EUROSPACE FP9 POSITION PAPER (EXSUM)

"Europe needs to maintain and further strengthen its world-class capacity to conceive, develop, launch, operate and exploit space systems. To ensure this, the Commission will support the competitiveness of the whole supply chain and actors from industry to research organisations. It will also foster the emergence of an entrepreneurial ecosystem, opening up new sources of financing, creating new business opportunities, and making sure this will benefit businesses in all Member States."

Space Strategy for Europe

"Research, development and innovation not only are key elements of space industrial competitiveness, but also essential ingredients of a sustainable economic growth, be it in the short run as in the long run, with effects on the ability of the European Union to remain competitive in an increasingly globalised economy"

Communication of the EC on EU space Industrial Policy - Releasing the potential for economic growth in the space sector, February 2013 - COM(2013) 108 final

EUROSPACE RECOMMENDATIONS FOR FP9

With the relatively limited funding available for space technology development in Europe, the matter of its effectiveness is absolutely crucial. Developments should be appropriately targeted and correctly performed, avoiding unnecessary duplications whenever possible.

It is absolutely essential that more efforts in coordination be undertaken to clarify the understanding of needs and issues and ensure maximum effectiveness of public and private investments in space technology with the establishment of focused initiatives - such as the Strategic Research Clusters (SRC) approach or Joint Technology Initiatives (JTIs) - with well identified objectives and leaving appropriate room for industry involvement in the definition of development plans. These efforts shall also provide for synergetic developments and continuity with opportunity driven (bottom-up) research activities.

FP9-Space shall support the space sector in addressing medium to long-term challenges in an evolving geopolitical and market environment. A budget envelope for FP9-Space in the order of 2 Billion Euro, of which 1.5 for space (upstream) RDT&I[1], and 0.5 for market development, outreach and other actions should be made available to this end.

FP9-Space shall focus on: technology readiness for institutional/EU programmes and international cooperation; autonomy and non-dependence for critical technologies, building blocks and access to space; competitiveness and innovation for space systems and services; safety and sustainability of operations in the orbital and industrial environments; and promoting the take up of space services, applications and uses of space data.

[1] *RDT&I: Research Development Technology & Innovation*

Key recommendations:

- Ensure the preservation of a dedicated Space line in FP9 to address the unique challenges of space technology development.
- Establish a global vision for FP9-Space with the involvement of all stakeholders, public and private, large and small.
- Ensure the appropriate involvement of all technology stakeholders, suppliers, promoters and users of space technology alike;
- Address all areas of space RDT&I needs, from competitiveness support at components, equipment and system level, for market driven activities, for EU institutional programmes and for the take up of space services and the exploitation of space data, with appropriate instruments, tools and budgets.
- Organise FP9 to support the appropriate identification of RDT&I needs and suitable coordination and implementation mechanisms for different RDT&I strands (see the 4 Pillars organisation in the Programmatic overview)
- Support the emergence of a JTI for Space, providing opportunities for larger and more ambitious projects, and enabling the expression of industry driven priorities for a competitive and sustainable industrial base and supply chain, and add leverage to industry investment for innovation in space components, materials, equipment, software, manufacturing processes for spacecraft, launchers and ground segments. The JTI is expected to enable larger projects

LOOKING AHEAD TO FP9-SPACE

FP9-SPACE GOALS

The objective for industry is that the European space technology policies ensure the on-time availability of needed/advanced technologies - with the appropriate maturity, the required level of non dependence, and at competitive conditions - for risk mitigated implementation in the European (institutional) and global (commercial) programmes.

Europe shall be able to bridge the gap and keep ahead of its competitors. This can only be achieved with appropriate funding effort, and with a stronger and sustainable commitment of all stakeholders under the Industrial leadership to the definition, implementation and coordination of activities.

A dedicated FP9-Space programme, addressing the appropriate areas of space technology development with the appropriate (grant-based) instruments and in coordination with all stakeholders (agencies, industry, research establishments and institutes) is needed to further the achievements of H2020.

