

Experiencing SATCE in Training

Perspectives from trials of this new training technology

**QUADRANT
GROUP**

Dr Jeremy Goodman MRAeS

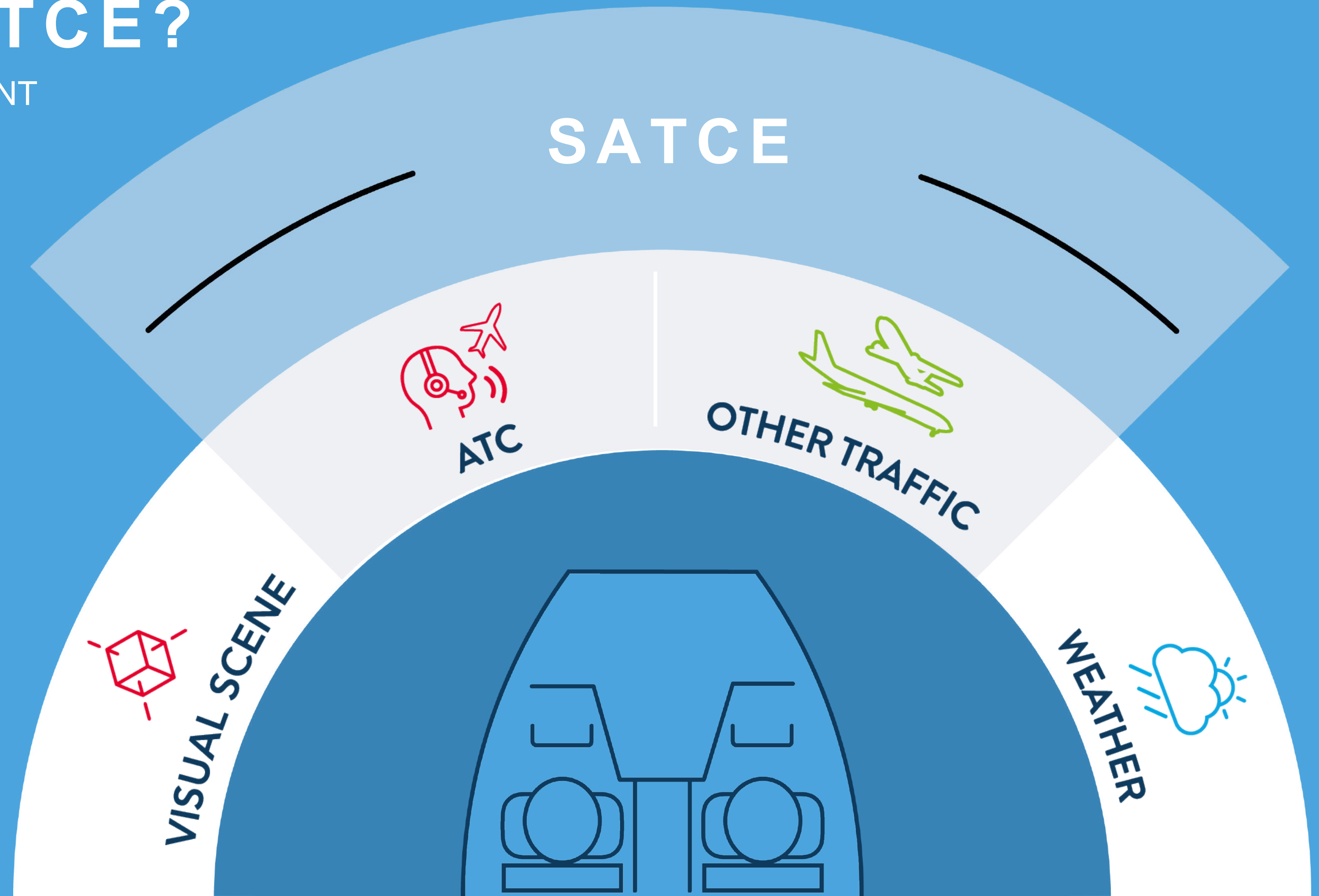


