

ARINC Project Initiation/Modification (APIM)

1.0 Name of Proposed Project **APIM #: 10-004**
Supplement 2 to **ARINC Specification 825: *General Standardization of CAN (Controller Area Network) for Airborne Use***

1.1 Name of Originator & Organization
Ralph Kneuppel, Airbus

2.0 Subcommittee Assignment and Project Support

2.1 Suggested AEEC Group and Chairman
Controller Area Network (CAN) Technical Working Group
Ralph Kneuppel, Airbus

2.2 Support for the activity (as verified)
Airlines: (Identify each company by name.)
Airframe Manufacturers: Airbus, Boeing
Suppliers: Goodrich Aerospace, Panasonic, GE Aviation
Others: Mentor Graphics, Stock Flight Systems, MicroFlight

2.3 Commitment for Drafting and Meeting Participation (as verified)
Airlines:
Airframe Manufacturers: Airbus, Boeing
Suppliers: Goodrich Aerospace, Panasonic, GE Aviation
Others: Mentor Graphics, Stock Flight Systems, MicroFlight

2.4 Recommended Coordination with other groups
NIS, SDL, GAIN, SAI

3.0 Project Scope (why and when standard is needed)

3.1 Description

The items identified below were not included in Supplement 1 because of time pressure. Supplement 1 was needed because it made significant corrections and provided additional design guidance to the base standard based on the two years of experience gained in using the original Standard.

- Gateway definition (CAN to/from 615A/665 SDL protocols)
- Timing model (CAN Predictability)
- Common latency methodology (related to timing model)
- Common Bus Loading (bandwidth) metric
- Security, specifically how CAN affects higher-level system security
- Safety & Reliability
- Failures
- Industry topics for inclusion (e.g. CAN ID addressing)

- Gateways - coordinate a set of functions that a gateway might require
- Data load Example - coordinate a more comprehensive data load example

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

Specify: _____ 825 _____

Product offered by more than one supplier yes no

Identify: GE Aviation, Panasonic, Goodrich, Stock Flight Systems

4.2 Specific project benefits (Describe overall project benefits.)

ARINC 825-1 provides a solid basis for the implementation of CAN on transport aircraft. This project will add significant contributions to the Standard which will enhance its long-term usability.

4.2.1 Benefits for Airlines

Airlines and other maintainers of aircraft infrastructure will benefit by being able to learn a single set of specifications for CAN implementations because of reduced training, increased productivity because of the predictability of the bus, and increased reliability of the bus.

4.2.2 Benefits for Airframe Manufacturers

Designers of aircraft sub-systems will benefit from this update as it will provide more assurance that CAN will perform in a predictable manner. The design guidance will assure consistent and workable bus implementations.

4.2.3 Benefits for Avionics Equipment Suppliers

Equipment suppliers will have high assurance that parts and protocols compliant to ARINC 825-2 will perform as expected when connected into sub-system and system assemblies.

5.0 Documents to be Produced and Date of Expected Result

825-2, May 2012

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
825-2	8	24	04/2010	05/2012

* Indicate unsupported meetings and meeting days, i.e., technical working group or other ad hoc meetings that do not requiring IA staff support.

6.0 Comments

NIS Subcommittee will receive regular updates on the work of CAN TWG.

Task II, i.e., coordination with SDL, will take place within the SDL Subcommittee.

6.1 Expiration Date for the APIM

April/October 2013

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Date Received: Jan 15, 2010	AEEC staff : _____
Potential impact: _____	
(A. Safety B. Regulatory C. New aircraft/system D. Other)	
Resolution: _____	
<i>Authorized, Deferred, Withdrawn, More Detail Needed, Rejected)</i>	
Assigned to SC/WG: _____	