



ICAO

International Civil Aviation Organization

Seventh Meeting of the ICAO Asia/Pacific Search and Rescue Working Group (APSAR/WG/7)

Video Teleconference, 24 – 27 May 2022

Agenda Item 5: GADSS Workshop Outcomes

GADSS Workshop Outcomes

(Presented by the Secretariat)

SUMMARY

This paper presents the outcomes of the Global Aeronautical Distress and Safety System Workshop held in conjunction with APSAR/WG/7

1. INTRODUCTION

1.1 The Global Aeronautical Distress and Safety System (GADSS) Workshop was held by video teleconference on 23 May 2022. There were 144 registered participants from 25 Administrations including two non-APAC Administrations, International Organizations and industry partners.

1.2 All presentations made to the workshop are available on the APSAR/WG/7 meeting web-page.

1.3 Outcomes of the workshop, together with proposed follow-up actions, are provided for consideration and discussion by APSAR/WG/7.

2. DISCUSSION

Workshop Pre-Poll – Awareness of GADSS

2.1 At the commencement of the workshop a poll was conducted to gauge awareness of GADSS. In response to the poll question ‘What role do you perform?’, the following distribution of roles was established:

| Role | Responses | % of Total |
|---------------------------------|-----------|------------|
| Aircraft operator | 6 | 9.1% |
| ANSP | 13 | 19.7% |
| SAR | 21 | 31.8% |
| Aviation Regulator | 19 | 28.8% |
| GADSS Service provider | 3 | 4.5% |
| Equipment Manufacturer/Supplier | 0 | 0.0% |
| Others | 4 | 6.1% |

2.2 For each of the poll questions more than 50% of respondents indicated their knowledge of the topic was either ‘low’ or ‘none’ or, in cases where either ‘yes’, ‘no’ or ‘don’t know’ answers were requested, the response was ‘no’ or ‘don’t know’. The poll questions and responses are provided in **Attachment A**.

GADSS Workshop Presentations

2.3 GADSS Workshop presentations were:

- GADSS Overview (Chair, ICAO/IMO Joint Working Group on SAR);
- Autonomous Distress Tracking (ADT) Overview (Chair, ICAO/IMO Joint Working Group on SAR);
- ADT Scenarios (ICAO);
- Cospas-Sarsat ELT(DT)s and GADSS Support (Cospas-Sarsat);
- ADT Solution (Satellite Authorisation Systems Pty. Ltd);
- Aviation Regulator Considerations (ICAO);
- Airline Preparations for ADT (IATA);
- SAR Service Considerations (Civil Aviation Authority of Singapore); and
- Air Navigation Service Provider Considerations (ICAO)

Considerations for Aviation Regulators, SAR Services and ANSPs

2.4 The following key points were raised in the four presentations as follows:

- **Aviation Regulator Considerations**
 - Annex 6 Part 1 section 6.18 Location of an Aeroplane in Distress:
 - Do the State regulations align with Annex 6?
 - Has the regulator considered which organizations may be considered ‘appropriate’ to receive distress position information from the operator?
 - ICAO Doc 8168 PANS-OPS Section 10 Chapter 2:
 - Elaborates on Annex 6 standards, to ensure operators have the means to receive, process and act upon information;
 - Requires that operators update the LADR;
 - Do national regulations support these provisions?
 - Impending provisions: Annex 11 and Annex 12, requiring the appropriate ATS authority, RCCs and, as appropriate, RSC to maintain up-to-date contact details in the OPS CTRL Directory.
 - ICAO State Letter 22/47
 - Has the State responded to the State Letter?
 - Has the State commenced preparation of regulations?
 - Has the State commenced registration on the OPS CTRL Directory?