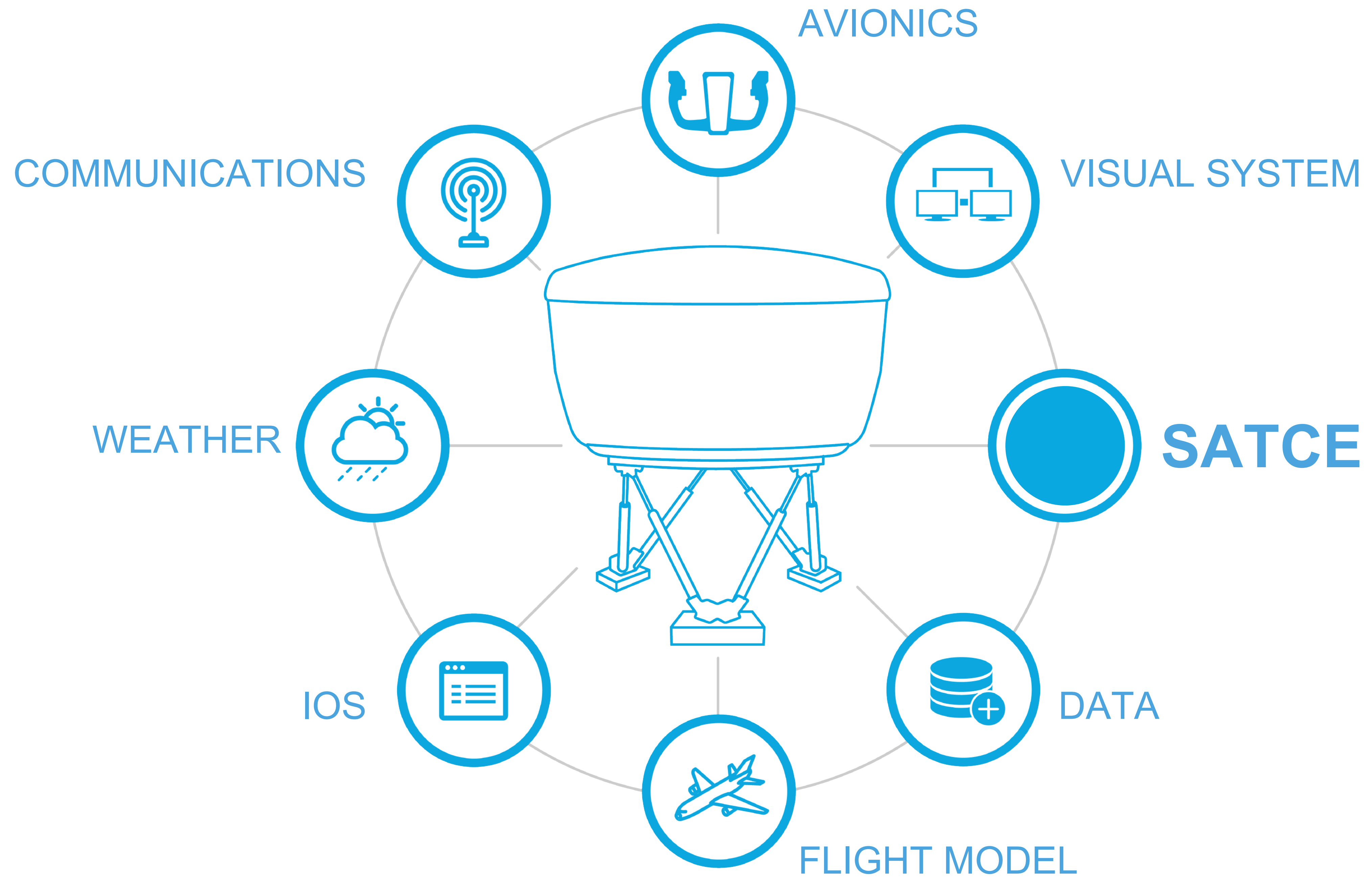
“ A synthetic environment in which
air traffic control services and
other traffic entities are simulated ”



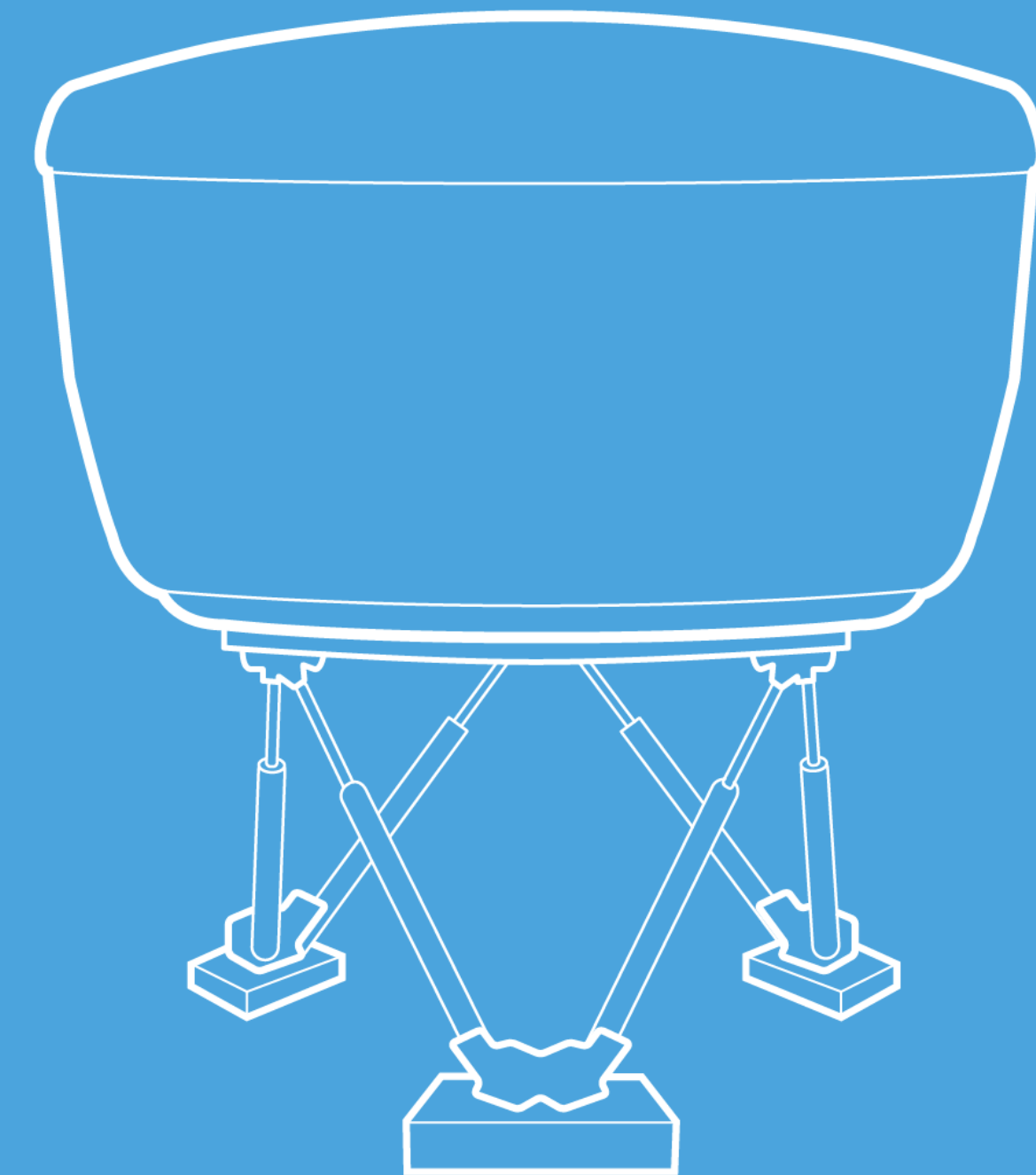
WHAT IS SATCE?

