

ARINC IA Project Initiation/Modification (APIM)

Name of proposed project

APIM #: 20-111

Supplement 3 to ARINC Report 667: *Guidance for the Management of Field Loadable Software*

Suggested Subcommittee assignment

Field Loadable Software (FLS) AMC Working Group.

Project Scope

RTCA DO-355 has operator process requirements for the secure management of software. A good portion of the document concerns software, software media, portable data loader handling, maintenance devices, and ground tools which are all involved in the secure management of software. A667 should be updated to align with and reference DO-355 where possible.

ARINC Report 667 currently refers to the use of a Certificate of Conformity (CoC) instead of an FAA Form 8130-3 or EASA Form One for the distribution and transfer of some types of aircraft software. However, the specific CoC information requirements are not defined in any ARINC Standard.

The FAA has requested that we supply a clear definition of the minimal information requirements for a software CoC. This reference must be traceable to the ARINC 667 use of this term.

Project Description

Update ARINC 667 to improve security process guidance and align with DO-355:

- Ensure the software guidelines of DO-355 section 2 are covered in A667 and add detailed recommendations as needed.
- Update processes to ensuring loader devices are well managed against cyber threats through all phases of the life cycle. For example, ensuring that the loading devices implement robust security measures to prevent corruption from untrusted networks; that loader device software is up to date, that loader devices are physically secured in line with or by reference DO-355.
- Update process recommendations for media handling and software transfer to the **loader devices** to ensure cyber resiliency in line with or by reference DO-355.
- Ensure DO-355 guidance for securing all ground tools and particularly devices that store airplane software are covered and add detailed recommendations as needed.

In general, a CoC is a document certified by a competent authority that the

supplied good or service meets the required specifications. *It is* also sometimes referred to as a certificate of compliance or certificate of conformance. The CoC is currently used for the transfer of UMS and AMIs as compliant receiving documentation.

The text within ARINC Report 667 needs to be worked to better describe when a CoC may be used in lieu of an FAA Form 8130-3.

The minimal set of information elements for a Software Certificate of Conformity (C of C) should include:

- A quality statement indicating that the supplier's accepted processes were followed in the creation and/or handling of the product, and that the product is genuine.
- Supplier identification information (e.g., Company Name, Address, etc.)
- Customer identification information (e.g., Company Name, Address, etc.)
- The identification of the product(s) (e.g., Part Number, Version Number, etc.)
- The supplier's representative approval signature

An example of a Certificate of Conformity:

Quality statement:

This will endorse that the below identified product was built, formulated, and assembled under the rigid quality requirements of our Engineering specifications for materials and processes. All direct and associated processing materials have been tested and approved.

All process and testing operations have been verified as acceptable by the Quality Assurance Department in conformance with the requirements of our Quality Program Manual and are endorsed to meet all general performance specifications stated in our current published catalogs.

Customer Name:

Customer PO#:

Sales Order#:

Software PN:

Software Version:

Approved by: Quality Representative

Approved Date:

Company Identification:

Project Benefit

Updated operator software management guidelines that ensure operator processes align with current best practice regulatory guidelines in DO-355. This project will improve aviation security significantly as aviation software is referenced throughout DO-355.

ARINC Report 667 currently defines the processes around the management of aircraft software. These processes have become increasingly important with the modern software centric aircraft and associated ground information systems support infrastructure. This document defines the process functions that airlines commit to follow in managing aircraft software.

Regulatory agencies, such as the FAA and EASA use this document as reference to support the formation of their regulation documents. It is important the ARINC documents remain in sync with regulatory publication as much as possible.

Airlines supporting effort

- Delta Air Lines
- American Air Lines
- Lufthansa
- KLM

Manufacturers

- Thales
- LFT

Issues to be worked

Ensuring secure software management processes are very secure but not disabling to continued operations.

The term Certificate of Conformity (CoC) used in ARINC Report 667 must be defined, primarily within the context of the minimal information requirements. Information requirements include a quality statement such as a Statement of Conformity, an identity of the product such as a part number, and a signature of a competent authority representative.

The *current* text in ARINC 667-2 must also be worked to better describe when *and how* a CoC may be used in lieu of an FAA Form 8130-3.

Recommended Coordination with other groups

Coordination with members of the Software Distribution and Loading (SDL) AEEC Subcommittee is strongly recommended, since many members of the previous FLS Working Group are participants of the SDL WG.

There may also be another related project starting to update the EDS document. It may be advantages to coordinate adjacent meetings with the ARINC Electronic Distribution of Software (EDS) WG, as members of the EDS WG were also

composed of many SDL members.

This is also to reduce the travel requirements for the participating members involved with multiple WGs.

Involvement with part 121 regulators will help ensure guidelines meet the expectations of the regulators.

Projects/programs supported by work

Improving operator security processes will affect all aircraft models.

This effort has been requested by Marcus Labay (FAA), who has attended several SDL meetings. He has worked with us during the development of AC 43-216 - Software Management During Aircraft Maintenance. This is in support of the goal to have global harmonization of standards related to the management and security of aircraft software.

https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/1032449

Timetable for projects/programs

Supplement 3 to ARINC Report 667 should be mature April 2020.

Documents to be produced and date of expected result

This project will create supplement 3 to ARINC Report 667.

Comments

Meetings for this project may be worked adjacent with SDL and EDS meetings.

Meetings

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

Activity	Mtgs	Mtg-Days
<i>Document a</i>	<i>3 of mtgs</i>	<i>1 of mtg days</i>
<i>Document b</i>	<i># of mtgs</i>	<i># of mtg days</i>

For IA Staff use

Date Received: _____ **IA Staff Assigned:** _____

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

Forward to committee(s) (AEEC, AMC, FSEMC): _____ **Date Forward:** _____

Committee resolution: _____
(0 Withdrawn 1 Authorized 2 Deferred 3 More detail needed 4 Rejected)

Assigned Priority: _____ **Date of Resolution:** _____
A. – High (execute first) B. – Normal (may be deferred for A.)

Assigned to SC/WG: _____