- Oversight
 - Has the regulator considered ways of checking implementation by ANSPs, RCCs and RSCs?
 - What training will be mandated in the ATS and SAR domains?
- **Airline Preparations for ADT**
 - IATA Operational Safety Audit (IOSA) Standards Manual:
 - Aircraft is in a distress condition when it is in a state that, if the aircraft behavior event is uncorrected, can result in an accident.
 - IATA audits operators for compliance with ADT requirements
 - Equipage
 - Boeing appears to be ‘line fitting’ ADT/ELT equipment to new aircraft;
 - Unsure of Airbus solution
 - ADT
 - Some confusion exists in terms of autonomous equipment
 - ADS-B – discussion indicated not suitable for ADT as it’s not autonomous/independent from other aircraft systems.
 - ELT appears to be still needed.
 - LADR
 - Technical rollout/training/procedures may be a challenge given the proposed timeline.
 - Airline feedback
 - Delay may be sensible
 - Yet to fully understand the procedural and notification requirements placed on an operator
 - Require clear and standard airline actions for when an aircraft is identified as in distress
 - Require contact details for all necessary parties, and contacts that will always reliably receive and action calls
 - How will airlines be notified of LADR outages?
- **SAR Service Considerations**
 - LADR subscription
 - Free subscription through ICAO OPS CTRL Directory
<https://www4.icao.int/opsctrl>
 - requires a focal point, e.g. SAR Authority, SPOC etc. to request an account

- Access for RCCs to OPS CTRL Directory is not yet available. Expected around August 2022
- IT requirements
 - Reliable 24HR internet access
 - Ensure configure RCC systems to allow receipt of LADR notifications
 - Flag LADR emails as a priority in the message queue
 - Plan for other LADR communication paths – AFTN, SMS, SWIM, when available
 - Configure ELT(DT) alert messages delivery to RCC system
 - Upgrade Beacon Registers to cater for FGB and SGB with ELT(DT) capability
- RCC staff training
 - Ensure staff have knowledge of GADSS, its ~~three~~ functions, the LADR system and the 2 ~~LADR (ADT?)~~ ADT notification pathways – ~~LADR and MCC,~~ via the LADR for ADT and ELT(DT) notifications, and via the MCC for ELT(DT)s
 - Ensure staff know how to handle ADT notifications. Annex 11 and 12 alignment
 - Understanding of ELT(DT) alert messages.
 - Handling of ADT notifications for cross-boundary (FIR/SRR) incidents
 - SAREX to involve RCC, ATSU, airline operations centre, MCC, neighbouring SRR
- Engagement
 - Develop procedures with other stakeholders such as ATSUs and neighbouring RCCs to ensure understanding for handling ADT notifications
- **ANSP Considerations**
 - Annex 11 5.2 – Notification of rescue coordination centres
 - Uncertainty phase – no change
 - Alert phase – possibly impacted – information on ADT activation may lead ANSP to think operating efficiency is impaired, but don't know by how much. Addition of *or where the likelihood of a forced landing has not been determined* to qualify impaired operating efficiency for Alert phase.
 - Distress phase – no real change, but optional ADT data may lead to the conclusion that a forced landing is likely – earlier declaration of DETRESFA.
 - Using ADT information

- ADT notification is not an alert. It's an 'accident site finder'
- ANSP should choose to subscribe to LADR through OPS CTRL Directory
- Access information on aircraft within FIR plus buffer
- Recommend use ATC supervisory position as the contact.
- What procedure changes? Needs collaboration between ACC/RCC.

