

BUSINESS INNOVATION SYMPOSIUM (E6)

New space individuals, projects, programs, or business units: innovation, entrepreneurship & investment at the microscopic level of analysis (1)

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THE ESA GRAND CHALLENGE: A NEW WAY TO SPUR INNOVATION

Abstract

This document presents the rationale and mechanism of the new ESA Grand Challenge initiative launched at the ESA Ministerial Council in Luzern on December 2016. Over the last few decades in particular, ex-ante inducement prizes have been increasingly exploited as innovation fostering tools in the space sector, as exemplified by the Cheap Access to Space Prize, America's Space prize, NASA Centennial Challenges, and most recently the Google Lunar X-Prize and by the Ansari X-Prize. The surge in popularity in the use of inducement prizes in the space sector is linked to the suitability of the sector for the use of such tools: like aviation before, space is prone to receiving out of the box spin-ins and inputs from wider communities of innovators.

The radical different factor that is introduced by inducement prizes as compared with grants is that the stimulus for innovation lies in the dynamic through which prizes create new ideas - a dynamic that is similar to that of the right to patents. The objective of running such prizes has historically been manifold:

- To identify new or unorthodox ideas, solutions or approaches to particular challenges
- To demonstrate the feasibility or potential of particular technologies
- To promote development and diffusion of specific technologies or business sectors
- To address intractable or neglected societal challenges
- To educate the public about the excitement and usefulness of research and innovation
- To maximize benefits from creativity exercises/contest through creation, development and exploitation of unforeseen spin off businesses (serendipity effect)

The advantages of prize schemes lead to the following rationales for ex-ante inducement prizes as propellers of RD and innovation:

- Stimulus factor
- Assets and resources retrieval
- Efficiency
- Outreach

ESA is an engine of innovation and a facilitator of exponential change. A space prize meets these objectives: a highly leveraged, incentivized competition that develops space entrepreneurship spirit, catalysing the growth of a new generation of European private sector actors, spurring innovation and accelerating the rate of positive change. A prize scheme can contribute to enlarge the scope of the space-based technologies

to solve global challenges, to unlock resources and to enable an inclusive Growth of the humankind. It allow relations with ESA from new stakeholders as participants, challengers, sponsors, etc. The ESA Grand Challenge is planned to be funded mainly from partnerships with commercial industrial sponsors.