Spain, Japan and the US (from SPI), but also organisations such as DLR, UNOOSA, VW Foundation, and the Japan Space Forum.

3.6. Conclusions

In terms of outputs of ESPI, one can state, that, after an initial slow starting phase, the Institute took off after the year 2007 and has provided a considerable body of evidence up to the year 2011.

- How are research topics generated and projects selected?

The process of finding research topics and shaping the annual work plan comprises inputs from its networks, the Advisory Council and the General Assembly. ESPI finds itself often confronted with a multitude of ideas and opinions in these discussions, which have not only to be prioritised against the mission and objectives of the institute, but also against the available expertise during the year (secondments) and budget constraints. The final annual work plan is approved by the General

Assembly. Some interviewees raised the issue that the topic selection for the AWP could be reflected on because they sometimes missed the policy focus. They suggest to make the process more transparent and include more specific policy experts in the discussion and generation of topics.

- Is ESPI independent in its decision making?

The governance structures of the association were particularly chosen to ensure independent decision making. The check and balance of the different mechanisms Secretariat/Advisory Council/General Assembly seem appropriate. With the Director being seconded by ESA, and the Treasurer by the Austrian authorities, the founding members do of course have subtle influence on the Institute. On the other hand, there needs to be someone in the driving seat, otherwise such an institution would probably not exist at all. If the founding members/General Assembly decide to change the public image, it could decide to turn the Director position into two senior posts funded by ESA. Perhaps it would be an agreeable solution to offer the European Commission to second the Director position in the future (or a certain percentage), which could have beneficial effects on the strategic influences of ESPI output. Alternatively, one could think of a solution where the Director position is funded by a donated University professorship, thus aligning the Institute more towards a university environment along the model of the SPI in Washington D.C.

- Which products and services are provided by ESPI?

ESPI developed a wide range of products and services that are typical for a think tank that tries to influence policy in the longer term, which is at the problem definition/perception end of the think tank spectrum according to McGann (2007). This is aimed less for hands-on policy advice of certain institutions, but instead more for generating, coordinating, and disseminating opinions and research results. An overview is given in Table 6.

- Which quality assurance mechanisms are implemented?

Quality assurance procedures were different for different kinds of products. When it comes to main research reports, the Director generally checked reports for their content, if necessary in several cycles, before they were handed over to a professional proof-reader, and later to the layout specialist. Quality assurance for books was organised differently: the Director checked individual contributions that were also cross-read by other book chapter contributors. If it was judged to be necessary, also chapter contributor meetings were held to fine-tune contributions.

A recent innovation for ESPI research reports is that these are cross-read by all ESPI research staff and review meetings are held to discuss individual reports, before the Director has the final say on a revised draft.

- How is the training of graduate researchers organised?

The training within ESPI is mainly based on the access to its library facilities, one-to-one coaching of young researchers with mainly the Director and other senior staff, and attending talks, workshops and conferences. Internships with ESPI are highly sought after. Still, one wonders whether a more formal relationship with educational organisations like universities, and even an international Masters and/or PhD programme could benefit both, the educational experience of the young researchers and the ESPI. The former could benefit from an even more international exchange between universities and more applied research organisations, and thus eventually in their career prospects. The latter could likely benefit from a broader scientific background of the candidate pool with more structured university links.

- Are the existing structures suitable for an effective and efficient implementation of the ESPI mission and goals?

ESPI has made the most from its available resources so far, especially in recent years. In terms of the quantity of research output, one could even say that it probably has overstretched its capabilities somewhat given the structure of its staff, which leans towards young researchers. A more appropriate balance between senior and junior staff is advised to ensure constant high quality of its products and services.

The networking structures implemented so far are promising for such a young Institute, but still needs to be fostered and extended. There are international players who would like to intensify their relationships with ESPI, and there are opportunities of collaboration to be explored with the European Commission.

- Does the portfolio of qualifications of ESPI staff meet the needs for fulfilling the goals?

ESPI has been successful in producing high output. The quality of research reports has been judged by interviewees to be somewhat variable. Some of which very good, and some were questioned. The reason for this was seen that staffing in appropriate levels has proven to be challenging because ESPI relies on secondments that can be withdrawn early, and have not always been at the level or background the Institute would have needed at the point of time. Thus, junior researchers were given important research tasks out of necessity.

Currently, ESA seconds the Director and one senior post, which is in fact split into two junior posts, to ESPI. To further develop the structure of the staff to increase the opportunities for the future, we can see two potential strategies: Either ESPI reaches with seconding organisations an agreement to send staff for a longer time and with particular competences (which will be not easy), and/or it converts the two junior researchers funded by ESA into a senior position, and generates additional

income to fund an additional senior researcher. In addition, the current Director aims to reach out to recent retirees in the space sector to convince them to stay with ESPI for some time. This taken together could give ESPI a decisive push towards increased research power at high quality levels, who could then also take on the guidance and training of young researchers more intensely as it is currently possible. These senior researchers would also be able to support the Director to increase third-party-funds.

- Which communication and networking structures have been built up (national, international)? What is the systematic behind this?

ESPI has increased its networking capabilities substantially over the years, and coordinates currently three networks (ESPRAN from 2007 onwards, EISC from 2009 onwards, and IAP from 2010 onwards). This is not only, but still very much focused on Europe. ESPRAN network partners interviewed by us during this evaluation emphasised the usefulness of past endeavours including the regular newsletter, but also recognised that it has become somewhat quieter recently. Because networks are work in progress by its very nature, these need to be fostered and developed to make most of its potential. From the currently around 250 members of the ESPRAN network, there should be benefits from intensifying it and to expand it even more to link with universities, also beyond Europe. The support of the European Interparliamentary Space Conference (EISC) is certainly important for networking with national parliaments of ESA and EU (non-ESA) members. Together with the rather recently taken on Ambassador Platform for the Central and Eastern European region (IAP), ESPI will have a powerful network node function, if these are served well and mutual benefits are explored to the full.

Although the ESPI website is already a very good dissemination tool with many outputs of ESPI available, there are nowadays opportunities to integrate web-sites with new media and discussion tools for an additional lead in for new audiences (twitter/facebook, etc.). A revamp of the webpage is already under way.

- What are the goals for ESPI's public relations and outreach? Are they met? Are stakeholders satisfied?

There are no specific goals for PR and outreach, except the ones that can be derived from ESPI's mission statement. Overall, stakeholders in Austria have been satisfied with its presentation. European stakeholders also do recognise ESPI's endeavours. Here, ESPI struggles somewhat with it being seen to be rather closely affiliated with ESA. Thus, its outreach is facilitated by this into some communities, and perhaps less so in others.

- Which other subsidies are there in addition to the ones paid by the Austrian government?

Austria has funded ESPI so far with 40 %, further 40 % were paid by ESA, and further 20 % originated from third-stream-party funding (excluding secondments).

The funding based on individual projects by third parties amounts to about €184.000 for the period of 2004-2011, stemming from eight different institutions. For this time period, this seems to be relatively modest. Judging from the monitoring data, significant thinking went into how to broaden the client base. Though, there was a decision made by the General Assembly that ESPI would not do studies for private clients. It seems like that some more thinking needs to go into this, as exploring additional third-stream funding would be a promising route to enhance the research power of the Institute as long as it does not compromise the independence of the research.

- How is the subsidy (by the Austrian government) used? Effectiveness and efficiency?

The basic subsidy by the Austrian government is used for the facilities of ESPI; the basic funding by ESA is used for research and networking as agreed in the annual work plan. Although we did not compare the input-impact nexus with a similar organisation because ESPI is unique in its portfolio and we could not find an organisation to compare it with, we tentatively conclude that the money is used rather efficiently. Though, the efficiency argument is less important in a policy context. Overall, it is hard to imagine how an institution could produce the level of output with less money than ESPI has done in the recent past. The argument is more about the effectiveness of ESPI, as we will discuss later in connection with staffing issues.

- Is the organisation and management of ESPI appropriate to its size and tasks? If there is room for improvement, how?

Good management and good governance is crucial to the effectiveness of policy institutes, and in case of an institute of that size, the day-to-day management is very much dependent on the skill-set of the Director. It is their substantive knowledge, their interpersonal skills as a leader and mentor, their initiative and sensitivity to client needs, organisational and management skills, technical sophistication and credentials, and their intellectual creativity, that determines to a large extent the success of such an organisation (Stone 2005). Here, the ESPI recruitment panel was lucky enough to be successful, especially in recent years.

As mentioned already at a different place in this report, a more balanced research power between senior and junior staff would certainly facilitate to maintain a good output level to high quality standards, on which the latter was sometimes compromised somewhat in the past.

4. Impact at the international level

4.1. Outcomes and impact

Before we embark in the discussion on the outcomes and impacts of ESPI, we want to draw an analytical line to distinguish between input, outputs, outcome and impact as we define them in this context. Inputs are the money and people that go into the organisation, be it those that are remunerated or those who contribute on a voluntary basis. While outputs are the products and services produced by the Institute (e.g. a publication or a network meeting), these outputs become an outcome once people read the publication (and influences their thinking) or people attend a meeting (which influences their thinking). If people act differently because what they have learned through the interaction with ESPI, it has become an impact.

