## IAF HUMAN SPACEFLIGHT SYMPOSIUM (B3) Virtual Presentations - IAF HUMAN SPACEFLIGHT SYMPOSIUM (VP)

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## FANTASTIC TEAMS AND WHERE TO FIND THEM: TEAM PROCESSES IN ISOLATED, CONFINED AND EXTREME TEAMS THROUGH IMOI FRAMEWORK

## Abstract

The new space race has begun with plans to put people on the Moon by 2024 and on the Mars by 2030's. There are myriad of technical difficulties to overcome before humankind is able to sustainably reach these destinations, but there are also psychological factors that need to be considered. Since no-one goes to space alone, teamwork is of utmost importance. Understanding different aspects of teamwork and team processes gives organizations a chance to improve their teams' efficacy in order to explore LEO and beyond in more safely and coherent manner. In this paper, to explore the state of the art research in the field of team processes in space and analogue environments, 35 relevant papers were surveyed. From these studies, a model has been created, following the Input-Moderator-Output-Input (IMOI) framework. According to the model, there are contextual features like time, isolation and confinement, team attributes like autonomy, organizational culture and crew composition and individual attributes like personality, which act as inputs for team processes and emerging states. Interpersonal relationships, emotional states, using of coping strategies, social climate, communication with family and friends, prior training, identification with the mission, psychological support and behavioral changes were the extracted team processes and emerging states which affect the team outputs such as team efficacy, team performance and cohesion, psychological well-being and mission success. The goal of the proposed modelling is to understand the system of team processes and the affecting factors. The core of the model is the understanding that the system of team processes and their affecting factors are dynamic and plastic, i.e. the provided outputs may act as inputs in some processes as well, hence team processes are always changing and being responsive to the very environment. The model gives a clear understanding of what to take into account in forming extreme environment teams such as Antarctic expeditions and space missions. The model could also help relevant research teams to understand the possible processes with an insight on how to adapt these processes to create the most efficient, coherent and successful teams, ultimately for the most delicate humankind missions.