Summary of Discussion

2.5 The following were the key discussion points/outcomes identified by the Workshop Moderator and the Secretariat:

- Survey and discussions revealed significant low level knowledge of GADSS and ADT across the region and uncertainty in several areas. Poll at start indicated around 2/3 of participants had little or no knowledge. Obvious need for States and stakeholder agencies to get more active on preparations.
- ICAO GADSS Manual Doc 10165 will be an important reference source when it becomes available to assist stakeholder education and preparedness.
- RCCs need to prepare for the two pathways of receipt of ELT(DT) notifications. It is important for RCC staff to understand the difference. RCCs need to adapt their operational procedures and practices accordingly.
- Need for further workshops likely to assist stakeholders with understanding and preparation.
- Two ADT solutions presented to workshop – Cospas-Sarsat ELT(DT) and SatAuth ADT. Information on each available in presentations. **There are likely to be other solutions.**
- Comments additional to Stakeholder presentations:
 - Regulators – in absence of regulations being made by 1 Jan 2023, Filing of Differences needed;
 - States still need to be capable of handling ADT events by 1 Jan 2023 (or sooner) regardless, based on Cospas-Sarsat advice that the ELT(DT) system will be ready later this year with some aircraft fitted. Chicago Convention requirement for SARPs over international airspace regardless?
 - Aircraft operator feedback – seeking clear ICAO HQ advice to airline industry to allow clear understanding of requirements and to avoid confusion.
- Reminder for States to respond to State Letters on Annex 11 and Annex 12 PFAs.

2.6 ATSU, RCCs and aircraft operators were strongly encouraged to register on the OPS CTRL Directory

Workshop Q&A Sessions

2.7 Questions posed by workshop participants using the online application made available for the purpose are provided in **Attachment B**.

2.8 Questions that were most 'voted up' by other participants related to:

- How are distress conditions identified?

- Will further workshops be available before the applicability date?
- Requirements for current fleets versus new fleets at 01 January 2023.
- How do operators contact the RCC responsible for the SRR the aircraft is operating in?
- Difference between Aircraft Tracking (Annex 6 section 3.5) and Location of Aircraft in Distress (Annex 6 section 6.18)
- How (or whether) LADR information can be integrated in RCC and ATSU systems.
- How many countries are ready to implement SARPs by the applicability date, or will be filing a Difference?
- Clarify who is running the OPS CTRL Directory? ICAO? EUROCONTROL?

2.9 Some relevant questions from the MS Teams Chat as identified by the GADSS Workshop Moderator are provided in Attachment C

Proposed Actions for Consideration

2.10 The following actions in response to the outcomes of the workshop are proposed by the Secretariat. The meeting is invited to review and amend as appropriate:

- Explore what opportunities may be available for a further regional workshop to focus on:
 - Procedures for airline operators when notified of ADT activation
 - Procedures for RCCs when receiving ELT(DT) alerts
 - Procedures for RCCs when receiving other ADT notifications (not ELT(DT))
 - ANSP use of LADR information.
 - ANSP procedures when informed by airline operators of ADT activation
 - ANSP procedures when informed by RCC of ADT notifications
- Develop brief guidance in the form of a checklist of considerations for stakeholders when an ADT is activated (will require a formal outcome from the meeting).
- State Letter to:
 - remind States of the applicability date;
 - inform them of the OPS CTRL and LADR registration process and encourage them to register;
 - include a survey on readiness for applicability date 01 January 2023, and/or intentions to file a Difference;

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) discuss and agree to the proposed actions, as amended by the meeting; and
- c) discuss any relevant matters as appropriate.

.....

Question: What role do you perform?

Total votes (66)

| No | Answer options | Votes | % of Total |
|----|---------------------------------|-------|------------|
| 1 | Aircraft operator | 6 | 9.1% |
| 2 | ANSP | 13 | 19.7% |
| 3 | SAR | 21 | 31.8% |
| 4 | Aviation Regulator | 19 | 28.8% |
| 5 | GADSS Service provider | 3 | 4.5% |
| 6 | Equipment Manufacturer/Supplier | 0 | 0.0% |
| 7 | Others | 4 | 6.1% |

Question: What is your knowledge level of GADSS?

Total votes (62)

| No | Answer options | Votes | % of Total |
|----|----------------|-------|------------|
| 1 | High | 7 | 11.3% |
| 2 | Medium | 22 | 35.5% |
| 3 | Low | 24 | 38.7% |
| 4 | None | 9 | 14.5% |

Question: What is your knowledge level of Aircraft Tracking (AT)?

