

Fiscal Year:	FY 2009	Task Last Updated:	FY 02/24/2011
PI Name:	Keeton, Kathryn Ph.D.		
Project Title:	A Scheduling and Planning Tool in NEEMO 14		
Division Name:	Human Research		
Program/Discipline:	HUMAN RESEARCH		
Program/Discipline--Element/Subdiscipline:	HUMAN RESEARCH--Behavior and performance		
Joint Agency Name:	TechPort:	No	
Human Research Program Elements:	(1) BHP: Behavioral Health & Performance (archival in 2017)		
Human Research Program Risks:	(1) Team: Risk of Performance and Behavioral Health Decrements Due to Inadequate Cooperation, Coordination, Communication, and Psychosocial Adaptation within a Team		
Space Biology Element:	None		
Space Biology Cross-Element Discipline:	None		
Space Biology Special Category:	None		
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Zip Code:	77058	Congressional District:	22
Comments:			
Project Type:	GROUND	Solicitation / Funding Source:	Directed Research
Start Date:	07/20/2009	End Date:	09/30/2010
No. of Post Docs:	No. of PhD Degrees:		
No. of PhD Candidates:	No. of Master' Degrees:		
No. of Master's Candidates:	No. of Bachelor's Degrees:		
No. of Bachelor's Candidates:	Monitoring Center: NASA JSC		
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Flight Program:			
Flight Assignment:			
Key Personnel Changes/Previous PI:			
COI Name (Institution):	McCurdy, Mike (NASA Ames Research Center) Li, Jack (NASA Ames Research Center)		
Grant/Contract No.:	Directed Research		
Performance Goal No.:			
Performance Goal Text:	<p>The NASA/JSC Behavioral Health and Performance (BHP) Element of Space Medicine Division, Human Research Program (HRP) is proposing a research study that will explore with providing a fully-functional scheduling and planning system that can be easily used by the users and staff personnel to support both ground and flight activities as well as crewmembers for the capability to plan and organize their tasks to fit their needs in real-time within given and developing constraints of a mission.</p> <p>Future Constellation mission concepts will require a new suite of scheduling and planning tools that deliver improvements to current state-of-the-art technology and processes, including but not limited to: (a) the ability to plan and reason about complex constraint networks on long-range, mid-range, and tactical real-time schedules, (b) the ability for human operators to effectively manipulate and explain schedules generated by automated planning software, and</p>		

	<p>ultimately (c) the ability for the crew to assume the scheduling and planning roles currently reserved for ground personnel.</p> <p>This proposed pilot study will test the feasibility of using the Scheduling and Planning Interface for Exploration (SPIFe) tool, which is already developed by the Ames Research Center (ARC). The software tool will be revised according to lessons learned from each of the pilot studies (up to three) in simulated space analog environments.</p> <p>The overarching goal is to develop a technology to assist with scheduling, planning, and training of the astronauts when they are working and living during long duration spaceflight missions. The findings of this study will help determine whether additional countermeasures are needed due to the impact of autonomy.</p> <p>Objectives of the tool:</p> <ol style="list-style-type: none"> 1. Provide a fully-functional scheduling and planning system that can be easily used by the users and staff personnel to support both ground and flight activities. 2. Provide NEEMO crewmembers with the capability to plan and organize their tasks to fit their needs in real-time within given and developing constraints. <p>SPIFe will provide:</p> <p>SPIFe system shall provide capability to read OSTPV plans or other appropriate format for integration with existing tools.</p> <ul style="list-style-type: none"> • The SPIFe system shall incorporate the capability that allows an activity to be only completed by a specific crewmember (i.e., operator vs assistant). • The SPIFe system shall incorporate the capability that allows editing input of multiple users to sync into one timeline. • The SPIFe system shall incorporate the capability that allows color-coded status with activities. <ul style="list-style-type: none"> o The color of an activity will change based on the value of a user-entered attribute called “status.” • The SPIFe system shall incorporate the capability that allows priority status capability. <ul style="list-style-type: none"> o Each activity will have a numeric attribute called “priority.” • The SPIFe system shall incorporate the capability that allows checking and addition of the resources. • The SPIFe system shall incorporate the capability that allows the ability to change tracking and conflicts. <ul style="list-style-type: none"> o The system will display changes made in a plan from one version to another and handle conflicts between edits made to a plan. (Between the topside plan and the plan changed by a crewmember.) o The system will display the changes between a planned schedule and the as-run schedule.
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	
Task Progress:	<p>New project for FY2009. [Ed. note: added to Task Book in February 2011 when received information]</p>
Bibliography Type:	Description: (Last Updated:)