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DEVELOPMENT OF GLOBAL SAFETY SYNERGIES FOR SPACE EXPLORATION
REGULATIONS, AND BRIDGING WITH AVIATION STANDARDS

Abstract

The Space Agencies, participating in the International Space Exploration Coordination Group - including NASA, ESA, CNES, JAXA and eight other agencies - have been communicating their human space exploration activities toward human missions to the Moon, Mars and beyond. Framing human exploration in this context not only encourages, but also requires coordinated international effort and public-private partnerships to be successful. An international consensus has been reached on the importance of sustainable human expansion into the solar system and released into the Global Exploration Roadmap. Sharing the results of this work with the broader community aims to generate innovative ideas and solutions for meeting the challenges ahead.

During the Space Generation Congress 2015, the Exploration Working Group discussed extensively the topic of Pioneering Space. Among the conclusions, one crucial aspect was how to safely advance human spaceflight capabilities in a relevant environment as a foundation for pioneering expeditions.

The transportation capabilities for human-rating Space Exploration missions are emerging. Safety is a major argument on which the agencies commit to ensure to crew a safe journey and return to Earth. Secure the mission success requires a regulated Safety assessment process. Space Safety regulations and standards already exist in agencies and institutions, but they do not represent a common vision, committed and shared internationally. That's why the elaboration of a Safety standard for human-rating Space Exploration needs to benefit from existing Safety standards approved worldwide. The standardized process for civil airborne systems is the world's most severe civil aviation standard, and is enriched by decades of maturation and improvement. It is expandable to Space Exploration in term of set of methods for conducting a safety assessment process. In this frame, it represents the common Safety orientations to be targeted by the space agencies towards the incredible evolution of the concept of Safety for mission success.