We presented the relevant input and output indicators in chapter three. Descriptive-quantitative outcome and impact indicators are sometimes difficult to pin down in a policy influencing context, as we already discussed in the introduction. This is why this chapter is mainly presented as a qualitative discussion of ESPI's effects that we could determine in our interviews, which is enriched with descriptive data wherever possible.

Potential outcome and impact indicators for think tanks have already been explored by Stone (2005) and McCann (2007). These indicators are adapted to our case and enriched and summarized in the following table.

Table 10 Outcome and impact indicators used

Outcome indicators	Impact indicators
Visibility in Europe and at the global level Publication record: books sold; reports distributed; publications in or citations of publications in academic and policy journals; Number of media appearances Dissemination tools: Listserv and website dominance (web hits); content, navigability and sophistication of website; usage of library Interactions with other reputable stakeholders like global think tanks and multilateral representations	Indications by policymakers and other stakeholders that ESPI products and services were useful and have influenced thinking/acting
-	Impact on legislation, drafting of bills, etc.

Outcome indicators	Impact indicators
Appointment of Institute staff to official committees Number of applications for research post vacancies	
Network centrality Numbers and quality of attendees at conferences and seminars organized Number and relevance of invitations for giving talks and participate in e.g. panel discussions	Is ESPI well respected as a place to exchange independent ideas?
Appointment of Institute staff to official committees Network memberships and affiliations	Appreciation of knowledge and networks acquired by seconded alumni at the organizations of origin Professional progress of ESPI alumni
External funds raised: number of commissioned research projects from non-founding members and other institutions	
Trainings or talks to university students, etc. delivered	

Source: Adapted from Stone (2005) and McCann (2007)

Immediate impacts are seldom to observe in the policy influencing business. Impact is closely related to reputation and trust, which is mostly determined by high quality outputs. Thus, policy impact needs time to develop, which is at the detriment of a recently installed think tank like ESPI. The reason is because one needs to be able to look back five to ten years and judge how own ideas, writings and talks have being taken up.

OUTCOMES

The **visibility** of ESPI is determined mainly with the number of activities and outputs, the quality of its products, and here especially those of studies, briefs, and the personality and connections of the senior staff. Our interviews testified that the visibility of ESPI at the European and the global level has increased substantially, especially in recent years due to the high number of outputs, its networks and representations. Interviewees characterised the situation exemplarily: *“During the last years, it has become a recognised name. If somebody is interested in European Space policy they will know about ESPI. It’s becoming a name that is more and more known”, “It has reached a strong position in global space policy – but how will it go on from there? It is still young, thus the fight for reputation continues”, “This visibility has grown significantly over the past years ... It seems, though, that ESPI has not yet reached the level of reference institution in Europe, for instance when dealing with space economics statistics and strategic reports, for which main actors would tend to refer preferentially to OECD or Euroconsult.”*

Here we need to add, that the ESPI General Assembly had deliberately decided that ESPI does not provide the specific economic statistics because others are doing this already.

We also uncovered certain communities, where the knowledge about ESPI is not very deep, so they felt that they could not contribute much to an interview and turned it down. The background of these stakeholders is in industry, because space policy is somewhat secondary to their interests, and interestingly enough, the EC.

The visibility of its products can be quantified for its book sale and for the download of its most important reports. For the period 01/2011-02/2012, ESPI reports were downloaded around 14,000 times, and ESPI Perspectives around 7,500 times. The two book series edited since 2008 and 2009, respectively, have been sold around 7,400 times.

Table 11 Downloads / prints of ESPI reports and books

		01/2011-02/2012	Average / month
Downloads			
ESPI Reports		13.890	1068
ESPI Perspectives		7.455	573
Total downloads		21.345	1642
Book sale			
Yearbook on Space Policy	print	797	61
	downloads	1.698	131
Studies in Space Policy	print	1.380	106
	downloads	3.504	270
Total	print	2.177	167
	downloads	5.202	400

Source: The data is based on Google Analytics and the statistics of the ETH Zurich database (ISN), and represent a rough benchmark.

In terms of the different products of ESPI under the heading publications, a few interviewees felt that the differences of the various formats are not easy to understand. Thus, some recommended to simplify somewhat.

This usage of ESPI's publication record can be enriched through citations of publications in academic and professional journals, as well as of other ESPI output. Here we need to consider the long time lag that is built into the academic publishing business, where publications do get often cited only after two to three years because of the publishing cycles built into the system. A somewhat shorter feedback mechanism is built into the Google Scholar search facility which shows cita-

tions in academic journals and in grey literature, but also the citations of ESPI reports.

Here we can establish that there are two reports and publications from the year 2007 that are cited 8-10 times, and substantially more publications cited between 1-5 times. This result is somewhat hard to judge after such a short period, but seems to compare at least not unfavourably, given the fact that hardly any publications in the space policy theme have been cited more than 20-30 times, even if they had been published in the 1990s or 80s.

When searching the term “space policy” using the UK version of Google, ESPI comes out at fourth place (after the respective journal, Wikipedia, and the Whitehouse); on a search on “European space policy” it comes out second (after the EC), which seems to be very good visibility.

The ESPI library focuses mainly on literature on space policy and space law, and it displays all ESA publications and magazines. There are no records on the number of visitors, but it was portrayed to be frequently used by students, scholars and participants of its conferences and workshops.

Interactions with other reputable global and European think tanks existed and are listed in the Annex. These interactions mainly built on briefings, common workshops and writing policy briefs; common projects have not been implemented. These interactions were, foremost, embedded in its networks like ESPRAN. Interviewees from international think tanks and other international stakeholders showed quite some interest for a more intense collaboration.

But also ESPI's engagement in coordinating EISC and IAP resulted in high visibility for its target groups (EU member countries and Eastern European countries).

Trainings, lectures or talks to students from universities and other academic institutions have also been delivered increasingly over the years. ESPI was giving talks to students at six universities and has a continuing relationship with the first European masters course on „Institutions and Space Policies“, which was set up with the support of ESPI member ASI.

A further influencing factor for its visibility was ESPI's representation at other international organisations. With ESPI having observer status at the United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS), it is exposed to 89 nation state representatives at its yearly meeting. The outgoing Director chaired for four years the Legal Sub-Committee for Space Legislation, which gave the ESPI high visibility. It will be somewhat a challenge to keep this level of visibility up in the future, but it certainly needs to be a focus of ESPI to show high visibility at this important meeting.

In close connection with its visibility, we can discern a continually increasing **reputation**. This is not only based on the interviews, but also on indicators like that the past Director was invited to testify before the US Congress (together with the two other think tanks SPI and SWF). ESPI also wrote a briefing note for the EU Parliament and continued to support it over the years, and was trusted to support the already established networks of EISC and IAP.

Interview partners from European organisations were appreciative of ESPI's increasing role. They also pointed out that the role of ESPI to tackle new topics not normally addressed by agencies, institutions or other organisations to be of added value for Europe. At the same time, it was also pointed out that the coordination of events with specific topics with other organisations is necessary to avoid time collisions.

ESPI was also approached by JAXA (Japan) to deliver ESPI's first piece of commissioned study from outside of its member circle, and asked for support to set up a similar institute like ESPI in Japan.

The number of applications for vacancies and internships is increasing substantially. Already in 2009, ESPI received 150 applications for its vacancy notice for two Research Fellows, and these have risen by now to about 100 applications per post.

When it comes to **network indicators** on the outcome level, one would wish to be able to determine the network centrality of the Institute, which we can only establish qualitatively. ESPI has developed one own network (ESPRAN), and taken on to run two further networks (EISC and IAP), which gives it a rather central role. For example, ESPI initiated the first formal meeting between the leaders of Sky and Space Intergroup of the European Parliament and EISC at the European Parliament in Brussels.

This is also a distinguishing feature for the uniqueness of ESPI's portfolio. One interviewee formulated: *"I think, publishing ... having their annual conference and this network, publishing their year book ... that is something we don't do. This is good, but it takes support that's greater than we can get from grants and contracts here. I think that's positive."*

Concerning other, established networks with potential to influence policy in the longer term, ESPI is represented at international organisations as shown in the table below, where it plays different roles. The outgoing Director chaired for four years the UN Legal Sub-Committee for Space Legislation.

Table 12 Representations at international organisations and networks

	Since (year)	Role of ESPI
United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS)	2005	Observer status
Women in Aerospace (WIA)	2010	Institutional member
The Economic and Social Council (UNECOSOC)	2010	Observer status
EU Non-Proliferation Consortium	2011	Network member

Source: Monitoring data from ESPI

The numbers and quality of attendees at conferences and seminars organised have been presented in the section on output indicators. Overall, there was a tendency that meetings were held in other cities than Vienna. Collaborating with other organisations in doing so seems to be a promising strategy to reach new audiences and not to overstretch own resources.

There have been a number of presentations of ESPI studies in Brussels, but to our knowledge no official involvement of ESPI representatives in formal discussions in the EC. These happen only on an informal basis.

The amount of external funds raised and/or the number of studies can also be interpreted to be an indicator of reputation, although we need to note that ESPI's policy is not to enter in competitive bids. The number of commissioned research projects outside the annual work plan is 20 between 2004 and 2011, of which ten were conducted on behalf of the founding members, five on behalf of non-founding members and five on behalf of third parties (JAXA).

