

# ARINC IA Project Initiation/Modification (APIM)

## Name of proposed project

APIM #: 18-201

Update to ARINC Spec 439A: Guidance for Simulated Air Traffic Control Environments in Flight Simulation Training Devices

## Suggested Subcommittee assignment

FSEMC Simulated ATC Environment (SATCE) WG.

## Project Scope

The project's intent is to produce a supplement to ARINC Spec 439A (2016) to maintain the document's currency with industry developments in this fast-developing flight simulation training technology.

Updates are proposed in the following key areas:

1. Further **input from the training perspective is required**, to help reprioritize SATCE features and clarify guidance regarding application across varied training and device types.
2. In recognition of the potential training benefits – extend the guidance to **cover all levels of flight training**, not only a focus on ab initio / the MPL.
3. Extension of the guidance to include SATCE provision for **en route flight phases** (this will support application for LOFT sessions).
4. Improve guidance on integration of SATCE with **TCAS & ADSB FSTD** functionality.
5. Update guidance regarding **CPDLC** functionality.
6. Improve guidance on interface requirements concerning integration with FSTD **visual systems**.
7. Mature guidance on SATCE for application in **rotary wing** pilot training.
8. Mature guidance on SATCE for applications in **military** pilot training (ab initio and advanced), including interoperability.
9. Clarify and improve **Functions and Subjective Tests** - given industry deployments are growing, improvements would support validation of SATCE systems against requirements.
10. Improve guidance on **data synchronization between SATCE & FSTD** and on SATCE data maintenance.
11. Improve document readiness for contribution to future **regulatory documents/guidance** (for example, EASA CS-FSTD(A), and FAA).
12. **Editorial improvements** to document readability and usability. Removal of some legacy / redundant concepts.

Please see document “Review of ARINC Spec 439A 2017.pdf” for detailed review comments compiled from a number of industry experts in 2017.

## Project Benefit

Currently, ARINC Spec 439A is the industry's most up-to-date and comprehensive resource on SATCE, having already assisted ICAO and IATA/IFALPA with guidance. It is anticipated that an update will maintain the document's usefulness and assist with future guidance / regulatory updates from EASA and the FAA (in time) as the technology is adopted across both civil and military flight training.

An update to ARINC Spec 439A will benefit the following industry organizations:

- Airlines / Airline Training Providers
- Operators / Flight Training Organizations
- ICAO / FAA / EASA / NAAs / Other Industry Bodies
- FSTD / Systems Manufacturers and Integrators
- SATCE Vendors

This work will benefit and support **industry harmonization of guidance**.

Revised guidance on SATCE, updated through the work of the IPTA, is currently in review with the ICAO, which largely aligns with ARINC Spec 439A (Doc 9625 Ed 4). SATCE is also due for consideration during WP3 of EASA RMT0.196 (expected 2019) regarding CS-FSTD(A).

This proposed update will keep ARINC guidance on SATCE in line with industry development, which is transitioning from initial trials to initial deployments across both civil and military flight training.

## Airlines supporting effort

Proposed Chairman: Ted Chapman (FSI)  
Proposed Industry Editor: Jeremy Goodman (Quadrant Group)

### Organizations Supporting:

- FAA (incl. FAA NSP)
- DFS, Germany (Deutsche Flugsicherung GmbH)
- L3 Commercial Training Solutions
- Emirates (Airline)
- ASTi (Advanced Simulation Technology Inc.)
- TRU Simulation + Training
- Alaska Airlines
- CAE
- RSI Visual Systems Inc.
- UFA Inc.
- FlightSafety International (FSI)
- Quadrant Group
- Adacel
- Rockwell Collins
- ERAU (Embry-Riddle Aeronautical University)
- FedEx

### Organizations Sponsoring:

- The Boeing Company
- Fiji Airways
- Multi Pilot Simulations (MPS)
- FRASCA International, Inc.
- Atlantic Flight Training Academy (AFTA)
- Lockheed Martin - Rotary and Mission Systems (RMS)

## **Issues to be worked**

1. Reprioritize SATCE features, clarify guidance, according to training input.
2. Extend the guidance to cover all levels of flight training.
3. Extension of guidance to include en route flight phases.
4. Improve guidance on integration of SATCE with TCAS & ADSB FSTD functionality.
5. Improve guidance on CPDLC functionality (updates necessary?).
6. Improve guidance on interface requirements concerning FSTD visual systems.
7. Mature guidance on application in rotary wing pilot training.
8. Mature guidance on application in military pilot training.
9. Clarify and improve functions and subjective tests.
10. Improve guidance on data synchronization and maintenance.
11. Improve document readiness for regulatory adoption.
12. Editorial improvements.

## **Recommended Coordination with other groups**

The SATCE WG will need to coordinate with regulatory authorities such as FAA, EASA, Transport Canada and other NAAs. Coordination with other industry groups may include: IPTA, ICAO, STIG, EFTeG, RAeS, IATA and NASA. Participation will also be needed from airlines and flight training providers to properly identify optimal training requirements, approaches and outcomes.

## **Projects/programs supported by work**

- ICAO Doc 9625 4<sup>th</sup> Ed (2015), Manual of Criteria for the Qualification of Flight Simulation Training Devices.
- EASA CS-FSTD(A) - WP 3 Update RMT0.196
- ICAO 9868 2<sup>nd</sup> Ed (2016) PANS TRG.
- EASA FCL MPL – AMC 2011
- IATA Guidance on MPL (2<sup>nd</sup> Ed 2015)
- IPTA TDWS (Training Devices Work Stream)

## **Timetable for projects/programs**

Project start Q3 2018.

Face-to-face Meetings (4x) expected between mid-2018 – mid-2019.

Document maturity expected during Q2 2019.

Updated ARINC Standard should be available during Q3 2019.

## **Documents to be produced and date of expected result**

Supplement 1 to ARINC Spec 439A will be produced.

**Comments**

WG face-to-face meetings will necessitate support and active participation from flight training providers and airlines/airline training organizations (across the spectrum of training). Face-to-face meetings are expected to be supported by numerous smaller more specialized online meetings, necessary to revise guidance.

Representation and remote support from ICAO, FAA, EASA and NAAs would be helpful where possible.

**Meetings**

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

<b>Activity</b>	<b>Mtgs</b>	<b>Mtg-Days</b>
<i>Co-ordination of subject areas and task assignment. Meeting planning.</i>	<i>None</i>	<i>Online collaboration / teleconferences</i>
<i>Structured small-group discussion, drafting and initial review of updated materials. WG review of draft.</i>	<i>3</i>	<i>3 of mtg days</i>
<i>Final document review / acceptance by WG members.</i>	<i>1</i>	<i>1 of mtg days</i>
<i>Clean up of final document.</i>	<i>None</i>	<i>Online collaboration / teleconferences</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:** \_\_\_\_\_