

INTEGRATING SPACEFLIGHT HUMAN SYSTEM RISK RESEARCH

J. Mindock¹, S. Lumpkins², W. Anton¹, M. Havenhill³, M. Shelhamer⁴, and M. Canga⁴

¹Wyle, 1290 Hercules, Houston, TX 77058, ²MEI Technologies, 18050 Saturn Lane, Houston, TX 77058, ⁴Human Research Program, NASA Johnson Space Center, 2101 NASA Parkway, Houston, TX 77058

NASA is working to increase the likelihoods of human health and performance success during exploration missions, and subsequent crew long-term health. To manage the risks in achieving these goals, a system modeled after a Continuous Risk Management framework is in place. “Human System Risks” (Risks) have been identified, and approximately 30 are being actively addressed by NASA’s Human Research Program (HRP). Research plans for each of HRP’s Risks have been developed and are being executed. Ties between the research efforts supporting each Risk have been identified, however, this has been in an ad hoc fashion. There is growing recognition that solutions developed to address the full set of Risks covering medical, physiological, behavioral, vehicle, and organizational aspects of the exploration missions must be integrated across Risks and disciplines. We will discuss how a framework of factors influencing human health and performance in space is being applied as the backbone for bringing together sometimes disparate information relevant to the individual Risks. The resulting interrelated information is allowing us to identify and visualize connections between Risks and research efforts in a systematic and standardized way. We will discuss the applications of the visualizations and insights to research planning, solicitation, and decision-making processes.