

27th IAA SYMPOSIUM ON HUMAN EXPLORATION OF THE SOLAR SYSTEM (A5)
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THE SAFETY OF COOPERATION. CAUSES AND CONDITIONS OF SUSTAINABLE AND
FRUITFUL INTER-HUMAN COOPERATION IN THE DESIGN OF LONG-DURATION
AUTONOMOUS MANNED MISSIONS.

Abstract

In today's troubled geopolitical climate, the project of human space exploration of the solar system needs to be re-examined in order to lay the foundations for lasting peace. This is one of the guarantees required to support a coordinated exploration effort on a planetary scale. This challenge calls for truly secure cooperation that goes far beyond the simple organization of a network of international players distributed around the design of a system and compartmentalized sub-systems. The research undertaken with astronauts over the last 20 years, with the support of UTC, CNES and ESA staff, on the theme of crew safety and health maintenance, enables us to see how we can go beyond the limits of current organizational methods to meet the human and technological challenges posed by the design of long-duration missions with autonomy (embedded decision). In this article, based on a reference scenario of 1,000 days to Mars and back, we describe how to stabilize inter-human cooperation and establish a fruitful, lasting culture of mutual trust. It's through the orchestrated construction of a shared awareness (as a team) that makes explicit the contradictory stakes, disagreements, potential conflicts and possible deviant behaviors that we stimulate the creativity and embodied intelligence of the players in their immediate context and in relation to the common goal. As a prerequisite, this process requires recognition of the qualities of the human species in relation to the diversity of the living world, as well as its potential for evolution. On an operational level, this path requires mutual active listening and shared responsibility on the part of the partners, with the emphasis placed on the delegation process centered on the human being.