SIMULATED ATC ENVIRONMENT





SATCE is
applicable
across **all**
training
devices

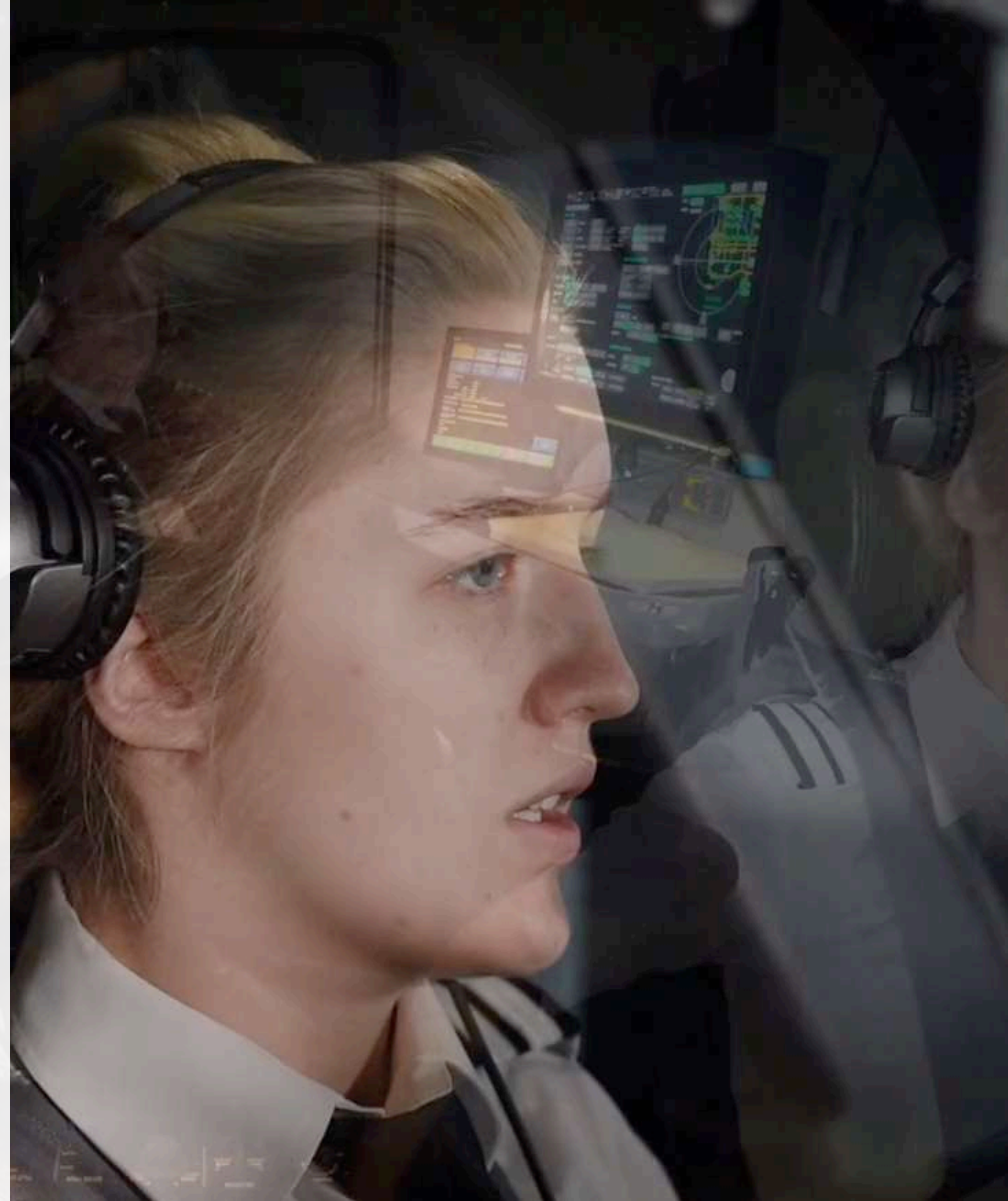


“ SATCE is most suited to
scenario-based real-time
synthetic flight training ”

DO WE NEED SATCE?

UPCOMING TRAINING NEEDS

- Real-time, LOS training
- Competency-based approaches – MPL, EBT
- Next Gen & SESAR – ATM
- ADSB-IN
- Data Link communications
- TCAS | MAP | R/W incursion | Wake turbulence training



TRAINING VALUE

BENEFITS OF SATCE

Realistic Crew Workload

- Adds real-world complexity
- Realistic comms environment
- Other traffic requires attention