IMPACTS

Capturing hard evidence for impact indicators for a think tank is fuzzy, as we have already argued in the introduction to this text. One would wish to capture the impact on legislation, drafting of bills, perhaps on writing speeches, etc. that really makes a difference to how policy evolves. Alternatively, it would be useful to get indications by policymakers and other stakeholders **that ESPI products and services were useful and have influenced thinking/acting**. Having hard evidence would be too much to ask for with this think tank being operable only for seven years (2005).

Still, we can learn, from anecdotal evidence, that ESPI products do get cited in internal documents (EC and other) that are not readily available in the public domain. As one interview partner put it: *"... for us it is very useful to refer to ESPI studies ... for example ... to say "Here is the basic information ... If you would like to find out more ... here is an ESPI study you should read ... we are referring to ESPI studies, not always, but sometimes."* And a different interviewee: *"I found all these newsletters and the annual report really useful."*

On the other hand, we heard during our interviews relatively often that ESPI output was useful, has added value overall, but its quality has been variable. Summarising these comments, one interviewee put it the following way: *“Knowing the staff base of ESPI, the quality of the reports was appropriate, but they do have a problem with the seniority of their staff. If you really want to have influence, you need more senior people”*.

With ESA, the EC, and the European national parliaments being the main stakeholders in Europe on space issues, these need to be the main target group for ESPI. The evidence on its impact on these is summarized below.

ESA: The ESPI reports, as part of the Institute’s annual work plan (AWP), aim to deliver background information for informed decision-making. In addition, ESPI carries out commissioned studies for ESA. Especially the regular report “Space Policies, Issues and Trends” for the corporate strategic planning office of ESA was seen to be important input for strategy finding in ESA. ESA does have a link from its Intranet webpage to ESPI so that ESA staff does link up. One interviewee found it somewhat curious that ESPI has not been involved in the preparation of the Ministerial Council of ESA, which gathers in three-year intervals. Here we need to add, that ESPI shall not, according to ESA, interfere too much with these immediate policy issues, but instead provide medium- to long-term agenda setting from the background.

EC: Between 2007 and 2011, ESPI presented 14 times key findings from its Reports in Brussels to selected members of the European Commission (EC) and the European Parliament (EP). In 2009, ESPI was commissioned by the EP to prepare a briefing note, and has been, since then, called in several times to contribute to Parliament meetings. Talks with the EC Joint Research Centres to conduct a series of joint workshops on issues related to sustainable development did not yet materialise.

One interviewee, who is well ingrained in EC circles, summarized the impact question the following: *“ESPI has been rather active in Brussels, in the EU activities in space. There have been meetings with EC, Parliament, etc. I see ESPI studies quoted ... especially on GMES, Galileo, ... people took those seriously; it is an impact ESPI has for sure.”*

National parliaments: ESPI’s influence on national parliaments rests on mainly three pillars. First, ESPI started to host joint events with national representations to review the space policy of countries during their EU presidency. Second, the support of the European Interparliamentary Space Conference (EISC) opened up the possibility to diffuse own research and influence the declarations coming out of these. And third, the recently taken on management of the Ambassador Platform for the ESA Integrated Applications Promotion (IAP) Programme for Central and

Eastern Europe has very much increased its visibility in these countries, as we have learned from anecdotal evidence from our interviews.

Taken the breath of ESPI's purpose, the impact level also affects how **ESPI's alumni** have developed after leaving the Institute. The monitoring data does capture where most Interns and other employed research staff went immediately after leaving ESPI. Here we can learn that a substantial part went on to another internship or work for respectable national and international organisations. These are the UN New York, UNOOSA, ESA, Secure World Foundation, ESTEC (Noodwijk), EC, Google, an international organisation in Singapore and multiple universities in Europe and the U.S (either to work there or to finish their education).

The seconded staff to ESPI returns to its organisation of origin, where we could establish that it is not only the knowledge, they acquired when working at ESPI, is appreciated, but especially also the network they bring with them.

Another indicator to judge on the impact of a think tank is whether it is well respected as a **place to exchange independent ideas**. Here, we found no evidence from those interviewed that would oppose this view. On the other hand, we did not succeed to get an interview with EC representatives. On this topic, ESPI seems to struggle somewhat with it being closely associated with ESA. Interviewees did recognise that ESA has been indispensable to the set up and development of ESPI and that ESPI is legally independent. But they questioned whether ESPI would be independent in terms of its agenda setting. The priority projects in the annual work plans (AWP), which are financed by ESA, are agreed in the General Assembly with public and private stakeholders being able to vote. But potential subtle influences of ESA through financing the AWP and also financing the Director position is judged to be important.

This does not need to be seen as problematic per se, if the European balance of powers is balanced in the Institute and does not hamper its mission, which is to influence European space policy strategies in the medium to long term. Though, because interviewees at the same time felt that there is somewhat a deficit of ESPI's influence on the EC, who became a major player in European space policy during the last decade, it needs to be reflected on.

The question of **independence** can be assessed on more than one criterion (Stone 2005). Dimensions of independence can include (1) legal independence, (2) financial independence, (3) political independence from vested interests, and (4) scholarly autonomy and „freedom of research“. While legal independence is not an issue with ESPI being a private association under Austrian law, one can discuss whether financial and political independence is something to aspire for a think tank because having vested interest in the organisation can also mean that they are interested in what you do and what your outputs are, i.e. they want to become influenced by the think tank, which is positive. What matters is the balance of powers

within the Institute. Ideally, the main stakeholders are represented in a balanced way. From this viewpoint, the EC is clearly underrepresented in ESPI's governance structures.

The fourth dimension of independence, the freedom of research, is insofar relevant as ESA currently ties its funding against the delivery of studies in the annual work plan (AWP). As one interviewee puts it, *"People are aware that ESPI is not completely detached from the political considerations going on at ESA. On the other hand, the institute managed ... to establish itself as a quite independent institute in terms of content. The strategic decision on the content and the focus of the research is taken mainly internally, together with the Advisory Council of course; that has to be put to the credit of ESPI. For external observers, who know ESPI, they know that ESPI is not taking its orders from ESA ... a very delicate balance to find, so far, in my view. ESPI managed to do it quite well."* Thus, it seems that there is a slight image problem that could be rectified if (a) either ESA decides not to tie its basic subsidy even less to an annual work plan as it does now, and/or (b) the generation of topics to be studied becomes even more inclusive and transparent.

4.2. Conclusions

- Are there changes to the mission and goals of ESPI necessary to improve the benefit from the Institute's work for the European and international space community?

The mission of ESPI seems to be right on target. No one of the interviewed experts questioned this. Some interviewees questioned whether the third goal on the consolidation of relations between civil society, researchers and experts in the space sector. The role of civil society therein was seen to demand too much of an institute of this size and resources, which it will not be able to deliver in a credible way. As a matter of fact, it will not make much difference to the Institute's work, as long as it is not judged too harshly on this criterion. Whether to keep it or not probably depends more on whether the ESPI directorship feels that organising cultural events, etc. once in while is something that does not deviate too many resources from its staff.

- Are the purposes of the Institute, as formulated in the original „Proposal for a European Space Policy Institute“ (ESA/C/(2002)72 and the purposes as of the legal Statutes (ZVR no. 313957060) of the foundation met?

First, we need to consider that the purposes as discussed in the ESA Council document and the purposes in the legal Statutes of the Institute do overlap in terms of content – what ESPI should focus on. Though, they do not completely overlap, when it comes to the description of the Institute's role. While the Statutes (see

chapter 2.2) are formulated somewhat more tentatively („*promote ... in the world; facilitate ... long-term orientation; identify areas where the Institute may provide an approach to European space policy; serve as a leading source of information; facilitate the exchange of information and opinions; support the training of young graduates*“), the ESA Council document formulates the purposes/the role sometimes more affirmative („*be the centre of a network of think tanks; be a central forum for the analysis and discussion ...; be the forum for European space strategy analysis; be a decisive information source for scholars, professionals, and students*“).

With ESPI becoming operational in the years 2004-5, and given the resources it had available, the overall conclusion is that ESPI has progressed considerably towards the fulfilment of the different aspects of its purpose, which is summarised in the table below.

