

## ARINC Project Initiation/Modification (APIM)

- 1.0 Name of Proposed Project** **APIM 17-011**  
Define an aircraft cabin and cargo surveillance system in ARINC 628 Part 1 Supplement 8
- 1.1 Name of Originator and/or Organization**  
Cabin Systems Subcommittee (CSS)  
Dale Freeman, Delta Air Lines
- 2.0 Subcommittee Assignment and Project Support**
- 2.1 Suggested AEEC Group and Chairman**  
Cabin System Subcommittee (CSS)  
Dale Freeman, Delta Air Lines
- 2.2 Support for the activity (as verified)**  
Airlines: Delta Air Lines, United, American,  
Airframe Manufacturers: Airbus, Boeing  
Others: Latecoere, Panasonic, Thales, ZII, KID Systems
- 2.3 Commitment for Drafting and Meeting Participation (as verified)**  
Airlines: Delta  
Airframe Manufacturers: Airbus, Boeing  
Others: Latecoere, Panasonic, Thales, ZII, KID Systems
- 2.4 Recommended Coordination with other groups**  
Network Infrastructure and Security (NIS). EFB Subcommittee
- 3.0 Project Scope (why and when standard is needed)**
- 3.1 Context**  
Today there is existing a large variety of Cabin and Cargo Surveillance Systems with different technologies (analog, digital, PoE), different topologies, different interfaces and different performance. The customization process, adaption to cabin layouts, network wiring definition and integration of the devices are time consuming and expensive.
- 3.2 Description**  
A standardized system meeting a set of agreed to customer functions and needs with standardized interfaces and provisions in the aircraft to reduce the customization effort to a minimum.
- 3.3 Planned usage of the envisioned specification**  
New aircraft developments planned to use this specification      yes  no

Airbus: all new and current production models

Boeing: 777X

Modification/retrofit requirement yes  no

Specify: Airlines are retrofitting cabin 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 (and should be avoided)? yes  no

If YES please describe, identify patent holder to avoid:

- Aircraft surveillance and recording system, US 5742336 A
- Surveillance system for aircraft interior, US 6864805 B1
- Aeronef pourvu d'un systeme de surveillance, EP 2694372 A1
- Record and playback system for aircraft, US 6366311 B1
- Latecoere patent ongoing

NOTE: These patents are "system level" patents defining the operation and functionality of an airplane surveillance system. The intent of the standard is to avoid incorporation of any patented technology.

### 3.4

#### Issues to be worked

- Functions
  - Network security considerations
  - Security assurance level
  - Video performance and formats
- Architecture
  - Network throughput requirements
  - Network protocols
- Interface
  - Definition of standardized mechanical and electrical interfaces to the aircraft
  - Connectors and cabling and electrical interfaces for Ethernet networking for devices (e.g., cameras)

## 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.)

A standardized network protocol and interfaces of a Cabin and Cargo Surveillance System reduce the customization effort to a minimum. Shorter lead times and reduced design and integration time lower the cost of this highly customized system.

#### 4.2.1 Benefits for Airlines

- System interoperability between suppliers
- Reduction in development cost, improved reliability, reduced spare parts, and therefore reduced cost for the airlines

#### 4.2.2 Benefits for Airframe Manufacturers

- Systems interoperable between suppliers
- System provisions for all aircraft types are predefined and easy to install.
- Reduction of time and cost for customizing due to standardized backbone and interfaces to aircraft and system devices.

#### 4.2.3 Benefits for Avionics Equipment Suppliers

- Eliminates the need to design different systems for different aircraft types.
- Reduction of time and cost for new developments due known interfaces and reuse of proven solutions

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

- Supplement 8 to ARINC 628 Part 1

### 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>
<i>Supplement 8 to ARINC 628 Part 1</i>	6	18	Oct 2017	April 2019

\* Meeting days reflect CSS 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**

November 2019

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