

ARINC Project Initiation/Modification (APIM)

1.0 Name of Proposed Project 8xx 23-XXX

ARINC 8xx will define a standardized physical interface and protocols needed to connect an Electronic Flight Bag (EFB) to a remote display via and ARINC 759 Aircraft Interface Device (AID).

This proposed standard will define the physical interface including power delivery and network connectivity between the EFB and AID as well as between the AID and a remote display. Further, this proposed standard would define protocols for at least video and Human Machine Interfaces (HMI) such as touch screen while addressing cybersecurity concerns.

Software specification only yes no

1.1 Name of Originator and /or Organization

Collins Aerospace on behalf of the EFB Subcommittee

2.0 Subcommittee Assignment and Project Support

2.1 Suggested AEEC Group and Chairman

EFB Subcommittee

2.2 Support for the Activity (as verified)

Airlines: Air France-KLM, American, Austrian, Delta, FedEx, Lufthansa, Southwest, United, UPS

Airframe Manufacturers: Airbus, Boeing

Suppliers: Astronics AES, Astronautics Corporation, Collins Aerospace, GE Aviation Systems, Lextech, Lufthansa Systems, NavBlue, Teledyne

2.3 Commitment for Drafting and Meeting Participation (as verified)

Airlines: Delta, Lufthansa, Southwest

Airframe Manufacturers: Airbus, Boeing

Suppliers: Astronics AES, Astronautics Corporation, Collins Aerospace, GE Aviation Systems, Lextech, Lufthansa Systems, NAVBLUE, Teledyne

2.4 Recommended Coordination with other Groups

The EFB Subcommittee will coordinate with other subcommittees as needed.

The following specifications and activities might be relevant to this topic:

- ARINC Specification 679: Aircraft Server, Communications, and Interface Standard
- ARINC Characteristic 759: Aircraft Interface Device (AID)
- ARINC Specification 818: Avionics Digital Video BUS (ADVB) High Data Rate
- ARINC Specification 828: Electronic Flight Bag (EFB) Standard Interface
- ARINC Specification 834/834A: Aircraft Data Interface Function

3.0 Project Scope (why and when standard is needed)

3.1 Description

Today most airlines are using tablets as an EFB, which they mount on the side of the cockpit. Currently, there is no standardized interface from the aircraft to the EFB for the following use cases:

- Device Charging (Power Delivery)
- Wired Network Access (when Wi-Fi is not suitable)
- Remote EFB display on cockpit screen (including user's control device like touch screen or keyboard).

In most aircraft operating today, the EFB is mounted to the side of the pilot. Pilots must turn up to 90 degrees to utilize, view, and translate EFB application information into action. There is an increasing desire to be able to view EFB applications on one of the forward-facing screens (MFDs) for ease of use and improved pilot orientation.

The purpose of this project is to create a new specification that defines how tablet EFBs can be connected on the flight deck to access power and information. A further goal is to define how to update the flight deck integrated display capability for better ergonomics.

The initial approach for this APIM is to leverage the USB-C connector specification to support the listed EFB use cases.

This EFB information may need to be processed through an AID device for additional security when interfacing with avionics (write capability).

3.2 Planned usage of the ARINC Standard

New aircraft developments planned to use this specification	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>
Modification/retrofit requirement	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>
Needed for airframe manufacturer or airline project	yes <input type="checkbox"/>	no <input checked="" type="checkbox"/>
Mandate/regulatory requirement	yes <input type="checkbox"/>	no <input checked="" type="checkbox"/>
Is the activity defining/changing an infrastructure standard?	yes <input type="checkbox"/>	no <input checked="" type="checkbox"/>
Are 18 months (min) available for standardization work?	yes <input checked="" type="checkbox"/>	no <input type="checkbox"/>
Are Patent(s) involved?	yes <input type="checkbox"/>	no <input checked="" type="checkbox"/>

3.3 Issues to be Worked

- Propose a single standard physical interface supporting all listed use cases compatible of most tablet EFBs / current generation of laptops
- Develop a simple specification that abstracts the complexity of interfacing with the EFB away from an EFB application developer.
- Help AID developers understand how to translate this EFB content into data the MFD understands.
- Consider safety and (cyber) security aspects.
- Clearly project flags to the pilot that this is non-certified data being viewed.

3.4 Security Scope

Is Cybersecurity 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

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It is paramount to address all potential security concerns.

4.0 Benefits

4.1 Basic Benefits

The main benefit from this work is to leverage modern technology provided through tablet EFBs when interfacing with installed certified MFDs.

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

Product offered by more than one supplier yes no

The purpose of this proposed project is to provide a common standard to project non-certified EFB information on forward facing screens.

4.2 Specific Project Benefits

The ability to easily connect standard tablet EFBs with a single connector providing access to power and data and potentially send data from an EFB to an aircraft integrated display system will reduce crew workload and reduce entry errors.

4.2.1 Benefits for Airlines

This update will make it easier for airlines to develop EFB apps that address common EFB use cases including power charging, and access to avionics data (over an AID) and allow them to be viewed on the forward-facing certified avionics MFDs.

4.2.2 Benefits for Airframe Manufacturers

There is also benefit to airframe manufacturers in that they will be able provide the same common interface for their own connectivity solutions.

4.2.3 Benefits for Avionics Equipment Suppliers

They can offer a standardized interface to the EFB providing power charging, avionics and connectivity access, and allow pilots to view EFB application content on forward facing displays.

5.0 Documents to be Produced and Date of Expected Result

ARINC Specification 8xx by June 2026.

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
<i>Supplement 1 to ARINC 8xx</i>	<i>Monthly 2-hour virtual meetings</i>	<i>Semi-annual 3-day virtual meetings, with additional TBD</i>	<i>6/2023</i>	<i>6/2026</i>

6.0 Comments

None

6.1 Expiration Date for the APIM

December 2026

***Completed forms should be submitted to Sam Buckwalter
(sam.buckwalter@sae-itc.org)
AEEC Executive Secretary & Program Director***