

REDAC / NAS Operations



*Review of FY 2021 - 2024
Proposed Portfolio*

Enterprise Human Factors

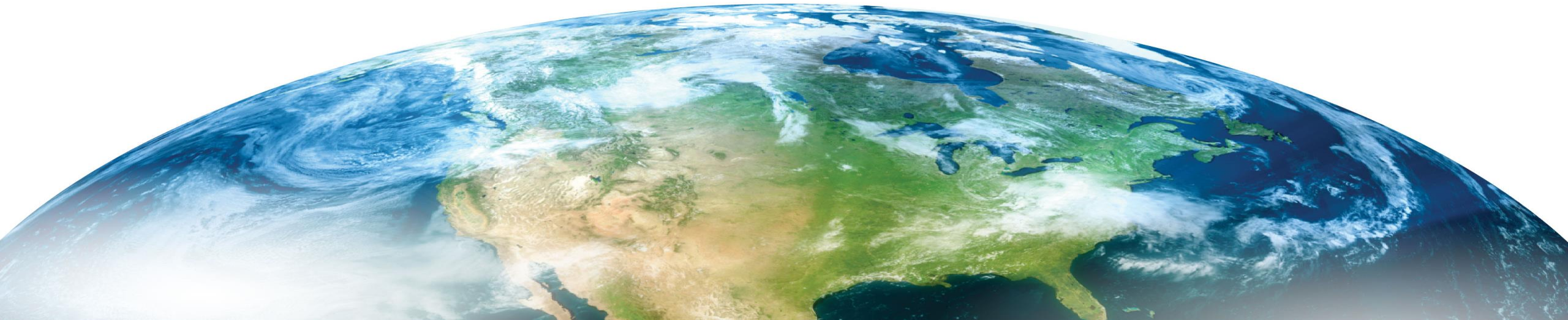
BLI Number: 1A12B0/1A11B0

Presenters' Names:

Tara Gibson (ANG-C1 Manager)

*Karl Kaufmann (Enterprise HF Program
Manager)*

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Enterprise Human Factors Overview

What are the benefits to the FAA

- Enterprise human factors research investigates areas that have effects across NAS domains, systems, and programs. The program provides integrated guidance on human performance considerations to concept development teams, validation teams, and/or implementation teams. A primary focus is research that furthers successful integration of systems developed and deployed to enable NextGen concepts.

What determines program success

- Early identification of potential human performance issues and mitigation strategies that can support the usability, acceptability, and safety of NextGen concepts and systems.
- Results provided that can be used to improve individual program's development, validation, and implementation activities, though there are no formal dependencies to specific programs.



Enterprise Human Factors Program Support

People:

- Program Manager: Karl Kaufmann
- Subject Matter Experts: Bill Kaliardos
- Program Support: Carl Berntsen, Evan Harvey, Michelle Perdue

Laboratories:

- ANG-E25 Human Factors Branch, Aviation Research Division Research and Development Human Factors Laboratory
- MITRE Center for Advanced Aviation System Development



Current FY21 Accomplishments

- TBO Impact on TMU
 - Cognitive Model Method Final Report
 - Laboratory Method Final Report
- TBO Training Model
 - Project Kickoff
 - Final Report
- Human Factors of Large ATC Displays
 - Project Kickoff
- TMU Regional Coordination and Decision Making
 - Project Kickoff
- Human Factors of Highly Automated Vehicles
 - Draft research results



Anticipated Research in FY22

Planned Research Activities

- TBO Impact on TMU Phase 2
 - Cognitive Model Method
 - Laboratory Method
- TMU Regional Coordination and Decision Making Phase 2
- TBO Training Model Phase 2
- Human Readiness Levels

Expected Research Products

- Cognitive Model – Terminal TMU
- Simulation Test Plan – TBO Effects on Terminal and Enroute TMUs
- Example Supplemental TBO Training Product
- TBO Training Effectiveness Assessment Test Plan
- Human Readiness Levels Literature Review



Anticipated Research in FY23

Planned Research Activities

- TBO Impact on TMU Phase 2
 - Cognitive Model Method
 - Laboratory Method
- TMU Regional Coordination and Decision Making Phase 2
- TBO Training Model Phase 2
- Human Readiness Levels

Expected Research Products

- Model-based Assessment of Effect of TBO on Terminal TMUs
- Simulation-based Assessment of Effect of TBO on Terminal and Enroute TMUs
- TMU Regional Coordination and Decision Making Phase 2 Final Report
- TBO Training Model Effectiveness Assessment
- Tailored Human Readiness Levels Guideline for FAA Application



Emerging FY24 Focal Areas

Traffic Management Human Factors

- Continued TMU Coordination and Decision Making
 - Extension to Command Center and FOC Collaboration
- Future Flow Management/Performance Based Flow Management
 - Initial Analysis

ATC Human Factors

- Charting Aviation's Future
 - Initial Analysis



Enterprise Human Factors

Research Requirements

Provide integrated enterprise HF guidance to:

- Increase the utilization rate of concepts and systems among controllers
- Ensure controller acceptance of concepts and systems
- Increase safety through the mitigation of known human factors risk
- Decrease controller workload through improved tools and techniques

Outputs/Outcomes

- HF Assessments, such as to determine operational context, NAS interactions, human actors, human factors risks and opportunities
- Enterprise level HF guidance, such as design/procedure/training recommendations for programs to consider

FY 2024 Planned Research

- ATC and Traffic Management Transformation Effects
- TBO Implementation and Usage Improvements

Out Year Funding Requirements

RE&D	FY21	FY22	FY23			
	N/A	N/A	N/A			
F&E	FY21	FY22	FY23	FY24	FY25	FY26
	\$1.5M	\$1.0M	\$1.5M	\$1.5M	\$2.0M	\$2.0M