

ARINC IA Project Initiation/Modification (APIM)

- 1.0 Name of Proposed Project** **APIM: 11-006**
- Define a Cabin Wireless Access Point (CWAP) within Supplement 6 to ARINC Specification 628, Part 1.
- 2.0 Subcommittee Assignment and Project Support**
- 2.1 Identify AEEC Group**
Cabin Systems Subcommittee (CSS)
- 2.2 Support for the activity**
Airlines: Delta Air Lines, others TBI
Airframe: Manufacturers: Airbus, Boeing, others TBI
Suppliers: Panasonic Avionics, Thales
Others:
- 2.3 Commitment for resources**
Airlines: Delta
Airframe Manufacturers: Airbus, Boeing,
Suppliers: Panasonic Avionics, Thales
Others:
- 2.4 Chairmen:**
Chairman: Dale Freeman, Delta
Co-Chairmen: Gerald Lui-Kwan, Boeing and Rolf Goedecke, Airbus
- 2.5 Recommended Coordination with other groups**
AGIE/MAGIC Subcommittee
- 3.0 Project Scope**
Wireless Local Area Network (WLAN) technology is changing rapidly. Advancements in this technology drive the need for a new Cabin Wireless Access Point (CWAP) standard for inclusion in ARINC Specification 628. Though ARINC Characteristic 763A includes the definition of a Cabin Wireless LAN Unit (CWLU), new commercial standards have emerged since its publication, including IEEE 802.11n wireless physical and datalink standards. IEEE 802.11n introduces Multiple Input/Multiple Output (MIMO) technology that tremendously increases the data bandwidth capabilities of WLAN access points.
- 3.1 Description**
This effort will standardize Cabin Wireless Access Point (CWAP) equipment form, fit, and function suitable for a wide variety of cabin installations. IEEE 802.11n MIMO technology and wired interfaces for Gigabit Ethernet will be included in the standard. It will support IEEE 802.11a, b, g technology along with sufficient growth capability. In addition to IEEE 802.11n, the CSS should consider the need to support IEEE 802.16 WiMax and Femto cell 3G and 4G technology. The standard should include both an integral antenna, and optional externally mounted antenna.

3.2 Planned usage of the envisioned specification

New aircraft developments planned to use this specification yes no
 Airbus: A380, A350
 Boeing: 787, 747-8

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: A380, A350
 Boeing: 787, 747-8

Mandate/regulatory requirement yes no
 Program and date:

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

When is the ARINC standard required? September 2012
What is driving this date? Development of the broadband off-board connectivity solutions.

Are 18 months (min) available for standardization work? Yes no
 If NO please specify solution: _____

Are Patent(s) involved? yes no
 If YES please describe, identify patent holder: _____

3.3 Issues to be worked

- Definition of CWAP form factor including multiple antennas
- Definition of Gigabit Ethernet wired interface
- Definition of connector and interconnect wiring
- Definition of electrical power requirements.
- Definition of cooling requirements.

4.0 Benefits

The goal is to reduce cabin equipment design and installation costs and to reduce cabin system acquisition costs for airline customers.

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: IEEE 802.11n and IEEE 802.3 1000baseT

Product offered by more than one supplier yes no

Identify: *Panasonic Avionics, Thales Avionics, EMS, Miltope*

4.2 Specific project benefits

Simplify and lower the cost of installation and interconnection of CWAP. Provide much higher performance WLAN platforms for wireless connectivity in the cabin.

4.3 Benefits for Airlines

Standardization has the potential to lower acquisition cost of CWAP for new and retrofit airplanes. It will also lower maintenance and spares costs across the airlines multiple airplane models. The wireless LAN data capability in the cabin can be enhanced with higher bandwidth off-board connectivity solutions such as a Ku band or Ka band satellite system. The cabin crew and passenger connectivity experience will also be enhanced with the higher bandwidth CWAP.

4.4 Benefits for Airframe Manufacturers

Simplifies the design for installation of the CWAP, 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 6 to ARINC Specification 628, Part 1, September 2012

6.0 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
Strawman material	2*	6*	5/2011	9/2011
Mature Supplement for adoption consideration	2*	6*	2/2012	9/2012

***NOTE:** This effort will take place within the regularly scheduled CSS meeting schedule. In addition, web conferences will be arranged between CSS meetings to review action items and the draft Supplement material.

6.1 Expiration Date for this APIM

April 2013

7.0 **Comments**
 None

For ARINC IA staff use only:	
Date Received:	Assigned:
Potential impact: New Acft and Retrofit	
Resolution:	Date of Resolution: First:
<i>(Withdrawn, Authorized, Deferred, More detail needed, Rejected)</i>	
Assigned to Subcommittee: CSS	