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**COMMISSION STAFF WORKING PAPER**  
**GREEN PAPER ON EUROPEAN SPACE POLICY:**  
**REPORT ON THE CONSULTATION PROCESS**

**Information Document to the Joint Task Force**  
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*Prepared by the Joint Task Force Secretariat*

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## 1. INTRODUCTION

In its Resolution entitled “Europe and Space” of 17 January 2002, the European Parliament requested the European Commission to produce a White Paper on space “setting out the main objectives of the policy to be implemented in the medium and long term.”<sup>2</sup>

In consequence and as a step towards the White Paper, the European Commission, in cooperation with ESA, elaborated a Green Paper on Space Policy, which was adopted by the Commission<sup>3</sup> on 21 January 2003. The objective of this document was to stimulate a European-wide debate on the issue and launch a process meant to gather inputs from all relevant actors in Europe.

The consultation process following the publication of the Green Paper has been organised by the EC/ESA Joint Task Force. The present document is an EC/ESA joint report on the consultations, to be presented to the Joint Task Force. This report will lead the way to the White Paper (including an action plan), to be elaborated by the European Commission in cooperation with ESA. Encouragement to this has been given by the Council of the EU on May 13 and the ESA Ministerial Council on May 27.

The purpose of the present document is to give a first summary report on the Green Paper consultation process, focussing on the workshops of the targeted consultation which have taken place from March through June 2003.

## 2. THE CONSULTATION ACTIVITY

Three methods have been used to collect the inputs during the consultation process: an open web-consultation of European citizens, the targeted workshop consultation, and the way of written input received from various actors of the space domain.

The open web-consultation has received around 200 contributions and offered an excellent opportunity for a lively debate.

The opening conference in Brussels on 6 March was followed by a series of five consultation workshops, taking the debate to member states’ capitals (Madrid, Berlin, Rome, London and Prague). The Greek Presidency of the European Union also convened a special workshop in Athens for 8/9th May, which concentrated on a discussion of security matters.

In addition, Austria, Italy and Portugal each held national meetings, supported by the European Commission and the European Space Agency, for discussion of the Green Paper, and a review of the national implications. The United Kingdom Industrial Space Committee made a presentation of its views on the Green Paper to the Commission, while the Belgian authorities have both organised a national review of space-based defence systems, and passed a Resolution on the Green Paper following discussion in the national Senate.

The targeted consultation finished with a closing conference in Paris on 23-24 June, at which reports from the whole series of workshops were presented and considered.

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<sup>2</sup> P5\_TA(2002)0015.

<sup>3</sup> COM(2003)17 final, [http://europa.eu.int/comm/space/doc\\_pdf/space-green-paper\\_en.pdf](http://europa.eu.int/comm/space/doc_pdf/space-green-paper_en.pdf).

Other European institutions (i.e. the European Economic and Social Committee and the European Parliament) have been consulted during the Green paper consultation process and their position has been presented to the Commission services.

More than 70 written contributions have been received, including from industry, ESA/EU member states, associations and individual persons.

### **3. OPENING CONFERENCE (BRUSSELS, 6<sup>TH</sup> MARCH, 2003)**

The Brussels conference served as the ‘kick-off’ meeting to initiate the consultation process and permitted a first exchange of views, which underlined the will for a stronger political vision for an increasingly ambitious space policy in Europe.

Main highlights of the discussion were:

- For the institutional framework in which space activities could be placed, vice-president DEHAENE of the Presidium of the European Convention presented the possibility of space as a competence in the future Treaty for the European Union.
- Notwithstanding the interest of satellite applications programmes, the basic role of space science was strongly underlined, as a driver for technological innovation and the initiation of applications. Specific guidelines are needed for co-operation, for co-ordination of and within national programmes, and for strengthening the scientific community.
- The concept of a ‘flagship’ programme to stimulate interest in space technology was discussed as a possibility to generate public interest and to stimulate interest of younger generations.
- Discussions of applications and technology programmes gave rise to a broad exchange of views on the concept of ‘multiple-use’ technologies. This concept deserves in-depth discussion, particularly in examining the use of satellite systems to increase the overall security of Europe and its citizens.

