

ARINC IA Project Initiation/Modification (APIM)

Name of proposed project

APIM #: 15-201

FSEMC Data Document (FDD) Working Group

Suggested Subcommittee assignment

Develop a standard to provide Training Device operators, Training Device Manufacturers (TDM), airplane manufacturers or other sources of approved data and vendors of airplane equipment, with a standard, describing the scope and content of data required to build, test, qualify, and provide lifecycle support for a Training Device of adequate fidelity to meet flight crew training requirements.

Address the regulatory requirements that are concerned how FSTDs are built, used, and updated (FAA Part 60, EASA CS-FSTD(A), ICAO 9625, each document as amended). Ensure support for legacy devices, held to a prior version of a standard.

Address that device level may affect the amount/depth/breadth of data required and be substantially different than a highest-level device. The document will describe these scenarios as well as best case solutions.

Address the operators' need for additional data specific to accomplishing maintenance training (potential future APIM for an attachment)).

Project Scope

Develop a Standard for defining what data is required to support training devices.

1. Configuration/Design Data
2. Simulation Modeling Data
3. Software Driven Aircraft Specific Data (LSAPs, SSP, etc.)
4. Checkout Data
5. Validation Data
6. Engineering Validation Data
7. Validation Data Roadmap
8. Flight Test Validation Data
9. Validation Data for Alternate Configurations
10. Proof of Match Data
11. System Verification Data (consider new capabilities: Wx, EFB, etc.)
12. Malfunction Data
13. Others

Project Benefit

The Standard is intended to ensure the continued viability of training devices.

- Enhances safety by ensuring there is a provision of data to safely train crews in the performance of their duties and the operation of the equipment.

- Common understanding of data needed for a training device
- Standardization of data improves effectiveness; promotes interoperability
- Educates industry on necessary data and uses
- Data can be collected at the most opportune time rather than once it is discovered it is needed
- Improves cost efficiency in the initial purchase of training device(s)
- Improves cost efficiency in the lifecycle support costs of training devices
- Ensures that data is available so training can be performed
- Reduces time to field a training device

Companies Supporting This Issue

FedEx	Airbus	FlightSafety
AAL	AMST	Rockwell Collins
ANA	Bihrl	TRU + Simulation
Boeing	CAE	ZenSim
Air Canada	Aircrew Training	

Issues to be worked

It is recognized that as aircraft and their onboard systems have become more complex, the development of Training Devices has become more involved, often requiring direct use of aircraft equipment, software, and/or thorough modeling of complex systems. The data requirements associated with this increased complexity typically include the use of Intellectual Property of the aircraft manufacturer and aircraft equipment vendors.

This Standard will define the recommended data requirements to build and maintain a training device.

Examples of problem areas to be resolved:

1. Quantity and quality of data: Operators have experienced missing data, erroneous data, or data not available for new technology systems. In some cases, operators have experienced a lengthy wait for data support from airframers and TDMs.
2. New technology may not be described, or as exhaustively, as needed. For example:
 - New display systems
 - Electronic Flight Bags (EFB)
 - Security aspects of wireless devices
 - ADS-B (In/Out)

- Datalink
 - Software driven aircraft
 - Weather radar systems
3. Engineering Data and tolerance – Should the WG discuss?
 4. Data format – Define how data should be structured, distributed, revised
 5. Levels of Data – Describe what levels of data is needed for different levels of devices
 6. Data integrity and authentication – Ensure valid models and data
 7. Malfunction – describe a minimum list of simulator malfunctions
 8. Proof of Match – Using an extrapolated data model or an airframer’s original model
 9. Intellectual Property (IP) – Contractual considerations with regards to IP and export control.
 10. Long term Support – To maintain currency as devices age (data, documentation, ATMs, etc.)

Recommended Coordination with other groups

The group will need to coordinate with regulatory authorities, avionics supplier’s airframe and helicopter manufacturers, airlines and operators, TDMs, FSG of RAeS.

Projects/programs supported by work

New Aircraft developments, new FSTDs types, major avionics updates

Timetable for projects/programs

2nd Quarter 2018

Documents to be produced and date of expected result

Supplement 1 to ARINC 450

Comments

None

Meetings

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

Activity	Mtgs	Mtg-Days	Docs
FDD	6	3 per meeting	1

For IA staff use

Date Received IA staff assigned: **Sam Buckwalter**

Potential impact:

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

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

Committee resolution: **1**____

(0. Withdrawn 1. Authorized 2. Deferred 3. More detail needed 4. Rejected)