ARINC Project Initiation/Modification (APIM)

1.0 Name of Proposed Project APIM 22-002

ARINC Project Paper 811A: Commercial Aircraft Information Security Concepts of Operation and Process Framework

1.1 Name of Originator and /or Organization

Jeffrey Rae, United Airlines

2.0 Subcommittee Assignment and Project Support

2.1 Suggested AEEC Group and Chairman

Existing NIS Subcommittee

2.2 Support for the Activity (as verified)

Airlines: United Airlines, Delta Air Lines

Airframe Manufacturers: Airbus (TBC)

Suppliers: Panasonic, Universal Avionics, Collins Aerospace, Honeywell

Others:

2.3 Commitment for Drafting and Meeting Participation (as verified)

Airlines: United Airlines, Delta Air Lines

Airframe Manufacturers: Airbus (TBC)

Suppliers: Panasonic, Universal Avionics, Collins Aerospace (TBC)

Others:

2.4 Recommended Coordination with other Groups

Cabin Systems Subcommittee (CSS), Software Data Loading (SDL)

3.0 Project Scope (why and when standard is needed)

3.1 Description

ARINC Report 811 was last published in 2005. Security technologies and concepts have changed significantly since that time. ARINC Report 811 should be reviewed and updated as needed to reflect the digital aircraft and modern approaches to security.

The intent is to remain within the original purpose and scope of ARINC Report 811 as referenced below:

1.1 Purpose of Document

The purpose of this document is to facilitate an understanding of aircraft information security and to develop aircraft information security operational concepts. This common understanding is important since a number of subcommittees and working groups within the aeronautical industry are considering aircraft information security.

This document also provides an aircraft information security process framework relating to airline operational needs that, when implemented by an airline and its suppliers, will enable the safe and secure dispatch of

the aircraft in a timely manner. This framework facilitates development of cost-effective aircraft information security and provides a common language for understanding security needs.

1.2 Scope

This document does not attempt to solve specific application, communication, or network security issues, but provides a concept of airline operations and process framework to AEEC subcommittees and working groups for the development of other ARINC Standards and aircraft equipment.

This document includes a common set of terms and concepts, bridging between airline organizations and the terrestrial network security industry.

3.2 Planned usage of the ARINC Standard

Note: New airplane programs must be confirmed by the aircraft manufacturer prior to completing this section.

New aircraft developments planned to use this specification yes ☐ no ☒

Airbus: (aircraft & date)

Boeing (aircraft & date)

Other: (manufacturer, aircraft & date)

Modification/retrofit requirement yes ☐ no ☒

Specify: (aircraft & date)

Needed for airframe manufacturer or airline project yes ☐ no ☒

Specify: (aircraft & date)

Mandate/regulatory requirement yes ☐ no ☒

Program and date: (program & date)

Is the activity defining/changing an infrastructure standard? yes ☐ no ☒

Specify (e.g., ARINC 429)

When is the ARINC standard required? _____

What is driving this date? _____

Are 18 months (min) available for standardization work? yes ☒ no ☐

If NO please specify solution: _____

Are Patent(s) involved? yes ☐ no ☒

If YES please describe, identify patent holder: _____

3.3 Issues to be Worked

The intent is to review the document to update with current technology and appropriate terms including:

- Security Roles
- Information Security Processes
- Security Objectives
- Security Controls
- Cybersecurity Risks and Threats

Throughout the review, other documents may be identified (related documents). Any documents identified would be shared with the Subcommittee/Working Group associated with the document and discussed to determine updates needed.

3.4 Security Scope

Is Cyber Security Impacted (if YES, check box(es) below) yes ☒ no ☐

- Aircraft Control Domain yes ☒ no ☐
- Airline Information Services Domain yes ☒ no ☐
- PAX Information and Entertainment Systems yes ☒ no ☐
- Other: _____ yes ☒ no ☒

(Discuss the level of cyber security guidance needed, the specific topics to be covered, and whether these topics are covered elsewhere by reference, e.g., ICAO Documents, RTCA/EUROCAE Standards, existing ARINC Standards, or if they need to be defined by a new or revised ARINC Standard.)

4.0 Benefits

4.1 Basic Benefits

Operation enhancements yes ☐ no ☒

For equipment standards:

a) Is this a hardware characteristic? yes ☐ no ☒
b) Is this a software Characteristic: yes ☐ no ☒
c) Interchangeable interface definition? yes ☐ no ☒
d) Interchangeable function definition? yes ☐ no ☒

If not fully interchangeable, please explain: _____

Is this a software interface and protocol standard? yes ☐ no ☒

Specify: _____

Product offered by more than one supplier yes ☐ no ☒

Identify: _____(company name)_____

4.2 Specific Project Benefits

Update ARINC Report 811 and facilitate a more relevant understanding of aircraft information security systems and concepts as encountered today. A common understanding of these updated concepts will benefit multiple stakeholders, subcommittees, and working groups within the aeronautical industry.

4.2.1 Benefits for Airlines

4.2.2 Benefits for Airframe Manufacturers

4.2.3 Benefits for Avionics Equipment Suppliers

5.0 Documents to be Produced and Date of Expected Result

ARINC Project Paper 811A – Expected May 2024

5.1 Meetings an Expected Document Completion

The following table identifies the number of meetings and proposed meeting days needed to produce the documents described above.

Activity	Mtgs	Mtg-Days (Total)	Expected Start Date	Expected Completion Date
ARINC 811A	*7*	*7*	*05/2022*	*05/2024*

Please note the number of in-person meetings and the number of meeting days to be supported by the ARINC IA Staff.

Please add a statement describing the frequency of web conferences.

6.0 Comments

6.1 Expiration Date for the APIM

October 2024

Completed forms should be submitted to Paul Prisaznuk (pjp@sae-itc.org)
AEEC Executive Secretary & Program Director