### **4. MADRID WORKSHOP: *THE INDUSTRIAL VIEW* (25<sup>TH</sup> MARCH, 2003)**

The Madrid meeting provided the opportunity for an extended discussion of the current situation of the European space industry, covering not only satellites and launchers, but also system operators, ground segment interests and representatives of the insurance market. Highlights brought out during the meeting were:

- While the current arrangements for ESA and the use of existing structures received praise from industry, industry also welcomes and calls for a greater involvement of the European Union in space activities, notably as a provider of regulatory frameworks and additional funding.
- There is a need for a substantially widened institutional market, which fully recognises the potential of space systems to address policy objectives (monitoring of climate change, environmental damage, monitoring for treaty implementation, crisis monitoring, security, navigation, science). Should European and national institutions become convinced that space systems help in addressing policy objectives and could

harmonise their programmes and requirements, the market potential would be substantially increased.

- ESA should continue to be the focus for funding the key activities of a space policy. The ESA current financial scheme (variable geometry, geographical return), with additional resources from the EU to serve European policies, seems to be adequate.
- A key element for Europe is to have available, reliable and affordable access to space; independent access is seen as mandatory. (Support in this direction has since been given strongly by the ESA Council at Ministerial level in May 2003.)
- The workshop noted that international co-operation remains attractive in numerous areas and is not per se incompatible with the objective of European autonomy. A particular example of such co-operation, the International Space Station (ISS), was underlined as first and foremost a political project, from which Europe cannot be absent, which constitutes a long-term investment for the benefit of future generations.
- A similar emphasis to that of the Brussels conference was made on the interest to the public – and by extension to young engineers – of new European ambitious programmes (cf. ‘flagship programmes’)<sup>4</sup>. A further common theme from the two workshops is the major role to be played by the EC in ensuring harmonised and well-founded regulations across Europe.
- Regarding multiple use systems, the need for greater recognition of space tools in the framework of an EU security and defence policy was underlined. This was accompanied by support for the introduction of ‘space’ into the present draft Treaty discussed by the European Convention.
- Finally, at a time when part of the European space industry is looking to restructure, participants at the workshop stressed that without a sufficiently ambitious political and financial commitment, this restructuring will not lead to a stronger industrial base. New vocations and competences cannot be expected without the underpinning of a long-term programme supported by a solid political and financial commitment.

## **5. BERLIN WORKSHOP: THE VIEW OF THE SCIENTIFIC COMMUNITY (8<sup>TH</sup> APRIL, 2003)**

This meeting concentrated on the European space science community, and in particular underlined the underestimated contribution that it makes to the overall activity, not least in making available key technology developments to the applications programmes.

Main highlights:

- Space sciences must be an integral part of any European space policy.
- A plea was made to stop the trend to significantly reduce the funds for European space science research. Recognition was given to the ESA Science Programme as of

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<sup>4</sup> The high level of public interest in the press and television coverage of the launch of ESA’s Mars Express satellite and its Beagle 2 lander in early June showed the continuing stimulus of space activities when associated with tangible goals such as the exploration of Mars.

top world quality, using only modest resources. For Earth Observation, a proposal was made to develop a mandatory programme (Earth Explorer missions) with a level of resources based on GNP contribution scales. The scientific role of the overall 'Global Monitoring for Environmental Security' (GMES) programme was stressed, as was the synergy between the research and development of scientific and security requirements.

