

Intelligent Systems Technologies for Human Space Exploration Mission Operations

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Abstract— Human space flight and exploration continues to be a key goal of the NASA, with an emphasis on utilizing new technologies to improve the effectiveness, efficiencies and safety associated with this endeavor, including the ground-based mission support. This search for improvement has led to cross-fertilization between the advanced software development community and the manned spaceflight operations community within NASA. This paper discusses the latest status of the ongoing application of a

variety of intelligent systems technologies adopted for manned mission operations. We discuss several specific projects between the Ames Research Center Intelligent Systems Division and the Johnson Space Center's Mission Operations Directorate, and how these technologies and projects are enhancing the mission operations support for the International Space Station and preparing for the mission operation support of the future human exploration Programs.

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