

Fiscal Year:	FY 2009	Task Last Updated:	FY 09/28/2012
PI Name:	Zoldak, John		
Project Title:	Medical Consumables Tracking-GRC		
Division Name:	Human Research		
Program/Discipline:	HUMAN RESEARCH		
Program/Discipline-- Element/Subdiscipline:			
Joint Agency Name:	TechPort:	Yes	
Human Research Program Elements:	(1) ExMC :Exploration Medical Capabilities		
Human Research Program Risks:	(1) Medical :Risk of Adverse Health Outcomes & Decrements in Performance due to Inflight Medical Conditions (IRP Rev I) (2) Stability :Risk of Ineffective or Toxic Medications Due to Long Term Storage (IRP Rev F)		
Space Biology Element:	None		
Space Biology Cross-Element Discipline:	None		
Space Biology Special Category:	None		
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PI Organization Type:	INDUSTRY	Phone:	440.625.2334
Organization Name:	Zin Technologies, Inc.		
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PI Web Page:			
City:	Cleveland	State:	OH
Zip Code:	44130-7994	Congressional District:	16
Comments:			
Project Type:	GROUND	Solicitation:	Directed Research
Start Date:	06/01/2009	End Date:	09/30/2016
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:	Watkins, Sharmila	Contact Phone:	281.483.0395
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Flight Program:			
Flight Assignment:	NOTE: End date is now 09/30/2016 per HRP Master Task List dated 12/28/2012 (Ed., 3/14/2013)		
Key Personnel Changes/Previous PI:			
COI Name (Institution):			
Grant/Contract No.:	Directed Research		
Performance Goal No.:			
Performance Goal Text:			

Task Description:	<p>This task will identify current practices and develop controls, processes, and technical solutions to accurately track the inventory of medical consumables. When shuttle and ISS medical kits are returned to Earth, fewer medical consumables remain in the medical kits than would be expected based on reported use by the astronauts. This is significant because the possibility exists that exploration missions could be undersupplied and run the risk of not being able to treat an ill or injured crewmember, particularly given the small volume available for the medical kits. This task will identify current practices and develop controls, processes, and technical solutions to accurately track the inventory of medical consumables.</p> <p>The Medical Consumables Tracking system will utilize an electronic identification system comprised of a reader/scanner/interrogator and a transponder. The system will address insufficient tracking of medication and medical consumables usage on the International Space Station (ISS). An electronic tag will be placed on each package. Periodically the system will be powered and contents within the RSR storage locker will be inventoried. The information in the MCT database will be downlinked to the Health Management System (HMS) Inventory Tracking Tool (HITT), which contains medical inventory information to be accessed on the ground.</p> <p>Results to date (Preliminary Design Review level) indicate that using an RFID tag (electronic tag) to read a highly dense population of medical items (including liquids, pharmaceuticals of a dielectric nature and metal wrapped packaging) and achieve the minimum accuracy is feasible.</p> <p>Specific aims:</p> <ol style="list-style-type: none"> 1. Track medical consumables and medications accessed with an accuracy of 95% or better 2. No additional scheduled crew time to access a medication or medical consumable 3. Work in a microgravity environment 4. Work in space vehicles that have electronically noisy environments 5. Encrypted data transfer 6. To know how much of a particular medication is available 7. Read the electronic ID tagged items inside of Convenience Medications Pack 8. Have the ability to scale; to track small quantities or large quantities of medicines and medical consumables
Rationale for HRP Directed Research:	This research is directed because it contains highly constrained research, which requires focused and constrained data gathering and analysis that is more appropriately obtained through a non-competitive proposal.
Research Impact/Earth Benefits:	0
Task Progress:	New project for FY2009. [Ed. Note: Added to Task Book in September 2012 when received information]
Bibliography Type:	Description: (Last Updated:)