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Private Endeavour in Space Exploration (2)

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ESA - SPACE 4.0: AN UMBRELLA FOR PARTNERSHIPS WITH THE PRIVATE SECTOR

**Abstract**

Since early days, governmental entities largely drive space programs through public procurement approach; this often implies adopt existing solutions. In addition, space missions usually are non-replicable and innovative concepts have a low probability to be implemented. This is because of the challenging requirements on robustness and success rate, that results in a low rate of innovation. Therefore, space missions often do not meet broad user needs, which makes space an isolated sector. Consequently, space missions end with value destruction because, nowadays, no circular economy models are in place in the space domain. To react to this flat and stagnant context, ESA is facing the challenge to bring more benefits to society by introducing the alternative '4.i' paradigm, where 'i' stands for: inform – inspire – interact – innovate. In this paper we describe new ways for ESA to realize its European space exploration program by increasing the awareness of space (inform), sustaining space enthusiasm (inspire) of a broader public domain – space and non-space – that will address larger users' needs (interact) with the ultimate goal to innovate the overall space ecosystem. The paper focuses on space exploration perspective highlighting the potential of a range of private-sector entrepreneurial firms interested in pursuing space commerce for space exploration purposes in a novel way.