Unburdens the Instructor

- ATC is fully automated
- New toolset - events | malfunctions



TRAINING VALUE

BENEFITS OF SATCE

Phraseology & Language

- Supports standard phraseology
- Supports exercise of English

Cost Savings / Environment

- Increased FSTD use for military flight training

Future Possibilities

- RPAS

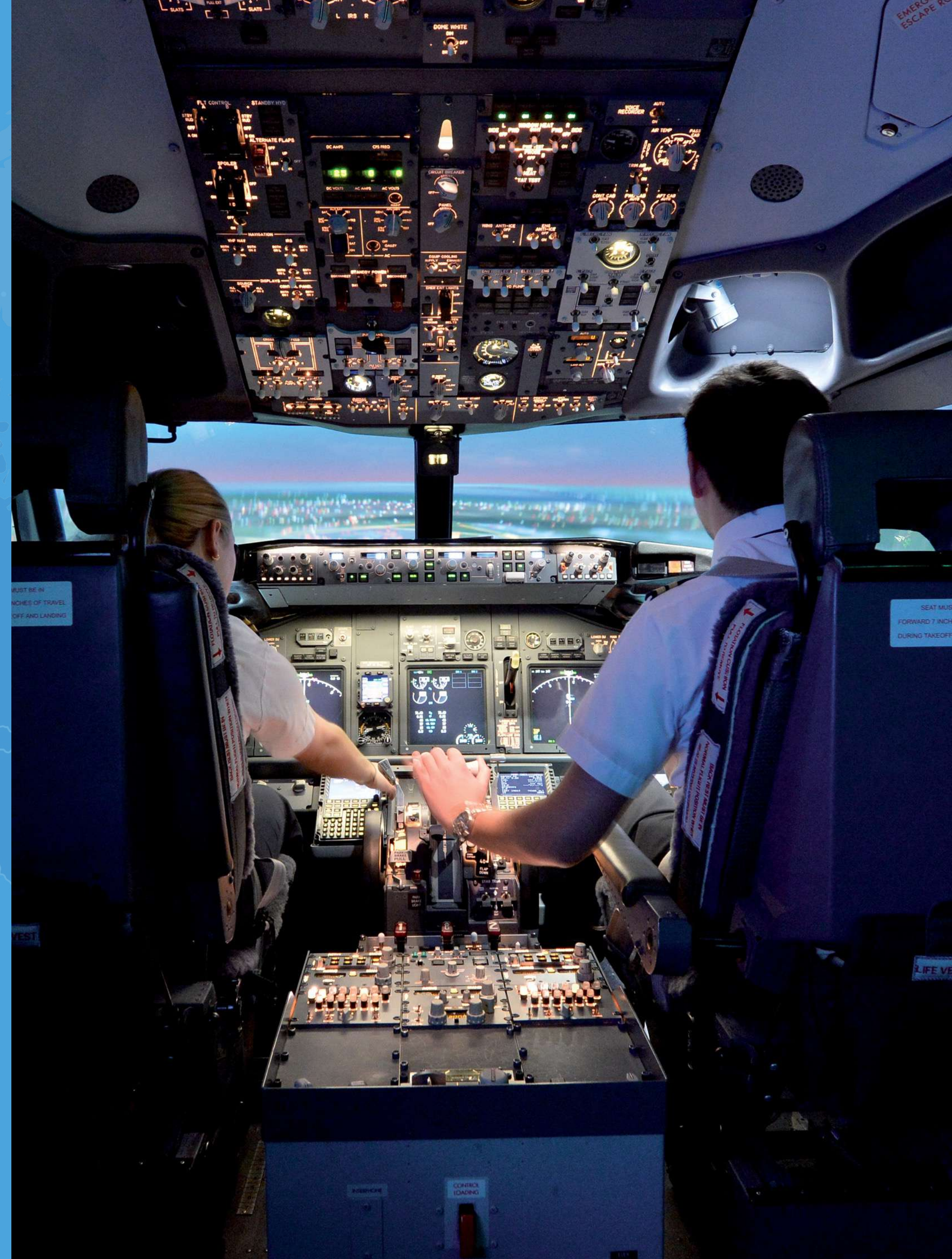


INITIAL TRIALS - 2018

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Atlantic Flight Training Academy



ARRIVAL SEQUENCE

AB INITIO – FIXED-BASE DEVICE (MAR 2018)

