ARINC Project Initiation/Modification (APIM)

1.0 Name of Proposed Project APIM# 10-003

Bus speed update and ARINC Characteristic 757/757A Alignment

1.1 Name of Originator and/or Organization

DFDR Subcommittee

2.0 Subcommittee Assignment and Project Support

2.1 Suggested AEEC Group and Chairman

DFDR Subcommittee

Robert Swanson
Association: FedEx
Phone number: 1-901-224-4678
Contact info: robert.swanson@fedex.com

2.2 Support for the activity (as verified)

Airlines:

FedEx, American Airlines, UPS

Airframe Manufacturers:

Airbus, Boeing

Suppliers:

Honeywell, Inc.

L3 Communications

GE Aviation

Teledyne Controls

Curtiss-Wright Controls

Others:

USAF

AAIB

NTSB

2.3 Commitment for Drafting and Meeting Participation (as verified)

Airlines:

FedEx, American Airlines, UPS

Airframe Manufacturers:

Airbus, Boeing

Suppliers:

Honeywell, Inc.

L3 Communications

General Electric

Teledyne Controls

Curtiss-Wright Controls

Others:

USAF

AAIB

NTSB

2.4 Recommended Coordination with other groups

FRED Subcommittee

3.0 Project Scope (why and when standard is needed)

3.1 Description

The first part of the activity is to bring ARINC Characteristic 757: Cockpit Voice Recorder (CVR) into alignment with the the proposed ARINC 757A: Cockpit Voice Recorder (CVR) Gray Cover (in draft at the time of this writing). ARINC 757A is derived from ARINC 757 and was produced to introduce reporting of the Recorder Independent Power Supply (RIPS) status to the Onboard Maintenance System (OMS) using the CVR. ARINC 757A also introduces power input wiring changes. In the preparation of ARINC 757A, inconsistencies were noted in the methods used by airframe manufacturers to control start and stop commands for recording. These differences could result in CVR actions that may be contrary to CVR requirements. These topics were discussed by the DFDR Subcommittee and were resolved in the preparation of ARINC 757A. Other material included within the original ARINC 757 was recognized as a potential problem and will be modified to preclude problems in the future. With the expected completion of ARINC 757A, the DFDR Subcommittee, as part of this APIM, will prepare Supplement 5 to ARINC 757 to resolve problems that have been identified during the preparation of ARINC 757A.

The second part of this effort will update the definition of recorder interfaces and the data acquisition unit to allow for faster bus speeds and to enable higher data throughput. Supplements to ARINC 747 DFDR, ARINC 757 CVR, and ARINC 717 DFDAU will be prepared as a result.

3.2 Planned usage of the envisioned specification

Use the following symbol to check yes or no below. ☒

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

Airbus:	A350 2012
Irkut	MC-21 2016
Bombardier	C-Series 2012
Mitsubishi	MRJ 2013

Modification/retrofit requirement yes ☒ no ❑

Boeing B-777 2010

Needed for airframe manufacturer or airline project yes ☒ no ❑

Per above

Mandate/regulatory requirement yes ☒ no ❑

Mandate for additional data capacity

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

ARINC 573/717 bus update

When is the ARINC standard required?

Immediate for new aircraft – December 2010 for existing aircraft

What is driving this date? Mandate

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

If NO please specify solution: Three meetings in one year

Are Patent(s) involved? yes ❑

If YES please describe, identify patent holder: _____

3.3 Issues to be worked

See paragraph 3.1.

4.0 Benefits

4.1 Basic benefits

Operational 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: Recorder to DFDAU

Product offered by more than one supplier yes ☒ no ❑

4.2 Specific project benefits (Describe overall project benefits.)

4.2.1 Benefits for Airlines

Meets mandate

4.2.2 Benefits for Airframe Manufacturers

Meets mandate

4.2.3 Benefits for Avionics Equipment Suppliers

Meets mandate

5.0 Documents to be Produced and Date of Expected Result

5.1 Meetings and 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
Supp 5 to ARINC 757	3	6	May 2010	March 2011
Supp 15 to ARINC 717				
Supp 3 to ARINC 747				

6.0 Comments

6.1 Expiration Date for the APIM

March 2011

AEEC Secretary use only:

Date Received: Jan 15, 2010 Assigned to: _____

Potential impact: _____

*(**A**. Safety **B**. Regulatory **C**. New aircraft/system **D**. Other)*

Resolution: _____

Authorized, Deferred, Withdrawn, More Detail Needed, Rejected)

Assigned to SC/WG:_____