

AEEC Project Initiation/Modification (APIM)

- 1.0 Name of Proposed Project** **APIM 07-008E**
Supplement 2 to ARINC Characteristic 791 Part 2: Ku-Band and-Ka Band Broadband Satellite System Installation and Equipment Interfaces
- 2.0 Subcommittee Assignment and Project Support**
This effort has defined 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 scope of this effort be expanded to include Supplement 2 to ARINC Characteristic 791, Part 2. The purpose of this supplement is to (1) update and consolidate the management information base (MIB) for the Ku/Ka-band Satcom system and (2) update Quality of Service definitions, both based on inputs from developers and related systems. In addition, development of common protocols and interfaces between multiple satcom systems and airline cabin services as well as passenger devices will be considered.
- 2.1 Identify AEEC Group**
Ku/Ka Band Satellite Communications (KSAT) Subcommittee
- 2.2 Support for the activity**
Airlines: Delta, Lufthansa
Airframe Manufacturers: Airbus, Boeing Commercial Airplanes, Bombardier
Service Providers: Gogo, Inmarsat, Intelsat, Panasonic Avionics, Row 44, ViaSat
Suppliers: Kymeta, Thinkom, Com Dev, Honeywell, iDirect, Intelsat, ITS
Electronics, Rockwell Collins, TECOM, Thales, Wavestream
- 2.3 Commitment for resources (Identify each company by name)**
Airlines: Delta, Lufthansa
Airframe Manufacturers: Airbus, Boeing Commercial Airplanes, Bombardier
Service Providers: Gogo, Inmarsat, Intelsat, Panasonic Avionics, Row 44, ViaSat
Suppliers: Kymeta, Thinkom, Com Dev, Honeywell, iDirect, Intelsat, ITS
Electronics, Rockwell Collins, TECOM, Thales, Wavestream
- 2.4 Chairman: (Recommended name of Chairman)**
Peter Lemme
- 2.5 Recommended Coordination with other groups**
Air/Ground Communications Systems (AGCS) Subcommittee
AGIE/MAGIC 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)

ARINC 791 establishes standard form, fit, and interfaces for an aviation wideband satcom system operating over Ku band or Ka band.

Two key goals of this activity are as follows:

- (1) to permit standardized aircraft provisioning, and
- (2) interchangeability between antenna subsystem and the modem/service provision.

3.1 Description

This project would standardize the broadband satellite equipment hardware and electrical/electronic installation interfaces onto all commercial airplanes.

3.2 Planned usage of the envisioned specification

New aircraft developments planned to use this specification yes no

Airbus: A350

Boeing: 777X

Modification/retrofit requirement yes no

Airbus: A318-321, A330, A340, A380

Boeing: 737, 747, 767, 777

Needed for airframe manufacturer or airline project yes no

Airbus: A350

Boeing: 777X

Mandate/regulatory requirement yes no

Program and date:

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

ARINC Project Paper 791

When is the ARINC standard required? April 2015

What is driving this date? [Continued Implementation in forward fit and retrofit applications](#)

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

If NO please specify solution: _____

Are Patent(s) involved? yes

If YES please describe, identify patent holder: _____

3.3 Issues to be worked

- [Updating and consolidating MIB to fit in with industry needs](#)
- [Clarification of QOS that is not handled by terminal](#)
- [Providing adequate reference to and consistency with ARINC Specification 830 and ARINC Specification 839](#)
- [Common satcom protocols and interfaces for airline cabin services](#)
- [Common satcom protocols and interfaces for passenger devices](#)

4.0 Benefits

Lower airplane design and installation costs, lower system design cost for

multiple airplanes, and also lower airline acquisition costs.

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: _____

Product offered by more than one supplier yes no

Identify: Panasonic Avionics, AirCell, Row 44, Inmarsat

4.2 Specific 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

4.3 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.

4.4 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.

4.5 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 2 to ARINC Characteristic 791, Part 2, Electrical Interfaces and Functional Equipment Description, April 2015](#)

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
ARINC 791, Part 2, Supplement 2	2	6*	Apr 2014	Apr 2015

*In addition, monthly web conferences will be scheduled.

6.0 Comments

None