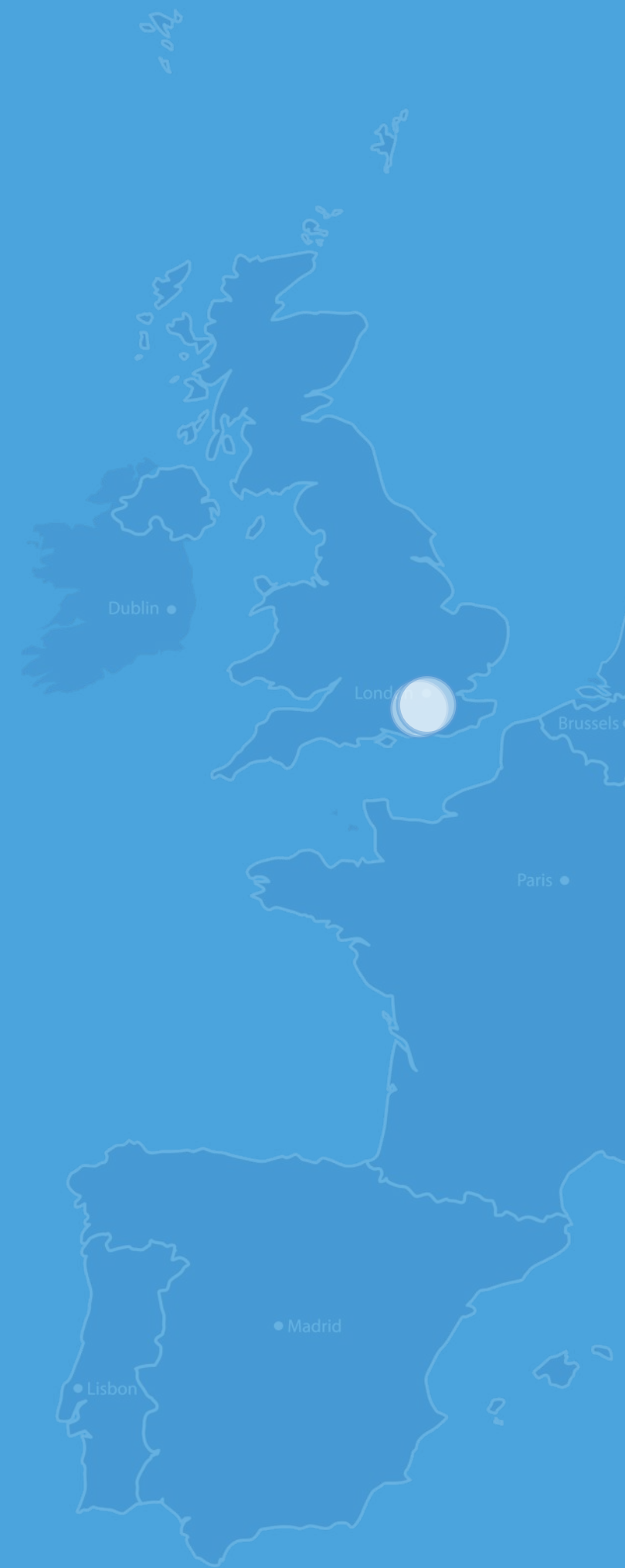


FFS EVALUATION - 2019

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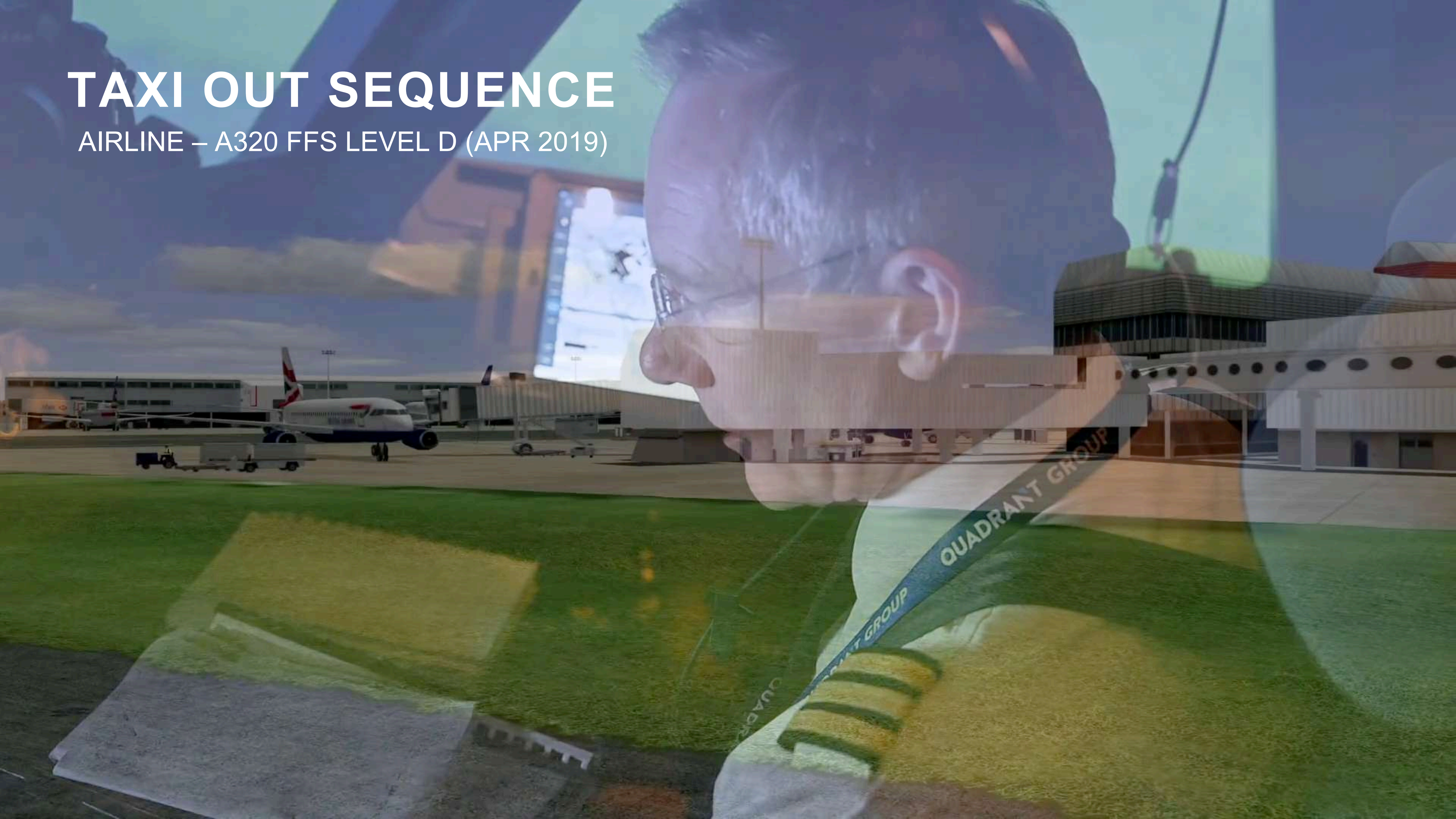


Collins Aerospace



TAXI OUT SEQUENCE

AIRLINE – A320 FFS LEVEL D (APR 2019)



OBSERVATIONS

Workload Management / CRM

- Increased crew workloads – especially PM
- Inter-cockpit communications can be disrupted

Situational Awareness

- Other traffic support SA – especially when the ownship is ‘embedded’

