



# ADT Equipage in Aircraft

11<sup>th</sup> Meeting ICAO Asia/Pacific Search and Rescue Workgroup  
Export Control - Not technical / Airbus Amber  
ADNS X313PR2602923

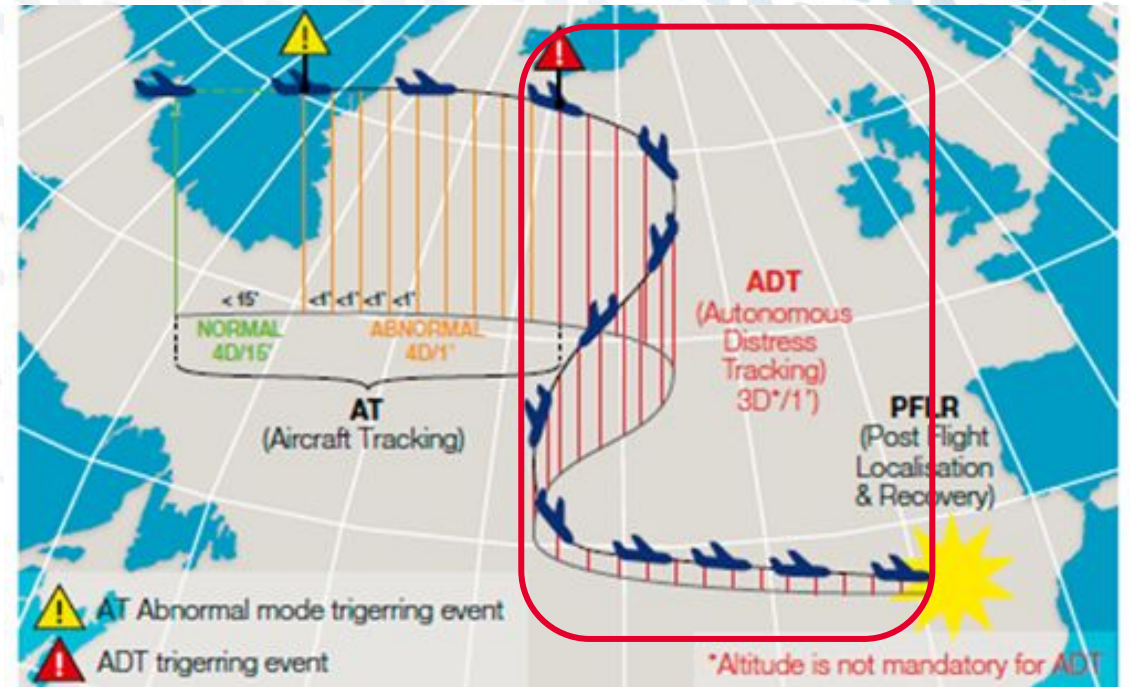
COMMERCIAL AIRCRAFT

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**AIRBUS**

# Agenda

- Basic overview
- Current Status Inadvertent ELT-DT activations
- Summary



# Basic overview

# Basic overview

## Introduction

- Airbus installs an Emergency Locator Transmitter - Distress Tracking (ELT-DT) as the means for Autonomous Distress Tracking (ADT) / Location of Aircraft in Distress (LAD)
- Same ELT-DT equipment is installed as standard equipment on A320Neo Family, A330-800/-900 and A350-900/-1000 aircraft
- The Airbus ELT-DT solution combines the new autonomous distress tracking function (ICAO Annex 6 Part I Chapter 6.18) with an automatic crash detection and manual activation including the 121.5MHz homing capability (ICAO Annex 6 Part I Chapter 6.17)
- The default ELT-DT coding protocol implemented by supplier SAFRAN and Airbus is compatible with ICAO's LADR

# Basic overview

## Major system components



### ELT-DT Antenna

- 406MHz & 121,5 MHz transmission
- GNSS reception



### Remote Control Panel

- ON-ARMED-TEST/RESET
- Status Indication (LED)



### ELT-DT Unit

- Crash survivable
- Acceleration Sensors
- Internal GNSS receiver

### Aircraft Identification Module

- LADR compatible coding available



### ADT Software

- Hosted on avionics computer
- Logic for detection of “in flight” status, distress detection & ADT triggering
- Interface between ELT-DT and aircraft display & maintenance systems

