International Civil Aviation Organization

Eighth Meeting of the ICAO Asia/Pacific Search and Rescue Working Group (APSAR/WG/8)

Bangkok, Thailand, 22 – 25 May 2023

Agenda Item 3: Global update

ICAO UPDATE ON THE LADR

(Presented by the Secretariat)

SUMMARY

This paper presents an update on the Location of an Aircraft in Distress Repository (LADR), which will support the Autonomous Distress Tracking standards in Annex 6 – *Operation of Aircraft* Part I – *International Commercial Air Transport – Aeroplanes*.

1. INTRODUCTION

1.1 The LADR is intended to meet the requirements for information sharing as part of the Global Aviation Distress and Safety System (GADSS).

1.2 The GADSS concept of operations and the functional specifications for the LADR are available at https://www.icao.int/safety/globaltracking.

1.3 Information related to the initial development of a centrally managed position data repository to address the concerns of Search and Rescue (SAR) services related to the ease and speed of obtaining autonomous distress tracking (ADT) information, was previously provided in State letter AN 11/1.1.29–19/63 dated 14 August 2019.

2. DISCUSSION

Annex 6 Provisions

2.1 Referring to the location of an aeroplane in distress, Annex 6 Part I Section 6.18 states:

6.18 LOCATION OF AN AEROPLANE IN DISTRESS

6.18.1 As of 1 January 2025, 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 1 January 204, 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.

6.18.2 **Recommendation**.— *All aeroplanes of a maximum certificated take-off mass of over 5 700 kg for which the individual certificate of airworthiness is first issued on or after 1 January 2023, should autonomously transmit information from which a position can be determined at least once every minute, when in distress, in accordance with Appendix 9.*

6.18.3 The operator shall make position information of a flight in distress available to the appropriate organizations, as established by the State of the Operator.

Note 1.— Refer to 4.2.1.3.1 for operator responsibilities when using third parties.

Note 2.— Operational procedures for monitoring and making position information of a flight in distress available to the appropriate organizations in a timely manner are contained in PANS-OPS, Volume III, Section 10.

2.2 ICAO Headquarters has provided the following information update on planning for LADR hosting and operations for the information of APSAR/WG:

- Eurocontrol will host the LADR, and is continuing to work on its development. It is expected that a version of the system will be available for testing purposes around mid-2023;
- User access to LADR will be controlled by the OPS CTRL directory;
- As part of the LADR development Eurocontrol will assume hosting of the OPS CTRL directory, and will develop functionality for RCCs to subscribe and populate their contact data;
- Subscription to both the LADR and OPS CTRL directory will be free of charge; and
- ICAO Headquarters will issue a State Letter once a deployment date for the LADR is confirmed. The State Letter will inform States how their RCCs can subscribe to both OPS CTRL and LADR, and will remend them to ensure that Air Navigation Service Providers (ANSPs) and aircraft operators also subscribe.
  - The OPS CTRL directory is currently an ICAO product, but may be migrated to Eurocontrol to run on behalf of ICAO, as part of LADR development. TBD.
  - ICAO as LADR administrator will approve requests for an account, then Eurocontrol will create the account.

2.3 It is envisaged that data in the LADR could be accessed by users through a web-viewer[1], or by extracting the data for use in their own software. While ICAO Doc 10150 *Functional Specifications for the LADR* specifies that the data will be available for extraction, it does not specify the data format. It does, however, list example formats that may be used, such as (but not limited to) the Flight Information Exchange Model (FIXM), Geography Markup Language (GML) and Geographical JavaScript Object Notation (GeoJSON).

2.4 It is currently expected that that the LADR data output will be in FIXM 4.2, with the additional intention to enable Open Geospatial Consortium (OGC) standards to satisfy the specification. Subject to further confirmation, this may mean that outputs would also be provided in GML 3.2 over OGC Web Feature Service (WFS) 2.0, based on a schema to be provided by EUROCONTROL. While GeoJSON will be considered it is not currently expected that it will be used.

2.5 Doc 10156 specifies, however, that the system will receive and validate data from one or more authorized LADR contributors in FIXM 4.2 format.

[1] Prototype demonstrated in the ICAO APAC GADSS Workshop, 23 May 2022

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper; and

b) discuss any relevant matters as appropriate.

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