- A problem common to scientific and applications programmes surfaced at this workshop: the exploitation of data. The need for a data policy harmonised at European level was underlined, with a role identified for the European Commission in support of a powerful data processing system to support for example climate forecasts and global change. This was associated with a call for sustainable funding and a long-term continuity of observing systems, information availability, fast data delivery and cost-effectiveness. In general, space sciences were underlined as a major element for building a knowledge based society.
- Discussion of the International Space Station underlined the scientific excellence of the ISS for microgravity activities, with access of European researchers to work in the fields of life and physical sciences. ISS should be exploited also for Earth observation and human spaceflight activities. Not least was the role of ESA's European Astronaut Corps as ambassadors of a European identity.
- The political and strategic need for Europe to maintain and develop its own means of access to space was stressed, with the provision that additional costs linked to this need should not reduce the existing science budget. The need for engineering excellence (cf 'reliability') of the launch infrastructure for a successful space science programme was underlined.
- The Aurora programme, which prepares for ensuring the future for next generation (science, exploration and human presence), was seen as an initiative to be welcomed, one concept on which ESA and the European Union can build a European role in space in the medium to long term.
- No merging of diverse institutions into centralized bodies (preserve a healthy « biodiversity » among the existing institutions). Maintain ESA as an independent institution for science working in close relationship with the European Union. A more coherent co-ordination throughout disciplines should be developed (EIROForum is an example to be exploited), as part of the ERA strategy.

Finally, the role of the European Union to contribute to horizontal and infrastructure activities was stressed with a number of fields identified for consideration: an independent data systems network, ISS utilisation, critical technologies for payloads, development of future nuclear and electric propulsion systems (critical for interplanetary missions), data analysis and archiving.

## **6. ROME –THE INSTITUTIONAL VISION (28<sup>TH</sup> APRIL)**

The workshop in Rome aimed at registering the views and reactions of the ESA/EU Member States (that is national administrations and other public institutions). The discussions provided i.a. the following inputs:

- *Access to space*: The need for independent access to space and the role of ESA’s new EGAS (European Guaranteed Access to Space) programme were again confirmed.
- *Science*: The role of science (including research on the ISS) as the enabler (understanding and invention) for future applications and commercial activities was developed. A doubling of the science budget, without prejudice to other space programme funding, was requested.
- *Industry*: The dramatic situation in which the European space industry currently finds itself was again stressed. In order to remedy the situation and to ensure at least “a level playing field” with respect to the US, a doubling of the total yearly available institutional market was requested as a medium to long-term goal.
- *Knowledge Society, Sustainable Development, Security*: It was emphasised that the applications area is at the core of the present discussion, whilst the role of space as an important tool for the implementation of key Union policies and objectives was confirmed.
- Space policy should be guided and discussed at the highest political level.
- The European Parliament has taken a major interest in the European Space policy, both prior to and during the Green paper activity; in particular, it has concerned itself with the impact of space technologies on the European citizen. The contribution of Parliament to the dossier is a welcome and important addition.
- ESA (institutionally outside the EU framework) has proved capable of giving Europe a world-class space “acquis” that must be maintained in the future. Discussions on its future role and its relationship to Union Institutions should ensure that strengths are reinforced and organisational changes made only when called for. ESA should become the space agency of the Union (Europe) - in a first step through a framework agreement, and with a possible further rapprochement to be defined.

## **7. LONDON – OPERATORS, SERVICE PROVIDERS (20<sup>TH</sup> MAY)**

The space applications workshop held in London assembled representatives of satellite operators, service providers, users, industry, SMEs, national space agencies and universities. The wide-ranging discussions highlighted the following points:

### **General**

- Space Applications are key components of a Space Policy. They are market driven, therefore should ultimately be financed by end users, achieving optimal use and leverage of public funding. Earth Observation applications which are dominated by the public sector as user as well as regulator, are only partially driven by the commercial market.
- Applications bring concrete benefits to professionals and customers in their daily activities: taxpayers and their political representatives can see a concrete return from public funding invested in space activities.

