ARINC Project Initiation/Modification (APIM)

1. Name of Proposed Project

APIM: 09-003B

Supplement 3 to ARINC Specification 840: Electronic Flight Bag (EFB) Application Control Interface (ACI) Standard.

Software specification only yes ☑ no ☐

2. Subcommittee Assignment and Project Support

2.1 Identify AEEC group

Electronic Flight Bag (EFB) Subcommittee.

2.2. Support for the activity

Organizations: Airbus, American Airlines, Apple, Astronautics, Astronics, Boeing, British Airways, Comply365, Delta Air Lines, FedEx, Jeppesen, Lextech, Lufthansa Airlines, Lufthansa Systems, PACE, Rockwell Collins, Sabre, Southwest Airlines, Teledyne, United Airlines, UTC Aerospace, [others, TBI]

2.3. Commitment for resources (directly from participant)

Organizations: Airbus, American Airlines, Apple, Astronautics, Astronics, Boeing, British Airways, Comply365, Delta Air Lines, FedEx, Lextech, Lufthansa Airlines, Lufthansa Systems, PACE, Rockwell Collins, Sabre, Southwest Airlines, Teledyne, United Airlines, UTC Aerospace, [others, TBI]

2.4. Recommended Coordination with other groups

The following activities are relevant to this topic:

- ARINC 633 AOC Messaging Application
- ARINC 828 Electronic Flight Bag (EFB)
- ARINC 834 Aircraft Data Interface Function (ADIF)

3. Project Scope

3.1 Description

The software components installed on an EFB can be distinguished either as being underlying system software (e.g. operating system or system services such as input / output service) or as being applications for specific purposes (e.g. electronic charting, document viewers, technical logbooks).

ARINC Specification 840 presently defines a standard for the Application Control Interface (ACI) that exists between the Application Control Component (ACC) software and EFB applications in all classes of EFB. The standard is intended for implementation by each ACC software provider and each EFB application developer. It provides the means to launch and control applications on different EFB platforms without change to any other EFB system software, “Main Menu” application, or the application itself.

The rapid acceptance and deployment of low cost, mobile COTS tablets and smartphones has revolutionized EFB development in commercial aviation. This has led to numerous developers providing unique applications intended to address single tasks. Airline operators in turn, select various applications which, although well suited for their specific task, may not function well together and are difficult to use in concert. The goal of this APIM is to provide a new standard that provides a unified user experience for the application based, tablet EFB environment most airlines operate in today.

Material on the following topics will be added to the standard:

- Inter-application navigation for users
- Blending of multiple applications into a single workflow
- Single data entry with data shared across applications

3.2. Planned usage of the envisioned specification

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

New avionics equipment for major retrofit programs yes ☐ no ☑

Mandate/regulatory requirement yes ☐ no ☑

Please specify program and date: Not Applicable

Modification/retrofit requirement yes ☐ no ☑

Please specify: Not Applicable

Airframer and/or airline projects to use this specification yes ☑ no ☐

Once established, it is expected to be used by airframer and/or airline projects using EFB ACC or application software.

Is the infrastructure standard for the aircraft defined? yes ☑ no ☐

When is the ARINC standard required?

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

If 'No' please specify solution:

Patent(s) involved? yes ☐ no ☑

If 'Yes' please describe:

There are no known patents, however, the objective of the proposal is to reach an industry consensus on a standard, and this could involve conflicts with existing proprietary non-standard interfaces.

3.3. Issues to be worked

The main issues are:

- Application to application workflow, data sharing, and navigation
- Interface to be hardware and architecture agnostic
- Interface to be operating system independent

4.0 Benefits

4.1. Basic benefits

Ability to efficiently run and utilize different EFB applications on a single platform.

Operational enhancements (reduction in DOC?) yes ☑ no ☐

Form, Fit, Function, (FFF) standard (HW and/or SW):

a. ARINC 600 form (only HW) yes ☐ no ☑

b. Interchangeable fit (plug, mount, SW loading interface, etc) yes ☐ no ☑

c. Interchangeable function yes ☑ no ☐

If not fully interchangeable, please explain:

Interface and protocol standard only, since H/W will not be addressed yes ☑ no ☐

Please specify: The purpose of this proposed project is to establish a standard definition for application control for the mobile COTS tablet and smartphone environment.

Product offerable from more than one supplier (competitive environment) yes ☑ no ☐

Please identify: The purpose of this proposed project is to establish an open standard that can be referenced by multiple application developers and implemented by any supplier.

4.2 Specific project benefits

- EFB applications that meet the ACI standard will integrate seamlessly.
- Published standard will enforce common understanding for all EFB application suppliers.
- EFB application developers will benefit from having consistent and recognized inter-application standards regardless of operating system.

4.3 Benefit for Airlines

- Being able to efficiently run different applications on COTS tablet EFBs.
- A wider selection of applications that would support this standard.
- Lower integration cost, time, and risk.
- Reduced training requirements for an integrated set of applications rather than separate isolated applications.
- Better and more consistent integration of applications leading to better user acceptance.

4.4 Benefit for Airframe Manufacturers

- Flexibility to add new applications / functionality to the aircraft.
- Reduced integration time to verify new applications.

4.5 Benefit for EFB Equipment and Application Suppliers

- Flexibility to add new applications.
- Reduced integration time to validate new applications.
- Reduced integration for third party developers to integrate on different COTS EFB platforms and aircraft specific hardware.
- Single data entry removes hurdles to new EFB application adoption as the number of applications available continues to grow.
- Applications will be inter-operable across different COTS EFBs.

5. Documents to be Produced and Date of Expected Result

Supplement 3 to ARINC Specification 840: Electronic Flight Bag (EFB) – Application Control Interface (ACI) Standard - April 2018

6. Meetings/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
Supplement 3 to ARINC 840	4	2 x 1(w/EFBUF) 2 x 3 (dedicated) 8 total days	June 2017	April 2018

6.1 Expiration date for this APIM

October 2018

7. Comments

Any other information deemed useful to the committee for managing this work.

For AEEC staff use only:

Date Received: AEEC staff:

Potential impact: New Acft *(New aircraft/system)*

Resolution: Date of Resolution: First:

Rev A:

(Withdrawn, Authorized, Deferred, More detail needed, Rejected)