

Fiscal Year:	FY 2019	Task Last Updated:	FY 04/22/2019
PI Name:	Selva, Daniel Ph.D.		
Project Title:	HCAAM VNSCOR: Virtual Assistant for Spacecraft Anomaly Treatment During Long Duration Exploration Missions		
Division Name:	Human Research		
Program/Discipline:			
Program/Discipline-- Element/Subdiscipline:			
Joint Agency Name:		TechPort:	Yes
Human Research Program Elements:	(1) HFBP :Human Factors & Behavioral Performance (IRP Rev H)		
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		
PI Email:	dselva@tamu.edu	Fax:	FY
PI Organization Type:	UNIVERSITY	Phone:	607-255-6351
Organization Name:	Texas A&M University		
PI Address 1:	Aerospace Engineering Department		
PI Address 2:	701 Ross St 3141 TAMU		
PI Web Page:			
City:	College Station	State:	TX
Zip Code:	77843-0001	Congressional District:	17
Comments:			
Project Type:	GROUND	Solicitation / Funding Source:	2017-2018 HERO 80JSC017N0001-BPBA Topics in Biological, Physiological, and Behavioral Adaptations to Spaceflight. Appendix C
Start Date:	03/06/2019	End Date:	03/05/2023
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
Contact Monitor:	Williams, Thomas	Contact Phone:	281-483-8773
Contact Email:	thomas.j.will1@nasa.gov		
Flight Program:			
Flight Assignment:			
Key Personnel Changes/Previous PI:			
COI Name (Institution):	Diaz Artilles, Ana Ph.D. (Texas A&M Engineering Experiment Station) Dunbar, Bonnie Ph.D. (Texas A&M Engineering Experiment Station) Wong, Raymond Ka Wai Ph.D. (Texas A & M, College Station)		
Grant/Contract No.:	80NSSC19K0656		
Performance Goal No.:			
Performance Goal Text:			

Task Description:	<p>This task is part of the Human Capabilities Assessments for Autonomous Missions (HCAAM) Virtual NASA Specialized Center of Research (VNSCOR).</p> <p>The research objective of this proposal is to investigate the impact of using Virtual Assistants (VA) to support crew members in the context of anomaly treatment during Long Duration Exploration Missions (LDEM), when ground support will be limited. A VA will be developed building upon the software architecture from an existing VA developed by the Principal Investigator. The VA will provide support for various aspects of anomaly treatment, including detecting and diagnosing the anomaly, as well as recommending a course of action. It will also have the ability to take initiative in the dialog with the user (mixed-initiative mode), and the ability to provide explanations for its actions. The impact of the VA on performance, cognitive workload (CW), situational awareness (SA), and trust, will be assessed through a set of three experiments with human subjects in a laboratory environment. The first experiment will establish the baseline impact (master-slave, no explanations), and subsequent experiments will study the effect of switching to the mixed-initiative mode and adding explanations. Finally, the system will be deployed in an analog environment.</p>
Rationale for HRP Directed Research:	
Research Impact/Earth Benefits:	
Task Progress:	New project for FY2019.
Bibliography Type:	Description: (Last Updated: 02/23/2024)