FIJI AERONAUTICAL INFORMATION CIRCULAR

ISO 9001:2015 CERTIFIED	Civil Aviation Authority of Fiji Private Bag (NAP0354), Nadi Airport, Fiji Tel: (679) 8923 155; Website: **www.caaf.org.fj**	**AIC 04/23** Effective 26 JAN 23 **OPS/ATC**

GLOBAL AERONAUTICAL DISTRESS SAFETY SYSTEM (GADSS) and LOCATION OF AN AIRCRAFT IN DISTRESS REPOSITORY (LADR)

1   INTRODUCTION

1.1   Following several accidents where downed aircraft could not be located at all, or only after long and expensive search efforts, the Global Aeronautical Distress and Safety System (GADSS) recommendations were adopted by the International Civil Aviation Organization (ICAO) in March 2016. These recommendations, Standards and Recommended Practices (SARPS), support the goal of improving aircraft tracking and identifying distress situations during the flight, when it is still possible to track the aircraft and initiate a timely rescue operation.

1.2   ICAO requirements anticipate that most commercial aircraft (subject to its jurisdiction, e.g., on international routes) that are delivered on or after 1 January 2024 will be equipped with an ELT(DT) (or comparable device). It is expected that the first operational ELT(DT)s could be in flight during Q4/2022

2.   DSECRIPTION

2.1   A new beacon type, the ELT(DT) (ELT for distress tracking) was developed to support ICAO's Global Aeronautical Distress and Safety System (GADSS). ELT(DT)s will activate while an aircraft is still in flight, if certain distress conditions are detected, necessitating handling by SAR authorities of alerts in ways that might be different from legacy ELTs.

3.   OBJECTIVES

3.1   A key aspect of GADSS is autonomous distress tracking (ADT), applicable for most commercial aircraft (those over 27,000 kg maximum take-off mass), which is to:

- ensure timely detection of aircraft in distress, to facilitate confirmation of the distress condition and timely preparation for SAR action,

- ensure tracking of aircraft in distress and timely and accurate location of end of flight, to accurately direct SAR actions,

- enable efficient and effective SAR operations,

- ensure timely retrieval of Flight Recorder Data.

4. PURPOSE

4.1   The purpose of this AIC is to:

1. Alert air operators of aircraft of new tracking requirements issued under the International Civil Aviation Organization (ICAO) Standards and Recommended Practices (SARPs), Annex 6 – Operation of Aircraft, Part I section 6.18 and ICAO DOC 8168 PANS OPS Section 10 Chapter 2 which will be applicable 01 January 2025.

2. Provide information and support to the SAR Authorities on GADSS, its functions, the LADR system and the handling of ELT (DT) messages.

3. LIST OF ACRONYMS

ADT – Autonomous distress tracking

AO – Aeroplane Operators

ATSU – Air Traffic Service Unit

DT – Distress Tracking

GADSS – Global Aeronautical Distress Safety System

ELT -Emergency Locator Beacon

LADR – Location of an Aircraft in Distress Repository

OPS CTRL – Ops Control Directory

RCC – Rescue Coordination Centre

SAR – Search and Rescue Services

4. LOCATION OF AN AIRCRAFT IN DISTRESS REPOSITORY (LADR)

4.1   The proposed Location of an Aircraft in Distress Repository (LADR) is intended to serve as a central location for storing and accessing the last known position of an aircraft in distress. This position may be made available from a number of different proprietary systems which meet the requirements of the Standards in Annex 6. The LADR will provide a single point of access and standard format for this information.

4.2   The LADR does not provide alerting of distress conditions, this will be done by operators and Air Traffic Service Units (ATSUs) using the existing provisions of Annex 6 and Annex 11— *Air Traffic* Services. Annex 6 requires the operator to be notified when an aircraft is in distress. The operator should use this information to supplement its existing procedures and either validate the distress event, or establish contact with the crew to confirm the safety of the aeroplane.

4.3   In the event that a distress condition is confirmed or suspected, the operator will contact the relevant air traffic control (ATC) centre who remains responsible for the activation of the alerting service and establishment of the relevant alert phase (uncertainty (INCERFA), alert (ALERFA), distress (DETRESFA)

4.4   The LADR is a system that will allow accredited contributors, as defined in Section 6, to submit position information of an aircraft in distress or potentially in distress. The system will store information (i.e. data that meets the input format guidelines) and provide filters allowing users to access information based on their profile.

4.5   The OPS Control Directory contains operational contact details for aircraft operators, area control centres, and rescue coordination centres, to assist with coordination in the event of an incident. Appropriate SAR authorities will be able to request a free subscription to the LADR through the ICAO Ops Control Directory (https://www4.icao.int/opsctrl).

5. STATE READINESS

5.1   In recognition of the impending equipage of new aircraft with Autonomous Distress Tracking (ADT) devices, and the need for aircraft operators, Air Traffic Service Units (ATSUs) and Search and Rescue (SAR) service providers to be prepared to receive and respond to ADT alerts and notifications, ICAO has circulated a survey (refer to ICAO State Letter AP128-22 Attachment A) intended to

     1)   gauge regional readiness for ADT, and to

     2)   serve as a checklist of considerations for the relevant State authorities.

