REALIZING AN ACTIVE AIRPORT ENVIRONMENT

SATCE & Visual Systems

apats2019 SINGAPORE

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“ the long-held desire to provide a busy, interactive airport visual scene is now a realization… ”

Collins Aerospace

QUADRANT GROUP

“ The airport is void of traffic – does not represent real-world ”

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AIRPORT ENVIRONMENT

CURRENT TRAINING SUPPORT

Visual Cues:

- Approach cues
- Runway and lighting
- Taxiway surfaces
- Terminal area
- Docking aids & gate clutter
- Pushback vehicles & personnel

Special Purpose Items:

- TCAS threats
- Bird strikes
- Runway incursions

CURRENT APPROACH

CREATING “A BUSY AIRPORT”

Ground space

- Increase clutter at terminal gates – static
- Service vehicles movements
- Add “active” personnel
- Add moving traffic - pre-recorded routes
- Scenario scripting & simulation control

CURRENT APPROACH

CREATING “A BUSY AIRPORT”

Airspace

- Scripted other traffic
- Most are simulator flown routes
- Interaction with ownship - problematic

VISUAL SYSTEM ADVANCES

ENABLING “A BUSY AIRPORT”

- Number of active moving models
- Number of simultaneous active routes
- Tools for populating ground areas
- Number of aircraft types & liveries
- Higher fidelity moving models
- Animated personnel
- Visual System AI

“Simulator support to take advantage of visual system advancements is lagging…”

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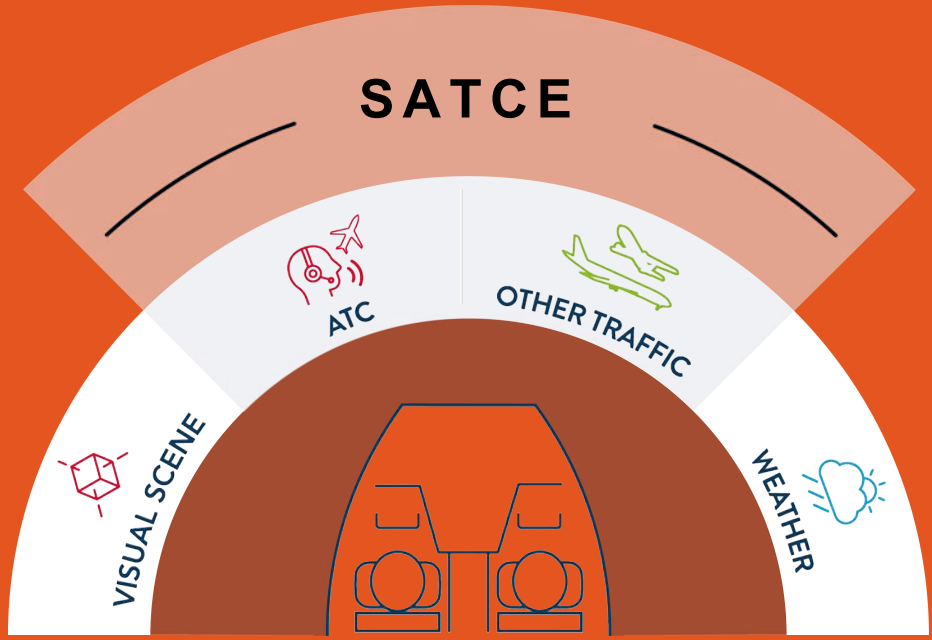
WHAT IS SATCE?

