ARINC Project Initiation/Modification (APIM)

1.0 Name of Proposed Project APIM 16-006

Broadband Satellite System Installation and Equipment Interfaces

1.1 Name of Originator and/or Organization

Ku/Ka Band Satellite Communications (KSAT) Subcommittee

2.0 Subcommittee Assignment and Project Support

2.1 Suggested AEEC Group and Chairman

Ku/Ka Band Satellite Communications (KSAT) Subcommittee
Peter Lemme, Totaport

2.2 Support for the activity (as verified)

Airlines: Delta
Airframe Manufacturers: Boeing (TBC), Airbus (TBC), Bombardier
Service Providers:
Suppliers:
Others:

2.3 Commitment for Drafting and Meeting Participation (as verified)

Airlines: Delta
Airframe Manufacturers: Boeing (TBC), Airbus (TBC), Bombardier
Service Providers:
Suppliers:
Others:

2.4 Recommended Coordination with other groups

Air/Ground Communications Systems (AGCS) Subcommittee
Cabin Systems Subcommittee (CSS)
Network Infrastructure and Security (NIS) Subcommittee
Systems Architecture and Interfaces (SAI) Subcommittee

3.0 Project Scope (why and when standard is needed)

3.1 Description

ARINC 791, Part 1 and ARINC 791, Part 2 define Ku-Band and Ka-Band satellite communication (satcom) equipment, installation and necessary interfaces to aircraft systems. Airlines, aircraft manufacturers, avionics suppliers, IFE suppliers, cabin communication suppliers and service providers with an interest in providing this equipment and services have participated in these activities.

It is recommended that the following work be performed to maintain these standards:

Supplement 3 to ARINC Characteristic 791 Part 1, including the following:

- Revise fittings to address installation issues identified during installation

programs and to accommodate a broader range of antenna options.

- Revise antenna location and blockage maps for selected single aisle configurations
- Clarify labeling of bulkhead penetrations
- Revise form factor length dimension for the KRFU and KANDU enclosures
- Revise and correct RTCA DO-160 section and category references, including updates for DO-160G
- Provide guidance on minimum agility to track satellites in taxi, in approach/departure, and enroute
- Provide guidance for waveguide installation

Supplement 2 to ARINC Characteristic 791 Part 2, including the following:

- Modify the network interface definition to correct port labeling and VLAN trunk definition.
- Revise aircraft geometry/blockage data section to include asymmetric blockage cases
- Update the management information base (MIB) for Ku-band and Ka-band satcom systems

3.2 Planned usage of the envisioned specification

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

Airbus: Airplane retrofit and forward fit programs

Boeing: 737 Max, 777X, and airplane retrofit programs

Modification/retrofit requirement yes ☒ no ☐

Specify: Airlines are retrofitting connectivity systems into their existing fleets.

Needed for airframe manufacturer or airline project yes ☒ no ☐

Specify: driven by the need to provide common definitions for the airplane programs and retrofit programs

Mandate/regulatory requirement yes ☐ no ☒

Program and date: No mandate

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

Specify:

When is the ARINC Standard required? Per aircraft program

What is driving this date? Aircraft Development Schedules

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

If NO, please specify solution: Not applicable

Are Patent(s) involved? yes ☐ no ☒

If YES please describe, identify patent holder: Not applicable

3.3 Issues to be worked

- Take advantage of improvements or corrections identified in the development of ARINC Project Paper 792
- Incorporate items identified in service implementation of ARINC 791 by the suppliers, service providers, airlines, and airframe manufacturers

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 ☒

Product offered by more than one supplier yes ☒ no ☐

Identify:

4.2 Specific project benefits (Describe overall project benefits.)

Simplify and lower the cost of installation and interconnection of these Ku band and Ka band satellite communication systems in new and retrofit airplanes.

4.2.1 Benefits for Airlines

Lowers acquisition cost of these systems for new and retrofit airplanes. Standardized equipment will also lower maintenance and spares costs across the airlines multiple airplane models.

4.2.2 Benefits for Airframe Manufacturers

Simplifies the design for installation of these systems, lowering the cost of installation and interconnection which ultimately lowers the acquisition cost.

4.2.3 Benefits for Avionics Equipment Suppliers

Avionics suppliers are able to design standard equipment applicable to multiple airplane manufacturers and models decreasing their design effort and cost.

5.0 Documents to be Produced and Date of Expected Result

Supplement 3 to ARINC 791 Part 1 and Supplement 2 to ARINC 791 Part 2

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
Supplement 3 to ARINC 791 Part 1 Supplement 2 to ARINC 791 Part 2	3	9	July 2016	Oct 2017

Reflects necessary Ku-Band and Ka-Band Satcom Subcommittee meetings. In addition to the proposed meetings identified above, the Subcommittee will have approximately 10 virtual meetings per year to support specific develop goals.

6.0 Comments

None.

6.1 Expiration Date for the APIM

Oct 2017

Completed forms should be submitted to the AEEC Executive Secretary.