Table 13 ESPI's purpose and its accomplishment

1. Promote European space policy in the world by setting-up an active forum for the analysis and discussion of European needs, capabilities and long-term prospects in space activities;	Given the time frame, ESPI has progressed considerably; still more work to do when it comes to integrating further international think tanks and scholars (in east and west, perhaps also newly arising space powers), and the EC;
2. Facilitate European space policy research, academic interaction and the definition of long-term European orientations in astronautics;	Overall, the definition of long term orientations for European space policy is still in its infancy. ESPI's contribution so far was to contribute a few studies, but still more work is needed by all stakeholders, not only ESPI.
3. Establish a European and international cross-disciplinary network of researchers and experts in all sectors dealing with space activities to support an efficient and thorough exchange of ideas between the participants;	With ESPI hosting now three networks, a good launch is made; challenge to extent and deepen the ESPI networks beyond Europe;
4. Identify areas where the Institute may provide an approach to European space policy and, in this regard, address proposals and recommendations to European decision-makers and institutions in an appropriate form;	ESPI has proven to be able to generate ideas and to call attention to this. What is needed to improve the overall quality and acceptability of proposals is a higher share of senior staff to ensure quality levels and to broaden the networking / policy influencing capabilities.
5. Serve as a leading source of information for scholars, scientists, professionals and students who wish to meaningfully contribute to the development of European space policy;	Despite its young age, ESPI has succeeded to reach a high degree of dissemination of its products and services; made good use of the Internet as a very important tool.
6. Facilitate the exchange of information and opinions between those interested in space policy research through publications, workshops and other means required to perform the tasks of the Institute;	Made good progress through it hosting and supporting three networks and organising the ESPI/ESPRAN conference, including the topic specific workshops.
7. Support the training of young graduates interested in the development of space policy in Europe.	ESPI has hosted 56 Interns (graduates and PhD students) up to 2011, with a strongly increasing tendency over the years. These need to be guided by seniors, which will be too much for one senior staff (Director).

Source: §2 of ESPI's Statutes, and own comments

Concerning the question, whether ESPI has developed into a globally leading space policy institute (measured against its output und reputation), one can state that ESPI has reached this goal in terms of output, if not overstretched it somewhat, because the reputation, though certainly increasing, is partly not developed to the full because the output has had somewhat variable quality.

- How is ESPI embedded in the European and international aeronautics community? Are there (potential) synergies with other institutions not yet explored in full?

ESPI is coordinating and supporting three networks that target European and global researchers and think tanks (ESPRAN), the Parliaments of European national states (EISC), and specifically Eastern European countries (IAP). It also hosts the Space Generation Advisory Council (SGAC) and is further represented in four supranational organisations (United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS), The Economic and Social Council (UNECOSOC), Women in Aerospace (WIA), EU Non-Proliferation Consortium). The main potential in terms of new collaborations is global think tanks and scholars, but also to deepen the collaborations within the already existing networks.

- How does ESPI compare with similar organisations?

ESPI is a unique organisation regarding its portfolio (not only in Europe) although there are a few institutions worldwide that focus solely on space policy issues. From those coming closest, the Space Policy Institute (SPI) of the University of Washington is insofar different as it is mainly a teaching and research unit with its core staff being financed by the university, and the Secure World Foundation (SWF) is different because it is mainly a hands-on policy influencing organisation without research and being financed by a single private donation. Subsequently, their missions and goals are different from ESPI. The remaining institutions in the space policy scene are mainly national and single departments, with one to three staff, within a larger organisation covering a wide array of issues on foreign relations.

This is why a comparison with these organisations is not possible on the basis of comparing the input-output nexus. Though, one can state that the SPI does have an advantage because it is already on „the market“ for 30 years with a considerable reputation built up, and the SWF seems to do policy influencing rather effectively by being constantly present at the point of decision-making (Brussels), attending space related meetings and extensive briefings of decision makers. Still, the role of ESPI is somewhat different with the aim of brokering ideas and standpoints on medium- to long-term issues underpinned by research; and it has not had the time to build up such a reputation yet, although it has come a considerable way already.

- To what extent could the strategy „Perspectives 2010“ by Director Schrogl be implemented? Which barriers did ESPI experience, which changes to the plan occurred?

These goals for 2010, set by the outgoing Director and approved by the General Assembly in 2007, were quite challenging:

Targets according to „Perspectives 2010“	Attainment
(a) ESPI as top institute for inter-/trans-disciplinary research.	On the way; already good progress made
(b) Members, and others, visibly use ESPI products in their position building;	This is more hidden and cannot be traced easily. But there are indications.
(c) ESPI as acknowledged partner of EISC (European Interparliamentary Space Conference).	Target met
(d) Equally special relationship with ESA and EU.	Not met for EC, but progress made for ESA and the European Parliament, but also the European national parliaments via EISC.
(e) ESPI as leading space policy institute in the world by output and reputation.	Considerable progress made, but still some way to go. Reputation does not build that quickly; highest quality outputs of utmost importance.
(f) Two more ordinary members per year, 1 more detachment; 1 visiting researcher and up to 4 interns per year.	Not quite met, but considerable progress; Goal too demanding from the outset
(g) All relevant actors of the ESPRAN network involved (as speakers, authors, etc.); 1 joint activity with each ESPI member and each partner organization (EURISY, ECSL, IAF, IAA, ISU, EA, OECD, SGAC, UNOOSA).	Mostly met, considerable networking activities existed.
(h) Autumn conference as top meeting for research community.	Regular conferences happened; whether it is judged to be a top meeting was not investigated.
(i) Top publications in the field; establishment of a space policy book series (with Springer)	Target met. The academic publication record is very much focussed on a few journals, but they seem to be the right ones. Overachieved: 2 book series established.
(j) Three networking fora in place.	Target met.

- To what extent has the objective to establish a think tank for the exchange of ideas been implemented?

ESPI experienced an increasing number of events at its premises to discuss about specific topical issues; but has also been increasingly invited to other meetings over the years, which stabilised from 2007 onwards at a high level.

- To what extent have the following objectives of the ESA Status Report of the 31st of May 2007 (ESA/C(2007)74) been reached?
 - (a) Enlarge and consolidate the network with universities, research establishments and academia gathering competencies from all over Europe and motivate them to work with the Institute.

With ESPI now hosting three networks, a good launch is made and ESPI has positioned itself as the network node on space policy in Europe. Collaboration with network members have materialised, and can still be intensified in the future.

(b) Increase the visibility and relevance through inter- and trans-disciplinary debates.

The number and breath of inter- and trans-disciplinary events has increased substantially since the ESA Status Report, also with the effect of higher publications in this vein.

Also on this visibility indicators publication record and dissemination, ESPI has made considerable progress. Interactions with other international reputable stakeholders have also improved, and can still be intensified internationally (U.S., Russia, China, and India). Relevance in the sense of reputation has also shown some indications of increasing response by e.g. the European Parliament, national parliaments, Japanese collaboration, a number of invitations to international gatherings, etc.

(c) Find new revenue sources

Other revenue sources apart from the two founding members have been found; membership fees have nearly doubled since the ESA report, and also other sources in form of commissioned studies have increased. Though, this is still at a somewhat modest level, and the EC has so far missed the opportunity to increase ESPI's capabilities through funding.

- How does ESPI contribute to ESA and other space agencies?

ESPI has produced commissioned research for ESA to an extent of about € 130-150.000 per year (from 2007 onwards). Further, it takes on the research projects from the annual work plan. ESPI also interacts with ESA via its other products (e.g. executive briefs, etc.) and services (workshops). Some other space agencies (foremost GA members) commissioned occasionally research pieces.

- How important are ESPI's products and services in the space community?

ESPI products are seen to be useful overall. As one interviewee put is "*There is a value added to this*". But the varying quality of its studies has hampered to build up its reputation to a certain extent. ESPI services are appreciated. ESPI has delivered a high volume of networking activities that is perceived to be helpful.

5. Impact on Austria

Background

Austria has been active in European space activities since the late 1950 and successfully established itself to become a recognised player in the space industry, research and technology. A key milestone was laid in 1975, when Austria decided to take part in ESA programmes, becoming increasingly involved in international cooperative space projects, and a full ESA member in 1987. Austria's interests at ESA bodies are represented through the Austrian Federal Ministry for Transport, Innovation and Technology (BMVIT) and, until 2004, the Austrian Space Agency (ASA). In 2004, ASA merged into the Aeronautics and Space Agency (ALR) of the Austrian Research Promotion Agency (FFG) to become the national liaison office to the international aerospace scene for Austrian business and science (ALR/FFG).

The strategic orientation of Austria's space engagement was established in 2000 with the Austrian Space Plan. In 2002, the BMVIT launched two Austrian space programmes, the Austrian Space Applications Programme (ASAP) and the Austrian Radionavigation Technology and Integrated Satnav Services and Products Testbed (ARTIST) to strengthen the Austrian capacity in space. ASAP and ARTIST have been merged into the Austrian Space Applications Programme (ASAP). Currently, national stakeholders are preparing a strategic paper for space related activities in Austria up to the year 2020.

In 2011, the Austrian space budget (incl. EUMETSAT, ESA and National Programmes) amounted to a total of €65 Mio. The largest share was allocated to ESA Programmes (€54 Mio) of which around 90 %, in turn, were awarded to Austrian industry and research contractors. According to a recent study (Brimatech 2011), 114 organisations are currently active in Austria's space industry and research. The Austrian space sector is assumed to have a total volume of €125 Mio, employing around 950 people. The academic research on space-related issues is mainly clustered in Vienna and Styria, but extends also to other federal provinces. The industrial „space sector“ can be regarded as quite heterogeneous.

Vienna as ESPI's location

After a competitive selection process with several European candidate cities, the ESA council decided to select Vienna as host location for the ESPI in December 2002. As has been argued in some interviews, one of the reasons for choosing Vienna was the close proximity to the United Nations (UN) and possible synergy effects, in particular with the UN Office for Outer Space Affairs (UNOOSA) and UNOOSA related events, e.g. the UN Committee on the Peaceful Uses of Outer Space (UNCOPUS).

