

Fiscal Year:	FY 2007	Task Last Updated:	FY 04/28/2009
PI Name:	Holden, Kritina Ph.D.		
Project Title:	Information Presentation		
Division Name:	Human Research		
Program/Discipline:	HUMAN RESEARCH		
Program/Discipline--Element/Subdiscipline:	HUMAN RESEARCH--Space Human Factors Engineering		
Joint Agency Name:	TechPort:	No	
Human Research Program Elements:	(1) SHFH :Space Human Factors & Habitability (archival in 2017)		
Human Research Program Risks:	(1) HSIA :Risk of Adverse Outcomes Due to Inadequate Human Systems Integration Architecture		
Space Biology Element:	None		
Space Biology Cross-Element Discipline:	None		
Space Biology Special Category:	None		
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City:	Houston	State:	TX
Zip Code:	77058-3607	Congressional District:	22
Comments:			
Project Type:	GROUND	Solicitation / Funding Source:	Directed Research
Start Date:	10/02/2006	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):	McCann, Robert (NASA Ames Research Center)		
Grant/Contract No.:			
Performance Goal No.:			
Performance Goal Text:	<p>Display and control user interfaces are the critical vehicle elements supporting crew performance for many, if not most, mission operations. Correctly defining, refining, and validating the requirements for the proper display and use of information for systems monitoring and vehicle control is critical for optimizing operational performance and minimizing operational risk. The goal of this Information Presentation Directed Research Project (DRP) is to address design questions related to the presentation of information to the crew. This includes not only the issues of information formatting, style, and layout, but also methods of interacting with the information, use of information under the extreme environments encountered in space travel, and refinement of human factors techniques, such as modeling, that will supplement traditional design techniques, and help ensure that optimal information design is accomplished in the most cost efficient manner. This DRP will result in the development of guidelines, requirements, and validation techniques for advanced information display solutions currently contemplated for the various spacecraft systems being designed and developed under the Constellation program.</p>		

Task Description:	<p>The major areas of work, or subtasks, within this DRP are: 1) Displays, 2) Controls, 3) Electronic Procedures and Fault Management, and 4) Human Performance Modeling. The Displays subtask addresses label formatting, text color, auditory alarms, and navigation across and within display units. The effects of vibration on reading and speech communication are also investigated. The Controls subtask concentrates on cursor control functionality, design, and use under vibration and microgravity. The Electronic Procedures and Fault Management subtask focuses on information architecture issues for nominal and off-nominal electronic procedures, and their integration with advanced caution and warning systems. The Modeling subtask focuses on human performance modeling of user interfaces in the space environment.</p> <p>The focus within each major subtask has been carefully selected to address either 1) a near-term identified need within ongoing Orion development work, or 2) a longer-term Exploration need that is sufficiently complex to warrant initiation of research. It is envisioned that activities within these subtasks will evolve and be modified for out-years, as additional research needs are identified.</p>
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	
Task Progress:	New project for FY2007.
Bibliography Type:	Description: (Last Updated: 10/29/2023)