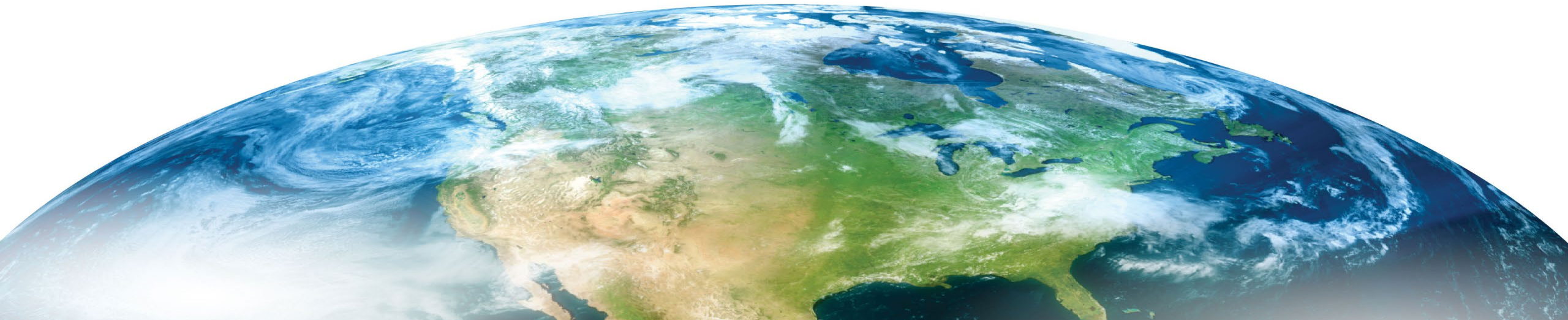# REDAC / Human Factors

Enterprise Human Factors

BLI Number: 1A12B0/1A11B0

Presenter Name: Karl Kaufmann (ANG-C1)

Date: August 18, 2020

Review of FY 2020 - 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

Laboratories:

- ANG-E25 Human Factors Branch, Aviation Research Division Research and Development Human Factors Laboratory

- MITRE Center for Advanced Aviation System Development

Enterprise Human Factors – Accomplishments in Current FY

Project	Description/Product
TBO Training Analysis Report	Provided an assessment of the current ("as is") TBO operations and training, and the desired ("to be") states of TBO operations and training, to establish the operational and training gaps.
Current State of Knowledge of TBO and Traffic Management Unit Operations	Provided the current state of knowledge of TBO operations and TMUs at all facility types. It includes literature review and interviews with TBO Implementation teams and applicable SMEs, to define knowledge gaps, known TBO impacts, and key operational scenarios to consider.

Enterprise ATC Ongoing and Anticipated Research in FY21+

Planned Research Activity	Description/Product
TBO Impact on TMU – Phase 1	Lab Method – Enroute and terminal Cognitive Modeling Method – Enroute only
Human Factors of Highly Automated Vehicles – Phase 1	Research plan to investigate HAV human factors implications for ATC.
Regional TMU Coordination Practices	This research will investigate the coordination and decision-making processes that have appeared, identify the associated best practices, and, when possible, provide standardization recommendations for widespread regional use.
TBO Training Model	This research will investigate current iTBO training, provide recommendations for training models, and develop guidance for implementation of training enhancements.
Human Factors Impacts of Large ATC Displays	Report on visually induced motion sickness and visual fatigue with large ATC displays

Backup information

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 risks
- 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

- Continue investigation of TBO effects
- Continue investigation of integration of new traffic management concepts

Out Year Funding Requirements

RE&D	FY20	FY21	FY22
	$ 0	$ 0	$ 0

F&E	FY20	FY21	FY22	FY23	FY24	FY25
	$1.5M	$1.5M	$1.5M	$1.5M	$1.5M	$1.5M