TEM

- Other traffic pose a potential threat to the ownship flight crew

Training Flexibility

- Added flexibility – support for seat instruction

Training Dynamics

- Collaborative vs adversarial

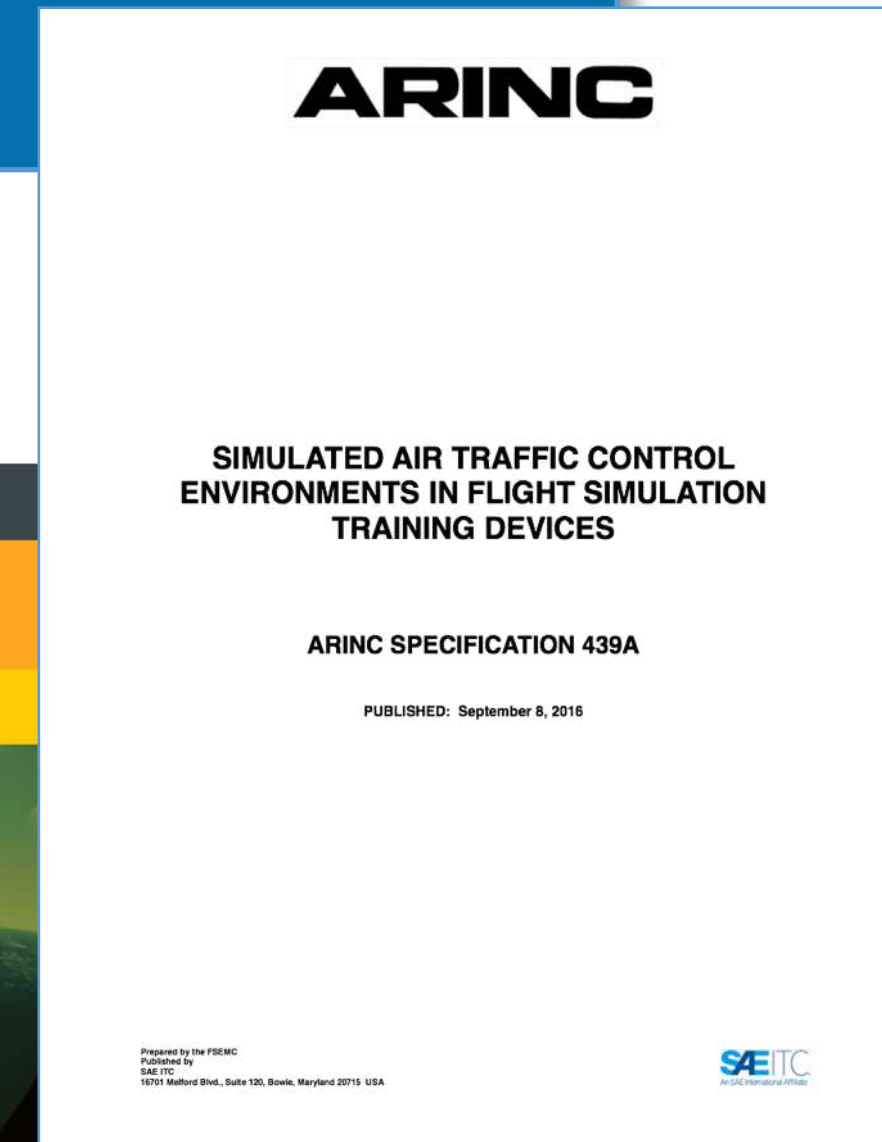
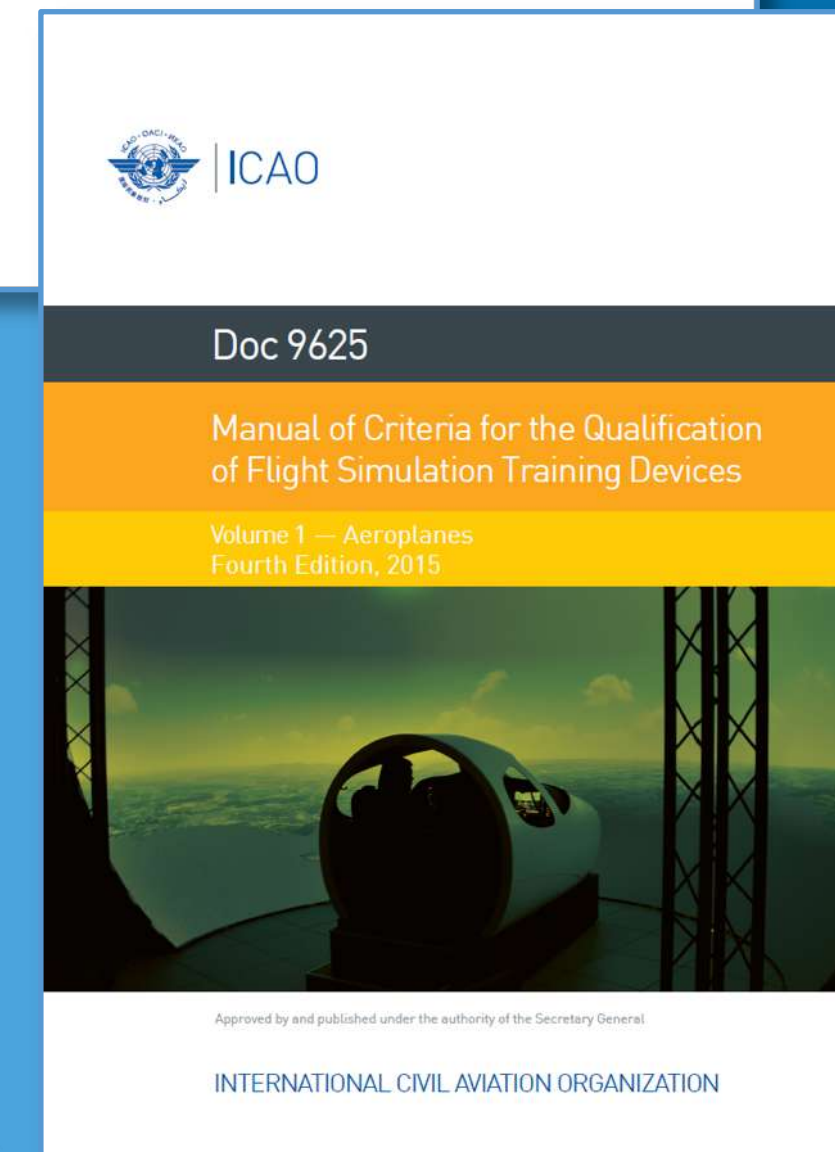
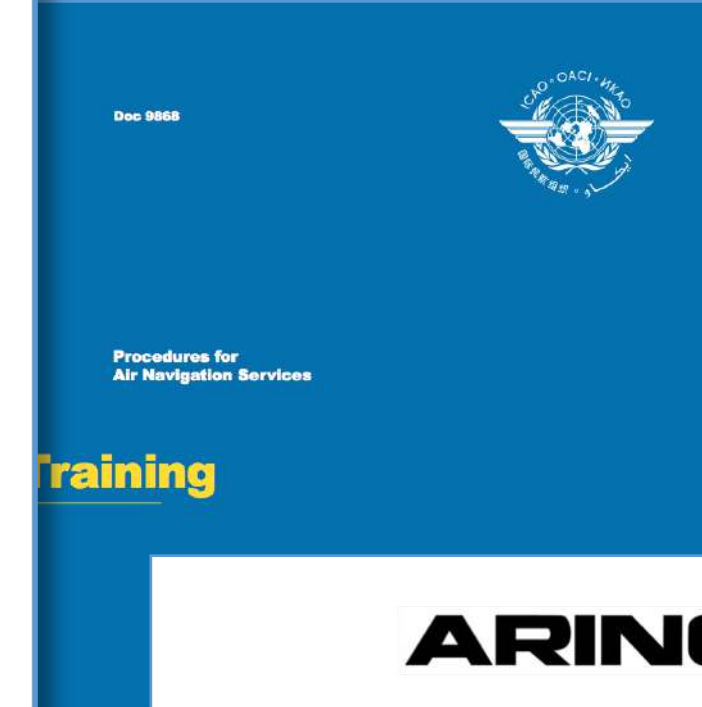
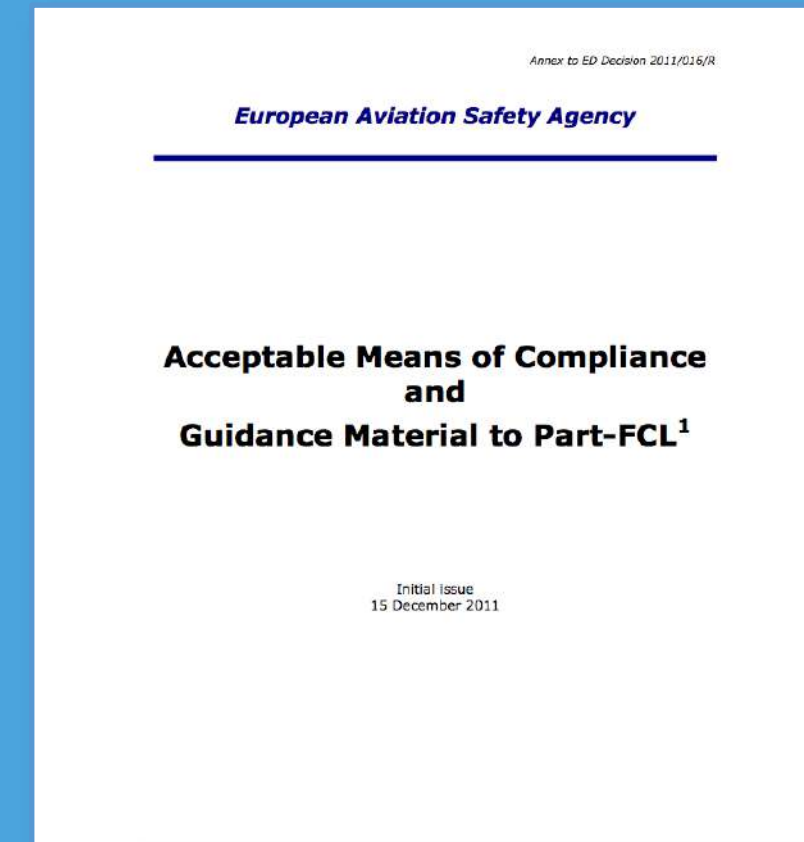
INDUSTRY GUIDANCE

