

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

### **1. Name of Proposed Project**

**APIM #: 10-005A**

Cabin Equipment and Communications Interfaces

### **2. Suggested Subcommittee Assignment (who acts)**

#### **2.1 Originator**

Cabin Systems Subcommittee (CSS)

Delta Air Lines, Chairman

#### **2.2. Support for the activity**

##### **Airlines:**

Delta

##### **Airframers:**

Airbus, Boeing

##### **Suppliers:**

Panasonic Avionics Systems

Souriau

Thales

Deutsch

Astronics

TE Connectivity

B/E Aerospace

Amphenol

Sicma

Lumexis

Honeywell

KID Systeme

ITT Canon

W. L. Gore

Rockwell-Collins

Holmberg GMBH

#### **2.3. Commitment for resources (directly from participant)**

##### **Airlines:**

Delta

##### **Airframers:**

Airbus, Boeing

##### **Suppliers:**

Panasonic Avionics Systems

Souriau

Thales

Deutsch

Astronics

TE Connectivity

B/E Aerospace

Amphenol

Sicma

Lumexis

Honeywell

KID Systeme

ITT Canon

W. L. Gore

## 2.4. Recommended Coordination with other groups:

AGCS, AGIE/MAGIC, Ku/Ka-Band SatCom, NIS, SAI

## 3. Project Scope (why and when standard is needed)

### 3.1. Description

New and retrofit aircraft will use the documents developed under this standardization program. The documents will define cost effective and valuable network infrastructures for interface standards between inter-cabin and cabin-to-aircraft equipment and communications standards.

The objective is to help the airlines cope with the rapid and evolving IFE industry by providing them with the freedom of choice in the installation and modular expansion of cabin equipment. This is necessary since passenger entertainment and infotainment systems are subject to frequent aircraft upgrades. Generating cabin interface protocols, administering and resolving seat integration issues, cabin communications, and connector standardization are also significant parts of the activities. The following CSS APIMs are related to or intricate parts of this project.

APIM: 06-008, 4th Generation Cabin Network  
PP832 (Developing)

APIM: 07-002, Wireless Distribution  
PP833 (Developing)

APIM: 07-007A, Cabin Cables and Connectors  
PP800 (Developing)

~~APIM: 07-009, EMC Recommended Practices~~  
~~ARINC 831 (Completed)~~

APIM: 08-011, Cabin Boxes Mechanical Interface  
PP836 (Developing)

~~APIM: 08-012, Human Machine I/F Style Guide~~  
~~PP837 (Completed)~~

Specifically, this APIM authorizes supplements to the following Parts of ARINC Specification 628 and ARINC Specifications 809:

- ARINC 628 Part 1 – to provide further improvements to the digital video camera unit, the digital overhead monitors, the high definition displays, high definition video formats, and an ARINC 810-based remote control center (RCC).
- **ARINC 628 Part 2 – to standardize seat and seat peripherals addressing.**
- **ARINC 628 Part 5 – to address current operator maintenance problems by providing improved definition of when cable protection is required (and not required) for in-seat applications.**

- **ARINC 485 and ARINC 809 – to standardize seat and seat peripherals addressing.**

### 3.2. Planned usage of the envisioned specification

New aircraft developments planned to use this specification yes  no

Airbus: A350, A380, and airplane retrofit programs

Boeing: 787, 747, and airplane retrofit programs

Other: (aircraft & date)

Mandate/regulatory requirement: yes  no

Please specify program and date:

Modification/retrofit requirement yes  no

Please specify: (aircraft & date)

Airframer and/or airline projects to use this report yes  no

The timetable for this program varies and is mainly driven by the need to provide common definitions for the airplane and retrofit program.

Is the infrastructure standard for the aircraft defined? yes  no

Please specify, (e.g., ARINC 429)

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:

Patent(s) involved? yes

if YES please describe

### 3.3. Issues to be worked

There are no significant issues.

## 4. Benefits envisioned

### 4.1. Basic benefits

The usefulness of an ARINC Standard is led by the spirit to reduce the Direct Operating Cost (DOC) of an aircraft. As the DOC includes production cost (via the sales price) as well as the relevant operating cost, this method ensures the whole life time of an aircraft is covered.

Operational enhancements (reduction in DOC) yes  no

Form, Fit, Function, (FFF) standard (HW and/or SW):

a. ARINC 600 form (only HW) yes  no

b. Interchangeable fit (plug, mount, SW loading interface, etc) yes  no

c. Interchangeable function yes  no

If not fully interchangeable, please explain:

Interface and protocol standard (for aircraft defined in scope) yes  no

Please specify:

Product offerable from more than one supplier (competitive)

yes  no

Please identify:

#### 4.2. Specific project benefits

Cabin systems provide entertainment and service improvements to the passenger. To keep up with passenger's desire for better accommodations, systems are becoming more sophisticated and complex. Home entertainment and office type computing systems and peripherals are finding applications in the cabin to facilitate data handling and data link to the ground. These growing complexities and scope of cabin equipment has resulted in the need to update specific parts of ARINC 628. New series of specifications are added as new concepts and next generation systems and networks are developed. The benefits of the cabin standards are numerous. They provide the airlines freedom of choice, unit price reduction through increased volume, interchangeable spares, more upgradeable options, and creation of more sub- markets for integrators and software/hardware suppliers. These benefits are being realized on the A380, B787, A350, possibly regional and business jets, and retrofit aircraft programs.

#### 4.3 Project Benefit for Airlines

- Equipment interchangeability between suppliers
- Reduction in development cost, improved reliability, and therefore reduced cost for the airlines

#### 4.4 Project Benefit for Airframe Manufacturers

- Equipment interchangeability between suppliers
- Flexibility and reduced costs by working from the same set of guidelines
- Reduction of time and cost for new developments due to reuse of proven solutions

#### 4.5 Project Benefit for Avionics Equipment Suppliers

- Eliminates the need to design custom provisions for each installation
- Reduction of time and cost for new developments due to reuse of proven solutions

#### 5. Documents to be Produced and Date of Expected Result

Supplements to ARINC 628, ARINC 809 – see table below

#### 6. Meetings/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 Completion Date
ARINC 628 Part 1, Supp 6	3*	9*	10/2012

ARINC 628 Part 5, Supp 3	3*	9*	10/2012
ARINC 809, Supp 3	6*	18*	4/2013
ARINC 628 Part 2, Supp 2	6*	18*	4/2013
ARINC 485 Part 1, Supp	6*	18*	4/2013

**\*NOTE: This effort will take place within the regularly scheduled CSS meetings.**

### **6.1 Expiration Date for this APIM**

**April 2013**

### **7. Comments**

Any other information deemed useful to the committee for managing this work.

Any further work can be accomplished by additional ad hoc meeting between the regular CSS meetings.

AEEC Secretary use only:	
Date Received: September 8, 2011	Assigned: Tom Munns
Potential impact: New aircraft/system	
Forwarded to:	Date Forwarded:
Resolution:	Date of Resolution:
Assigned to Subcommittee:	

**Return completed form to the AEEC Executive Secretary.**