



To SDL Subcommittee **Date** January 17, 2020

From Scott L. Smith
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tel +1 443-221-8372 **Reference** 20-999/SMA-164 kpp

Subject **Meeting Announcement**
Software Distribution and Loading (SDL) Subcommittee

Chairman Ted Patmore, Delta Air Lines

When March 3-4, 2020
Tuesday through Wednesday from 0900 to 1700

Host TechSAT is hosting the SDL Subcommittee meeting. They have made arrangements for the meeting space. A special hotel rate is available.

Where Meeting Location
The Spokane Club
1002 W. Riverside Ave
Spokane, Washington 99201 USA
Tel +1 (509) 838-8511
Fax +1 (509) 838-1367
Reservations email: frontdesk@spokaneclub.org
Web: [The Spokane Club](http://www.spokaneclub.com)

TechSAT has arranged to host the meeting at The Spokane Club hotel. The meeting site is about 10 miles from the Spokane International Airport (GEG) or 300 miles from the Seattle Tacoma International (SEA) Airport.

Hotel Reservation Information

TechSAT has arranged preferred room rates for the SDL Subcommittee meeting attendees.

\$119 Standard Room
\$139 Deluxe Room
\$199 Suite

Please make your reservations by calling the hotel in-house reservations directly and mention the keyword **Aeronautical Radio**. Note: The hotel group rates are

available to those who contact the hotel before **February 21, 2020**. To book a room, call or email the hotel directly.

Parking at the hotel is \$14 USD nightly, with additional public parking areas nearby.

Instruction Please notify ARINC Industry Activities of your intention to attend by registering online at: <http://www.aviation-ia.com/events/>

The meeting is open to all interested parties. Individuals requesting time on the agenda should contact Scott Smith. Any material intended to be circulated prior to the meeting should be submitted before February 28, 2020. The agenda will be finalized one week prior to the meeting.

Activity Scope The SDL Subcommittee's objective is to develop standards for software distribution and loading. This includes continued development of high-speed data loaders, high-density storage media, and loading protocols. The SDL Subcommittee prepares and updates standards for file format, media type, part numbering, distribution, and terminology.

This subcommittee also defines the interfaces between the software data loader and the target hardware. The SDL Subcommittee sets standard formats for Loadable Software Parts (LSPs) so that all the requirements of configuration management of LSPs may be accomplished.

Meeting Objectives **ARINC Project Paper 851: *Software Ground Systems for e-Enabled Aircraft***

The SDL Subcommittee will continue work standardizing software management ground systems such that an airline or operator could use one ground system for any manufacturer's aircraft. This work is chartered by APIM 16-015A, attached to this announcement.

Airframe manufacturers have different systems, requiring airlines that utilize fleets from multiple manufacturers to install and support divergent software management suites. The resulting cost and resources required is not insignificant.

Having a hosted solution that supports this standard is also desired. Some airlines and operators do not have or want the capability to host the IT infrastructure required to support e-Enabled aircraft.

The discussion will continue documenting features of one or more Application Program Interfaces (APIs) that are envisioned to work with more than one software supplier through a single, standardized function through potentially multiple backplane services.

The SDL Subcommittee will define the airline domain of software distribution, storage, and management as illustrated by Figure 1.

