REDAC HF Subcommittee

Review of FY 2021 Proposed Portfolio

Enterprise (ATC) Human Factors

BLI Number: 1A11B0

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Federal Aviation Administration

Program Overview

- **The Enterprise Human Factor Development program will provide integrated guidance on human performance considerations to concept development, validation, and implementation teams.**

- **Research efforts to identify and mitigate systemic human factors considerations may yield the following benefits:**
  - Increasing the utilization rate of concepts and systems among controllers;
  - Ensuring controller acceptance of concepts and systems;
  - Increasing safety through the mitigation of known human factors risks; and
  - Decreasing controller workload through improved tools and techniques.

Federal Aviation Administration

Enterprise Human Factors
1A11B0

What are the benefits to the FAA?

- Human factors high-level (enterprise) guidance to assist with the evolution of the NAS infrastructure and its workforce

What determines program success?

- Successful transition of Human Factors products.

- Early identification of HF opportunities, to minimize a program's cost, safety and operational risks.

Enterprise Human Factors, 1A11B0 Overview Capabilities

People:

- Program Managers
  - Bill Kaliardos
  - Sabreena Azam (iTBO Training)

- Sponsors and Customers
  - ANG   NextGen
  - AJM   ATO Program Management Office ("PMO")
  - AJI   ATO Safety and Technical Training
  - AJV   ATO Mission Support Services
  - AJT   ATO Air Traffic Services
  - AJW   ATO Technical Operations

PBN and Enterprise Human Factors, Accomplishments in Current FY

PBN Human Factors, 1A12B0 (Previous BLI, FY16-17)

- PBN Human Performance Metrics

  - Tools and methods to "measure" and mitigate PBN ops from a ATC HF perspective

- Time/Speed/Spacing Integration

  - Recommendations on HF integration for suites of NextGen tools/procedures (vs. individual tools), from primarily a ATC HF perspective. Focus was on TBFM utilization as a key component in TBO.

- Established-on-RNP (EoR) HF Implementation Guidance

  - Guidance for facilities on EoR implementation, from primarily a ATC HF perspective

- ATC Skill Degradation from Use of NextGen Tools

  - Documentation of potential cognitive skill degradation risks from long-term use of NextGen decision support tools. Focus is on subset of Time/Speed/Spacing tools and iTBO. Risk mitigations will also be provided.

Enterprise Human Factors, 1A11B0 (Current BLI, FY 18+)

- iTBO Training

  - Front-end analysis and curriculum development to address integrated iTBO capabilities

Anticipated Research in FY20 and FY21

Planned Research Activities (TBD)

- **HF Integration Considerations of early TBO**
- **HF integration of UAS compliance with ATC visual procedures**
- **HF integration for Mid-Term TBO**
- **HF integration of Cross-domain automation enhancements**
- **HF integration of Traffic Flow Management concept development**
- **HF operational interactions between UAS Traffic Management (UTM) and air traffic managed airspace**
- **HF integration of new PBN procedures**

Expected research Products

- **All products will involve two parts**
  - HF assessments
  - HF guidance (enterprise level)

NextGen Enterprise Human Factors - Summary

Research Requirement

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

All planned research will include:

- 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

Planned Research

- HF Integration Considerations of early TBO
- HF integration of UAS compliance with ATC visual procedures
- HF integration for Mid-Term TBO
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- HF operational interactions between UAS Traffic Management (UTM) and air traffic managed airspace
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Out Year Funding Requirements

FY19	FY20	FY21	FY22	FY23
$1.5 M	$1.5 M	$1.5 M	$1.5 M	$1.5 M

Questions?

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