

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

**1.0 Name of Proposed Project** **APIM 17-008**  
Line of Sight (LOS) Cellular Broadband Communication System Provisions

**1.1 Name of Originator and/or Organization**  
Airbus

**2.0 Subcommittee Assignment and Project Support**

**2.1 Suggested AEEC Group and Chairman**  
AEEC Ku band subcommittee  
Peter Lemme, Totaport

**2.2 Support for the activity (as verified)**  
Airlines:  
Airframe Manufacturers: Airbus, Boeing (to be confirmed)  
Suppliers: Thales, Inmarsat, Gogo  
Others: Totaport

**2.3 Commitment for Drafting and Meeting Participation (as verified)**  
Airlines:  
Airframe Manufacturers: Airbus  
Suppliers: Thales, Inmarsat, Gogo  
Others: Totaport

**2.4 Recommended Coordination with other groups**  
Cabin Systems Subcommittee (CSS)

**3.0 Project Scope (why and when standard is needed)**

**3.1 Description**

Line-of-Sight (LOS) cellular broadband networks offer regional Internet access to passengers on aircraft flying as far as 200 miles from each ground station. LOS systems utilize one of three frequency assignments:

- 1) Dedicated, licensed spectrum (EAN, Gogo ATG)
- 2) Shared, licensed spectrum (14GHz, public LTE cellular)
- 3) Shared, unlicensed spectrum (SmartSky, Gogo ATG)

Aircraft provisions for LOS systems include one or more radio systems that each include an antenna, transmitter, and receiver. Typically, each antenna is mounted on the belly of the aircraft and the associated avionics installed nearby.

While each LOS service provider is developing a proprietary airborne system, the components from each are similar in size, power, and interwiring. A common



- Interfaces to the onboard distribution systems for passenger connectivity (e.g. 3G/4G Cabin Distribution System, Wireless Distribution System, CWAPs) (leveraging ARINC 791 Part 2)
- Network security considerations (leveraging PP848)

#### 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: Gogo, Inmarsat, SmartSky

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

Common aircraft physical and logical provisions will enable LOS system installation line-fit, ease integration.

##### 4.2.1 Benefits for Airlines

- Equipment interoperability between suppliers
- Reduction in development cost, improved reliability, and therefore reduced cost for the airlines
- System easy replaceable to regional system
- Reduced lead time

##### 4.2.2 Benefits for Airframe Manufacturers

- Common platform provisions for different suppliers reduce development and installation cost and time
- Flexibility and reduced costs by working from the same set of guidelines
- Time and cost reduction for new developments due to reuse of proven solutions

##### 4.2.3 Benefits for Avionics Equipment Suppliers

- Eliminates the need to design custom equipment for each aircraft type
- Time and cost reduction for new developments due to reuse of proven solutions

#### 5.0 Documents to be Produced and Date of Expected Result

- Project Paper 7XX
- ARINC 791 Part 2 revised if necessary

- Project Paper 848 revised if necessary
- Adaptation of Cabin Distribution Networks and Peripherals (ARINC 628P1, ARINC 808, ARINC 832, PP820)

**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.

<b>Activity</b>	<b>Mtgs</b>	<b>Mtg-Days (Total)*</b>	<b>Expected Start Date</b>	<b>Expected Completion Date</b>
ARINC Project Paper 7XX	6	24	4/17	10/18

\* Meeting days reflect Ku/Ka Band subcommittee meetings responsible for multiple ARINC Standards. In addition to the in-person meetings identified above, web conferences will be called to support specific project goals.

**6.0 Comments**

**6.1 Expiration Date for this APIM**

April 2019

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