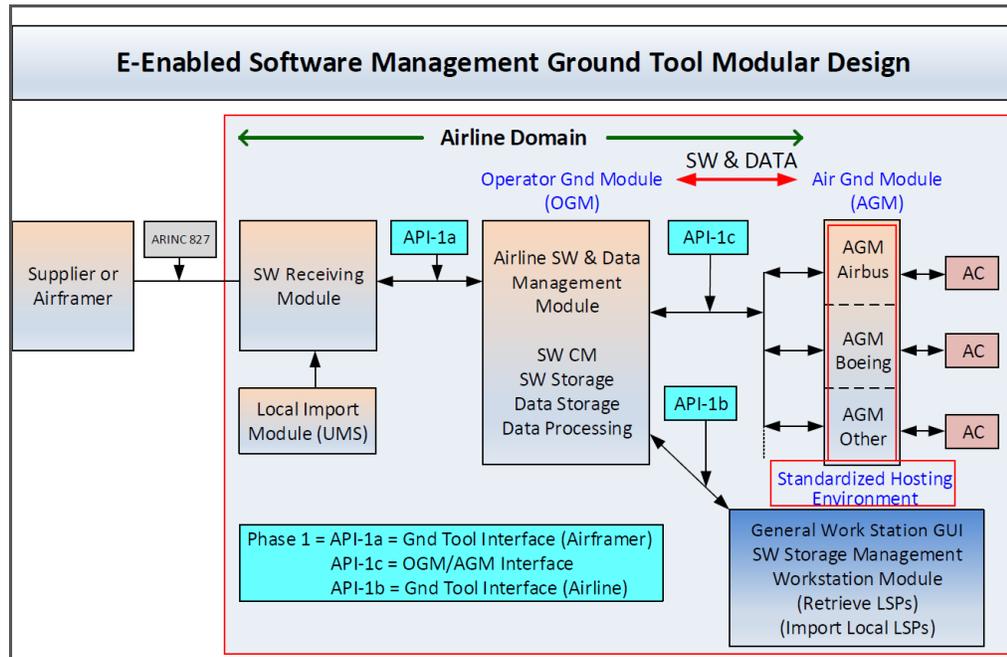


Figure 1 – Modular e-Enabled Ground Support System

New Projects

APIM 19-011: Loadable Software Loader Security Guidance

The SDL Subcommittee will initiate work on **Supplement 1 to ARINC Report 645: Common Terminology and Functions for Software Distribution and Loading**. The objective is to add software loader security guidance to ARINC 645. The aviation industry is keenly aware and proactive with security and safety of operations and maintenance. This project intends to strengthen processes involving:

- Portable data loaders
- Airborne data loaders
- Maintenance PCs
- Avionics shop loaders

The project is in step with other security-specific regulatory requirements and industry standards in-work. APIM 19-011 is attached to this announcement.

APIM 19-014: Update to ARINC Specification 641

The SDL Subcommittee will initiate work on **Supplement 1 to ARINC Specification 641: Logical Software Part Packaging for Transport** updating guidance on converting ARINC 615 media sets (physical media) to a digitally secured format to enable airlines to enhance their electronic distribution processes. If physical media is required, the process to accomplish this will be provided as well, including any authentication or security features as needed. APIM 19-014 is attached to this announcement.

Meeting Schedule

Note: The AMC Electronic Distribution of Software (EDS) Working Group will also meet in Spokane during the same week. The groups will meet according to the following schedule:

Place	March 3 Tuesday	March 4 Wednesday	March 5 Thursday	March 6 Friday
The Spokane Club	SDL	SDL	EDS	EDS

**Travel
Information**

The Spokane International (GEG) is the nearest airport to the meeting site. Please make you make reservations with the hotel by **February 21, 2020**. Travel from the airport to the hotel is not provided. Please make your own air and ground transportation arrangements.

cc

SAI Subcommittee

Attachment 1

ARINC Project Initiation/Modification (APIM)

- 1.0 Name of Proposed Project** **APIM 16-015A**
Ground System Definition for e-Enabled Aircraft
- 1.1 Name of Originator and/or Organization**
Maurice Ingle, American Airlines
- 2.0 Subcommittee Assignment and Project Support**
- 2.1 Suggested AEEC Group and Chairman**
Software Distribution and Loading (SDL) Subcommittee
Chairman: Ted Patmore, Delta Air Lines
- 2.2 Support for the activity (as verified)**
Airlines: American Airlines, Cathay Pacific, Delta Air Lines, El Al Israel Airlines, Lufthansa, Qatar Airways, Southwest, TAP Portugal, United Airlines, UPS, Virgin America, WestJet
Airframe Manufacturers: Airbus, Boeing
Suppliers: Collins, Esterline, Honeywell, Teledyne
- 2.3 Commitment for Drafting and Meeting Participation (as verified)**
Airlines: American Airlines, Delta Air Lines, Lufthansa
Airframe Manufacturers:
Suppliers: Teledyne
Others:
- 2.4 Recommended Coordination with other groups**
RTCA SC-216, EASA WG-72, NIS and SAI Subcommittees
- 3.0 Project Scope (why and when standard is needed)**
- 3.1 Description**
e-Enabled aircraft and their e-Operations Ground Systems are proprietary, and only operational with aircraft built by that respective airframer. Airlines that operate aircraft from more than one airframer are faced with building and maintaining more than one entire ground system.
The project has a grand objective, potentially involving almost all facets of airborne software management. Given unlimited power, time, resources, and business approval the project would simply provide airlines a single Software management system. This system would span from LSAP receiving, storage,

