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POST-ISS FUTURE ACTIVITIES IN LOW EARTH ORBIT

Abstract

The Community of Ariane Cities Summer School is an annual programme designed for around 40 university students and young engineers from space industry. The 2012 edition was hosted at French Air Force Academy in Salon de Provence; its main focus human space flight- current, close and future missions. In this frame, an international group, of six members analysed Post-ISS (International Space Station) activities in Low earth Orbit (LEO). The International Space Station represents the first space project involving the cooperation between major space agencies and plays also a major role in the Human Space Exploration. Unfortunately, even if it has been used for scientific purposes to great acclaim, the future of the ISS is still uncertain, so the Space sector runs the risk of reaching a standstill after 2020. This paper investigates concepts and potential for post-ISS space activities in Low Earth Orbit and analyses political, financial, legal and technical aspects in order to establish the feasibility of potential projects. The importance of post-ISS activities in LEO as test bench for the future deep space exploratory missions is also highlighted. The analysis is in agreement with the Global Exploration Roadmap, released in September 2011 by the International Space Exploration Coordination Group (ISECG), which reflects the international effort to define a long-range human exploration strategy that begins with the International Space Station and expands human presence throughout the Solar System, leading to human missions to explore the surface of Mars. Taking into account the current political decisions and the on-going strategies, this paper proposes new ways to maintain and even develop the funding of human space activities in LEO. For instance the role of the general public's imagination is of great importance as shown by the development of space tourism. It is undeniable that the general public's imagination must be captivated again stronger than before. A stronger public interest would engage private industry further than its current nascent state, and encourage governments to invest further in public agencies. The importance of international cooperation to improve the funding opportunities should also not be underestimated. Finally, the role of public and private engagement, in terms of cooperation and competition, and the potential of increasing the involvement of the private sector in human space activities are also analysed.