FP9-Space shall rely on the convergence of existing coordination schemes, and shall enhance them with an industry driven Research and innovation Action Plan (RIAP) for implementation in a Joint technology Initiative (JTI). This situation would allow technology suppliers, promoters and users to maximise the impact of developments, each being able to contribute to the definition of programme priorities, within their specific areas of responsibility and expertise.

The leverage to RDT&I answers a political objective, and should therefore take the form of an instrument allowing a top down, focused, approach achievable only through a dedicated and well-defined budget line. Therefore, in line with the objectives of the Space Strategy for Europe, **Industry strongly recommend the EU to strengthen its leverage to space RDT&I by furthering a dedicated line under FP9 (as with Horizon 2020).**

FP9-SPACE, PROGRAMMATIC ORGANISATION

FP9-Space should provide a balanced and coherent approach to support the technology readiness of future systems and applications, and to stimulate the take up and development of new services and applications.

An organisation of FP9-Space in 4 pillars would suit these needs.

Competitive and sustainable industrial base and supply chain

- Research and technology for component, equipment, building blocks and innovative design & manufacturing
- Entire supply chain
- Implementation: Grants through JTI, driven by RIAP
- Budget 500 M€

Innovation in system and architecture for market driven competitiveness

- Research, development and concepts for system level competitiveness
- Commercial and export markets
- Implementation: Grants through PSA/SRC
- Budget 500 M€

Readiness for institutional and flagship EU programmes

- Copernicus evolution
- Galileo evolution
- SSA preparation
- IOD/IOV service
- Science & Exploration
- Implementation: SRC/EGEP type
- Budget 500 M€

Market, Services and applications development

- EO downstream applications
- Data distribution & networks
- Galileo services
- Implementation: Grants/Programme Commitee
- Budget 500 M€

The many synergies and complementarities between the four pillars justify the setting up of a global vision for FP9-Space able to embrace, with the contribution of all stakeholders, public and private, the global research needs of Europe in space. **The elaboration of a European long-term vision for European space technologies would allow the best coordination and consistency of all investments in space research and the identification of key development strands for Europe**.

THE JTI FOR SPACE: PRELIMINARY SCOPING AND OBJECTIVES

In the rapidly changing environment of space markets and applications, the space sector must adapt to new challenges. Research, development, technology and innovation are part of the solution, and the JTI approach for space, promoted today by the European Union, is a welcome addition to the European context of space RDT&I programmes, as a strong leveraging tool for quick and fast adaptation of the industry to the market needs. The JTI is also expected to provide opportunities for larger and more ambitious projects,

The JTI will be better connected to markets, and will provide a more flexible and agile environment for Space RDT&I. It will ensure a product-oriented focus, it will promote spin-in and the take up of COTS in space systems, it will ensure that all developments are brought to the appropriate maturity for integration in products, it will address environmental concerns, with appropriate solutions to comply with environmental regulations affecting industrial activities and the overall issue of orbital debris mitigation. And last but not least, the JTI will enable the conditions for industry to go beyond 4,0, with new integrated processes, new models, new tools.

It will be an industry driven instrument aiming at supporting the development of a more competitive industrial base and supply chain. It will address issues such as technology

readiness, dependence reduction, and innovation, with a strong focus on components, materials, equipment and processes.

The JTI is proposed as a complement to existing RDT&I programmes established at ESA, national and EU levels. Innovation is necessary to face competition; technology roadmaps elaborated by Industry can be implemented at most partially because of shortage or fragmentation of funding; there is therefore a demand for further funding, and the JTI concept goes in this direction.

Eventually, an industry-driven JTI will accelerate innovation, provide more focus, more agility and more budgets for research through a coordinated approach to achieve competitiveness goals because the investment by industry will be leveraged by the Union. This is the positive basis of the JTI partnership.