

## SPACE STRATEGY FOR EUROPE

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### ABSTRACT

The range of space technology applications has been increasing since the years following the end of the Cold War in a context marked by an unprecedented global expansion of the Information Society. Industry has adapted to this change, particularly in the United States and more recently in Europe. Furthermore, space systems themselves, due to developments in their characteristics, have accelerated the phenomenon of internationalisation: GNSS constellations are systems with global cover, future multimedia satellite systems aim to have world-wide cover. Finally, the many problems to which space technology is addressed in order to meet the needs of an international society are complex: climatic change, environment, major risks, etc. Space transport of the future, reusable systems eventually, will no doubt demand co-ordinated efforts on an international level for it to be mastered. When it comes to those to-day key fields of high technology and industrial innovation, the question again arises, like it used to twenty five years ago for the Ariane launcher: is Europe in a position to set itself up as a second source in the world ?

Faced with these questions, it is obvious that "national" resources are for the most part inadequate – especially in the liberal economic and political environment that we have in Europe. Over the last 10 years, France has been a relative exception, most European countries undertaking space research having been forced to reduce their "national" programme to a paltry amount merely maintaining a decent level of contributions to intergovernmental efforts within the ESA (most Member States now

devote 80 to 100% of their public resources to ESA programmes) and have had to renounce a genuinely national programme.

We are forced to recognise that faced with the double challenge of an increasing use of space system resources in new fields, and the rise in power of a somehow unique source in the world, Europe has no alternative but to try and combine national, inter-State and multilateral efforts – doing away with duplication, spreading themselves too thinly or double in order to favour a clearer synergy. Incidentally isn't such a path followed to a certain extent but increasingly so in fields such as aeronautics, GNSS, global change ? In order to have the multiplier played to full effect, it supposes that a suitable minimum policy guidance, centring and co-ordination is provided at European level ( new programs for the Information society, Environment). Such has been the case for the Galileo programme. It is now a matter of transforming this test and extending it bit by bit, through deciding on future new generation programmes which need to be kicked off more players.

With time, the European Union, could play a *de facto sine de jure* "touchstone" role in the europeanisation of future application space programmes (support, or otherwise, with or without financial investment), thus defining a european doctrine for the **world-wide** context.

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The European Union (EU) Council of ministers adopted in december 1999 a Resolution (1999/C 375/01 of december 2, 1999) framing a joint exercise ESA-EC to be completed by the end of the year 2000 aiming at drafting space strategy guidelines for Europe. Some figures concerning the ratios of public funding at various level including EU will first be quoted as indications from where we start, and of future possible impact of actors on the scene.

## I

Considerations based on the broader experience of financing R&D activities in Europe seem to be in favour of an approach providing combination of public resources at different levels. This belief is demonstrated in the observations given in the ETAN (European Technical Assessment Network) Report of July 1998 relating to the internationalisation of research and technology :

“With the rising research costs in many areas it is obvious that international co-ordination and collaboration represent in many areas a more efficient way of reaping the potential benefits of both national and world research efforts”.

These considerations offer a useful insight. **The ratio of Community financing related to budget appropriations for R&D from Member States of the European Union currently stands at around 4 to 4.5%.** It is considered as not marginal, sometimes “strategic”. Note anyway that, in 1985, this figure was just 1.5%. Hence, we might say that we have here a creeping and growing impact. In France alone, the ratio is slightly higher if you take into account the BCRD. If you look at DIRD<sup>1</sup>, the proportion is naturally lower ( 2.5%). But the effect is comparable in general terms. The Ministries

<sup>1</sup> Trans.: DIRD - Dépense intérieure de recherche et développement – French domestic expenditure on research and development

for research keep more than an eye on the orientation and use of these budgets. You may then wonder whether the same trend would affect a heavily industrialised high-tech field – space - which until recent years, and quite successfully, was the almost exclusive privilege of national or intergovernmental space agencies...

As the domain involves space technology applications, one should point out that contributions from the Community are currently limited to a maximum of 100 Million euros (average) per year (Commission datas) which are roughly 2% of european budgets (national +ESA=5000 Me in 1999) or 5% of ESA only budget (2300 Me). If we consider consolidated figures and for one single year, we have the available reference of 1998 with datas released by the EUROSPACE group: for 1998 they quote 17 Me, i.e. 1% of ESA budget, or 2,7% of “national” envelopes.

