



INTERNATIONAL COSPAS-SARSAT PROGRAMME

Global Aeronautical Distress Safety System (GADSS) & Emergency Locator Transmitter- Distress Tracking (ELT-DT)

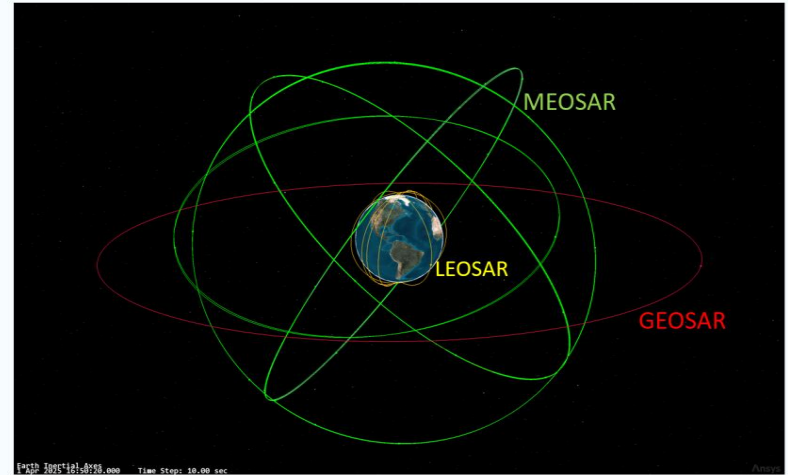
Dr. Shefali Juneja
Head of Secretariat
Cospas-Sarsat Programme

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WE SAVE LIVES

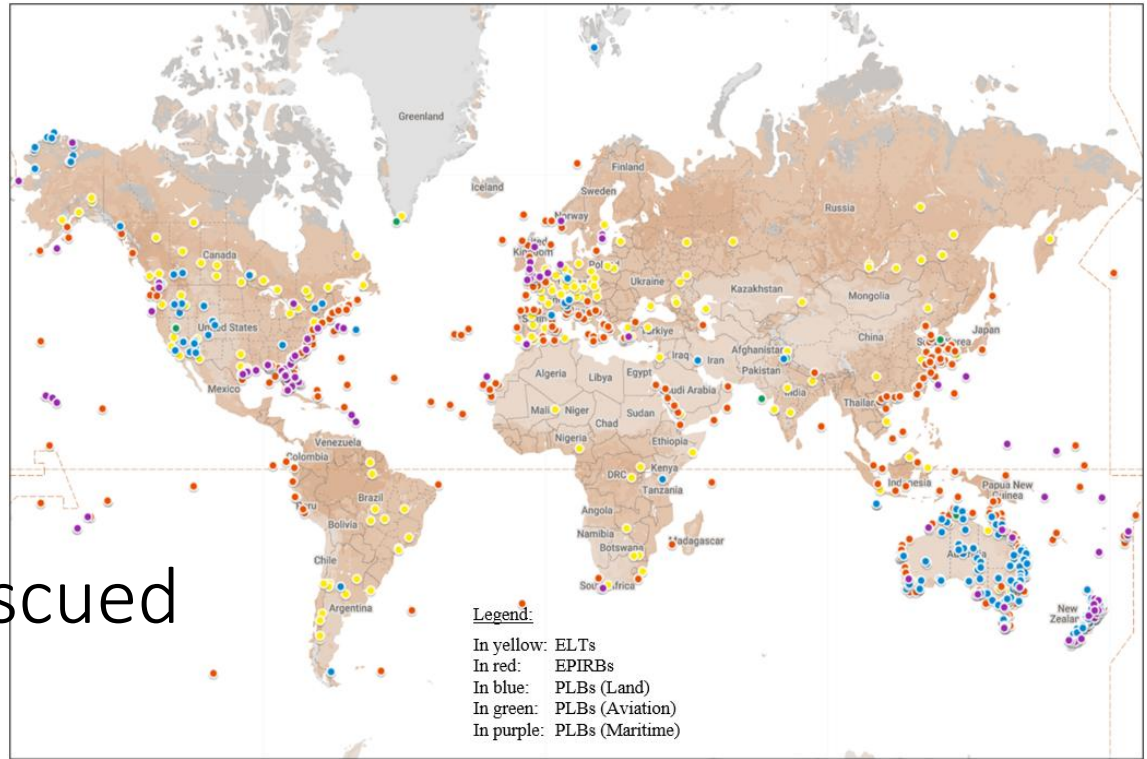
- Cospas-Sarsat: A Satellite-Aided Search & Rescue Programme
- Detects and locates emergency radio beacons via 70 satellites network
- Exclusively processing 406 MHz beacons since 2009
- Mandated by ICAO & IMO for SAR
- 3 million Beacons in aircraft, vessels, or individuals in distress
- 147 Global Data distribution Ground segments