### **Satellite Communications**

- Satellite Communications provide 50% of all European space hardware industry revenues, and are the most efficient lever to revive and fund upstream players (satellite and launch manufacturers). They have an unrivalled ability for bridging the “digital divide” in Europe, as a complement to terrestrial networks, thereby addressing the more than 20% of the population left out of the Information Society. They should become a ‘Third element’ of joint ESA/EU space applications activities, alongside earth observation and navigation systems
- Fixed or mobile access through satellite to High-Speed Internet and essential Broadband Services on a universal basis must be included in any European Space Policy.
- It is recommended to establish immediately a forum at European level to co-ordinate and federate the players concerned with the definition, development, operation and utilisation of a satellite communications broadband infrastructure.
- Despite progress over the past decade in several regulatory areas at CEPT, EU and national levels, the satellite industry continues to face multiple, often inconsistent, regimes. Common regulatory conditions are essential:
  - Harmonized and streamlined licensing procedures throughout the Union.
  - Harmonized Spectrum Allocation enabling free circulation of User Terminals and the exemption from licensing for Satellite Earth Stations and User Terminals.
  - Fair access to frequencies for satellite operators and exclusive frequency bands for ‘point to point’ satellite systems in Europe.
  - Acceptance of market access principles for satellite services in the Member States of the enlarged Union and in third countries.

## **Earth Observation**

- The establishment of a robust European Earth monitoring capability is of strategic importance for Europe, in particular for the implementation of policies bearing on such issues as management of renewable resources and security.
- There is a clear need for a co-ordinated approach aiming at the creation of an operational structure for data gathering , data handling, information production and dissemination.
- The demand for Earth Observation data is essentially public. There is a need to federate and organise at the European level the public demand for longer term commitments, and identify appropriate funding instruments.
- A significant catalyst for the exploitation of satellite remote sensing will come from applications in the Security/Defence fields. The Global Monitoring for Environmental Security (GMES) programme should act as a catalyst and demonstration of how space can address European strategic aims.
- There is a need to create an organisation, or network of organisations, to deal specifically with space imagery, integration and dissemination of geo-spatial

information, taking into account the existing structures. An overall architecture including data collection and information dissemination should be defined.

### **Satellite Navigation, Positioning and Timing**

- Satellite navigation is also a key dual-use technology having numerous applications and generating indirect returns far exceeding investment costs.
- A strong international cooperation is essential as in COSPAS/SARSAT. Users need the European GALILEO system to be interoperable and compatible with other systems. They want GPS and GALILEO (plus Glonass) in order to have at their disposal larger constellations that are inherently more reliable and provide more accurate navigation solutions in difficult environments.
- Safety issues should be managed and financed by each area of applications (air, rail, maritime...), since each application area has its own standards for precision and integrity and possible augmentations.
- Coupling navigation, positioning and timing with mobile/satcoms creates potential for commercial opportunities.

### **8. PRAGUE – THE INTERNATIONAL CONTEXT 2<sup>ND</sup> AND 3<sup>RD</sup> JUNE)**

Located in Prague, the workshop was designed to bring out some of the international aspects of a European space policy. Particular points that were emphasised are:

- Europe must combine autonomy in strategic areas with co-operation in others. Where it collaborates, Europe must be a strong partner.
- Satellite technologies correctly and imaginatively exploited in pursuit of identified policy objectives can play a major role in the incorporation of the most far-flung corners of the Community.
- The need for strategic objectives for international cooperation (as well as for *all* relevant partners, i.e EU, ESA, other organisations in the space field such as Eumetsat, European States, users and industry).
- The new EU Member States have a strong interest in involvement as soon as possible in European space activities. This may go all the way from participation in individual programmes such as GALILEO and GMES, to associate status in ESA.
- Russia and the Ukraine have both indicated a willingness to enter into long-term strategic partnerships with Europe in key areas such as human space-flight, launchers, and applications such as navigation and global monitoring.
- The „Wider Europe“ initiative of the European Union, endorsed 2003 by the European Council in Thessaloniki, offers scope for the use of space technology in supporting Eastern and Southern neighbours of the EU as well as Europe’s Overseas Countries and Territories in their development.
- The co-operation between the EU and the Mediterranean countries is based on the Barcelona process, and implemented through the MEDA programmes. These

countries may expect to be the prime beneficiaries of an outward looking space programme making use of satellite technology.

