

ARINC Project Initiation/Modification (APIM)

1.0 Name of Proposed Project **APIM 19-002**

Update Bus Speed for Cabin Seat Networks and prepare:

- **Supplement 4 to ARINC Specification 485: Cabin Equipment Interfaces, Part 1, Head End Equipment Protocol**
- **Supplement 5 to ARINC Specification 485: Cabin Equipment Interfaces, Part 2, Physical Layer – In-Seat Protocol**

1.1 Name of Originator and/or Organization

Scott McMillan, Crane Aerospace and Electronics

1.2 Suggested AEEC Group and Chairman

Cabin Systems Subcommittee, Dale Freeman, Delta Air Lines

1.3 Support for the activity (as verified)

Airlines: Delta Air Lines

Airframe Manufacturers: Airbus, Boeing

Suppliers: Crane Aerospace and Electronics, TE Connectivity, Amphenol, KID-Systeme, Panasonic Avionics Corp, Recaro

Others:

1.4 Commitment for Drafting and Meeting Participation (as verified)

Airlines: Delta Air Lines

Airframe Manufacturers: Airbus, Boeing

Suppliers: Crane Aerospace and Electronics, TE Connectivity, Amphenol, KID-Systeme, Panasonic Avionics Corp, Recaro

Others:

1.5 Recommended Coordination with other groups

(List other AEEC subcommittees or other groups.)

2.0 Project Scope (why and when standard is needed)

2.1 Description

The ARINC 485 In-Seat Network currently specifies use of low-speed bus (9.6 kbps). This APIM would add the option of high-speed bus (115 kbps).

2.2 Planned usage of the envisioned specification

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

New aircraft developments planned to use this specification yes no

 Airbus: All Aircraft with seats using ARINC 485

 Boeing: All Aircraft with seats using ARINC 485

 Other: All Aircraft with seats using ARINC 485

Modification/retrofit requirement yes no

Specify: All Aircraft with seats using ARINC 485

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: ARINC 485, Parts 1 and 2

When is the ARINC standard required? April 2020

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: _____

2.3 Issues to be worked

In ARINC 485, Part 1:

- Update Section 2.2.4, *Bus Timing*, to define two bus speeds.
- Update Section 2.2.4.1, *High-Speed Bus Timing*, to specify high-speed bus.
- Update Section 2.2.4.2, *Low-Speed Bus Timing*, to specify low-speed bus.

In ARINC 485, Part 2:

- Update Section 2.1, *Physical Layer*, Bullet 4 to specify both the low-speed rate and the high-speed rate.
- Update Section 2.2.4, *Bus Timing*, to specify two bus speeds.

3.0 Benefits

3.1 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: _____

Product offered by more than one supplier yes no

Identify: (company name)

3.2 Specific project benefits (Describe overall project benefits.)

3.2.1 Benefits for Airlines

Airlines would benefit from a more responsive and faster in-seat communication bus.

3.2.2 Benefits for Airframe Manufacturers

Airframe manufacturers will benefit from increased reliability and functionality.

3.2.3 Benefits for Avionics Equipment Suppliers

Suppliers could design increased functionality and communication capabilities into their products and services.

4.0 Documents to be Produced and Date of Expected Result

Supplement 4 to ARINC Specification 485: *Cabin Equipment Interfaces, Part 1, Head End Equipment Protocol*

Supplement 5 to ARINC Specification 485: *Cabin Equipment Interfaces, Part 2, Physical Layer – In-Seat Protocol*

4.1 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
<i>Supp 4 to ARINC 485, Part 1</i>	2	6	<i>May 2019</i>	<i>Apr 2020</i>
<i>Supp 5 to ARINC 485, Part 2</i>	2	6	<i>May 2019</i>	<i>Apr 2020</i>

Reflects all CSS meetings responsible for several APIMs in work. In addition to the proposed meetings identified above, the CSS will have virtual meetings to develop preliminary pin assignments and connector definitions.

5.0 Comments

None.

5.1 Expiration Date for the APIM

October 2020

Completed forms should be submitted to the AEEC Executive Secretary.