distribution, PKI, installation, and verification, to include configuration reporting. It would cover all airframes, all fleets, and all systems.

The reality of the industry does not allow for such a simple system to be available today for airlines.

This APIM proposes a phased approach to achieving an acceptable outcome for all stakeholders. Initially, industry will draft a document defining an API to allow access between an airline's ground software management tools to any aircraft manufacturer's airplane software distribution mechanisms. This is represented in the Figure 1 as API-1. This phase provides value to the airlines by simplifying a portion of their ground infrastructure requirements

It was originally envisioned that API-2 (see Figure 1) would later be developed to standardize the Air to Ground Module (AGM) communication to the aircraft.

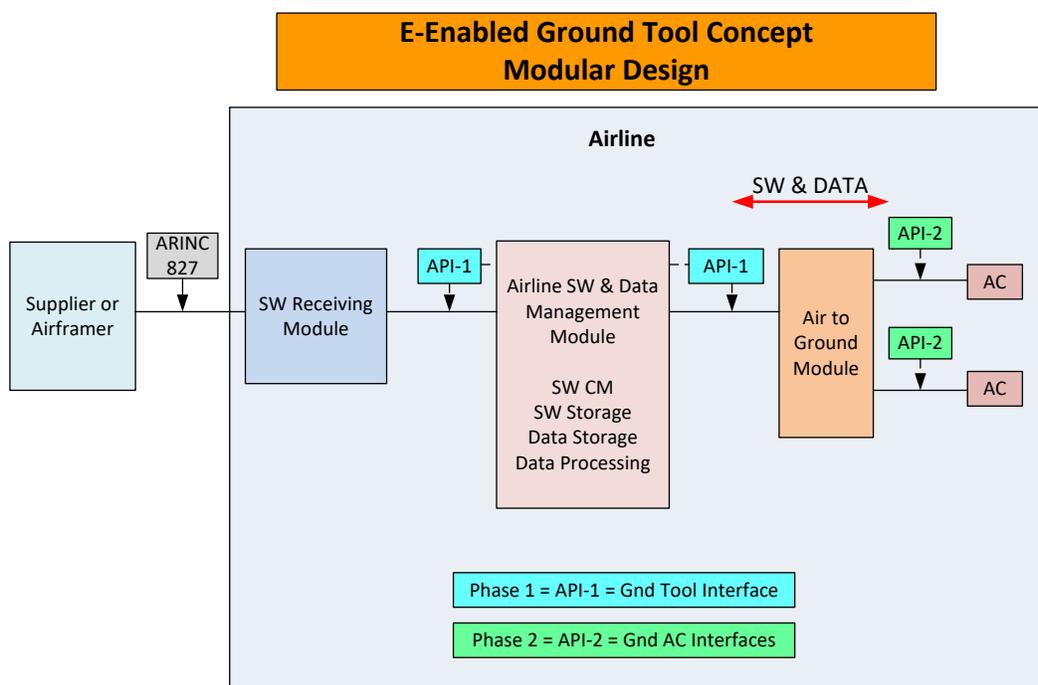


Figure 1 – Old Concept - Modular e-Enabled Ground Support System

However, there has been significant reluctance from the major aircraft manufacturers in sharing the AGM to aircraft interface information with outside parties. Among other reasons for their position, they consider this information to be proprietary and essential to maintaining aircraft security. Additionally, standardizing the AGM affects TC aircraft components and restricts future development to keep up with the latest technology.

