

STEPP

SPACE TECHNOLOGIES FOR EUROPE - PILOT PROJECT

PROJECT SUMMARY

Background

The Space Strategy for Europe [COM(2016)705] announced that the Commission would explore new approaches to leverage private sector investments and partnerships with industry including through a joint technology initiative (JTI). Such an action will support improved technology readiness throughout the space industrial value chain in a balanced way and is expected to accelerate innovation in space systems, supported by the risk-free market introduction of mature space technologies, thus paving the way for European competitiveness and non dependence in space applications and services.

The pilot project is expected to contribute to the implementation of this action. In particular, the pilot project will contribute to assessing the extent to which a public private partnership through a JTI can foster private sector commitment and investment for the development of key components and building blocks for risk-free implementation in space products, and the undertaking of large-scale, longer term and high-risk/reward research in the strategic area of space technologies, including technology demonstrators.

Objective summary

The objective of the project is to **assess the conditions for the establishment of a Joint technology Initiative for space technology in Europe and to test the viability of the JTI approach by applying the prototype tools and structures to two pilot topics as proposed by European Commission**. The two Pilot topics are "de-orbiting" and "Innovative (critical) materials".

Expected outputs

1. Analysis of the JTI approach: the project is expected to prepare recommendations, inter alia, for needs and drivers, participants, governance, processes, links with other relevant European activities.
2. Prototyping of JTI workplan process: focusing on the two pilot themes (de-orbiting and critical materials), the project is expected to prepare, inter alia, a strategic research and innovation agenda, technology planning, roadmapping and workplan.
3. Outreach and communication: the project is expected to prepare, inter alia, workshops and concept papers.

Funding and calendar

The pilot project is funded 100% by the EU. The project will be managed by Eurospace. The budget **for the action is 1,5 M€**. The project will be carried out in 24 months, start date is November 2017.

If the project lives to expectations, European Parliament is ready to fund a Preparatory Action to support the **implementation of the two pilot themes (up to 25 M€)**. Decision point: end 2018.

MORE DETAILS

PILOT THEMES OVERVIEW

The specific area of **innovative (critical) materials for space equipment** is critical for the European space sector due to dependence situations, i.e. unguaranteed access to supplies and re-export limitations. In order to support the dependence reduction on materials and a sustainable REACH-compliant competitive space sector two major topics could be addressed by developing innovative materials for space equipment: this theme is fully driven by the critical items list jointly assessed by the Joint Task Force¹ for non dependence set up by ESA, the EC and EDA to address consistently the issue of critical dependence on technologies for European space systems. The critical functions to cover with this topic are adhesives, thermal control, primers and lubricants (oils and greases).

The topic on **de-orbiting** is addressing the need to preserve the Earth orbital environment in good condition in order to enable safe operations in space for the future. EU should support the necessary actions for limiting of the growth of the orbiting debris.

Three main lines of technology development could be assessed in this frame:

- Deorbiting solutions at end of life (propulsion and dedicated systems for drag augmentation e.g.)
- Trajectory and controlled re-entry (design and modelling, standards)
- Design for demise (controlled break-up in re-entry) with activities potentially at system, subsystem and equipment levels.

PROJECT ACTIVITIES

Activity 1 stakeholders for the JTI/SRA

Activity 1 aims at identifying and creating the tools for the actual involvement of relevant stakeholders in the potential JTI and SRA process. By creating and opening an effective dialogue and consultation process with two specific groups of stakeholders (key stakeholders, and secondary stakeholders), **the activity will lead to proposing after one year of activities a consistent and consensual JTI and SRA scope**. The JTI/SRA scope, together with the identified group of key stakeholders will be critical inputs for the Activity 2. The Activity 1 will be concluded with the organisation of consensus building workshop, the issue of a detailed JTI scoping report and outreach activities ensuring the good information of all potentially relevant stakeholders.

Activity 2 scope and mandate definition (JTI/SRA)

Activity 2 aims at defining with sufficient level of detail, and creating consensus, building on the outcome of the definition of the JTI scope the scope and mandate for the future JTI. **Eventually the activity will produce a consistent and consensual draft concept for the JTI**. The activity will be concluded with the preliminary agreement and commitment to pursue the definition of a detailed governance scheme for the JTI. This activity will involve high level dialogue with institutional (EC, EP,

¹ <https://www.eda.europa.eu/info-hub/press-centre/latest-news/2015/03/19/critical-space-technologies-for-european-strategic-non-dependence> & [http://www.esa.int/Our_Activities/Space_Engineering_Technology/Technology_to-do_list_helping_secure_Europe_s_non-dependence/\(print\)](http://www.esa.int/Our_Activities/Space_Engineering_Technology/Technology_to-do_list_helping_secure_Europe_s_non-dependence/(print))

Agencies) and industrial representatives to raise awareness, generate adoption and define the requirements for consensus to be achieved.

Activity 3 JTI governance definition

Based on the outcome of activity 2, this activity will support the definition of the actual scheme for the establishment of a JTI. **The key outcome of the Activity is a complete governance scheme for the JTI**, including, in particular the draft text for the JU agreement for the actual implementation of the JTI in the institutional context. Another important outcome will be the definition of the JTI requirements in term of personnel, resources and alia, with aim of providing all elements required to set up a successful and well-dimensioned JTI structure in the wake of the project.

Activity 4 SRA governance and process definition

This activity will support the definition of the actual process for the elaboration endorsement and publication of a consensual SRA for implementation in the JTI. **The key outcome of the Activity is a complete governance scheme for the SRA including**, in particular, the draft text for the SRA agreement and detailed aspects of an SRA governing structure and elaboration process. The goal of the activity is to ensure an SRA process matching the needs and expectations of the JTI stakeholders allowing the coherent expression of technology drivers and challenges.

Activity 5 prototyping of a JTI workplan - de-orbiting and innovative (critical) materials

The prototyping of a JTI workplan aims at bringing together all relevant stakeholders to **jointly define an operational workplan leading to drafting a call text for potential implementation by the EU**. Two separate strands are developed for each pilot theme.