

ARINC IA Project Initiation/Modification (APIM)

1. Name of Proposed Project

APIM #: 07-010

New Project Paper 830: *Aircraft/Ground Information Exchange*

Software specification only

yes no

2. Suggested Subcommittee Assignment (who acts)

2.1 Identify AEEC group

ANFS Subcommittee

2.2. Support for the activity

Organizations: AirCell, ARINC, Boeing, FedEx, Rockwell Collins, VT Miltope

2.3. Commitment for resources (directly from participant)

Organizations: AirCell, ARINC, Boeing, FedEx, VT Miltope

2.4. Recommended Coordination with other groups

The following activities are relevant to this topic:

- Onboard Network – ARINC 821
- Aircraft/Ground IP Communication – ARINC 822
- Network Infrastructure and Security (NIS) – ARINC 664 and 811

3. Project Scope

3.1 Description

The Aircraft/Ground Information Exchange (AGIE) is a set of protocols for application-to-application information exchange between the aircraft and the airline ground infrastructure, using wired, wireless and optical technologies. The aviation industry has spent significant effort defining the onboard architecture and communication protocols to support the delivery of large amounts of aircraft information using Internet Protocols (IP). For example, aircraft and applications have been developed to rely on wireless communication of these data uploads/downloads for efficient operation. This AGIE would allow for common-use infrastructure such that every airline, airframe or third-party content provider does not need to maintain local servers for individual aircraft applications (such as EFB chart viewers, document viewers, electronic logbooks, flight data download systems, IFE content, etc.). The specification should also define a standard interface for ground applications to enable use of the “store and forward” process.

While the AEEC efforts to standardize the wireless communication protocol (ARINC 822) and onboard network functionality (ARINC 821) are essential to promote interoperability across vendor products, there is one piece of the wireless data delivery that has not been addressed. Most aircraft applications built or in development assume that the large bandwidth available over

4.2 Specific project benefits

The successful use of wireless data transfer of large amounts of aircraft is seriously jeopardized by WAN bandwidth constraints. All of the benefits achievable with wireless data transfer are at risk due to the lack of efficient, manageable data delivery across a WAN to the aircraft at the gate. This project would enable those benefits to be realized at lower costs to the airlines.

4.3 Project Benefit for Airlines

This standard will provide several benefits to Airlines:

- Reduced cost for wireless network implementation
- Commonality between the delivery and tracking mechanism for data delivery to and from aircraft applications
- Ability to prioritize data transfer for different aircraft applications

4.4 Project Benefit for Airframe Manufacturers

- The Airframe Manufacturers can define a single data delivery interface on the aircraft for all onboard applications to use.
- Flexibility to add new functions to the aircraft that require large data uploads/downloads while not jeopardizing “high priority” data transfers
- Enable Airframe Manufacturers to offer new business models to the airlines/operators.

4.5 Project Benefit for Avionics Equipment Suppliers

- Allows for an open market place for manufacturers to supply interoperable equipment

5. Documents to be Produced and Date of Expected Result

ARINC Project Paper 830: Aircraft/Ground Information Exchange for IP Communication.

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 2007	Mtg-Days 2008	Mtg-Days 2009
Prepare standard for AWDD	4	2	6	2

7. Comments

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

For AEEC staff use only:

Date Received: March 1, 2008

AEEC staff: PJP

Potential impact: New Acft

(Safety, Regulatory, New aircraft/system, Other)

Resolution: Approved

Date of Resolution: April 15, 2008

(Withdrawn, Authorized, Deferred, More detail needed, Rejected)

Assigned to Subcommittee: ANFS