The SDL Subcommittee began working on an alternate approach to the resolve the issue that the AGM module functional details need to remain proprietary.

As shown in Figure 2, the goal now (APIM 16-015A) is to standardize the interface between the Operator Ground Module (OGM) and Air to Ground Module (AGM).

Here, the OGM to AGM communication would be standardized. This means that the aircraft interface functionality would remain hidden, and the AGM would be designed, by the aircraft manufacturer, to conform to the standard set of API-1c functions and messages defined in this standard. Each aircraft manufacturer will produce an Air Ground Module (AGM) function that will communicate to their aircraft using their proprietary method, and communicate with the OGM using the ARINC Specification 851 defined standard method. The AGM will operate in a standardized hosting environment defined in this standard.

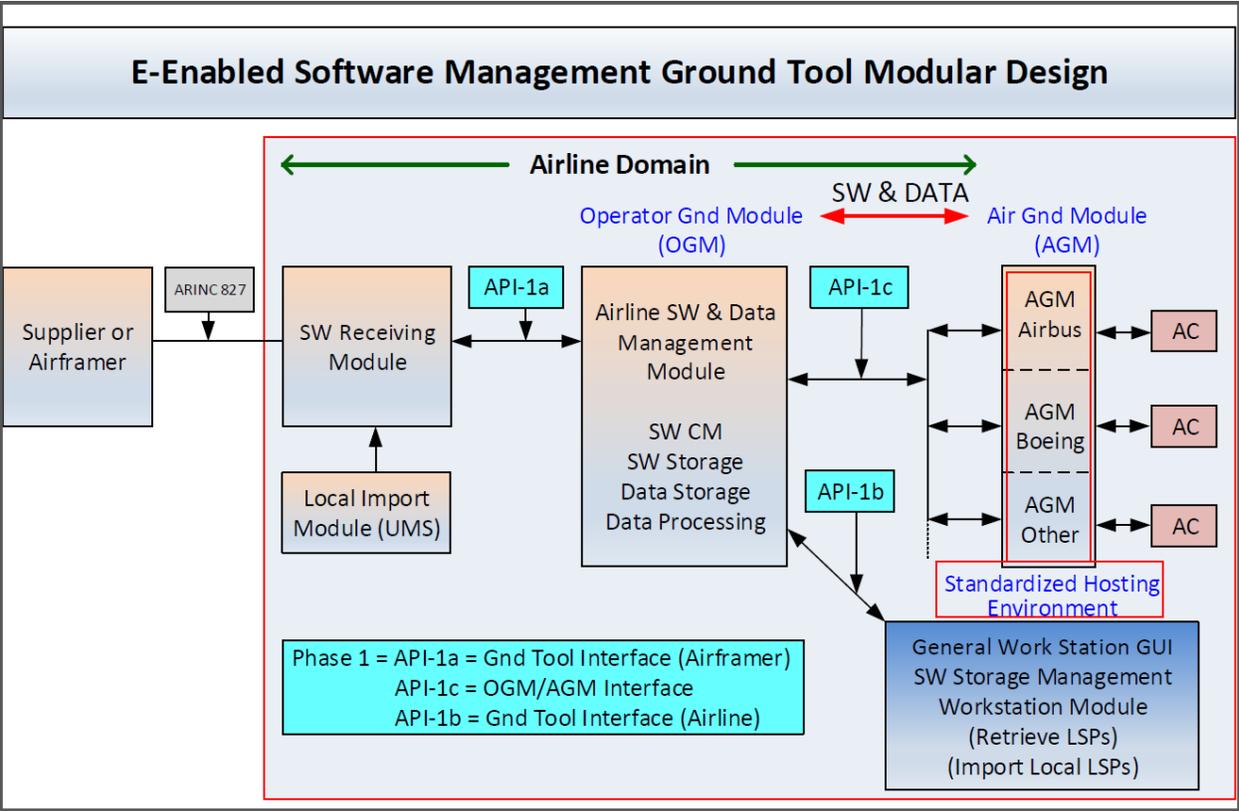


Figure 2 – New Concept - Modular e-Enabled Ground Support System

The OGM will interface to the AGM through API-1c. This will require that all AGM are designed or modified to interface to the OGM standard that will be defined in this standard. This will avoid the need to develop the API-2 (phase 2) of the original APIM proposal.