Geographical
distribution of SAR
events with Cospas-
Sarsat data used
(2024)

Number of People Rescued

(~10 lives/day)



COSPAS-SARSAT PARTICIPATING COUNTRIES — 2026



4

Founding Nations

26

Ground Segment Providers

13

User States

2

Organisations

45

Total Participants



GADSS

Global Aeronautical Distress and Safety System

First appeared in ICAO regulations in 2018 (Manual on Global Aeronautical Distress and Safety System, Doc 10160)

Inspired by the disappearance of Malaysia Airlines flight MH370 in 2014 and the AF447 incident in 2009

Cospas-Sarsat Autonomous Distress Tracking (ADT) solution is the ELT(DT)

GADSS ADT represents a significant improvement in flight safety



New ICAO SARPs applicable to:

- New aeroplanes >27,000 kg from 1 Jan 2025
- Recommended for >5,700 kg
- RCCs notified when aircraft still in flight
- Coordination procedures per IAMSAR Manual

AUTONOMOUS DISTRESS TRACKING (ADT)



"Distress is a situation which, if left uncorrected, is likely to result in an accident."

AUTOMATIC TRIGGERS

Unusual attitudes & speed/acceleration
Failure of aircraft surveillance systems
Complete loss of engine power
Ground proximity warnings

MANUAL TRIGGERS

Crew-initiated activation during a distress situation when the pilot recognises a dangerous flight condition.

GROUND TRIGGERS

Actions taken on the ground that can activate autonomous tracking of an aircraft in flight.

PERFORMANCE OF EMERGENCY LOCATOR TRANSMITTER (Distress Tracking)



ELT(DT) is triggered when an aircraft in-flight enters a state where, if no corrections are made, an accident is likely to occur.

3D Position

Provides three-dimensional position of the aircraft at all times.

1-Minute Intervals

Transmits position approximately every 1 minute under distress tracking.

Protected Spectrum

Uses protected distress spectrum — immune to commercial interference.

5-Second Activation

Activates within 5 seconds upon detection of a confirmed distress condition.

6 NM Accuracy

Accident site can be determined to within a 6 Nautical Mile radius.

Resilient

Resilient to faults of aircraft power, communication, and navigation systems.

ICAO: performance based, non-technology specific specifications

Major aircraft manufacturers have selected the ELT(DT) to comply with the new **ICAO Annex 6** requirements.



Airbus, Boeing, Bombardier, and Embraer (OEMs) have selected the ELT(DT) to satisfy the European operational requirements (see ED-237) and ICAO GADSS recommendations.

Operational:

