Future space missions will be significantly longer than current shuttle missions and new systems will be more complex than current systems. Increasing communication delays between crews and Earth-based support means that astronauts need to be prepared to handle the unexpected on their own. As crews become more autonomous, their potential span of control and required expertise must grow to match their autonomy. It is not possible to train for every eventuality ahead.

The Training Task addresses Program risks that lie at the intersection of the following three risks identified by the Project:

- Risk associated with reduced safety and efficiency due to poor human factors design
- Risk associated with poor task design
- Risk associated with inadequate information

Training Directed Research Project

Overview

Flight Resource Management training for Mission Operations Directorate (MOD) Flight Controllers could be integrated with systems training for optimal Mission Control Center (MCC) operations. The game teaches how to develop these training capabilities. By researching established training principles, examining future needs, and by using current practices in space flight training as test beds, both in Flight Controller and Crew Medical domains, this research project is mitigating program risks and generating templates and requirements to meet future training needs. Training efforts in Fiscal Year 08 (FY08) strongly focused on crew medical training, but also began exploring how Space Flight Resource Management training for Mission Operations Directorate (MOD) Flight Controllers could be integrated with systems training for optimal Mission Control Center (MCC) operations.

FY08 Deliverables

- Trade Study of Analogue Environments to Conduct Distributed Team Studies
- Demonstration of JIT Training Technique
- SFRM Generic Training Framework Concept Prototype

Future Research Direction

The Training Continuum

- Pre-Flight
- In-Flight Ops
- In-Flight Refresher
- In-Flight JITT
- Post Flight

- Skill-Based vs. Task-Based
- Classroom Simulations
- On-Board Equipment
- CBT On-Board drills
- Virtual Experience
- Expected Unknown
- Critical Skills
- Virtual Environment
- CBT

Some Research Questions:

- What are the basic and generalizable skills underlying different tasks?
- What is the optimal distribution of topics across training opportunities?
- What is the optimal delivery method and media for a given training topic?
- How do we assess proficiency?

Stakeholders:

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