For aircraft planned in the future, the overall single, unified software management system could be more easily implemented to accept an airline’s fleet of disparate aircraft software from any manufacturer. This would greatly simplify the airlines’ processes into the next 100 years of powered flight.

Through all phases, there are a few details that would significantly assist the airlines in managing their processes.

- The desired method of software distribution is media-less.
- The desired method of software staging on aircraft is wirelessly.

- A mechanism for a hosted system should be available. Some airlines do not want or do not have the capability to host and maintain the Information Technology (IT) infrastructure required to support software intensive aircraft.
- Downloading data from the aircraft is also a function related to eEnabled ground system transport and storage, whether wireless, media based or wired for the following data:
 - Aircraft system reports
 - Flight Ops Quality Assurance data
 - Security log data
 - FLS configuration data

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 no

Airbus: (aircraft & date)

Boeing: (aircraft & date)

Other: (manufacturer, aircraft & date)

Modification/retrofit requirement yes no

Specify: **Ground System**, Desired

Needed for airframe manufacturer or airline project yes no

Specify: Desired

Mandate/regulatory requirement yes no

Program and date: (program & date)

Is the activity defining/changing an infrastructure standard? yes no

Specify (e.g., ARINC 429)

When is the ARINC standard required? March 2021~~2019~~

What is driving this date? Time necessary to define, prepare and alter systems

Are 18 months (min) available for standardization work? yes no

If NO please specify solution: _____

Are Patent(s) involved? yes no

If YES please describe, identify patent holder: _____

3.3 Issues to be worked

The ground system applications must support the following:

- A secure means of validating that FLS has been provided from a trusted source and the FLS integrity has not been compromised.
- The ability to digitally sign the FLS with the airline or operator digital signature (as required).
- Storage of the FLS.

- Distribution of the FLS wirelessly to aircraft and/or via ground systems like proxy servers, USB sticks or maintenance laptops.
- PKI infrastructure as required by the ground and aircraft systems.
- A repository for aircraft data.

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: All of the above is as it relates to ground systems and interface with aircraft

Product offered by more than one supplier yes no

Identify: Boeing and Airbus

4.2 Specific project benefits (Describe overall project benefits.)

4.2.1 Benefits for Airlines

Large initial acquisition and build, and ongoing maintenance cost savings for airlines that operate or plan to operate any aircraft manufacturer’s “eEnabled” aircraft will be realized from commercial product and licensing costs, hosting fees, IT infrastructure costs, and Engineering, IT, and IT Security resources.

Also, operators desire to have one process to perform eEnabled FLS management. This will minimize problems due to human factors caused by the complexity of using multiple systems for one type of task.

Regulatory requirements will also be simplified with the standardization of ground applications, infrastructure and processes.

4.2.2 Benefits for Airframe Manufacturers

Simplification with one industry standard

4.2.3 Benefits for Avionics Equipment Suppliers

(Describe any benefits unique to the equipment supplier’s point of view.)

5.0 Documents to be Produced and Date of Expected Result

Identify Project Papers expected to be completed per the table in the following section.

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
ARINC Project Paper 851: Aircraft Software Ground Tool Definition ARINC Project Paper 8XX: Part 1, API-1	95	2745	Jan 2017	Mar 2021 2019
ARINC Project Paper 8XX: Part 2, API-2				
Web meetings	6/year		Feb 2017	Mar 2021

Please note the number of meetings, the number of meeting days, and the frequency of web conferences to be supported by the ARINC IA Staff.