With the developments in space policies, more market-oriented, and with the Community’s increased awareness of newly developed space system resources (satellite navigation, major risks, etc.), Community financing should though rise - from the current 1 or 2% (5% of the budget of the intergovernmental space agency, ESA) to a possible 5% or more of the public space budget including national envelopes, in other words approaching the figure given above regarding the impact of EU expenditure on the fifteen member states’ R&D budget appropriations.

In time, it is not unthinkable that these resources (300 / 600 Me per year ?) – which constitute appropriations for new starts – could also, even in a country like France major investor in space, represent a non negligible ratio of the “national” budget (national program of CNES which amounts to 725 Me in 1999) or Member state’s contribution to the ESA ( 667 Me for France).

It therefore seems plausible to consider this field to be fully developing in terms of the mechanisms and procedures used to ensure a **co-ordination of national, intergovernmental and multilateral levels of public intervention**, in order to avoid inconsistencies or doubles, providing coherent support to the existing agencies, and lastly favouring co-operation which can change accordingly.

In this respect, the belief is that there is an unprecedented opportunity to determine a new space policy line for Europe. It is the meaning of the EU council of Ministers Resolution adopted in Brussels on december 2th 1999, advocating for more synergy between the EU and ESA and creating a joint group for elaborating strategy guidelines which should be assessed at the end of the year 2000 both by the ESA Council and the EU Council.

## II

Starting in january 2000, the Commission together with ESA executive has explored policy questions as "findings" to craft a tentative common approach of a european strategy for space. The work actually took place along the first six months of the year, with advice requested from member states. Official consultations have gathered in the frame of the Space Advisory Group (SAG), an ad hoc group of member states to advise the Commission on space matters, member states, the Council Secretariat, WEU representative, ESA executive, the chair being hold by the Commission (the "coordinator for space", present director general of JRC). The main orientations of these "findings" can be described as following five directions:

1. There is a consensus that Europe needs to do MORE, to preserve and enhance its space capabilities in science, launchers and applications. Reinforcement of the space industry is necessary through long term planning and public commitment, though future satellite applications projects are to be pursued, as far as possible, through public/private partnerships (PPP). It will require enhanced R&D co-operation in Europe.
2. There is a need to widen the debate on Space beyond the historical stakeholders. Today EU policies play a promising role in the activities related to space-based communications, information systems and services. To secure Europe's presence on the global scene, those policies should be more taken into account. The Commission, in the respect of the principle of open coordination, might take active roles, such as negociator and regulator for commercial systems/services through radiocom & telecom satellites; initiator for the global navigation Galileo program and political leader of the further development scenario with ESA, national agencies and industry; animator for an initiative that will result in the definition of a comprehensive system of monitoring for earth observation, climate, environmental risks, that would respond to Europe's needs in terms of global capability.
3. In the context of a "European Research Area", concept defined by the Commissioner Research to address new R&D issues at stake in the years to come, a partnership is to be built, gathering the Commision ESA and other partners (Eumetsat, WEU, national space centres, industries), for a network on Global Monitoring for Environment and Security (GMES). This network able to bring together customers for space-based information would become an organisational pillar for a later GMES project.

4.  
With a view to prepare the creation of more institutionalised links in between ESA and the EU, as well as to involve Council and European Parliament, the Commission could prepare an annual report on space activities together with ESA. Such a monitoring mechanism would give member states and members of Parliament a coherent view of space activities all over Europe and would also illustrate the willingness to keep on going in the way of "common approach". Establishment of working relations, besides the annual report, between the EU, ESA and the network of space centres (joint team), political support to the main policy lines (science, launchers, earth observation) will be together with the backing of the Galileo program and the kick-off of the GMES

initiative, the core elements of the European Strategy for Space.

## CONCLUSION

While confirming ESA's operational and programmatic activities as space agency for the member states, member states - both at the level of the EU council and ESA council - could eventually in terms of principal recommendation enable ESA, together with the network of space centres, to work effectively on a regular basis in partnership with EU. Such co-operation would greatly benefit space policy as a whole, Galileo as well as GMES later on, and would be in line with objectives of creating a competitive European research area for the development of cutting-edge R&D., then paving the way for a balanced international co-operation.