Maturing industry guidance

Required by EASA for the MPL

Recommended in:

- ICAO Doc 9625 4th Ed. FSTD
- ICAO Doc 9868 PANS-TRG
- IATA / IFALPA Guidance for MPL
- ARINC Spec 439A



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An SAE ITC Program

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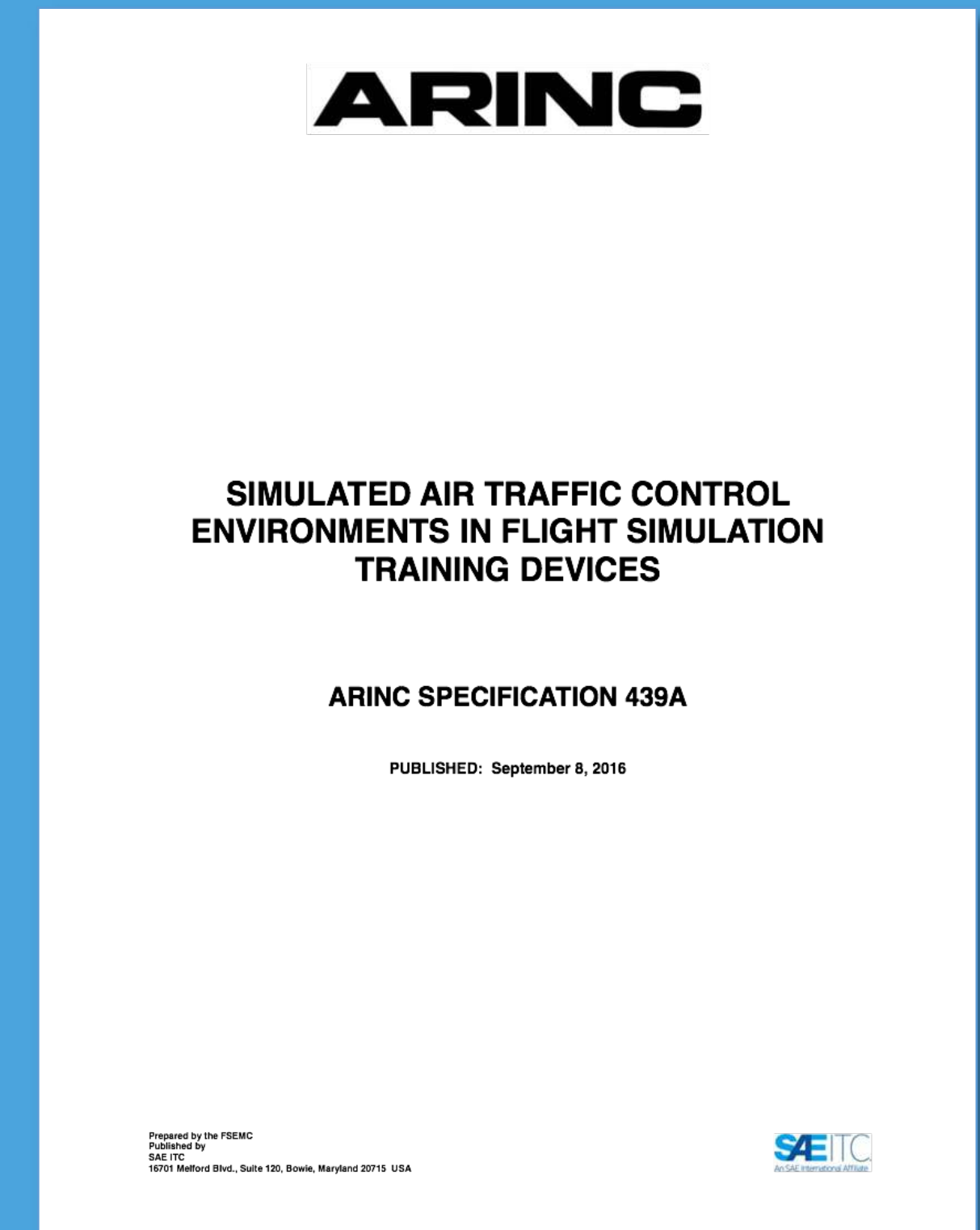
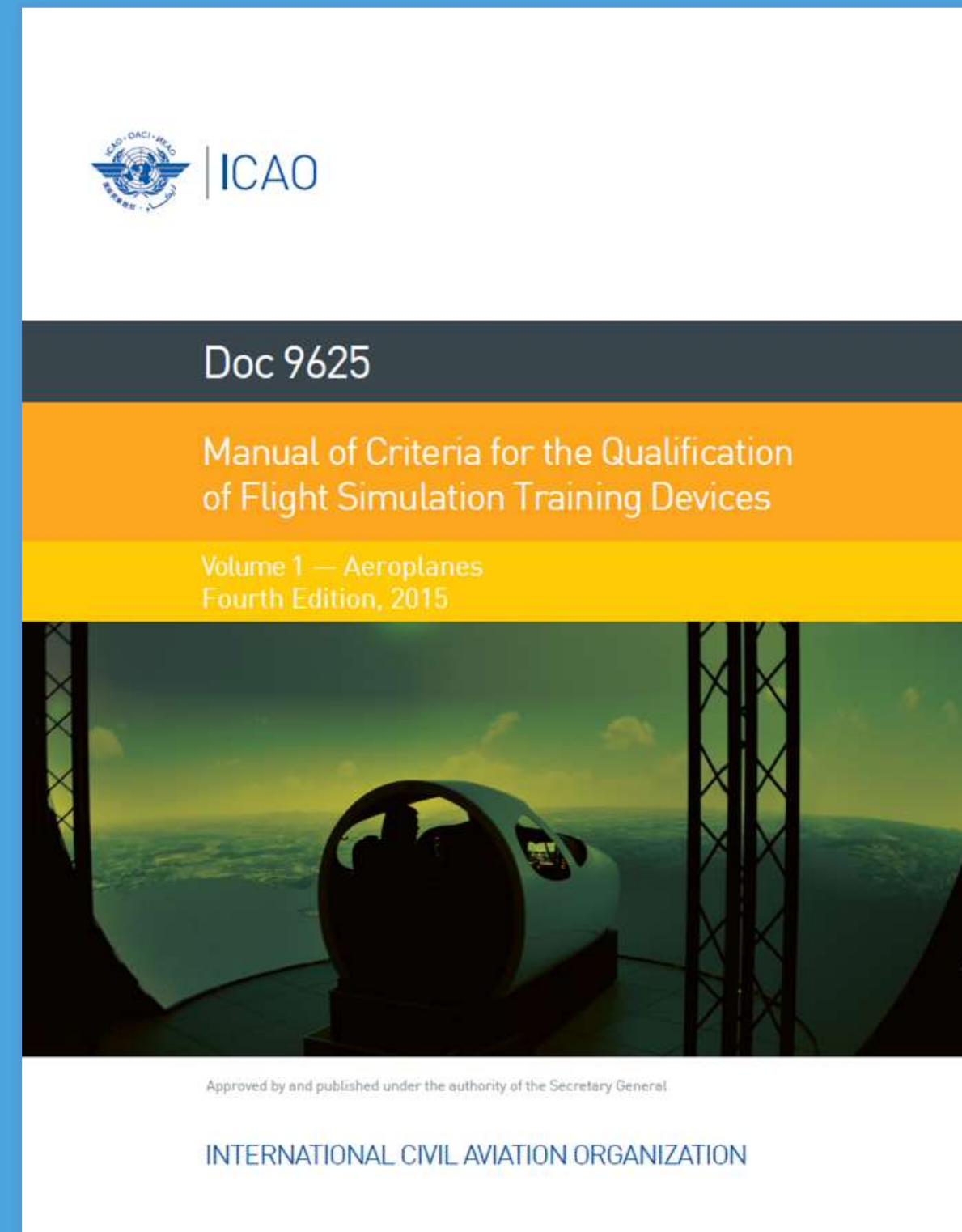
INDUSTRY GUIDANCE

ICAO Doc. 9625 (Ed. 4)

- Content recently harmonised
- Revisions submitted to ICAO

ARINC Spec. 439A

- FSEMC SATCE WG meeting over 2018-2019
- Next meeting #4 / 4
13-15 Aug 2019 FRA LAT
- Next revision due Oct 2019



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THANK YOU

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