6.0 Comments

Airbus, Boeing, and all other aircraft manufacturers will have to support this standardization if it is to be accomplished. IT and IT Security involvement will be instrumental.

6.1 Expiration Date for the APIM

April 2022

Completed forms should be submitted to the AEEC Executive Secretary.

Attachment 2

ARINC Project Initiation/Modification (APIM)

- 1.0 Name of Proposed Project** **APIM 19-011**
Software Loader Security Guidance in Supplement 1 to ARINC Report 645:
Common Terminology and Functions for Software Distribution and Loading
- 1.1 Name of Originator and/or Organization**
Todd Gould, The Boeing Company
- 2.0 Subcommittee Assignment and Project Support**
- 2.1 Suggested AEEC Group and Chairman**
AEEC Software Distribution and Loading Subcommittee
Ted Patmore, Delta Air Lines (Chairman)
- 2.2 Support for the activity (as verified)**
Airlines: American, Delta, Lufthansa
Airframe Manufacturers: Airbus, Boeing
Suppliers: Garmin, MBS, Safran, TechSat,
Note: Need confirmation: (Collins), (Honeywell), (Thales), (Teledyne), (Swiss Aviation Software)
Others: ICAO Aviation Trust Framework, AIA SW and Distribution Security Working Group, **RTCA, EUROCAE**
- 2.3 Commitment for Drafting and Meeting Participation (as verified)**
Airlines: Delta,
Airframe Manufacturers: Boeing,
Suppliers: Garmin TechSat, Safran,
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 project will have a high priority given that cyber security regulations and standards are being considered from work within ICAO, IATA, RTCA & EUROCAE, ARAC and ASISP. In this scope of work, these organizations are look to ARINC to define security process guidance to be implemented within aircraft software loading devices. This includes all types of civil aircraft types that use software loading devices, some of which are often referenced as dataloaders within the aerospace industry.
Civil aircraft cyber security is currently on the forefront of concerns within airline organizations and aircraft manufacturers. Work within standards organizations, as those previously indicated above, is in progress at an international scope. All aspects of cyber security threats, active measures, and security management are being considered and defined.

Data distribution and loading security, the process of securing software from the software provider to the aircraft flight systems, is the essential key vulnerability in the safety and security of all aircraft the use flight control software.

AIA software and distribution security working group has recommended that ARINC develop a security standard for all dataloaders, loader devices, portable dataloaders, STC airborne dataloaders, and shop loading devices.

3.1 Description

A variety of software loaders and load tools (PDLs and **STC ADLs**) are used to directly load aircraft systems onboard aircraft and load aircraft LRUs in supplier, OEM, and operator shops. The software load tools generally conform to ARINC 615, ARINC 665, and ARINC 615A standards. In general, most of these loaders do not implement ARINC 835 software security specification. Also, there is no common guidance on how the loaders operating system and media ports should be hardened against cyber threats. There is no common security process guidance for how the loaders should be managed or how the process of getting software to the loaders should be managed to be resilient against Cyber threats.

This standard would address the following to ensure a complete security solution is established for software loaders to be considered compliant:

1. Require use of adequate digital authentication mechanism to ensure aircraft software is not tampered with prior to any SW loading. ARINC 835 provides one example of a detailed description of industry implemented processes which can be used as a reference. However, compliance with ARINC 835 will not be required.
2. **Create or reference loader** device hardening requirements.
3. Create or reference processes for ensuring loader devices are developed to guard against cyber threats.
4. Create or reference processes for 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.
5. Create process recommendations for media handling and software transfer to the **loader devices** to ensure cyber resiliency.
6. PDLs and STC ADLs are specific examples of loading devices.

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 no

 Airbus: (aircraft & date)

 Boeing: (aircraft & date)

 Other: (manufacturer, aircraft & date)

Modification/retrofit requirement yes no

4.2.1 Benefits for Airlines

Provides a more end-to-end solution that is less reliant on a variety of storage, network, and handling processes. Provides a good means to comply with AC 43-216.