According to the experts interviewed, ESPI has in fact a well-developed relationship with UNOOSA and assumes also a permanent observer status at UNCOPUS and its subcommittees. Since its foundation, ESPI increasingly tried to place some of its own events before/after the regular meetings of COPUS in Vienna, which usually takes place in June, and invited delegates to join ESPI for presentations and discussions.

Besides basic locational factors and the close proximity to Central and Eastern European countries, Austria's long-standing history of being "neutral"⁹, and having no ESA establishment on its territory, makes Vienna according to a substantial share of interviewed experts a good location for an independent think tank on space policy. Especially the physical distance to Paris (ESA) and Brussels (EC) is seen to facilitate taking on an "external viewpoint" and could play out as an asset. However, this distance has found both, strong advocates and critics in the interviews. While the above mentioned opinion is formulated by those in support of ESPI in Austria, critics put more weight on the geographical distance to the EC, which is seen as a problem in terms of a lack of policy influencing capability. Although ESPI has succeeded to engage at the EU level, formally particularly with the European Parliament, but informally also with some EC officials, it is seen by critics to be less than is wished for. This is seen to be much easier with a Brussels presence, where space related events happen very frequently. Lobbyists of all kinds are attending these meetings. And, it is argued, even a think tank could/should play this game to maximise policy influence (and which some do).

These arguments need to be weighed up against the mission of ESPI, which focuses on developing proposals for mid- to long-term strategies relevant to Europe's space activities. After all, keeping day-to-day politics at arms lengths is important for a think tank with a strong medium- to long-term research focus like ESPI. It can be argued that keeping the mission in focus can be provided best, and policy influence maximised at the same time, when highest quality output and advice is paired with policy relevance. Thus, a recurring contact with policy makers is important, but not on a very frequent basis.

⁹ *With the „Declaration of Neutrality“ enacted in 1955, Austria declared itself permanently neutral, which means that the states does not participate in military conflicts between two other parties, and Austria's territory must not be used by foreign armies for military actions.*

ESPI and the national space community

ESPI maintains a high visibility among the national space community and is generally viewed as an important institution and active forum for promoting and facilitating European space activities and research. All national interview partners welcomed the location of a high-level space-oriented think tank in Vienna, recognising its role and objectives as European-oriented institution. Most experts interviewed consider Austria to be fortunate to have ESPI in Vienna, especially because the institute is – not only in Austria – strongly viewed as “ESA affiliated facility”, thus putting a spotlight on Austria as front-line player in the growing global space community.

This has to be seen in sharp contrast to the fact that only the minority of Austrian space stakeholders appears to be aware of the research portfolio and outputs of ESPI. First, this can be explained by the fact that ESPI is focusing on space policy activities in Europe and beyond, and not on the specific situation in Austria. Second, ESPI primarily addresses space-related topics from a policy perspective, thus often out of the scope of academic (technology-oriented) research and the industry. This issue has been especially raised by university scholars, which consider the work of ESPI to be important for shaping European space policy, but to a lesser extent of relevance for their own research in space technologies and applications. As has been explained above, joint (research) projects between ESPI and members of the Austrian space sector are subject to the “conflict-of-interest” policy at ESPI, thus not being an Austrian-specific issue.

Thus, collaborations with ESPI consist primarily of workshops (e.g. with the FFG), information events and networking activities at (co-)hosted events – which are nevertheless viewed as important venues to increase informal contacts among Austrian stakeholders and other national and international space agencies (e.g. ESA, DLR, CHNES, ASI). Having high-ranking international experts and scholars in Vienna is not only important for networking purposes, but also, as highlighted by some scholars, to hear about new ideas and discuss current issues related to the field. As put forward in most interviews, space-related topics need time to develop and to be adopted. The sooner a specific topic is raised and discussed, the better for thinking about solutions or developing applications on this topic.

Especially small countries with space ambitions may benefit from those insights, which may guide them aligning their future space development activities. Thus, some of the experts suggest that ESPI’s expertise should be used – in line with its missions and objectives – to deliver fresh insights into Austria’s upcoming development strategies and priorities with regards to space related activities.

Effects of ESPI on the Austrian economy

It is of course not possible to estimate the net effects of ESPI being located in Austria because we do not know what would have been done with the tax money, to what effect, instead. However, based on a rough estimate of first-round effects of direct expenditures by ESPI, it can be assumed that the economic effects of ESPI being located in Vienna are beneficial.¹⁰ Thus, the subsidy by the Austrian authorities seems to be justified.

5.1. Conclusions

- Which contacts exist to the Austrian aeronautics community? Are there common projects? In which way does the Austrian aeronautics community take advantage from ESPI's presence?

There have been collaborations with the University of Vienna, especially the NPOC of the ICSL, with exchanging views and giving talks, plus writing research pieces on a continuing basis. Otherwise, direct cooperation did not happen, but ESPI is known and welcomed in the Austrian aeronautics community. The benefits for most stakeholders is more on the level that ESPI's output informs them occasionally about potential future developments on specific space issues. Indicators to support the above conclusion are not only what interviewees told us in the course of this evaluation, but also the relatively high share of Austrian participants in networking events and talks organised by ESPI.

- Have there been activities by ESPI to make connections with Austrian partners in research and industry?

One needs to point out that it is actually not ESPI's role to make specific connections with it being an organisation with a European focus. Thus, it is the obligation by the Austrian stakeholders if they want to engage with ESPI, not so much the other way round. Still, ESPI did engage with some scientific stakeholders, less so with industry apart from inviting them to its local evening events, as its very nature is space policy, which is not necessarily the prime interest of industry.

¹⁰ Calculations are based on the Event-Model Austria as used by the Vienna Convention Bureau (Author: Dr. M. Stoff-Hochreiner).

- In how far does ESPI being in Vienna contribute to enhance Austria's recognition as a relevant stakeholder in aeronautics at the European level and globally?

We can state here from the interviews that it reflects positively on Austria, especially as there are complementary effects with the Vienna based UN organisations present.

- In how far does ESPI being in Vienna contribute to enhance the recognition of international organisations in space (ESA, UNOOSA) with Austrian stakeholders?

The space community did know these organisations already before that. They did not need ESPI for this. But they do see it as a benefit to have ESPI here as they can meet at ESPI's events ESA staff with whom they interact.

- Are there monetary effects of ESPI on Austrian companies?

Not directly.

- If justified, what are arguments to continue Austria's financial support of ESPI?

The basic financial structure of ESPI is rather heavily dependent on a set of few supporters, but this seems to be a natural process for a young institute. Also the world renowned Space Policy Institute in Washington D.C., which served somewhat as a rough model for ESPI, was initially heavily funded by NASA. After its 30 years of existence, it has completely lost the basic funding by NASA but instead does contract research for a wide range of clients, with its few core staff being employed by the university.

So far, the Austrian contribution to ESPI has been around 40 % of its budget (without taking secondments into account, which cannot be quantified). This is matched by an equivalent contribution by ESA, as reported earlier. Judging from the rough estimate of ESPI's impact on Austria, and from the viewpoint of making a contribution to the development of space policy, we can conclude that the Austrian authorities should continue to support ESPI's development, and should even increase its financial contribution in the short to medium term; this could also increase the likelihood that other stakeholders would engage more heavily with the Institute. This argument needs to be seen against the background of a necessary immediate increase of ESPI's qualitative research power as argued in this report.

6. Overall findings and recommendations

While Europe's activities have surely fostered space-related programmes and initiatives in recent years, the European space landscape remains still fragmented from the viewpoint of experts, both in terms of (national) interests and competences, but partly also between EU and ESA, which makes the formulation and implementation of a coherent European space policy a somewhat challenging process. This is exactly the niche, where a think tank like ESPI could contribute and generate high value-added.

The key to the visibility of a think tank is its quality and quantity of activities and outputs and the dissemination of its research work and related products. Hence the vast majority of the expenditure of a think tank must go towards the production of high quality results. But in the current state of European space policy, bringing people together to support the formation of common views is also of utmost importance. It seems reasonable that ESPI puts weight on both aspects.

Overall, after the first two years where the ESPI Secretariat was mainly concerned with setting up the organisation and equipped with only few (research) staff, this changed considerably from 2007 onwards. The second Director was able to build on the existing infrastructure, and ESPI entered into a period of rapid growth in activities and output. Helpful was the introduction of a mid-term strategy, called "ESPI-Perspectives 2010", which outlined key objectives and goals to be reached.

With ESPI becoming operational in the years 2004-5, and given the resources it had available, the overall conclusion is that ESPI has progressed considerably towards the fulfilment of the different aspects of its purpose. This view was already shared by the short Status Report by ESA in 2007 (ESA/C/2007)74).

This high level of activities and output could also be reached because the strategy was to join forces with other institutions in arranging conferences and workshops because arranging these entirely on its own (ESPI Autumn Conferences, etc.) would have been beyond the limit of ESPI's capacity.

ESPI is working at the interface of the political triangle of ESA, EC, and EC Member States. Each of which is rightly considered by ESPI to be an important target community.

ESPI is still young in comparison to other think tanks in the field, and its profile is unique – in Europe and beyond. There are space policy units present in Europe, though their portfolio is either much broader, thus space issues are only covered by one to two staff (national agencies), more technology focussed (e.g. ESSC), consultants of the ordinary kind (e.g. Booz Allen and Euroconsult) that do not really count as think tanks, or more hands on policy advice without own research (SWF).