Q1/2023: Airbus

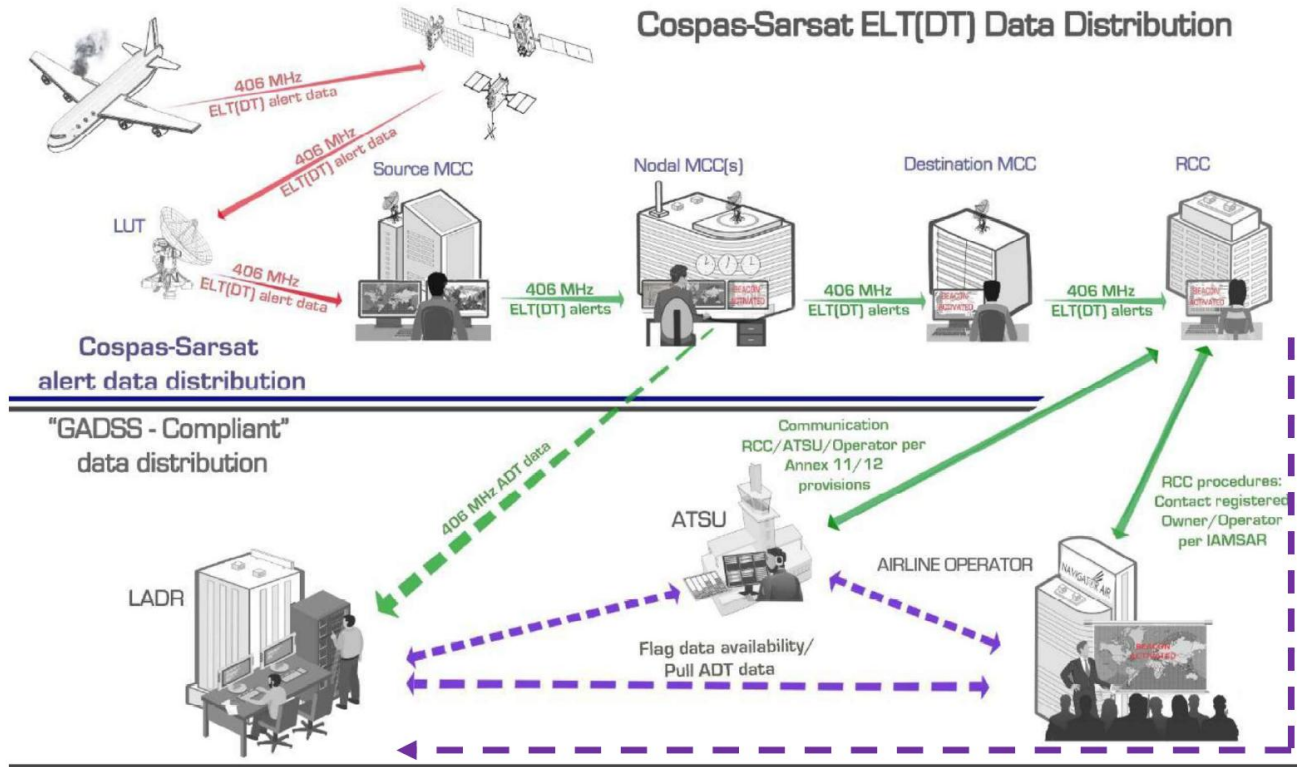
Q2/2023: Boeing

ICAO LADR (Location of an Aircraft in Distress Repository)

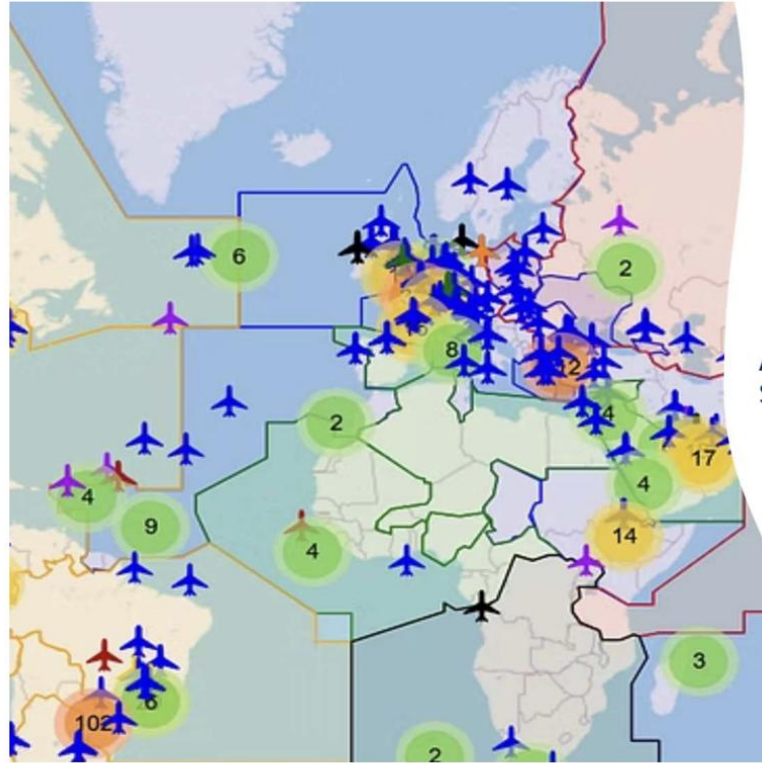


- ICAO requires that the last known position of an aircraft in distress shall be made available to RCCs, air-traffic service units (ATSUs) and the aircraft operator (airline)
- ICAO will implement a Location of an Aircraft in Distress Repository (LADR) as a single database, to collect and distribute the required information
- To satisfy the ICAO data-sharing requirements, Cospas-Sarsat nodal MCCs will input ELT(DT) data received in alert messages into the LADR
- ICAO has announced that the LADR will be hosted by EUROCONTROL (Brussels, Belgium) with possible mirrored LADR in Benin