4.2.2 Benefits for Airframe Manufacturers

Better assurance that all aircraft have better software tamper protection.

4.2.3 Benefits for Avionics Equipment Suppliers

Provides a security check right before loading into equipment.

5.0 Documents to be Produced and Date of Expected Result

Supplement 1 to ARINC Report 645 adding Software Loader Security Guidance

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>Supp 1 to ARINC Report 645</i>	6	12	<i>Oct 2019</i>	<i>May 2021</i>

6.0 Comments

The SDL Subcommittee has other APIMs in-work. Work on all projects are done in parallel.

The SDL has monthly web conferences to discuss and modify their assigned projects.

6.1 Expiration Date for the APIM

April 2022

Completed forms should be submitted to Paul Prisaznuk, AEEC Executive Secretary and Program Director (pjp@sae-itc.org).

Attachment 3

ARINC Project Initiation/Modification (APIM)

- 1.0 Name of Proposed Project** **APIM 19-014**
Prepare Supplement 1 to ARINC Specification 641: Logical Software Part Packaging for Transport
- 1.1 Name of Originator and/or Organization**
Olivier BASTIEN, Airbus Civil Aircraft
- 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
- 2.2 Support for the activity (as verified)**
Airlines: American, Delta, Lufthansa,
Airframe Manufacturers: Airbus, Boeing
Suppliers: Honeywell, TechSAT, Safran, Teledyne
Others: TBD
- 2.3 Commitment for Drafting and Meeting Participation (as verified)**
Airlines: TBD
Airframe Manufacturers: Airbus
Suppliers: TBD
Others: TBD
- 2.4 Recommended Coordination with other groups**
TBD
- 3.0 Project Scope (why and when standard is needed)**
Legacy ARINC 615 software standard has been specified taking in consideration the certification of Field Loadable Software (FLS) distributed via physical media devices, which are most of the time part of the certified aircraft definition and requiring being kept onboard as per regulation requirement.
FLS physical media distribution is now becoming obsolete, and e-distribution of digitalized FLS progressively becomes the standard.
However, removing regulation requirement for storing FLS medias onboard the aircraft is challenging. It requires, not only, to ensure that any alternate FLS e-delivery process of these existing certified FLS medias being performed in a digitally secured way, from its originator to their final destinations, but also not to affect certification of existing legacy FLS medias, whose format and content are most of the time linked to ARINC 615 media sets organization.
This method needs to be included within ARINC 641. It will be used for A320 and A330/A340 aircraft to allow the removal of software media that has been required to be carried on the aircraft and kept updated. This method is compatible with the

method used for the A350/A380 field loadable software delivery, and is already approved. Therefore, this approved process specific to these aircraft types should be included within ARINC 641 to cover all use cases.

3.1 Description

This additional method specific to Airbus aircraft needs to be added to ARINC Specification 641 so that it will contain an array of complete solutions for aircraft software packaging.

This standard would propose a method allowing:

- Simple conversion of existing certified ARINC 615 FLS media sets in a digitally secured FLS, for compatibility with existing ARINC 665 & ARINC 835 standard involved in the FLS e-distribution processes.
- Simple re-generation of ARINC 615 media sets from a digitally secured FLS, for backward compatibility with existing in-service floppy based loaders.

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 type="checkbox"/> no <input checked="" type="checkbox"/>
Airbus: A320 & A330 families,	
Boeing:	
Other:	
Modification/retrofit requirement	yes <input checked="" type="checkbox"/> no <input type="checkbox"/>
Specify: A320 & A330 families	
Needed for airframe manufacturer or airline project	yes <input checked="" type="checkbox"/> no <input type="checkbox"/>
Specify: allows e-distribution of existing ARINC 615 multiple media sets, in a secured digital ways	
Mandate/regulatory requirement	yes <input type="checkbox"/> no <input checked="" type="checkbox"/>
Program and date:	
Is the activity defining/changing an infrastructure standard?	yes <input type="checkbox"/> no <input checked="" type="checkbox"/>
Specify: allows e-distribution of existing ARINC 615 multiple media sets, in a secured digital ways.	
When is the ARINC Standard required?	Q1-2020
What is driving this date?	
APIM review by SAI, APIM Consideration, APIM Approval, Drafting Work, Circulation for Adoption consideration	
Are 18 months (min) available for standardization work?	yes <input checked="" type="checkbox"/> no <input type="checkbox"/>
If NO please specify solution: _____	
Are Patent(s) involved?	yes <input type="checkbox"/> no <input checked="" type="checkbox"/>
If YES please describe, identify patent holder: _____	

