

REDAC / NAS Operations



Enterprise Human Factors

BLI Number: 1A12B0/1A11B0

Presenters' Name:

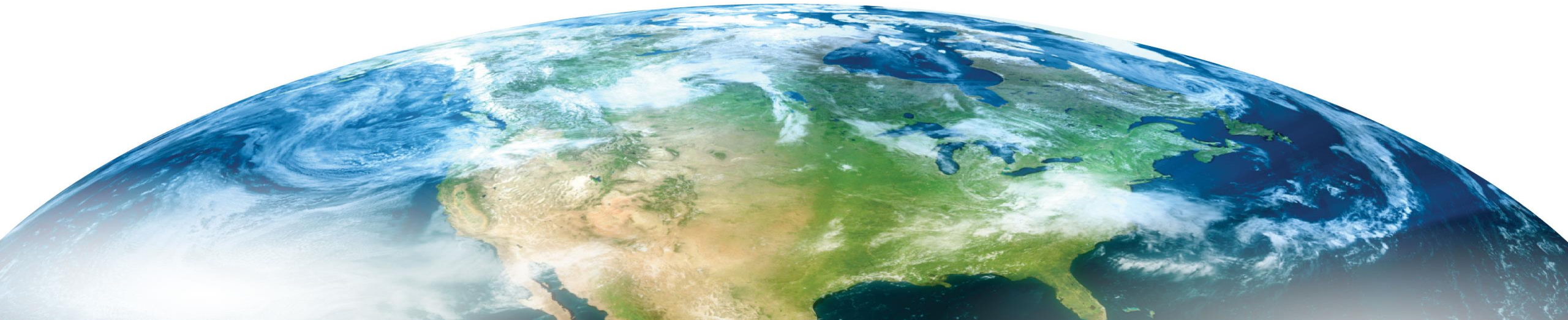
Karl Kaufmann

Tara Holmes (ANG-C1)

Date: March 17, 2021

Review of FY 2021 - 2023

Proposed Portfolio



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
- TBO Training Model Project Kickoff
- TMU Regional Coordination and Decision Making Project Kickoff
- Human Factors of Highly Automated Vehicles Draft Research Plan



Anticipated Research in FY22

Planned Research Activities

- Human Factors Impacts of Highly Automated Vehicles – Phase 2
 - Execution of selected research areas identified in Phase 1
- TBO Training
 - Follow-on training enhancement work based on TBO Training Model results
- TBO Impact on Traffic Manager Unit (TMU)
 - Follow-up on results of cognitive model and laboratory method projects
- Traffic Management Information Flow – National Command Center

Expected research Products

- Research report(s) on specific human factors considerations around integrating highly automated vehicles into the NAS
- Initial development and evaluation of TBO training enhancements
- Report(s) on TBO Impact on TMU Phase 2
- Analysis of Command Center information flow/exchange and recommendations for improvement



Emerging FY23 Focal Areas

- ATC Transformation
 - New traffic management concepts
 - Future Flow Management
 - Integration of Highly Automated Vehicles
- Trajectory-Based Operations
 - Traffic Management Unit effects
 - Fostering effective use
- Traffic Management Units
 - Coordination, information sharing, decision-making



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 2023 Planned Research

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

Out Year Funding Requirements

F&E

FY21	FY22	FY23	FY24	FY25	FY26
\$1.5M	\$1.0M	\$1.5M	\$1.5M	\$2.0M	\$2.0M