SIMULATED ATC ENVIRONMENT



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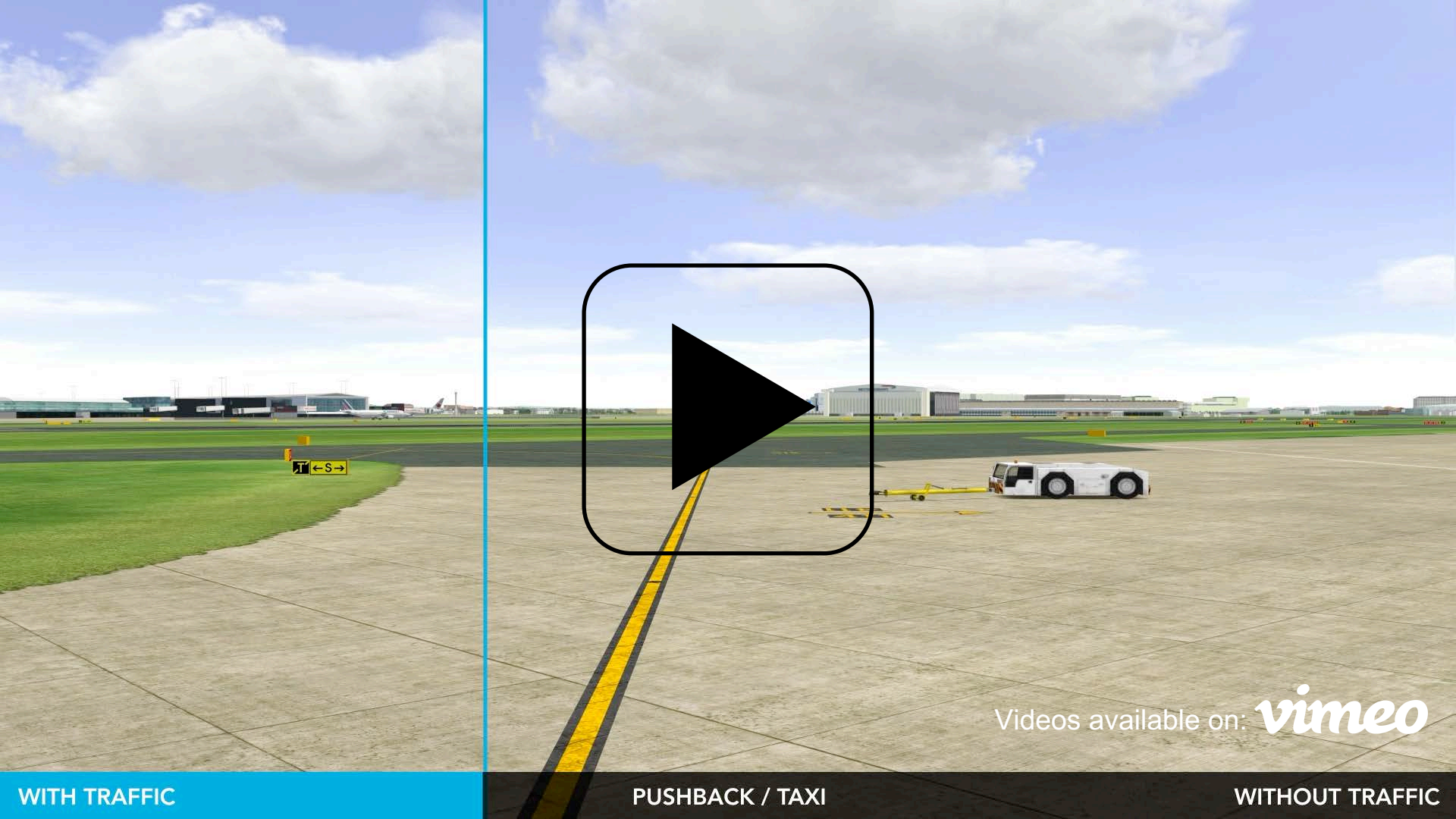

