

# Business Jets Workshop 2025



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#easabusinessjets



# OPERATIONAL MANDATES WITH IMPACT ON DESIGN

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# Operational mandates affecting avionics

- LAD/ADT: Location of an Aircraft in Distress/Aircraft Distress Tracking
  - CofA  $\geq$  Jan 01, 2024, entry in force Jan 01, 2025
- ROAAS: Runway overrun awareness and alerting systems
  - CofA  $\geq$  Jul 1, 2026
- EPP: Extended Projected Profile (ATN B2 subset)
  - CofA  $\geq$  Jan 01, 2028

# LAD/ADT

→ What:

→ Alerting and localization of accident site (in-flight triggering of an ELT(DT))

→ Why:

→ History of lost aeroplanes (AF447, MH370), ICAO FLIRECP recommendation

→ Which regulation and affected aircraft:

→ (EU) 965/2012 – CAT.GEN.MPA.210

→ CS ACNS, subpart E, section 3, LAD

→ Rulemaking activities:



# Aircraft Distress Location

- Not applicable below 27000 kg (and over 19 seats or any number of seats and 45,000kg) so Textron Aviation products are not affected however we understand it does apply to some larger business aircraft
- This is both a good example for a mandate as well as an example of some improvements needed in how mandates are applied
  - Good in that the authorities tried to limit applicability to larger aircraft doing airline type operations (which was the area of concern and risk identified)
  - Room for improvement - MCTOM catches some larger business aircraft, perhaps consider less focus on MCTOM for future mandates

# Talking LAD/ADT: a side remark

- ELT(DT) introduction resulted in many additional nuisance alerts
  - Normal operations on ground, maintenance and production
- SIB 2025-XX
  - **Report nuisance alerts** to TCH & competent authority
    - Appendix 1 provides guideline on reporting format, including cause
  - **CAUTION:** ELT(DT) activate (almost) instantaneously
    - **Use “test” switch** only (or shield antennas)
  - **CAUTION:** Once in the air, “anomalies” automatically activate the ELT
    - **Deactivate the ELT before testing A/C systems** with “airborne”

# ROAAS

→ What:

→ Crew alerting when aircraft energy challenges deceleration capabilities

→ Why:

→ History of accidents, N°1 risk in (EASA ASR 2018)

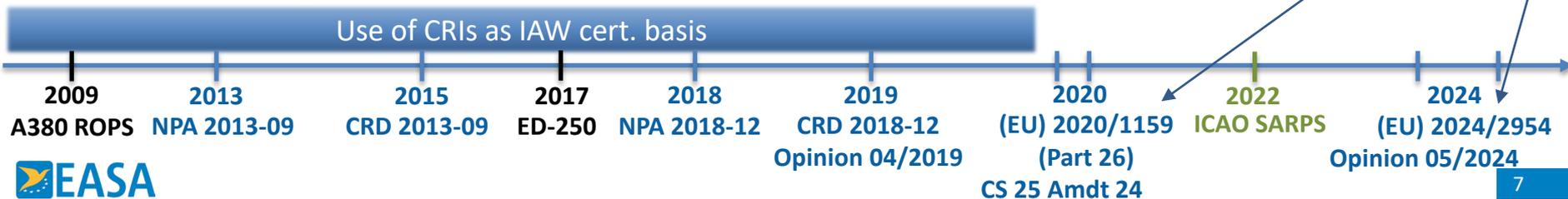
→ NTSB safety recommendation (Hawker 15-800A July 31, 2008)

→ Which regulation and affected aircraft:

→ Part 26 – 26.205

→ CS 25.705

→ Rulemaking activities:



# ROAAS

- ROAAS – Runway Overrun Awareness and Alerting System
  - Implementation Challenges
    - Complex system that requires landing performance data
    - Dynamic system monitoring energy of the flight path on approach and landing
  - ICAO Requirements applying this to any aircraft over 12,500lbs
    - Large effort for an airplane that doesn't already have performance data published (TOLD)
    - For Textron Aviation, this includes some larger turboprops and our larger CJ series jets, these platforms are a challenge to implement ROAAS on, and the safety data we have seen does not indicate a real problem to solve in this class of aircraft

# EPP

## → What:

- Automatic down-link of trajectory information using ADS-C EPP as part of ATS B2 services

## → Why:

- Common Project One (CP1): implementation of the European Air Traffic Management Master Plan
- Initial trajectory information sharing (AF6) is a step towards full Trajectory Based Operations (TBO)

## → Which regulation and affected aircraft:

- (EU) 2021/116 CofA > Dec 31, 2027  
All IFR GAT flights in SES with FL > 285
- CS ACNS, subpart B, section 2, Data Link Services (DLS) Aircraft implementing EPP

## → Rulemaking activities:



# ADS-C EPP

- Challenges for installation/approval
  - Currently at Textron, we do not have a path to test (development or certification) outside of flying an airplane to the EU on an experimental license
  - We don't know yet if datalink services in the US will be capable to support test and certification of EPP function (we expect there will be but concerned about timing)
- Requirements
  - We are still working with our suppliers on the details of implementation to meet the requirements
    - Some lack of clarity due to partial system incorporation of EPP separate from ATS B2
    - For us, ATS B2 will be delayed due to separating EPP from ATS B2
- FAA compliance path
  - FAA path is uncertain at present as AC 20-140C only recognizes full ATS B2 approval, there is no partial system recognition at present

# Mandates and Timing / Harmonization

## → Highly integrated avionics

- The timing and coordination of mandates is important for industry as there are no “small software changes” on integrated avionics installations.
- Obsolescence and other factors drive the timing of platform updates, it is difficult to simply add one new function
- Advanced knowledge and decent margins of time for implementation help us have a more integrated implementation and more likely to meet or exceed the authorities’ expectations

## → Harmonization

- Industry wants to encourage closer coordination between authorities so that mandates are not national or regional but global; we design, certify and build aircraft for the world, everyone benefits if standards are reasonable and global

# Proposal for future consideration

- Recognize that the safety case for new systems/functions is different for different classes of aircraft
- Apply mandates where there is a safety case for that type of aircraft in typical operations
- Consider the use of passenger/payload thresholds versus MCTOM or CS-23 versus CS-25
  - Addresses the possible weight increase of future technologies (such as electric/hybrid) , e.g. CS-23 aircraft can already weigh up to 17,000lbs and discussions of going higher for certain cases
  - Example: EWIS (Electrical Wiring Interconnect System) retroactive requirements per 14 CFR 26.11 used pax >30 seats and 7500lbs payload (or more), this allowed the FAA to address “aging airliner” concerns on fielded aircraft without burdening other aircraft that didn’t have as high of risk

# Thank you for your attention

## Questions

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