

ARINC Project Initiation/Modification (APIM)

- 1.0 Name of Proposed Project** **APIM 17-007**
ARINC Specification 812A: Standard Data Interfaces for Galley Inserts (GAIN), Digital Interface Update for Health Management Messages, Functionality, and System Integration
- 1.1 Name of Originator and/or Organization**
Galley Inserts (GAIN) Subcommittee
Airbus/Boeing, Co-Chairman
- 2.0 Subcommittee Assignment and Project Support**
- 2.1 Suggested AEEC Group and Co-Chairmen**
Galley Inserts (GAIN) Subcommittee
Scott Coburn, Boeing
Ralph Schnabel, Airbus
- 2.2 Support for the activity (as verified)**
Airlines: Lufthansa, United Airlines
Airframe Manufacturers: Airbus, Boeing
Suppliers (TBC): B/E Aerospace, Zodiac, Iacobucci HF Electronics, IPECO, Jamco
Others:
- 2.3 Commitment for Drafting and Meeting Participation (as verified)**
Airlines: TBD
Airframe Manufacturers: Airbus, Boeing
Suppliers (TBC): B/E Aerospace, Zodiac, Iacobucci HF Electronics, IPECO, Jamco
Others:
- 2.4 Recommended Coordination with other groups**
CAN Working Group
- 3.0 Project Scope (why and when standard is needed)**
- 3.1 Description**
ARINC Specification 812A defines interfaces to functional catering components (i.e., beverage makers, ovens, refrigerators, trash compactors, etc.), specifically the Controller Area Network (CAN) data interfaces and data content to be considered between all galley equipment using a Galley Data Bus.
ARINC 812A includes two parts, Part 1 includes the definition of CAN data interfaces and protocols for digital galley equipment and Part 2 includes the definition of verification test procedures for ARINC 812A Part 1 bus protocol implementation.

Production implementation of the ARINC 812A protocols have led to the identification of changes and corrections that should be updated. This project will resume the important work of the GAIN Subcommittee. Specifically, the work will focus on the following:

- Development of Supplement 2 to ARINC Specification 812A Part 1: *Standard Data Interface for Galley Insert (GAIN) Equipment, CAN Communications*, which will:
 - Identify and incorporate changes necessitated by production implementation of digital Galley Equipment.
 - Update messages based on changes introduced by Supplement 3 to ARINC 825.
 - Consider the effect of the new CAN FD protocol on ARINC 812A-compliant components
 - Address data security and provide guidance as needed.
 - Update the XML and XSD support files as required.
- Development of Supplement 1 to ARINC Specification 812A Part 2: *Standard Data Interface for Galley Insert (GAIN) Equipment, CAN Communications, Verification, and System Test Guidance*, which will update the verification test procedures based on the changes identified in Supplement 2 to ARINC 812A Part 1.

3.2 Planned usage of the envisioned specification

New aircraft developments planned to use this specification yes no

Airbus: all new

Boeing: 777X

Modification/retrofit requirement yes no

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? yes no

If YES please describe, identify patent holder: Not applicable

3.3 Issues to be worked

- Incorporate enhanced health management messaging, functionality, and system integration
- Improve GAIN serial number capability, PBM (0, t) misinterpretation, and CAN-Bus recovery.
- Incorporate remote control messaging as optional feature.

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: B/E Aerospace, Zodiac, Zodiac Controls, IPECO,
Iacobucci HF Electronics, Jamco

4.2 Specific project benefits (Describe overall project benefits.)

GAIN standards provide a common distribution system for Airbus and Boeing multi- and single-aisle aircraft. These standards focus on communications protocols and messaging that are beneficial to the airlines, airframe manufacturers, and suppliers.

4.2.1 Benefits for Airlines

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

4.2.2 Benefits for Airframe Manufacturers

- Equipment interoperable 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

4.2.3 Benefits 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

5.0 Documents to be Produced and Date of Expected Result

- Supplement 2 to ARINC 812A Part 1

- Supplement 1 to ARINC 812A Part 2

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.

Activity	Mtgs	Mtg-Days (Total)	Expected Start Date	Expected Completion Date
Supplement 2 to ARINC 812A Part 1	1*	3	June 2017	May 2018
Supplement 1 to ARINC 812A Part 2	1*	3	Nov 2017	Oct 2018

* In addition to the in-person meetings identified above, monthly web conferences will be used to prepare material for review.

6.0 Comments

None.

6.1 Expiration Date for this APIM

April 2019

Completed forms should be submitted to the AEEC Executive Secretary.