3.3 Issues to be worked

Legacy ARINC 615 software standard has been specified taking in consideration the certification of Field Loadable Software (FLS) distributed via physical media devices. Today, FLS physical media distribution becomes obsolete, and e-distribution of digitalized FLS progressively becomes the standard.

However, digitalization of existing FLS physical medias is not obvious, and becoming challenging due to:

- The need to ensure integrity of e-distributed software vs. genuine certified physical media set content.
- The need to secure replicability of the e-distributed software vs. individual certified physical media sets aircraft attached.
- The need to ensure compatibility with well-known ARINC 665 (FLS format) & ARINC 835 (FLS digital signature)

On top of that, ARINC 615 software drives additional challenges, especially when they are based on a media sets made of multiple media members, due to:

- The presence of a commonly file named having different content on each media member of the media sets (e.g. CONFIG.LDR)
- The need to keep traceability of multiple floppy organization after e-distribution for backward compatibility with existing floppy based loader.

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

Allows electronic reception and distribution of existing ARINC 615 multiple media set Field Loadable Software (FLS) in a secured digitally signed way, compatible with existing ARINC 665 & ARINC 835 standards.

Streamlines Airline process, by:

- Suppressing Media devices from certified aircraft definition.

- Suppressing floppy media management for FLS distribution between Airline engineering and line maintenance
- Introducing state of the art of FLS Data Security, allowing multiple FLS copy from centralized airline software storage.

It also provides Airlines opportunity to align legacy aircraft FLS management and distribution on brand new aircraft FLS e-distribution processes.

Avoid the use physical media such as floppies/CD. Enhances robustness and avoids obsolescence issues.

Ensures backward compatibility with legacy floppy based aircraft loaders, if needed, by allowing re-generation of floppy media sets from an e-distributed FLS parts.

4.2.2 Benefits for Airframe Manufacturers

Allows electronic distribution of existing ARINC 615 multiple media set Field Loadable Software (FLS) in a secured digitally signed way, compatible with existing ARINC 665 & ARINC 835 standards.

Streamlines Airframer processes by:

- Suppressing Media devices from aircraft definition.
- Suppressing logistic flow of numerous floppy media distribution between Suppliers and Airframer Final assembly line for each MSN.
- Introducing state of the art of FLS Data Security, allowing multiple FLS copy from centralized Airframer software storage

4.2.3 Benefits for Avionics Equipment Suppliers

Allows electronic distribution of existing ARINC 615 multiple media set Field Loadable Software (FLS) in a secured digitally signed way, compatible with existing ARINC 665 & ARINC 835 standards.

Streamlines Supplier processes by:

- Suppressing logistic flow of numerous floppy media distribution between Suppliers and Airframer, or Airlines.
- Introducing state of the art of FLS Data Security, allowing multiple FLS copy from centralized supplier software storage

Ensures integrity of e-distributed FLS with regards to original certified media content, allowing re-using certified software PNR identifier and MoC, instead of Media PNR identifier.

5.0 Documents to be Produced and Date of Expected Result

Standard describing how to convert multiple ARINC 615 Media members FLS, in digitalized ARINC 665 FLS.

Optionally, this standard could describe the method to re-generate ARINC 615 media sets from digitalized FLS PNR.

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 641</i>	3	3	<i>Jan 2020</i>	<i>May 2021</i>

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

6.0 Comments

none

6.1 Expiration Date for the APIM

October 2021

Completed forms should be submitted to the AEEC Executive Secretary.