# Basic overview

## Activation types

- Autonomous
  - Initiated by the ADT software after detection of:
    - Unusual Aircraft Attitude: excessive pitch angle, excessive roll angle
    - Unusual Speed: excessive vertical speed, stall warning, Speed or Mach excessive
    - Collision with Terrain: radio altitude and inertial vertical speed in mode 1 warning envelope
    - Total loss of thrust/propulsion on all engines
    - Excessive Cabin Altitude
  - Autonomous activation is also done by ELT-DT unit directly in case of total loss of communication with onboard avionics or loss of ELT power supply
- Automatic
  - Initiated by the Acceleration Measurement Device within the ELT-DT
- Manual
  - Initiated via switch on the RCP in the cockpit or on the ELT-DT unit itself (Remark: ELT-DT unit not accessible in flight)

## Basic overview

### Flight Crew alerting of ELT-DT activation

Primary:

**Alert via the Electronic Centralized Aircraft Monitoring (ECAM)**

The ECAM alert is categorized as a CAUTION:

- visual attention getters lighted (Master Caution lights - amber steady lights located in front of each pilot) and
- it has an AMBER text **COM ELT EMITTING** on the Engine/Warning Display (upper part of the central display) and
- is associated with aural attention getters (Single Chime)



Supplemented by:  
**LED on the RCP will flash periodically**

Additionally:  
**If A/C is on ground a horn is activated**

# Basic overview

## Key figures

- **Standards**

406 MHz ELT-DT (First Generation Beacon) in accordance with European Technical Standard Order (ETSO)-C126c, Eurocae ED-62B and COSPAS-SARSAT C/S T.001 & C/S T.007

- **Capabilities**

C (crash survivability)

H1 (121.5-MHz homing signal)

G (internal/integral GNSS receiver) - Aircraft navigation system as backup

- **Transmission Duration**

406 MHz signal at least 24 hours

121.5 MHz signal at least 48 hours

- **Position accuracy of 406 MHz signal for location of point of end of flight**

If the system survives the accident: within 200 meters radius

In case of a non-survivable accident: within 6 nautical miles

# Basic overview

## Testing and Maintenance

- **Testing**
  - Automatic: Power on self test
  - Manual: Test via switch on RCP or on ELT-DT unit

ELT-DT is connected to the onboard maintenance system. Detected failures will be displayed to flight crew and as part of the Post Flight Report.

**Airbus maintenance procedures do not include live distress signal transmission for testing purposes.** We do not recommend this practice due to the potential impact on Search and Rescue operations.

- **Scheduled Maintenance Tasks**
  - Replace ELT-DT unit (battery discard) 60 month
  - Operational check of discrete interfaces 180 month or 24000FH