The scope of the workshop concentrated on the pan-European context (international partners such as USA and Japan were not specifically targeted to give contributions to this European debate at this stage).

## **9. CLOSING CONFERENCE, PARIS 23-24 JUNE 2003**

The conference was constituted by six panels and by seven speeches. More than 400 representatives from government, industry, research and civil society were present to the conference.

Mrs. Pascale Sourisse, president of Eurospace, presented the first panel related to the industrial view. Space cannot be considered as a strictly commercial sector. The institutional aspect of space is fundamental. Due to the severe crisis in the European space industry, there is a real danger that very high level of technologies and skills that Europe acquired cannot be maintained. The efforts towards the definition of a reinforced European Space Policy are therefore of critical importance.

Professor Roger Bonnet presented the Panel 2 related to the Berlin workshop on the view of the scientific community. The indisputable success of ESA sciences programmes has been underlined. A strong regret related to the too small emphasis on science in the Green Paper has also been underlined. The scientific community has claimed the right to be recognised. They regret the lack of political vision, of coherent ambition, and the immature coordination between ESA and EU. The starvation of science budgets cannot be the option. An increase of a factor two might be adequate, both at ESA and national levels, for all branches. The Science community insists on ESA's essential role, and ESA must be maintained as an independent institution in close association with the EU. ESA is essential for sciences.

EU should have a political role in defining European policies. EC has to compensate for the present deficit of resources, to use its institutional rules where ESA is not competent, and to participate in ESA delegate bodies much like an associated Member State. EC must organise itself more efficiently between its various directorates in view of GMES, and should support ISS utilisation through FP6.

Former Swedish Prime Minister Carl Bildt presented the Panel 3 related to the Rome workshop on ESA/EU Member States. Key points from Rome were that the messages coming out of the consultation must be radical and seize the momentum of current developments. Without institutional demand there will be no independent access to space. But independence of information should also be created. European Space Policy should be guided from the highest political level (European Council) and ESA should act as the EU's de facto space agency. The European Parliament should have a review function also on space policy. Mr Bildt also recalled the main points related to space in the EU draft Constitutional Treaty. He posed three main items for discussion: how could ESA become the space agency for the EU, how should EU funding be organised to support the policy goals, and how should a comprehensive European Space Programme be run.

Mr. Giuliano Berretta, president of the European Satellite Operators Association (ESOA) presented the Panel 4 related to space applications. Space applications are key components of the space policy. Applications bring concrete benefits to professionals and consumers in their

daily activities. Taxpayers and political representatives can see a solid return on their contributions. Unlike many other space programmes, space applications address many user communities. The needs of all communities should be taken into account in the future space programme.

Sectorial recommendations have been made in the field of satellite communications, Earth observation, and positioning, navigation & timing. The future European Space Strategy should rest on three pillars: EGNOS and GALILEO for navigation, GMES for Earth observation, and a new SATCOM programme.

Mr. Reinhard Loosch, former Department Head at the German Federal Ministry for Research, presented the Panel 5 on EU accessing states and international cooperation aspects. First, the inherent international dimension of space activities has been underlined. There is a need for a coherent European Space Policy that sets strategic objectives and priorities, defining areas where Europe must attain autonomy and where Europe should accept a higher degree of /inter-/dependence through international cooperation. Coordination among all European actors is needed for a coherent approach to space. Europe should speak with one voice on the international scene, including in UN bodies. In the field of human spaceflight, Europe should forge a strategic cooperation with other space powers. Some instruments have been defined: ESA's PECS programme, EU Framework Programmes for RTD, and agreements between EU and third countries. Major recommendations have been addressed:

- European Space policy must provide for securing financing, covering the development and operations of a European infrastructure as well as applications, including science, in space and on Earth.
- European Space policy can build on existing structures of EU, ESA and other European institutions.
- European coordination should be improved, not only between EU and ESA, (and between them and European governments), but also between public institutions and industry and the scientific community.