Cospas-Sarsat ELT(DT) Data Distribution



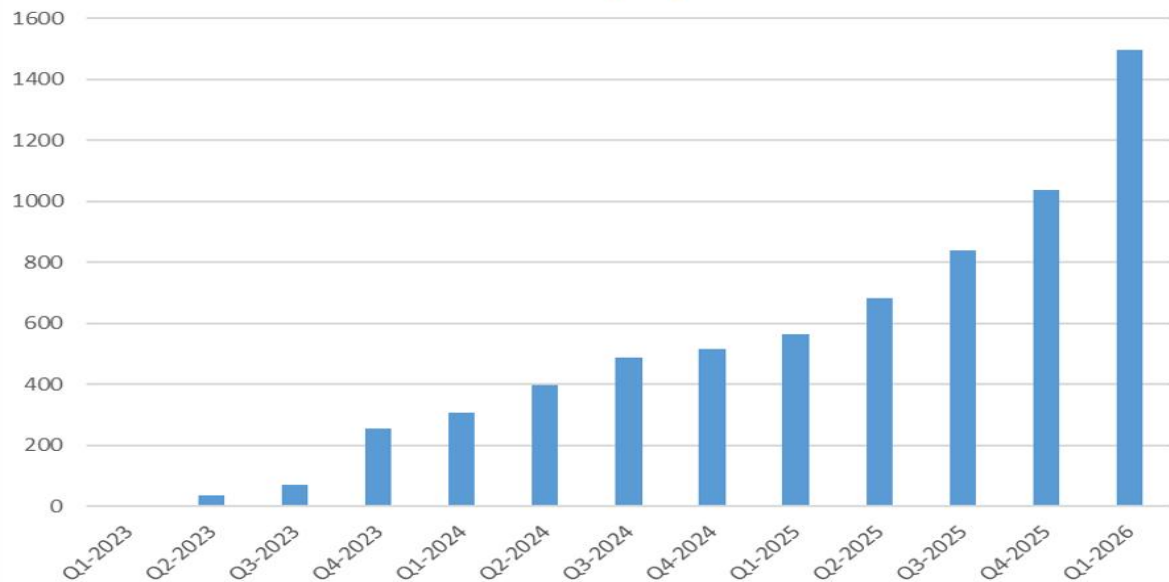
ELT(DT) / ADT Non- Distress Activations





ELT(DT) False activations

ELT(DT) activations



- ✓ Since Q1 2023 over 7000 ELT(DT) activations collected by the USMCC
- ✓ ELT(DT) activations are growing at an accelerated rate
- ✓ Only 2 of these activations were the results of real distress situations
- ✓ Several ELT(DT) activations were initiated on the ground but with aircraft eventually taking off and flying with their ELT(DT) still activated.

How should this issue be addressed?

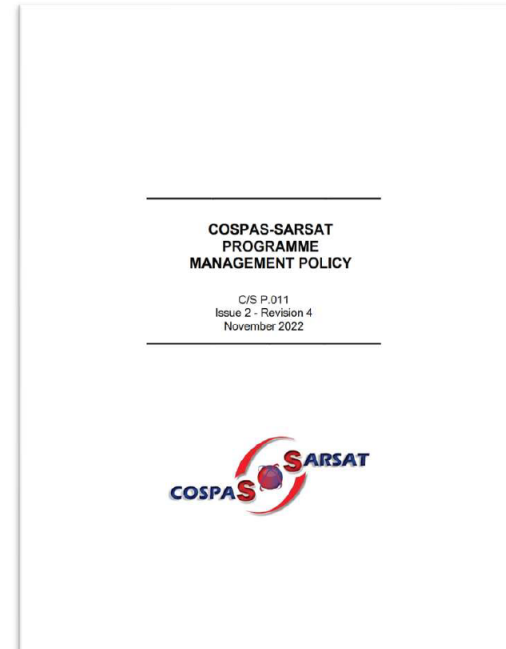
Two main and complementary channels are needed :

- Aircraft manufacturers, as integrators of the ADT solution.
- States, through national coordination and oversight.

In both cases, Cospas-Sarsat already provides the operational data needed to support analysis and follow-up.

How to Associate with C/S as an Observer

- Rules governing Observer participation (C/S P.011)
- To obtain permanent Observer status, coordinate with Secretariat
- Benefit from collaboration and sharing of expertise
- Approval by the C/S Council after submission of an input document
- No cost/annual fees





THANK YOU

Dr. Shefali Juneja

International Cospas-Sarsat Programme

www.cospas-sarsat.int