

ARINC IA Project Initiation/Modification (APIM)

- 1.0 Name of Proposed Project** **APIM 10-016A**
Enhanced ARINC 429 Data Loading, and
Target implementation considerations for ARINC 615-3 and ARINC 615-4 targets
- 1.1 Name of Originator & Organization**
Ted Patmore, Delta Air lines
Scott L. Smith, ARINC Industry Activities
- 2.0 Subcommittee Assignment and Project Support**
- 2.1 Suggested AEEC Group and Chairman**
Software Data Loader Subcommittee
Ted Patmore, Delta Air Lines
Rod Gates, American Airlines
- 2.2 Support for the activity (as verified)**
Airlines:
Delta Air Lines
American Airlines
Southwest Airlines
Lufthansa
Airframe Manufacturers:
The Boeing Company
Airbus
Suppliers:
Honeywell
Rockwell Collins
TechSAT
GE Aviation
Teledyne
Others:
- 2.3 Commitment for Drafting and Meeting Participation (as verified)**
Airlines:
Delta Air Lines
American Airlines
Southwest Airlines

Lufthansa

Airframe Manufacturers:

The Boeing Company

Airbus

Suppliers:

Honeywell

Rockwell Collins

TechSAT

Others:

2.4 Recommended Coordination with other groups

(List other AEEC subcommittees or other groups.)

3.0 Project Scope (why and when standard is needed)

This APIM will authorize the Software Data Loader subcommittee to create one new ARINC Standard, ARINC Report 8XX.

The proposed document will create guidance for target hardware developers that implement ARINC 429 data loading to produce equipment that is software loadable using ARINC 615-3 and ARINC 615-4 standards. This document will specify the target implementation of the protocol.

3.1 Description

ARINC Project Paper ARINC 8xx will create guidance for target hardware developers for equipment that will utilize the ARINC 615-3 and ARINC 615-4 data loading standards. ARINC Reports 615-3 and 615-4 provide specific requirements for the design and use of data loaders, but there is very little guidance on how to create target hardware and software to efficiently and correctly use ARINC 615-3 and ARINC 615-4 designed data loaders. This document will show the features of the data loading standard that should be considered when designing the target implementation of the protocol.

This should avoid ambiguous interpretations of the load specification. It is important to the airlines that future target implementations avoid creating any variations from the industry standard that require modifications to the software functionality in software data loaders.

Additionally, design recommendations for ARINC 615 data loaders that are used exclusively for future ARINC 615-4 LRU targets will be documented.

This document will also address the near-obsolescence of floppy disk based media, as well as the use of mass storage devices in Portable Data Loaders (PDL) and Airborne Data Loaders (ADL). The intent is to increase efficiency in loading procedures by reducing the steps required during storage, distribution, and loading.

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: Guidance for use of an existing protocol

Product offered by more than one supplier yes no

Identify: (company name)

4.2 Specific project benefits (Describe overall project benefits.)

4.2.1 Benefits for Airlines

Airlines will benefit from guidance for more efficient data loading using MSDs, increasing efficiency of target hardware when data loading, and potentially reducing time to load software.

4.2.2 Benefits for Airframe Manufacturers

Airframers will benefit from guidance for more efficient data loading using MSDs, increasing efficiency of target hardware when data loading, and potentially reducing time to load software.

4.2.3 Benefits for Avionics Equipment Suppliers

Equipment suppliers will benefit by the standardization of common data loading solutions by solving media obsolescence problems and using new storage technology.

The guidance for designing target hardware data loading engines in airborne equipment will increase loading efficiency, reduce loading failures, and improve reliability.

5.0 Documents to be Produced and Date of Expected Result

This project is envisioned to mature into a new ARINC Standard.

This proposed ARINC Standard will provide guidance for target hardware designers to better develop airborne equipment for use with ARINC 615-3/4 data loaders (ARINC Report 8XX).

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
<i>Enhanced ARINC 429 Data Loading</i>	3	12	4.2011	10/2012
<i>Airborne Equipment Design Considerations for Data Loading</i>	3	12	4/2011	10/2012

* Both projects worked in conjunction (i.e., 3 meetings a year total, etc.)

6.0 **Comments**

The Software Data Loader Subcommittee has other projects in work, specifically APIMs 08-005, 08-006, 10-008. The work on this project will coincide with the work in progress and will require 3 additional meetings specifically for this APIM. The work on APIMs 08-005 and 08-006 are nearing completion with:

Project Paper 835: Data Loading using XML

Project Paper 838: Security in Data Loading

In addition, the SDL group has drafted the majority of the material needed for this ARINC Report 615-3 project that was originally intended for a Technical Application Bulletin. Using this already prepared material should significantly shorten the drafting time required for this project.

6.1 **Expiration Date for this APIM**

April 2013

For IA staff use only

Date Received: Jan 15, 2011

Assigned to: _____

Potential impact: _____

(**A. Safety** **B. Regulatory** **C. New aircraft/system** **D. Other**)

Resolution: _____

Authorized, Deferred, Withdrawn, More Detail Needed, Rejected)

Assigned to SC/WG: _____