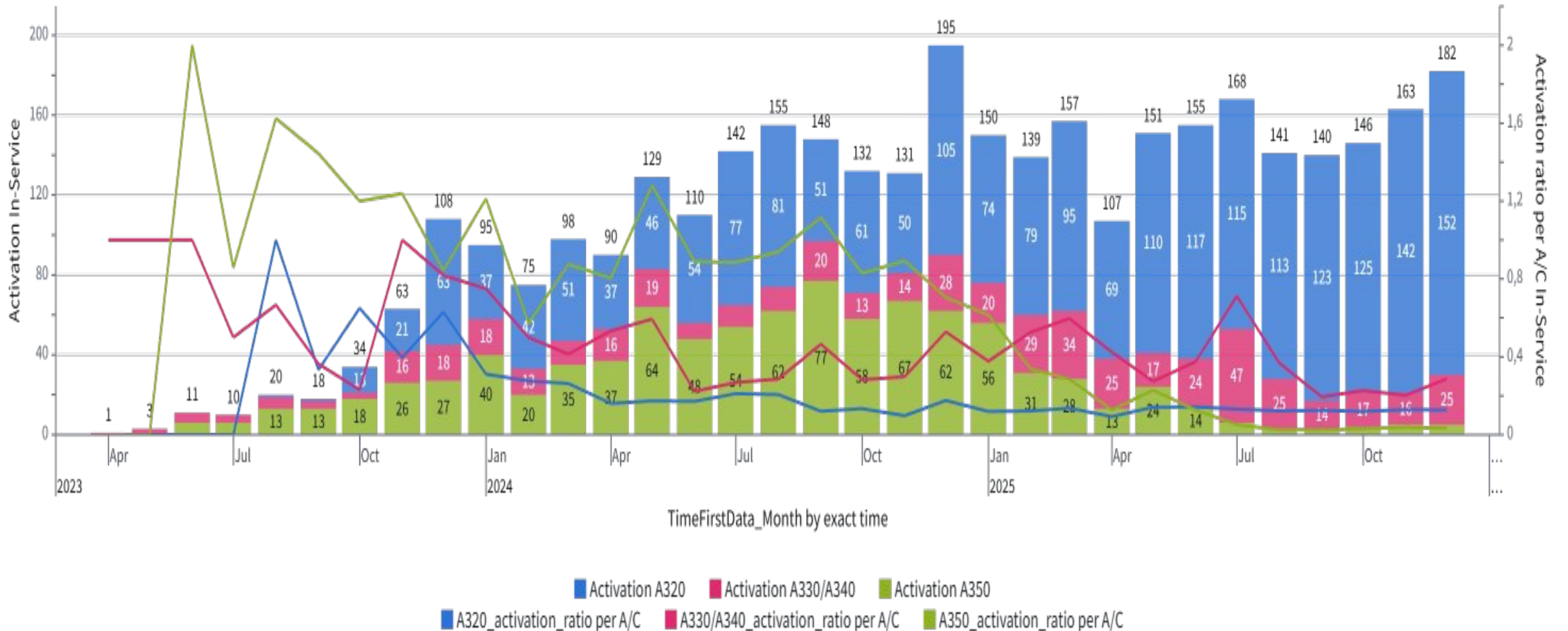
# Current Status Inadvertent ELT-DT activations

# Inadvertent ELT-DT activations

## Status End of Dec 2025

- Based on activation data received by FMCC as per 31.Dec.2025:
  - **3550 transmission events** from Airbus ELT-DTs were detected since 1st a/c delivery in April 23  
At that point of time Airbus delivered a total number of **1385 aircraft equipped with ELT-DT**
- **Airbus performs regular screenings of the reported activations.** (monthly review of C/S activation data related to Airbus aircraft provided by FMCC, weekly/as-received customer feedback investigation)
- The **majority of unintended transmissions started on ground**, mostly due to erroneous detection of flight status and/or inappropriate handling of the system during maintenance and aircraft ground operation
- In-flight activations are thoroughly investigated; **no flaw in the activation logic** has been identified thus far
- Activation events **vary significantly across operators.**

# Inadvertent ELT-DT activations (all types) at customers per month per program, and ratio to In Service aircraft curves (Until 31st Dec 2025)



# Inadvertent ELT-DT activations

## Mitigation and Improvement Actions

- Consisting of a mix of **dedicated awareness, enhanced training & and technical improvements**:
  - Dedicated electronic informations (ISI), Airline visits and webinars were performed **to bring and maintain system awareness** and introduce improvements in airline operations / to be continued
  - Maintenance manuals and trainings are updated to promote the **awareness of cautious ELT-DT handling**
  - Technical improvements on aircraft level to **robustify the “In Flight” detection logic** were implemented on A350 with very positive results  
Introduction of similar improvement on A320 and A330 will take place in the near future
  - Technical improvements of the **ELT-DT beacon and the Remote Control Panel** are defined and will be part of the next equipment standard

# Summary

# Summary

- ELT-DT is the Airbus means for Autonomous Distress Tracking and compatible to the LADR
- The Airbus ELT-DT system is integrated into the Cockpit Display System as well as the Central Maintenance System
- Airbus monitors all ELT-DT activations on Airbus aircraft thanks to the received C/S activation data from FMCC and aircraft operator's reports
- Airbus already launched several enhancements to significantly reduce the amount of unwanted activations
- First reduction results are already measureable in the A350  
→ similar improvements are to come on A320 and A330 in the near future

# Thank you

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