ESPI is clearly focussing on the problem definition and perception stage of the policy making process (see McGann 2007). This is aimed less for hands-on policy advice of certain institutions, but instead more for generating, coordinating, and disseminating opinions and research results. A review of successful lobbying by Coen (2002, cit. in Jones 2011: 8) has found that, in addition to clear and focused policy goals, the key strategic capacities required for policy influence are identifying natural allies, developing relationships and credibility with policy actors, and understanding the nature of the policy process and institutional access.

Having an office in Vienna, somewhat detached from Brussels and Paris, can be regarded from two standpoints. The positive interpretation is that the distance from the EC and the ESA enables ESPI to take a more distanced view on issues and work relatively peacefully on high quality reports. Some also mention that the attractiveness of the city of Vienna facilitates the recruitment and commitment of staff. The less positive interpretation is that it will have less impact on policy decisions because really impacting space policy decisions means actively engaging with players and attend meetings. We learned from our interviews, that the stakeholders clearly fall into these two camps, each of which emphasising the respective arguments in favour. Those raising the issue of policy influencing in Brussels do see ESPI increasing (more than so far) its lobbying activities. The question is whether ESPI, with focussing on the problem definition phase, needs to have such a hands-on approach - or, whether the effects are maximised by focussing on highest quality standards and whether an arm's length approach ensures a non-biased viewpoint. The evaluation team comes to the conclusion that the latter is of more immediate importance.

From the above discussion and the conclusions of the respective chapters in this report, **the study team recommends** the following.

Quality assurance: short- to medium-term

1. Essential for the success of a policy focused think tank like ESPI is quality, continuity, and longer time horizons to reach certain credibility. This does neither match with short termism when it comes to staffing issues, nor can this be done with only relying on junior staff. Although ESPI progressed substantially over recent years, we recommend that the most immediate need of ESPI is to balance the relationship of senior and junior staff to stabilise a high quality level of its output and increase its policy influencing capabilities.

2. For being able to implement this, we recommend the funding of senior researchers with a medium term horizon. In the short term, additional research power will probably need to be provided by the two founding members, but with the clear view to enlarge the spread of funding sources in the future.
3. Additionally, we see also a potential for restructuring the already existing staff structure: For example, ESA seconds the Director and one senior post, which is in fact split into two research fellow posts. ESPI could reach with ESA (and other seconding organisations) an agreement to send staff for a longer time and with particular competences, and/or it converts the two research fellows funded by ESA into a senior position, and generates additional income to fund an additional senior researcher, preferably not on a seconding basis.
4. Additionally, the current Director aims to reach out to recent retirees in the space sector to recruit some for a stay with ESPI. These retirees could add to the quality assurance mechanisms and guidance of young researchers, probably wanted to do also some own research and certainly could add to the networking activities.
5. To secure a high quality of ESPI products, it is advisable to continue the review meetings with all staff that were recently implemented. Involving more senior staff and/or external experts will then uphold a high quality orientation.
6. This taken together could give ESPI a decisive push towards increased research power at high quality levels, who could then also take on the guidance and training of young researchers more intensely as it was possible in the past. These senior researchers would also be able to support the Director to increase third-party funding.

Quality assurance: medium- to long-term

7. The training within ESPI is mainly based on the access to its library facilities, one-to-one coaching of young researchers with mainly the Director and other senior staff, and attending talks, workshops and conferences. Internships with ESPI are highly sought after. Still, one wonders whether a more formal relationship with educational organisations like universities, and even an international Masters and/or PhD programme could benefit both, the educational experience of the young researchers and the ESPI. The former could benefit from an even more international exchange between universities and more applied research organisations, and thus

eventually in their career prospects. The latter could likely benefit from a broader scientific background of the candidate pool with more structured university links. But this initiative is too much to be envisaged by ESPI on its own; it would need to be initiated by some universities, perhaps together with ESA/EC, where ESPI would be part of the network.

Policy influencing: short- to medium-term

8. A certain spread of ESPI's topics is considered by interviewees to be important, but the existing spread as somewhat too broad. Some interviewees suggest making the process of topic generation more transparent and keeping more rigorously to the policy focus, also involving more specific policy experts in the discussion and generation of topics.
9. ESPI is coordinating and supporting three networks (ESPRAN, EISC, IAP), and is represented (in different roles) in four supranational organisations and networks which gives it good visibility. The main challenge for the future will be to deepen and broaden these to harness the diversity of views, and maximise the potential for coordination and policy influence through targeted networking activities. As an example, high visibility at the yearly meeting of the UNCOPUOS exposes ESPI to representatives of 89 nation states, of which ESPI is well advised to take advantage of. There seems to be potential to intensify relations also with think tanks beyond Europe.
10. It would seem that the EC, as an important actor, has something valuable to contribute to such a think tank, and the EC could benefit from the opportunity to influence the strategic topics of ESPI, including to ensure that ESPI output is properly noticed by its own staff. To some extent this is already happening, but it is underdeveloped. As there seems to be a rule in the EC that it does not become a member of another organisation, the EC should think of opportunities to collaborate in a different way. Ideally, ESPI acts in terms of research topics and exchange as a bridge between ESA and the EC.

Policy influencing: medium- to long-term

11. During the development of ESPI, the governing bodies (General Assembly and Advisory Council) were instrumental to ensure that the Institute could develop into a remarkably independent organisation. Still, because ESA has played an instrumental role in setting up and financing ESPI, it is seen

by interviewees as think tank with very strong ties to ESA, which lessens somewhat its impact at the European scale. This strategic issue could be overcome by the European Commission engaging more with ESPI, so that the balance of powers is represented and is more visible to the outside.

12. If the founding members and the General Assembly decided to change this public image, one can think of different options. For example, one option could be to alternate the financing of the Director position between organisations (e.g. ESA and the EC) where the other party seconds two senior positions. Alternatively, one could think of a solution where the Director position is funded via a donated university professorship, thus aligning the Institute more towards a university environment along the model of the SPI in Washington D.C. Also the SPI was initially heavily supported by NASA.

After all, ESPI does support the case for its existence when it can contribute to the discussion in a way ordinary consultants, university departments, or strategy departments at, e.g., ESA and the EU, cannot. Given the development so far, it looks promising that through this offer of a relatively independent platform for extensive networking and research, it can contribute in the envisaged manner. Still there is, some way to go to reach the goal set out at its foundation, that ESPI shall become a, if not the, foremost discussion partner for space policy issues in Europe and beyond.

Finally, we want to make a methodological note concerning the M&E problematic of recording policy influence as discussed earlier in the report: It could be beneficial to add to the already detailed documentation of ESPI output an „uptake log“, where „uptake“ or influence by ESPI personnel are recorded. This would be a collection of informal and anecdotal evidence about the use of research or advice (when, who, topic, audience), but could provide useful information for an on-going monitoring and contribute to deeper analyses once a number of instances have accumulated, and should the occasion of another evaluation arise in the future.

7. References

- BRIMATECH (2011) Austrian Space Industry and Research: Database of Market Participants. Final Report. (available from: http://esamultimedia.esa.int/docs/TTP/oespace_final_report.pdf, [Accessed May 2012])
- Creola P (1999) A long term space policy for Europe. *Space Policy* 15(4): 207-211
- Jones H (2011) A guide to monitoring and evaluating policy influence – Background Note. Overseas Development Institute (ODI), London
- McGann JG and Johnson CE (2005) Comparative Think Tanks, Politics and Public Policy. Edward Elgar, Cheltenham, UK, Northampton [MA]
- McGann JG (2007) Think Tanks and Policy Advice in the United States. Academics, advisors and advocates. Routledge Research in American Politics. New York [NY]
- Stone D (2005) Think Tanks and Policy Advice in Countries in Transition. Paper prepared for the Asian Development Bank Institute Symposium: “How to Strengthen Policy-Oriented Research and Training in Viet Nam”, Hanoi 13th August 2005
- Stone D (2007) Recycling Bins, Garbage Cans or Think Tanks? Three Myths Regarding Policy Analysis Institutes. *Public Administration* 85(2): 259-278
- Singer PW (2010) Factories to call our own. Newspaper article in the Washingtonian Magazine, 45(11): p44, (available from: <http://www.washingtonian.com/articles/people/factories-to-call-our-own>)
- Leeson PT, Ryan ME and Williamson CR (2012) Think Tanks. *Journal of Comparative Economics* 40(1): 62-77
- Vienna Convention Bureau (2012) Vienna Meetings Industry Report 2011. Vienna Convention Bureau, Vienna Austria. (available from: <http://www.vienna.convention.at/>)