Lieutenant-Colonel Alexandros Kolovos presented the Panel 6 on the security dimension, a special workshop organised by the Greek Presidency of the EU. The EU Space Policy should include the security dimension, taking into account the complete spectrum of security related activities. This security dimension of the EU space policy needs governmental programmes and efficient bodies.

The EU needs to consider space-based capabilities in the following fields:

- Global monitoring,
- Global reconnaissance, monitoring and surveillance including image intelligence and electro-magnetic signals analysis,
- Meteorology and oceanography,
- Telecommunications,
- Intelligence information and verification,
- Global command, control, communications and information,

- Global positioning, navigation and timing,
- Mapping,
- Space Surveillance,
- Early warning and distant detection,
- Search and rescue,
- Independent access to space is a prerequisite.

Bodies and agencies have to evolve and different schemes are possible. The first option is to transform the existing ones (EU Satellite Centre, ESA, ...). The second is to create new ones. A third is to use complementarities between EU agencies and national agencies.

The 24 June, Jack Metthey, Director for space and transport of the Commission DG RTD, introduced the following speakers:

Mr. Bodrato, European Parliament, recalled that the EC has been asked to define a European space policy. ESA should not be decreased, but EU has competence that ESA does not have. ESA is already de facto the EU agency. The fair return ESA rule should be redefined. The article 150 of the European Convention project gives EU competence in space but not an exclusive one. The article 207 of the Part III concerning the European Armaments Agency is also very important.

S. Buffetaut, Economic and Social Committee, explained that three kinds of financing schemes are possible for future space activities: a European programme, a reinforced cooperation, and the actual system.

Dr Diehl, the German representative of Minister E. Bulmahn, presented some views. The priority is a coherent European space policy. Roles between institutions have to be redefined. EU could play an important role concerning infrastructure. ESA manages perfectly space science.

DG A. Rodotà explained that he was in favour of the inclusion of space in the European Convention. He regretted only that space was assimilated with technological research and development. He also explained the ESA concept of the fair return as a very flexible rule.

ESA's future DG J.J. Dordain wanted to underline that in his speech there was lesser focus on institutions. Space is a question of programmes and not of institutions. He only explained that ESA was able to federate the tender, and EU the demand. A distinction has also to be done between respective budgets and interests.

Concluding addresses were made by Mrs. Claudie Haigneré, French Minister for Research and New Technologies, Mrs. Letizia Moratti, Italian Minister for Education, University and Research, and Mr. Philippe Busquin, European Commissioner for Research.

Mrs. C. Haigneré asked for a financial evolution and a doze of geographical return rules. She underlined the importance of the inclusion of space in the European Convention. EU has the political and societal legitimacy for initiatives in the space field. Some important reform has to be made. She notably asked for a (comprehensive) European Space programme and an EU budgetary line for space to be available in 2007.

Mrs. Moratti notably underlined the knowledge and competence patrimony of ESA.

Mr. Busquin stated that the White Paper would be elaborated in close cooperation with ESA. He made references to the Convention and the shared competence, to explain that a European Space Programme was a necessity. He concluded with mentioning the intention of the Commission to organise an international conference on space in November 2003 in Italy.

## **10. ACTIVITIES AFTER THE WORKSHOP SEQUENCE**

As noted above, the Workshop sequence ended in the second half of June. The following series of activities are expected:

- The preparation of the present joint summary report on the whole consultation. This joint report is produced by the Commission/ESA Joint Task Force.
- The Commission will have to present to the Council of the Union and to the European Parliament an action plan (White Paper) elaborated in cooperation with ESA, as underlined by both the EU and ESA ministerial Councils in May 2003. This will acknowledge the contributions that have been received, and include proposals for the content, organisation and level of future European activities in space. This would be prepared for approval by the Commission in October, with consequent submission to the Council and Parliament.
- For discussion with the EU Council, an opportunity has already been foreseen at the Competitiveness Council currently planned by the Italian Presidency in November.