REDAC / NAS Ops

Review of FY 2022 Proposed Portfolio

Flight Deck Data Exchange Requirements (FD DER)

BLI Number: A12d

Nouri Ghazavi, ANG-C54

Date: 03/25/2020

Flight Deck Data Exchange Requirements
A12d

What are the benefits to the FAA

- Enable enhanced flight deck data exchange capabilities by identifying security management strategies required to mitigate potential threats and vulnerabilities around Electronic Flight Bag (EFB), Aircraft Interface Display (AID), and Internet Protocol (IP) Data Link, with additional avionics to be included in future phases. The air/ground data exchange capabilities will enable variety of flight deck applications that are expected to provide improvements to air traffic management and operations, such as Instrument Flight Rule (IFR) clearance delivery, trajectory negotiation.

What determines program success

- Ensure data exchange confidentiality, integrity, and availability to support future connected aircraft concept with its initial phase focusing on three primary components – EFB, AID, and IP Data Link
- Provide security management recommendations for the future connected aircraft concept

Flight Deck Data Exchange Requirements/ BLI Number: A12d Overview Capabilities

People:

- Project Manager: Nouri Ghazavi
- Project Team: Mosaic ATM and Honeywell

Laboratories:

- Cyber penetration Lab activity will be considered to support development and evaluation of security management strategy. The program will determine suitable lab environment in collaboration with industry partners as the program progresses.

Flight Deck Data Exchange Requirements – Accomplishments in Current FY (20)

- Established a contract with industry partners to begin work under SE2025
- Conducted kickoff meeting and determined high-level technical approaches for conducting cybersecurity assessments
- (ongoing) Conduct two cybersecurity risk assessments on (1) EFB and AID, and (2) flight deck IP Data Link technologies and architecture

Anticipated Research in FY21

Planned Research Activities

- Complete cybersecurity risks assessment associated with EFB, AID, and IP Data Link, and identify mitigation strategies to address those risks
- Develop a plan for the FD DER initial architecture and evaluation activities to support cybersecurity risks management of flight deck information exchange

Expected research Products

- Cybersecurity assessments report and recommendations for security management around EFBs, AIDs, and IP Data Link

Emerging FY22 Focal Areas

Research Expansion

- FD DER will expand research scope to include additional avionics and integrated flight deck components required to enable secure connected aircraft. This may include but not limited to systems in aircraft control domain such as Flight Management System (FMS).

Laboratory Exercise

- Develop initial FD DER architecture to conduct lab exercises to evaluate security management strategy identified through the cybersecurity risks assessment.

Flight Deck Data Exchange Requirements

Research Requirement

This program will address cybersecurity concerns around avionics and onboard IP Data Link required to enable connected aircraft concept and enhance Collaborative Decision Making (CDM) between flight deck and ground operations. The program will conduct cybersecurity assessment and evaluation exercises to identify risks and determine appropriate mitigation strategy. The findings of this research will serve as recommendations to support development of future standards and policies for connected aircraft.

Outputs/Outcomes

Products:

- Cybersecurity risks assessment reports and recommendations for security management around EFBs, AIDs, and IP Data Link, as well as other flight-critical avionics required to enable connected aircraft

FY 2022 Planned Research

- Cybersecurity risk assessments of avionics and aircraft systems in Aircraft Control domain and Airline Information Services domain such as FMS and aircraft maintenance system
- Develop a prototype and conduct lab exercises to evaluate security management strategy identified through the cybersecurity risks assessment exercise

Out Year Funding Requirements

FY20	FY21	FY22
$ 1.01M	$ 1.01M	$ 0.88M