Annex

Table 14 Representation at national or international events, 2004-2011

Event	Location
2011	
EU Council's space working party on socioeconomic benefits of GMES	Brussels, Belgium
5 th IAASS	Paris, France
62 th IAC, International Astronautical Congress	Cape Town, South Africa
26 th IAA/IISL Scientific-Legal Roundtable	Cape Town, South Africa
Seminar on Space Situational Awareness	Warsaw, Poland
Security Research Conference 2011	Warsaw, Poland
UN/Austria/Symposium on Small Satellites Programmes for Sustainable Development	Graz, Austria
Summer Session of the International Space University (ISU)	Graz, Austria
UNCOPUOS Scientific and Technical Subcommittee	Vienna, Austria
Hellenic Foundation for European and Foreign Policy (ELIAMEP)	Athens, Greece
ISI General Assembly	Warsaw, Poland
ESPI and the Prague Security Studies Institute (PSSI)	Prague, Czech Republic
RAST 2011	Istanbul, Turkey
The Institute of Policy and Mgmt. of the Chinese Academy of Sciences	Beijing, China
Kunsthalle Wien	Vienna, Austria
European Technology non-Dependence Conference	Budapest, Hungary.
University of Warsaw	Warsaw, Poland
MilSpace Conference	Paris, France
Faculty of Law, University of Vienna	Vienna, Austria
FFG	Vienna, Austria
JAXA Tokyo Office	Tokyo, Japan
University of Tokyo	Tokyo, Japan
University of Leiden	Leiden, The Netherlands
ISU Annual Symposium	Strasbourg, France.
ESA International Relations Committee (IRC)	Paris, France
UN International Students Conference of Amsterdam (UNISCA)	Amsterdam, The Netherlands
2010	
61 th IAC, International Astronautical Congress	Prague, Czech Republic
GMES-Galileo Workshop	Brussels, Belgium
Warsaw Space Days Conference	Warsaw, Poland
Workshop on "Space Solutions: Practical Applications for Governments and Markets", IISC (International Institute of Space Commerce)	Isle of Man

Event	Location
ESF-ESA "Forward Look" TECHBREAK Kick-off Conference	Brussels, Belgium
University of Vienna	Vienna, Austria
The European Security and Defence College's (ESDC) High Level Course 2010–2011 Module II	Tartu, Estonia
The XII th Plenary of the European Interparliamentary Space Conference (EISC)	Bucharest, Romania
UNIDROIT informal consultation meeting	Rome, Italy
ESA Office	Brussels, Belgium
University of Zielona	Góra, Poland
1st International Conference on Space Economy in the Multi-polar World	Vilnius, Lithuania
High-level conference "Space for the African Citizen"	Brussels, Belgium
19 th ECSL Summer Course	Jaen, Spain
ISU SSP10	Strasbourg, France
The European Parliament	Brussels, Belgium
The UN-SPIDER regional workshop "Building Upon Regional Space-based solutions for Disaster Management and Emergency Response for Africa"	Addis Abeba, Ethiopia
UNCOPUOS	Vienna, Austria
23 rd meeting of the "The Academic Council of the United Nations System (ACUNS)"	Vienna, Austria
Joint Symposium on Space Policy for the Future International Manned Space Programs. University of Tokyo and Japan Manned Space Systems Corporation	Tokyo, Japan
EISC Workshop	Bucharest, Romania
The ESDA/WEU Seminar on European Maritime Surveillance	Athens, Greece
Conference on Governance of European Space Programmes, Parador de La Granja	Segovia, Spain
University of St. Gallen	St. Gallen, Switzerland
Technical University of Vienna	Vienna, Austria
MilSpace	Paris, France
SIOI Master Course	Rome, Italy
IISL/ECSL Symposium at the UNCOPUOS-LSC	Vienna, Austria
"Space and Security", Cityforum	London, UK
The International Space University, ISU Master Course	Strasbourg, France
14 th Annual International Symposium at the International Space University	Strasbourg, France
The UNCOPUOS STSC Meeting, UNOOSA	Vienna, Austria
"Outer Space - An Ever Growing Issue in Society and Politics" authors conferences in	Graz, Austria
National Space Strategy Workshop	Washington DC, USA
The Interministerial Group on Austrian Space Policy	Vienna, Austria
2009	
3AF, 3 rd International Conference on Military Space "Space for Security and Defence in Europe"	Paris, France

Event	Location
ECSL-NPOC Austria Symposium "Weltraumrecht in Österreich", University of Vienna	Vienna, Austria
DLR-Workshop: Contracting for Space	Bremen, Germany
3 rd Annual Space Law Seminar, Nebraska University	Omaha, USA
60 th IAC, International Astronautical Congress	Daejeon, Republic of Korea
ISU, 2009 Space Studies Programme	San Francisco, USA
The Czech Permanent Mission to the International Organisations	Vienna, Austria
Himmel@All, Urania Sternwarte	Vienna, Austria
Perspectives of Space Exploration and the role of the United Nations, University of Vienna	Vienna, Austria
Space Systems and Security, IQPC	Potsdam, Germany
Master in Space Institutions and Policies SIOI/ASI/ISGI-CNR	Rome, Italy
UNCOPUOS	Vienna, Austria
7 th IAA Symposium on Small Satellites for Earth Observation	Berlin, Germany
European Geosciences Union, General Assembly	Vienna, Austria
IAA - Regionaltag ESOC	Darmstadt, Germany
TU Dresden/Zentrum für Internationale Studien/-Vorlesungsreihe "Interplanetare Raumfahrtmissionen"	Dresden, Germany
The French Permanent Representation to the EU	Brussels, Belgium
The "Military Space Operations & Security" conference (Defence IQ)	London, UK
The Annual International Symposium of the International Space University (ISU), "Space for a Safe and Secure World"	Strasbourg, France
International Space University (ISU) Master Course	Strasbourg, France
The French Cultural Institute	Vienna, Austria
2008	
59 th IAC, International Astronautical Congress	Glasgow, UK
The Global Space Technology Forum	Abu Dhabi, Un. Arab Emirates
University of Bologna, Faculty of Aerospace Engineering	Bologna, Italy
European Parliament, Public Mini Hearing on Human Space Exploration	Brussels, Belgium
10 th Joint Annual Meeting of LEAG-ICEUM-SRR	Cape Canaveral, USA
DGLR Symposium "To the moon and beyond"	Bremen, Germany
The Information Day on the second call "Space" of the 7 th Framework Programme (FP 7)	Prague, Czech Republic
17 th ECSL Summer Course	Genoa, Italy
37 th COSPAR Scientific Assembly	Montreal, Canada
ISU-SOI	Barcelona, Spain
EISC Professional Conference	Prague, Czech Republic
UNCOPUOS	Vienna, Austria
26 th International Symposium on Space Technology and Sci-	Hamamatsu, Japan

Event	Location
ence	
IAA 1st Symposium on Private Human Access to Space	Arcachon, France
Small Satellite Systems and Services, The 4S Symposium	Rhodos, Greece
Air Power Symposium at the Royal Military Academy	Brussels, Belgium
Warsaw Space Days 2008	Warsaw, Poland
European Geosciences Union (EGU) General Assembly	Vienna, Austria
European Interparliamentarian Space Conference (EISC) Professional Conference	Prague, Czech Republic
Thematic International Conference on Bio-, Nano- and Space Technologies	Ljubljana, Slovenia
12 th ISU Annual International Symposium	Strasbourg, France
Space Policy Institute, George Washington University	Washington DC, USA
Centre for Interdisciplinary Research (ZiF), Conference: "Imagining Outer Space, 1900-2000", University of Bielefeld	Bielefeld, Germany
The Permanent Mission of Norway to the European Union	Brussels, Belgium
Rat für Forschung und Technologieentwicklung	Vienna, Austria
Séminaire Intercentres	Toulouse, France
2007	
Royal Military School	Brussels, Belgium
University of Vienna, Institute of Astronomy	Vienna, Austria
9 th ILEWG International Conference on Exploration and Utilization of the Moon	Sorrento, Italy
CDI/USAF Conference "Improving our Vision II"	London, UK
Hofburg - 20 Jahre österreichische Mitgliedschaft bei der ESA	Vienna, Austria
EURISY Conference	Istanbul, Turkey
IX th Interparliamentary Space Conference	Rome, Italy
58 th IAC, International Astronautical Congress	Hyderabad, India
First CEAS European Air and Space Conference	Berlin, Germany
Studiengesellschaft der Deutschen Wehrtechnischen Gesellschaft	Bad Godesberg, Germany
16 th ECSL Summer Course ESTEC	Noordwijk, The Netherlands
International Space University, Summer Session Program 2007, Theme Day on Space Debris	Beijing, China
6 th European Space Policy Workshop	Leuven, Belgium
Justus – Liebig – Universität Giessen	Giessen, Germany
Warsaw Space Days	Warsaw, Poland
Séminaire Espace. Ecole de l'air	Salon de Prov., France
Programme de Formation Marco Polo	Vienna, Austria
3 rd International Conference on Recent Advances in Space Technologies. Space for a More Secure World, RAST 2007	Istanbul, Turkey
Ecole Militaire	Paris, France
Space Law Course, University of Vienna	Vienna, Austria
Pugwash/INESAP Event: Space Security – Impact on Nuclear	Vienna, Austria