Videos available on: vimeo
WITH TRAFFIC
PUSHBACK / TAXI
WITHOUT TRAFFIC

360°
Videos available on: vimeo

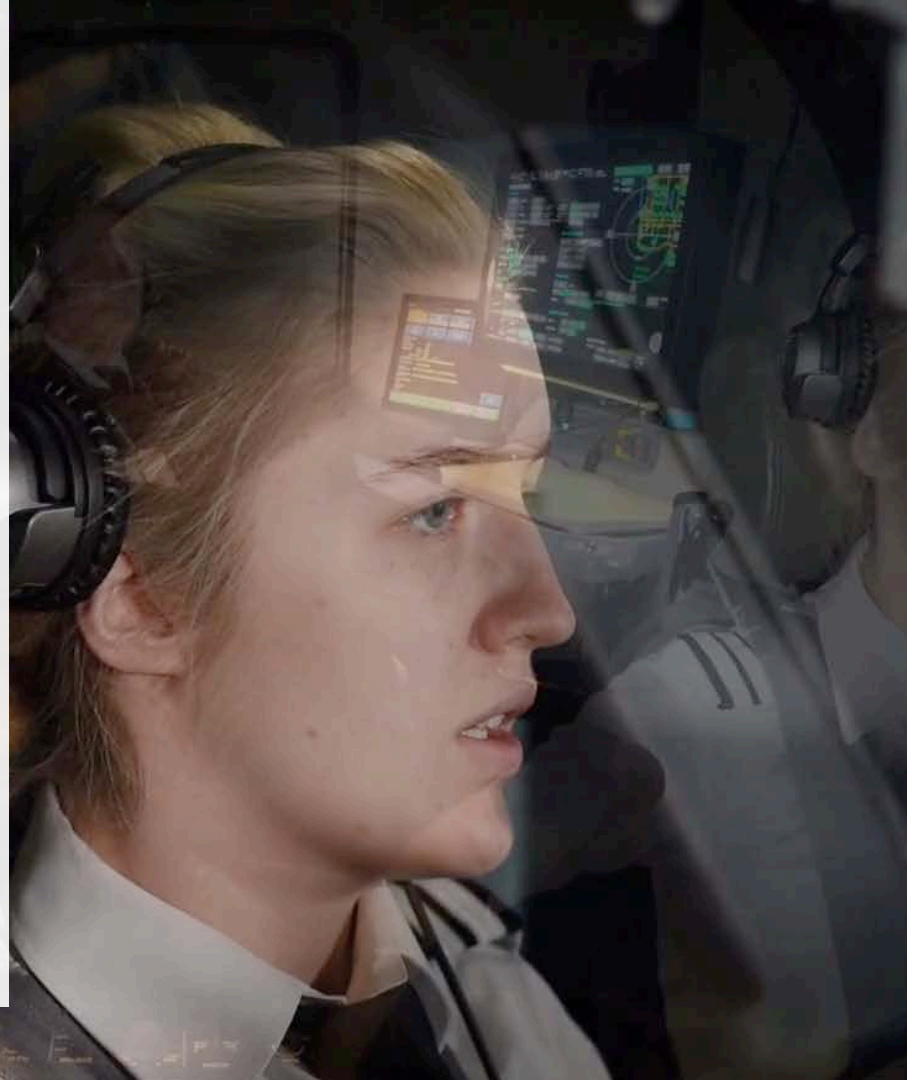
DO WE NEED SATCE?

UPCOMING TRAINING NEEDS

- Real-time, LOS & LOFT training
- Evidence-based Training (EBT)
- Next Gen & SESAR – ATM
  - ADSB-IN
  - Data Link

Current Training

- TCAS | MAP | R/W Incursion | Wake Turbulence



“ The technology is exciting…

”

Collins Aerospace

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“But… it’s about the potential for adding training value that’s the most exciting…”

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TRAINING VALUE

BENEFITS OF SATCE

Realism & Workload

- Adds real-world complexity
- Realistic communications environment
- Other traffic requires crew attention

Unburdens the Instructor

- ATC is fully automated
- New toolset - events | malfunctions | new training possibilities

“ SATCE offers significant training capabilities, and brings the visual environment alive… ”

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THANK YOU.

Dennis Hartley – Collins Aerospace
Jeremy Goodman – Quadrant Group

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Quadrant INTERACT™ SATCE

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QUADRANT INTERACT™ SIMULATED ATC ENVIRONMENT

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