International Civil Aviation Organization

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Agenda Item 4: Asia/Pacific and inter-regional SAR planning, coordination and cooperation

AUTONOMOUS DISTRESS TRACKING POSSIBLE IMPLEMENTATION ISSUES

(Presented by Singapore)

SUMMARY

This paper highlights the difference in notification processes for alerts Rescue Coordination Centres (RCCs) receive for the Autonomous Distress Tracking (ADT) and for the only known ADT device to date, the Emergency Locator Transmitter-Distress Tracking (ELT (DT)). Noting this difference, this paper discusses the need for clarity for the processes and actions by RCCs on receipts of such alerts.

1. INTRODUCTION

1.1 In March 2016, ICAO adopted Standards and Recommended Practices (SARPs)[1] relating to the location of an aeroplane in distress, that establish a requirement for an aeroplane to autonomously transmit information from which a position can be determined at least once every minute. This information would support identifying, to a reasonable extent, the location of an accident site within a radius of six nautical miles. The new standard is performance-based and non-prescriptive (in other words, the industry may consider all available and emerging technologies that can meet ICAO's specified tracking requirements).

1.2 The ADT system uses on board systems to broadcast information of the aeroplane's position when in distress. ICAO is establishing a centrally managed facility, the 'Location of an Aeroplane in Distress Repository (LADR)', that functions as a single point of access to the ADT position data. It is a secure, web-based storage facility that can make ADT messages available to approved parties. ICAO will act as Administrator of LADR to ensure that only appropriate entities can access or deposit data in the LADR. These are ADT service providers, ATSUs, aircraft operators and RCCs. The LADR will be made available soon and access to the LADR is through the ICAO OPS Control Directory[2]. States may also authorize other relevant entities to access the LADR.

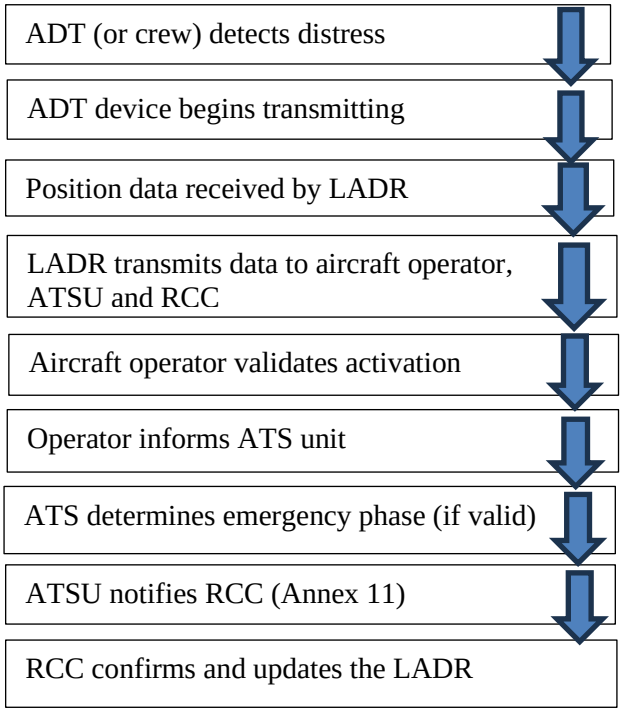
2. DISCUSSION

2.1 The standard for aeroplanes to automatically transmit information, when in distress, is not technology-specific and allow for various solutions. The only known solution or ADT device to date, is the ELT (DT), and data from this new beacon type will be distributed by Cospas-Sarsat.

[1] ICAO Annex 6 Part 1 – International Commercial Air Transport – Aeroplanes. 6.18 Location of an aeroplane in distress.

[2] User roles and information; and authorization to LADR will be managed through the ICAO OPS CTRL directory interface.