Event	Location
Disarmament	
European Geosciences Union General Assembly 2007	Vienna, Austria
2 nd Space and Society Conference, ESA, ESTEC	Noordwijk, The Netherlands
NATO Defense College Senior Course, ESRIN	Frascati, Italy
Mariazeller Technologieggespräche	Mariazell, Austria
European Exploration Workshop Edinburgh	Edinburgh, UK
2006	
Colloque Paneurope France	Toulouse, France
Summer School Alpbach	Alpbach, Austria
ISU Summer Session Program 2006	Strasbourg, France
Conference on Collective Security in Space	Paris, France
Regional Workshop: GMES Contribution to Environmental Policy in New EU Member Countries of the Baltic Region	Vilnius, Lithuania
European Geosciences Union, General Assembly 2006	Vienna, Austria
Ambassade de France en Autriche	Vienna, Austria
Mariazeller Technologieggespräche	Mariazell, Austria
2005	
"Space Day Austria, 2005"	Salzburg, Austria
2 nd Roundtable Discussion with Organisations supporting the Stakeholders Consultation, ESTEC	Noordwijk, Niederlande
ESTEC	Noordwijk, Niederlande
Workshop on Intern. Cooperation for Sustainable Space Exploration	Abbazia di Spineto, Italy
USAF Academy	Colorado, USA
CSIS	Washington, USA
U.S. Space Exploration Science Workshop	Maryland, USA
2004	
10 th International EuroDefense Meeting	Baden, Austria
13 th ECSL European Summer Course on Space Law and Policy	Graz, Austria

Source: Monitoring data from ESPI

Table 15 Indicators for measuring the influence of think tanks according to McGann (2007)

Resource indicators	Ability to recruit and retain leading scholars and analysts; the level, quality, and stability of financial support; proximity and access to decision-makers and other policy elites; a staff that has the ability to identify, analyse, and produce timely and incisive analysis; institutional currency and credibility; quality and reliability of networks; and key contacts in the policy and academic communities and the media.
Output indicators	Number and quality of: policy proposals and ideas generated; publications produced (books, journal articles, policy briefs, etc.); news interviews conducted; briefings, conferences and seminars organized; and the number of staff who are nominated to advisory and government posts.
Utilization indicators	Reputation as the “go-to” organization by media and policy elites in Brussels (EC) and Paris (ESA); number of media appearances, web hits, testimony before Congress; briefings, official appointments, consultation by officials or departments/ agencies; books sold; reports distributed; and numbers of attendees at conferences and seminars organized.
Impact indicators	Recommendations considered or adopted by policymakers issue network centrality; advisory role to political parties, candidates, transition teams; awards granted; publication in or citation of publications in academic journals and the media; listserv and website dominance; and success in challenging the conventional wisdom and standard operating procedures of bureaucrats and elected officials.

Source: McGann 2007: 42

Table 16 Project meetings with the awarding authority including external experts.

Date	People present	Purpose
18.1.2012	Andrea Kleinsasser (BMVIT), Ingrid Marboe (University of Vienna), Mario Steyer (BMVIT), Harald Posch (FFG), Ulrike Rohrmeister (BMVIT), Jürgen Streicher (KMFA), Peter Kaufmann (KMFA)	Kick-off
30.3.2012	Andrea Kleinsasser (BMVIT), Harald Posch (FFG), Lydia Feige (BMVIT), Jürgen Streicher (KMFA), Peter Kaufmann (KMFA)	Discussion of interim results
21.6.2012	Andrea Kleinsasser (BMVIT), Harald Posch (FFG), Mario Steyrer (BMVIT), Jürgen Streicher (KMFA), Peter Kaufmann (KMFA)	Presentation and discussion of end results

Table 17 Interview partners (in alphabetical order)

Name	Position, Institution
Allgeier, Herbert	Head, ESPI Advisory Council; Former Director General of the European Commission
	Deputy Head, National and International Relations Unit, Italian Space Agency (ASI), and member of the ESPI General Assembly
Aschbacher, Josef	Head, ESA GMES Space Office, ESA - Earth Observation Directorate, Frascati, Italy
Baumjohann, Wolfgang	Director, Space Research Institute, Austrian Academy of Sciences, Graz
Chenet, Joel	Senior Vice President, Institutional & Business Development, Thales Alenia Space; member of the ESPI General Assembly
Dickow, Marcel	Researcher, Armaments and Technology, Research Division International Security, German Institute for International and Security Affairs (SWP)
Ehrenfreund, Pascale	Professor, Space Policy Institute at George Washington University's Elliott School of International Affairs
Frischauf, Norbert	Secretary and project manager, Austrian Space Forum
Feuerbacher, Berndt	President, International Astronautical Federation (IAF); Former Director of the Institute of Space Simulation, German Aerospace Center (DLR), Köln, Germany
Grömer, Gernot	President and project manager, Austrian Space Forum
Hertzfeld, Henry R.	Professor, Space Policy Institute at George Washington University's Elliott School of International Affairs
Hoffman, Christian	Founder and Managing Director, Geoville, Innsbruck, Austria
Hulsroj, Peter	Director, European Space Policy Institute (ESPI)
Jankowitsch, Peter	Member of the ESPI Advisory Council; former minister for Foreign Affairs of Austria; current president of the Centre Franco-Autrichien pour le Rapprochement en Europe
Kleinsasser, Andrea	Deputy head, Department of Industrial Technologies and Space Flight (III/I5), Austrian Federal Ministry for Transport, Innovation and Technology (BMVIT)
Koudelka, Otto	Professor and Head, Institute of Communication Networks and Satellite Communications, Technical University Graz, Austria
Kowatsch, Max	Managing Director, RUAG Space GmbH, Austria
Lentsch, Aron	Founder and Managing Director, Orbspace Engineering, Austria
Lukaszczyk, Agnieszka	European Programme Manager, Secure World Foundation (SWF), Brussels, Belgium
Logsdon, John M.	Professor Emeritus, Space Policy Institute at George Washington University's Elliott School of International Affairs; Former Director of the Space Policy Institute

Name	Position, Institution
Marboe, Irmgard	Professor, Department of European, International and Comparative Law at the Law Faculty of the University of Vienna; National Point of Contact (NPOC) Austria of the European Center for Space Law (ECSL)
Masson-Zwaan, Tanja	Director, International Institute of Air and Space Law at Leiden University, The Netherlands; President, International Institute of Space Law (IISL)
Othman, Mazlan Binti	Director, United Nations Office for Outer Space Affairs in Vienna
Posch, Harald	Head, Aeronautics and Space Agency (ALR) of the Austrian Research Promotion Agency (FFG), and chair of the ESPI General Assembly
Schreier, Gunter	Deputy Director, Business Development & GMES, German Aerospace Center (DLR), Oberpfaffenhofen, Germany
Schrogl, Kai-Uwe	Head, Policies Department, European Space Agency (ESA), Paris, France; Former Director of the European Space Policy Institute (ESPI)
Steiner, Hans-Martin	Head of Unit, Siemens Austria, Communications, Media and Technology, Business Line Space
Vena, Andrea	Head of Corporate Strategic Planning Office, Directorate of ESA Policies, Planning and Control
Venet, Christophe	Research Associate, Space Policy Programme, Institut Français des Relations Internationales (IFRI)
Wagner, Wolfgang	Professor, Institute of Photogrammetry and Remote Sensing, TU Wien, Austria
Worms, Jean-Claude	Head, Physical, Engineering & Space Sciences Unit, European Science Foundation (ESF); Executive Scientific Secretary of the European Space Sciences Committee (ESSC), Strasbourg, France
Würz, Wolfgang	Treasurer, European Space Policy Institute (ESPI)

Acronyms

AC – Advisory Council

ALR/FFG - Aeronautics and Space Agency (ALR) of the Austrian Research Promotion Agency (FFG), an agency of the Austrian Federal Ministry for Transport, Innovation and Technology (BMVIT)

ASI - Agenzia Spaziale Italiana (Italian Space Agency)

AWP - Annual Work Plan

CEE - Central and Eastern Europe

CEO - Chief Executive Officer

CFO - Chief Financial Officer

CNES - Centre National d'Etudes Spatiales (French Space Agency)

DLR - Deutsches Zentrum für Luft- und Raumfahrt (German Aerospace Center)

EC - European Commission; EP – European Parliament

ECSL - European Centre for Space Law

EISC - European Interparliamentary Space Conference)

ESA - European Space Agency

ESPI - European Space Policy Institute

ESPRAN - European Space Policy and Academic Network

ESSC - European Space Sciences Committee

EU - European Union

GA - General Assembly

GALILEO - Galileo is Europe's own global navigation satellite system

GMES – Global Monitoring for the Environment and Security

IAA - International Academy of Astronautics

IAP - Integrated Applications Promotion (IAP) Ambassador Platform for Central and Eastern European region

IISL - International Institute of Space Law

JAXA - Japan Aerospace Exploration Agency

NASA - National Aeronautics and Space Administration (U.S.)

NPOC Austria - National Point of Contact for Space Law Austria

NSC - The Norwegian Space Centre

OECD - Organisation for Economic Co-operation and Development

SES - Société Européenne des Satellites

SGAC - Space Generation Advisory Council

SPI – Space Policy Institute, Washington D.C.

SWF - Secure World Foundation

UK - United Kingdom

UNCOPUS - United Nations Committee on the Peaceful Uses of Outer Space

UNECOSOC - United Nations Economic and Social Council

UNOOSA - United Nations Office for Outer Space Affairs

WIA - Women in Aerospace

ZVR – Zentrales Vereinsregister

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