6.   CONCLUSION

6.1   As of <u>1 January 2025</u>, all aeroplanes of a maximum certificated take-off mass of over 27 000 kg for which the individual certificate of airworthiness is first issued on or after <u>1 January 2024</u>, shall autonomously transmit information from which a position can be determined by the operator at least once every minute, when in distress, in accordance with Appendix 9 of Annex 6 Part 1

Attachment A

SURVEY OF STATE READINESS FOR AUTONOMOUS DISTRESS TRACKING (ADT)

The following SAR Administrations are requested to use the survey as a checklist to check the progress of their readiness for the reception and handling of ADT ALERTS:

1. Aviation Regulatory Authority;
2. Aircraft Operators (Annex 6 Part 1);
3. SAR Service Providers; and
4. Air Navigation Service Providers

		AVIATION REGULATORY AUTHORITY
		Check the box if State has:
1.	☐	Registered a State Focal Point in the ICAO OPS CTRL Directory (email: aircrafttracking@icao.int website: https://www4.icao.int/opsctrl/)
2.	☐	Taken action to ensure and facilitate the registration of all relevant organizations in the OPS CTRL Directory
3.	☐	Recorded the required operational contact details in the OPS CTRL Directory
4.	☐	Identified relevant entities and ensured they are prepared to subscribe to LADR notifications when the service is commissioned
5.	☐	Developed regulations requiring aircraft operator compliance with Annex 6 Section 6.18
6.	☐	Ensured the incorporation of procedures for ADT notifications, and verification by aircraft operators, in existing procedures for ATS alerting services.
7.	☐	Ensured the development of procedures for RCC actions in response to ADT notifications
8.	☐	Ensured the development of procedures for RCC actions in response to ELT(DT) alerts via the Cospas-Sarsat system
9.	☐	Incorporated ADT considerations in procedures and manuals for safety oversight of aircraft operators, ANSPs and SAR service organizations

10.	☐	Published and promulgated educational material on ADT for aircraft operator, ATSU and RCC personnel and other necessary stakeholders

AIRCRAFT OPERATOR		
Check the box if the Aircraft Operator has:		
1.	☐	Registered in the ICAO OPS CTRL Directory (email: aircrafttracking@icao.int website: https://www4.icao.int/opsctrl/)
2.	☐	Commenced preparation for subscription to LADR notifications, when the service is commissioned.
3.	☐	Developed procedures for the initial aircraft operator response to ADT notifications
4.	☐	Developed procedures for the initial aircraft operator response to ELT(DT) alert coordination received from SAR authorities or ATSUs
5.	☐	Trained flight despatch and other relevant personnel to understand ADT notifications and ELT(DT) alerts (according to fleet equipage), and to execute ADT procedures accordingly
6.	☐	Developed procedures for informing appropriate ATS units of the outcome of ADT validation checks

SAR SERVICE PROVIDER (RCC/RSC)		
Check the box if the Air Navigation Service Provider has:		
1.	☐	Registered in the ICAO OPS CTRL Directory (email: aircrafttracking@icao.int website: https://www4.icao.int/opsctrl/)
2.	☐	Commenced preparation for subscription to LADR notifications, when the service is commissioned.
3.	☐	Developed procedures for the initial response to ADT notifications received from ATS units.

4.	☐	Developed procedures for the initial response to ELT(DT) alerts.
5.	☐	Developed procedures for the use of LADR
6.	☐	Trained SAR personnel to understand ADT notifications and ELT(DT) alerts, and to execute ADT procedures accordingly.

AIR NAVIGATION SERVICE PROVIDER		
Check the box if all relevant Air Traffic Service (ATS) Units have:		
1.	☐	Registered in the ICAO OPS CTRL Directory (email: aircrafttracking@icao.int website: https://www4.icao.int/opsctrl/)
2.	☐	Commenced preparation for subscription to LADR notifications, when the service is commissioned
3.	☐	Provided for LADR access to the relevant operational supervisory position in the ACC in charge of each FIR, when the services is commissioned
4.	☐	Developed procedures for the response to ADT notifications received from aircraft operators.
5.	☐	Developed procedures for the response to ELT(DT) coordination received from SAR authorities.
6.	☐	Trained relevant ATS personnel to understand ADT notifications and ELT(DT) alerts, and to coordinate in accordance with procedure.

Reference Material

ICAO Annex 6 *Operation of Aircraft* Part I

ICAO Annex 11 Air Traffic Services

ICAO Annex 12 *Search and Rescue*

ICAO Annex 13 *Accident and Incident Investigation*

ICAO Doc 4444 *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM)

ICAO Doc 100542 *Manual on Location of Aircraft in Distress and Flight Recorder Data Recovery*

ICAO Doc 10165 Global Aeronautical Distress and Safety System (GADSS) Manual (NEW)

Expected availability Q3/Q4 2022

International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual Volumes I and II

ICAO Asia/Pacific Regional SAR Plan Version 4.0
Subject to approval by the Tenth Meeting of the ATM Sub-Group of APANPIRG, November 2022

ICAO Web Resources:

Global Tracking Initiatives

https://www.icao.int/safety/OPS/OPS-Section/Pages/Global-tracking.aspx

Update on GADSS-Related Global Aircraft Tracking Initiatives

https://www.icao.int/safety/globaltracking/Pages/GADSS-Update.aspx

ICAO Skytalk: GADSS Implementation Support Tools

https://www.youtube.com/watch?v=ZbD3IIdkzbk

ICAO OPS Control Directory

https://www4.icao.int/opsctrl/

Cospas-Sarsat Documentation:

C/S A.001 (data distribution procedures for ELT(DT)s)

C/S A.002 (structure and samples of ELT(DT) distress alert messages sent to SPOCs)

C/S T.001 and C/S T.018 (respectively, FGB and SGB (ELT(DT) specifications)

C/S G.007 (RCC handbook)

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