

ARINC Project Initiation/Modification (APIM)

- 1.0 Name of Proposed Project** **APIM 18-005**
Supplement 1 to **ARINC Specification 843: Aircraft Software Common Configuration Reporting**
- 1.1 Name of Originator and/or Organization**
Todd Gould, Boeing
- 2.0 Subcommittee Assignment and Project Support**
- 2.1 Suggested AEEC Group and Chairman**
AEEC Software Distribution and Loading (SDL) Subcommittee
Ted Patmore, Delta Air Lines
Rod Gates, American Airlines
- 2.2 Support for the activity (as verified)**
Airlines: Delta Air Lines, American Airlines, Lufthansa, KLM
Airframe Manufacturers: Boeing
Suppliers: Honeywell, Teledyne Controls, TechSAT
Others:
- 2.3 Commitment for Drafting and Meeting Participation (as verified)**
Airlines: Delta Air Lines, American Airlines, Lufthansa, KLM
Airframe Manufacturers: Boeing
Suppliers: Honeywell, Teledyne Controls, TechSAT
Others:
- 2.4 Recommended Coordination with other groups**
SAI, NIS
- 3.0 Project Scope (why and when standard is needed)**
Boeing's work on the B777X has highlighted the need for Supplement 1 to ARINC Specification 843.
This standard is used to provide aircraft OEMs, Regulatory Agencies, and Airline maintenance and engineering a basic format standard for automated configuration report creation and interpretation between different aircraft types and manufacturers.
This document defines a standard format needed to facilitate consistency among all configuration reports to avoid confusion by people who are reading the report, and makes automation of configuration reports possible.
- 3.1 Description**
Aircraft configuration management has become increasingly difficult to manage since the introduction of on-board loadable software and central maintenance computers across various aircraft types. Electronic files listing the location, name,

and part number are created and displayed on aircraft for configuration control. Information in these files such as Location nomenclature, Part Name and Part Number format can vary not only from aircraft types, but from displays, printers, and downloaded files from the same aircraft. In some cases, this information does not exactly match aircraft documentation, increasing the potential for human factor mistakes and making automated configuration control more complex.

A standard format is needed to facilitate consistency among all configuration reports. The part name, number, and location should be expressed in a consistent manner that will allow for unambiguous interpretations by persons and machines. This avoids confusion by people who are reading the report and makes automation of configuration reports possible.

This standard format is independent of the method used for configuration data collection. The format of the configuration report will be the same when data is collected manually as when collected automatically (i.e., by electronic means). Information from all sources will be stored using pre-defined field names and sizes (i.e., Part number, SLID, FIN, etc.).

As configuration reports are used to confirm what parts are installed and when, they may be used to demonstrate the modification status of ADs for regulatory use, increasing the justification for producing a standard for configuration information.

AMMs may not contain examples of how configuration information is displayed on the aircraft they are working, resulting in maintenance personnel interpretations.

Software intensive aircraft drive the need for strict software control and configuration management. This proposed project would automate the process.

3.2 Planned usage of the envisioned specification

Note: New airplane programs must be confirmed by manufacturer prior to completing this section.

New aircraft developments planned to use this specification	yes <input checked="" type="checkbox"/> no <input type="checkbox"/>
Airbus: Unknown	
Boeing: B777X, ASAP	
Other: Unknown	
Modification/retrofit requirement	yes <input checked="" type="checkbox"/> no <input type="checkbox"/>
Specify: As necessary	
Needed for airframe manufacturer or airline project	yes <input type="checkbox"/> no <input checked="" type="checkbox"/>
Specify: (aircraft & date)	
Mandate/regulatory requirement	yes <input type="checkbox"/> no <input checked="" type="checkbox"/>
Program and date: (program & date)	
Is the activity defining/changing an infrastructure standard?	yes <input type="checkbox"/> no <input checked="" type="checkbox"/>
Specify: (e.g., ARINC 429)	
When is the ARINC standard required?	October 2018
What is driving this date? [TBD]	

The Name attribute is intended to list the name of the system being reported (e.g., Flight Controls System).

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: _____

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

Improved clarity of aircraft configuration for maintenance and regulatory agencies.

Less time used by maintenance and engineering interpreting and configuration information.

Improved Automated Part management (software and hardware) control and modification.

4.2.2 Benefits for Airframe Manufacturers

Standard guidance for the information in configuration reports, as proposed in this document, will help reduce cost of design and implementation. By ensuring a consistent approach, design work need not be repeated, and operators benefit from uniform processes.

4.2.3 Benefits for Avionics Equipment Suppliers

Supply an automated aircraft configuration product effective for an airlines' fleet that uses electronic configuration reporting.

5.0 Documents to be Produced and Date of Expected Result

Supplement 1 to ARINC Specification 843 in 2019.

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>Supplement 1 to ARINC 843</i>	3	9*	<i>April 2018</i>	<i>April 2019</i>

* This project worked in conjunction with other SDL projects (i.e., three 3-day meetings per year total, etc.).

6.0 Comments

The Software Data Loader Subcommittee has other projects in work, specifically:
 APIM 16-002, **ARINC Project Paper 645: Common Standard for Software Data Distribution and Loading**

APIM 16-015, **ARINC Project Paper 851: Software Ground Systems for e-Enabled Aircraft**

6.1 Expiration Date for the APIM

April 2019

Completed forms should be submitted to the AEEC Executive Secretary.