

## **ARINC Project Initiation/Modification (APIM)**

- 1.0 Name of Proposed Project** **APIM 19-001**  
Prepare **Supplement 1 to ARINC Characteristic 792: Second-Generation Ku-Band and Ka-Band Satellite Communication System**
- 1.1 Name of Originator and/or Organization**  
Mark Sorenson – Delta Air Lines
- 2.0 Subcommittee Assignment and Project Support**
- 2.1 Suggested AEEC Group and Chairman**  
Ku/Ka-band Satellite Subcommittee  
Mark Sorenson – Delta Air Lines  
Chris Schaupmann - Airbus
- 2.2 Support for the activity (as verified)**  
Airlines: Delta Air Lines, United Airlines  
Airframe Manufacturers: Airbus, Boeing, Bombardier, Embraer (TBC), Gulfstream  
Suppliers: GoGo, VIASAT, Zodiac, Smiths Interconnect, ThinKom, Astronics, Phasor (TBC), Carlisle, Collins Aerospace  
Others: TotaPort, Seamless Alliance
- 2.3 Commitment for Drafting and Meeting Participation (as verified)**  
Airlines: Delta Air Lines, United Airlines  
Airframe Manufacturers: Airbus, Boeing, Bombardier, Embraer (TBC), Gulfstream  
Suppliers: GoGo, VIASAT, Zodiac, Smiths Interconnect, ThinKom, Astronics, Phasor (TBC), Carlisle, Collins Aerospace  
Others: TotaPort, Seamless Alliance
- 2.4 Recommended Coordination with other groups**  
CSS, SAI
- 3.0 Project Scope (why and when standard is needed)**
- 3.1 Description**  
Develop alternative form factor antenna installations for Ku and Ka Band Satcom systems.  
Develop new interface between the Modem Manager (MODMAN) and Outside Antenna Equipment (OAE) using fiber and/or copper media.
- Migration of functionality from MODMAN to the OAE
  - Provide antenna thermal management guidance.
  - Add new MODMAN form factor to accommodate multiple interchangeable modem which is industry driven

- Airlines want to change service provider
- Service providers want to incorporate new modems
- Allows using multiple modem suppliers
- Multiple networks (location dependent: regional and global)

**3.2 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:                    Maybe Retrofit (To be confirmed)

Boeing:                    B777-X (To be confirmed)

Bombardier                    To be confirmed

Embraer                    To be confirmed

Gulfstream                    To be confirmed

Modification/retrofit requirement                    yes  no

Specify:                    There is interest but no commitment for alternative form factor/s.

Needed for airframe manufacturer or airline project                    yes  no

Mandate/regulatory requirement                    yes  no

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

When is the ARINC standard required?

April 2021

What is driving this date?

Maturing antenna technologies.

Alignment with the LEO Constellation timeline.

Operators desire for narrower profile antennas (lower weight and drag).

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

Are Patent(s) involved?                    yes  no

None that are known

**3.3 Issues to be worked**

Evaluate and Develop alternative feedthrough and fitting locations.

Support different modem solutions that can drive a MODMAN form factor and fiber optic application.

Facilitate new cooling solutions (Antenna/Radome).

**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

Power and Cooling interfaces may be changed

(d) Interchangeable function definition? yes  no

Will reuse ARINC 791 and ARINC 792 provisioning  
(as much as possible).

Is this a software interface and protocol standard? yes  no

Product offered by more than one supplier yes  no

Astronics, ThinkKom, Phasor, Collins Aerospace, Smith Interconnect

**4.2 Specific project benefits (Describe overall project benefits.)**

**4.2.1 Benefits for Airlines**

- Less fuel burn (lower operating cost/carbon emissions).
- Regional Aircraft compatibility (move to satellite systems).
- GEO and N GEO solutions with smaller antenna form factor.
- Flexibility to change modem.
- Reusing standard structural provisions

**4.2.2 Benefits for Airframe Manufacturers**

Lessen installation time and cost, reduce weight, reduce rework, consistency (narrow bodied and wide-bodied aircraft).

**4.2.3 Benefits for Avionics Equipment Suppliers**

- Increase product line (Support for alternate antennas).
- Ease of introducing new modems.

**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
<i>Supp 1 to ARINC 792</i>	<i>6 meetings</i>	<i>18 days</i>	<i>May 2019</i>	<i>May 2021</i>

**6.0****Comments**

Meetings will take place within KSAT Subcommittee  
Monthly conference calls will be held as needed.

**6.1****Expiration Date for the APIM**

October 2021

***Completed forms should be submitted to the AEEC Executive Secretary.***