2.2 It was noted that the original intention was that ADT alerts would not require changes to ATSU's established procedures. Moreover, it was understood that the aircraft operator had the responsibility to first act on an ADT notification, so the alert message could be verified, before advising ATSU of the aircraft's status (this is necessary to reduce false alerts). The IAMSAR Manual Volume II (Appendix V) provides the sequence of events following an ADT notification:



2.3 For ELT (DT) activations, Cospas-Sarsat will distribute such notifications from the Cospas-Sarsat Mission Control Centres (MCCs) to the RCCs and LADR, concurrently. This process is distinct from the established ADT notification process for generic ADT devices, which is direct to LADR. There might be the possibility of RCCs being aware of the ELT (DT) notifications through MCCs first. **Figure 1** illustrates the message routes of an ADT device and ELT-DT using Cospas-Sarsat's distribution routes:

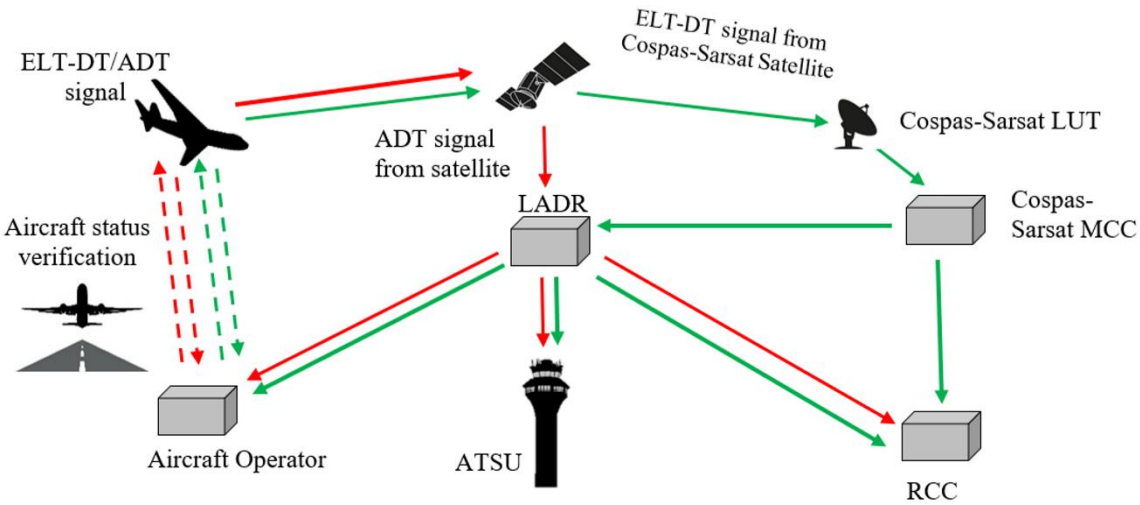


Figure 1: ELT-DT and ADT Message Routing

2.4 When the RCC is made aware of the ELT (DT) notification prior to notification from ATSU or LADR, it is possible that the RCC may consider action before the aircraft's distress status is able to be verified by the aircraft operator and declaration of an alerting phase by ATC.

2.5 ICAO Annex 12 prescribe the provisions and procedures in Chapter 5 (Operating Procedures) when RCC receives information concerning aircraft in emergency;

> *5.1.2 Rescue coordination centres shall, immediately upon receipt of information concerning aircraft in emergency, evaluate such information and assess the extent of the operation required.*
>
> *5.1.3 When information concerning aircraft in emergency is received from other sources than air traffic services units, the rescue coordination centre shall determine to which emergency phase the situation corresponds and shall apply the procedures applicable to that phase.*

2.6 As such, when an RCC receives information from other sources, such as MCCs, the RCC would need to validate the information of a possible event of an aircraft in distress prior to determining an appropriate emergency phase in collaboration with the relevant ATSUs. This is because the ATSUs would likely have received information on most aircrafts and an aircraft emergency, and its development is therefore likely to come to their notice first.

2.7 It is important that stakeholders note that, for ELT (DT) activations, the RCC would be notified through the MCCs per the provision in Annex 12. However, stakeholders should consider the process as reflected in IAMSAR Manual Volume II (Appendix V), for activation of ADT devices other than ELT (DT), which does not change the current ATS alerting processes. States are encouraged to communicate with the relevant stakeholder to ensure that they have clarity on the difference in notification processes between ELT (DT) and other ADT devices and that communication procedures highlight these differences.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) discuss the information provided by this paper; and

b) review possible actions necessary to bring clarity to the differences between receipt of ELT-DT notifications from the Cospas-Sarsat program and receipt of ADT activation notifications from LADR.

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