ARINC IA Project Initiation/Modification (APIM)

Name of proposed project APIM #: 03-009A

Standard Interfaces for Galley Insert Equipment (GAIN)

Suggested Subcommittee assignment

The Cabin Equipment Interface (CEI) Subcommittee is the only existing active subcommittee that can do this work.

Commentary: Due to the lack of resources a committee which would focus totally on the standardization of GAIN is not feasible. The task should be performed by the CEI Subcommittee and implemented into a new standard or existing ARINC 628 standards.

Project Scope

1. The project will standardize the physical dimensions and the interfaces for the Electrical Galley Inserts so that all GAIN systems can support standard installations.

2. Two phases of the interface solutions will be defined: Phase 1 consist of an investigative study of Galley Inserts installed in today standard galleys. This information will be used to develop design guideline for future standard. The Phase 2 solution is to develop new GAIN System standards for future use of inserts installed in newly developed galleys.

3. The main areas that need to be standardized are:

- wiring,
- water connectors,
- electrical connectors,
- dimensions,
- interfaces

3. Both Boeing (7E7) and Airbus (A380) are depending on this standard to support their new airplane programs.

4. This standardization activity should be conducted along with all the other supporting activities.

Project Benefit

GAIN suppliers have been developing their galley inserts without any guidance from the air framers or customers, which has resulted in varieties of galley inserts being installed. With a new set of standards, all parties concerned will be provided with advantages such as flexibility and reduced cost.

The new standard will provide a common standard distribution system for Airbus and Boeing multi and single aisle aircraft. Their attention will focus on the features that are beneficial to the airlines, air framers and suppliers such as dimensions and interfaces.

A standard will lead or at least stay abreast of the process while allowing for long term growth and support of multiple GAIN systems. The concept has evolved and should be effective through 2004 and beyond. Beverage makers, ovens, and refrigerators will be early beneficences of the standard.

Benefits to airlines

1. Gives the customers greater flexibility when choosing the electrical galley insert they wish to install, as the standard will support multiple GAIN systems with a common base.

2. Lower the GAIN system and installation costs by driving down the price of the system, as the suppliers are all competing equally with each other.

3. Gives more time for the airlines to adequately contemplate what systems they require. Later decisions benefit the customer by allowing decisions to be made late in the airplane production cycle regarding the beverage maker or oven that is to be installed.

4. Promotes more competition amongst the suppliers, which helps to drive down the cost.

5. Less expensive to retrofit and upgrade, because with standard interfaces, different GAIN Systems can be fitted when needed.

Benefits to air framers

1. Help reduce production cycle time by having fewer differences between the galley inserts.

2. Help reduce the variety of different dimensions and interfaces.

3. Less definition and construction issues.

Benefits to suppliers

1. More opportunities to compete

2. Easier to qualify and certify

3. Easier to upgrade and provide more functionalities if needed.

4. Lower cost through higher production rates and less production costs.

Airlines supporting effort

Airlines such as Lufthansa, ***KLM***, Virgin, Singapore Airlines are supporting the standardization of GAIN.

The airlines have expressed interest through customer focus groups and have been invited to attend CEI Subcommittee meetings.

Issues to be worked

General guidelines for the standards need to be addressed by AEEC. AEEC issues. Some of the
ongoing issues are as follows:

Identify galley insert designs in use that are reliable and maintainable. This information will be used as the basis for a new-solution using proven concepts to which new concepts may be added. Such designs will serve new aircraft , but may also be considered for retrofit in older aircraft.

a. The maximum size (Atlas standard) for inserts e.g., beverage makers, ovens, refrigerators etc.

b. Electrical and data connectors.

c. Water connections for beverage makers and steam ovens

d. Rails for the beverage makers

e. Power distribution is very similar between Airbus and Boeing. They need to work with each other to create a single standard

f. Airline inputs are needed.

Recommended Coordination with other groups

The standard will specifically impact ARINC 628 Parts 3, 4 and 5 to accommodate the data connection to the aircraft, power distribution, and wiring interfaces.

Projects /programs supported by work

Since the suppliers are constantly updating their systems, more delay in the standardization will only prolong GAIN implementation resulting in more divergent systems creating more problems for everyone. Both Airbus A380 and the Boeing 7E7 will be supported by the standards.

Timetable for projects/programs

It is highly recommended that this project be authorized during the third quarter of 2003 so that at least the preliminary draft of guidelines can be developed by April 2004.

Documents to be produced and date of expected result

1. Preliminary Report of GAIN System - April 2004

2. Project Paper XXX GAIN System – April 2005

3. Draft Supplement X to ARINC 628 Parts 3 for the new A/C interfaces - April 2005

4. Draft Supplement X to ARINC 628 Parts 4 – April 2005

5. Draft Supplement X to ARINC 628 Part 5 - April 2005

Comments

This is a great opportunity for the AEEC to establish a set of standards to benefit the entire GAIN industry. Timing is of the essence as many suppliers are just starting to explore the concepts for their intelligent galley inserts.

Meetings

The following table identifies the number of meetings and proposed meeting days needed to produce the documents described above.

Activity	Mtgs	Mtg-Days
Dev Galleys Investigative Report	2	2
Dev GAIN Proj Paper	3	2
Mods to 628 Specs, Parts 3 and 5	1	2

(Several ad hoc W/G meetings)

For IA staff use

IA staff assigned: ___Earl Nicks_____

Forward to committee(s) (AEEC, AMC, FSEMC): __AEEC_____

Potential impact: __C__
(A. Safety B. Regulatory C. New aircraft/system D. Other)

Committee resolution: ____
(1. Authorized 2. Deferred 3. More detail needed 4. Rejected)

Assigned Priority: ____

A. – High (execute first) B. – Normal (may be deferred for A.)