

A standalone FP10 to support aviation & space R&T and meet the challenges of tomorrow

ONERA Position paper appended to its reply to the public consultation on next MFF

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ONERA, the French Aerospace Lab, has been active in the successive European Framework Programmes and supportive of European research since FP3 in aviation, and more recently in space and security fields of activities.

Aviation and Space R&T is, by its very nature, a truly strategic domain for European competitiveness and sovereignty. For more than 30 years, it has embodied cooperation between Member States and the entire European scientific and technological community. Cross-border and cross-sector collaborations can generate major breakthroughs that would be impossible to achieve on an individual basis.

ONERA recommendations

1. Create a standalone Framework Programme (FP) 10

- A standalone EU-Framework Programme for R&I in the next MFF is essential to strengthen innovation through **cross-border cooperation**. The FP is the EU's key instrument for **implementing European strategic visions and R&T**, supporting cross-border cooperation, maintaining and developing European competitiveness and autonomy in key strategic sectors and delivering real impact.

2. Strengthen the financing of the entire aeronautics and space R&T value chain to meet societal challenges

- **R&T is the vital foundation of future innovation**. It must be **constantly nurtured** to enable the emergence of innovative solutions;
- FP10 must support **all stages of the R&T chain**: fundamental and applied research, demonstration, validation and innovation, with a **strong and well-balanced system between bottom-up and top-down streams**, a combined approach that is the **main success of the current FP** and the **real added value of EU-wide cooperation**;
- **Targeted instruments** (collaborative research and partnerships) are needed to maintain a continuous flow of ideas and technologies;
- **Increased investment in R&T** is crucial to strengthen Europe's capacity for innovation and maintain its competitive edge in an era of heightened global competitiveness.

3. Invest today in aviation to keep leading the world in this very competitive sector

- Aviation is one of the few sectors that Europe is actually leading, a position that could be challenged by new players if support to associated research were to weaken. To support such a competitiveness, it is therefore essential:
 - To maintain a **global and coherent overall strategy - integrating all stakeholders** - established through a common *Strategic Research & Innovation Agenda* (SRIA), as previously produced by the *Advisory Council for Aviation Research and Innovation in Europe* (ACARE),
 - To uphold a **continuous pipeline of research, development, testing and certification**, given that technological development in aeronautics requires **long lead times** of 10 to 15 years, from the basic idea to the certified final product,
 - To recognise **aviation as a “strategic sector”**, a vector of **connectivity, competitiveness and growth**,
 - To develop innovative **ATM (Air Traffic Management)** for the sake of EU environmental policy among which reducing the climate impact.

4. **Support the space sector, a strategic pillar for the sovereignty and autonomy of the EU**

- Space also plays a fundamental role in **Europe's technological sovereignty and geopolitical autonomy**. It supports **critical areas** such as communications, navigation, security, border and crisis management, earth observation and defence. Mastering these capabilities ensures the independence of European data and services, in a context of increasing competition, threats and geopolitical pressure.
- Additionally, space plays a major role as an **inspiring domain** attracting the **support of citizens**, stimulating the **interest of younger generations**, and fostering a collective dynamic within the research community. Supporting the space sector is therefore a way to combine technological ambition with **attractiveness of research careers** and narratives on **European social cohesion and pride**.
- For such an increased support, it is required:
 - To offer more possibilities to European research prototypes to be embarked as piggy-backs payloads on some institutional or commercial satellites, and to increase in this regard the role of the European Commission as an anchor customer,
 - To alleviate unreasonable expectations recently placed on newcomers and start-ups for restoring the support to European industry champions and major RTOs that are the only research players able to develop on the long-term massive and complex space systems.

5. **Encourage collaborative research in FP10 with an increased EU-budget**

- A **strong collaborative research component in FP10** will provide industry with innovative ideas and solutions for decades to come in order to explore and mature breakthrough technologies,
- The **involvement of all players** (industry, research centres, universities, SMEs, operators) is essential for a strong and balanced ecosystem,
- It is crucial to **balance top-down and bottom-up approaches** to ensure a diversity of initiatives and form the basis for preserving the long-term competitiveness of European industry,
- Collaborative research is the **vital link between research and industry**, in response to Europe's geopolitical, environmental and industrial challenges.

6. **Maintain European partnerships, success stories for aviation and space:**

- **Maintain public-private partnerships (PPPs) for aviation:**
 - PPPs encourage the **rapid transfer of knowledge to concrete applications and innovations**. They have demonstrated their **added value** within Horizon Europe and previous FPs such as Horizon 2020 and FP7, provided that a link exists with collaborative research.
 - Their **governance must remain balanced** to ensure effective and inclusive cooperation between all R&T stakeholders.
- **Upgrade the new Globally Competitive Space Systems (GCSS)** co-programmed partnership which reveals to be a lean and effective mechanism for ensure a strong cooperation between all research actors of the EU space sector on topics focusing on the European competitiveness. In this regard:
 - The **budget** of such a partnership could valuably be augmented of an order of magnitude in the next MFF
 - Its scope could be enlarged specially to address **Future Space Ecosystems** (robotics, automation, on-orbit operations and demonstrations) which are also topics for competitiveness along with Earth Observation, Telecommunications and New Space Transportation Solutions.

7. **Ensure dedicated funding for aviation research**

- **FP10 must include a specific funding stream for aviation** research to ensure continued technological development in a context of fierce global competition.
- This implies complementing existing partnerships with an **increased share of the budget allocated to aviation collaborative research in FP10 compared to budgets allocated in the last FPs**.

8. Ensure dedicated funding for space research

- FP10 must include a **specific funding stream for space** research to ensure continued technological development in a context of fierce global competition.
- With respect to the **specific importance taken by space developments** – both from competitive and security/sovereignty standpoints – it implies that space research could enjoy **its own cluster in FP10** as it was the case formerly, to avoid being diluted in other digital or industrial activities.

9. Support at high level the Technology Infrastructures (TIs)

- Technology Infrastructures (TIs) for applied research are key to support the EU technology development and are in essence completely different from Research Infrastructures (RIs) for fundamental research. They should complement each other and in this regard:
 - While acknowledging the prominence of Member States in the building of these critical strategic assets, the European Commission should heighten its consideration and support to such Technology Infrastructures.
 - Investing in test, simulation and demonstration capacities on European territory is a lever for European competitiveness, enabling research advances to be transformed into concrete, certifiable solutions. Technological infrastructures make it possible to validate and demonstrate technologies, which is a decisive step towards scaling them up and certifying them.

10. Keep separated civil and defence EU-programmes

- **Keeping separated civil and defence EU-programmes** ensures that priorities and investments are consistent. Defence is under the responsibility of the Member States, a key expression of their national sovereignty. Although civil and defence activities complement each other, their rationale, timescale and conditions for applications are completely different. Therefore, if cooperative streams between their respective financial instruments are possible, for instance for military exploitation of civil technologies, they must remain strictly separated, while respecting existing boundary conditions, such as the mandates of the respective MODs.
- **Emphasizing the importance of maintaining clear sources of funding for civil and defence-related research**, building upon the current approach characterized by an exclusive focus on either civil (through Horizon Europe and the forthcoming FP10) or defence (through the European Defence Fund) applications: a different approach could introduce additional complexity or duplicate R&TD activities in the next multiannual financial framework, which would likely impact the efficiency of these well-established funding schemes.
- **The development of a new funding instrument for dual use technology is not recommended**, as it is not clear what benefits this would bring over better exploiting synergies and cross-fertilization between civil and defence sectors.

11. Ensure a balance between short-term results and long-term investment

- Europe must **reconcile the quest for rapid impact** with the **need to sow the seeds of tomorrow's innovation** today. This **balance is essential** if we are to remain at the cutting edge in a constantly changing world.

12. Ensure simplification within FP10, but with the aim of benefiting researchers and their institutions and not compromising European cooperation (for instance the Lump Sum approach may result in siloing partners in projects and impeding cooperation with newcomers).

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