Total votes (62)

| No | Answer options | Votes | % of Total |
|----|----------------|-------|------------|
| 1 | High | 9 | 14.5% |
| 2 | Medium | 21 | 33.9% |
| 3 | Low | 29 | 46.8% |
| 4 | None | 3 | 4.8% |

Question: What is your knowledge level of Autonomous Distress Tracking (ADT)? Total votes (61)

| No | Answer options | Votes | % of Total |
|----|----------------|-------|------------|
| 1 | High | 5 | 8.2% |
| 2 | Medium | 18 | 29.5% |
| 3 | Low | 26 | 42.6% |
| 4 | None | 12 | 19.7% |

Question: What is your knowledge level of Post-Flight Localization and Recovery (PFLR)? Total votes (61)

| No | Answer options | Votes | % of Total |
|----|----------------|-------|------------|
| 1 | High | 3 | 4.9% |
| 2 | Medium | 8 | 13.1% |
| 3 | Low | 26 | 42.6% |
| 4 | None | 24 | 39.3% |

Question: Are there any changes to the alerting process when ADT/LADR is implemented?

Total votes (59)

| No | Answer options | Votes | % of Total |
|----|----------------|-------|------------|
| 1 | Yes | 17 | 28.8% |
| 2 | No | 3 | 5.1% |
| 3 | Don't Know | 39 | 66.1% |

Question: When an initial ADT notification is received from the LADR, do you know the stakeholder coordination process?

Total votes (59)

| No | Answer options | Votes | % of Total |
|----|----------------|-------|------------|
| 1 | Yes | 16 | 27.1% |
| 2 | No | 18 | 30.5% |
| 3 | Don't Know | 25 | 42.4% |

Question: Are you aware of the ICAO OPS Control Directory?

Total votes (60)

| No Answer options | Votes | % of Total |
|--------------------------|--------------|-------------------|
| 1 Yes | 18 | 30.0% |
| 2 No | 42 | 70.0% |

Question: If your role is Aircraft Operator or ANSP, has your organisation registered its contact details in the ICAO OPS Control Directory?

Total votes (38)

| No Answer options | Votes | % of Total |
|--------------------------|--------------|-------------------|
| 1 Yes | 5 | 13.2% |
| 2 No | 5 | 13.2% |
| 3 Don't Know | 28 | 73.7% |

Question: Is your organisation planning for the ADT changes starting 1 Jan 2023?

Total votes (54)

| No Answer options | Votes | % of Total |
|--------------------------|--------------|-------------------|
| 1 Yes | 16 | 29.6% |
| 2 No | 4 | 7.4% |
| 3 Don't Know | 34 | 63.0% |

Question: If your role is ANSP, SAR or Aviation Regulator, has your organisation discussed the coming ADT changes with any neighbouring State?

Total votes (48)

| No Answer options | Votes | % of Total |
|--------------------------|--------------|-------------------|
| 1 Yes | 9 | 18.8% |
| 2 No | 18 | 37.5% |
| 3 Don't Know | 21 | 43.8% |

Question: Has your organisation discussed the coming ADT changes with other stakeholders in your State?

Total votes (54)

| No Answer options | Votes | % of Total |
|--------------------------|--------------|-------------------|
| 1 Yes | 15 | 27.8% |
| 2 No | 12 | 22.2% |
| 3 Don't Know | 27 | 50.0% |

Question and Answer Sessions 1 and 2

How are distress conditions defined?

Will there be a further workshop on using the LADR before SARPs become applicable?

How is the ELT(DT) technically as well operationally feasible to install the small types of aircrafts like Beech craft, Twin Attor , etc ?

6.18.1.....shall autonomously transmit information from which a position can be determined by the operator, at least once every minute, when in distress,..... How is distress identified

Applicable date GADSS Implementation 1 Jan 2023.. New aircraft after 1 Jan 23 vs current fleet. Confirm all current fleet also needs to meets GADSS requirement / it's based on State?

cont... will the LADR allow for operators to contact local RCCs for the FIR that the aircraft is being operated in?

What is the coverage and availability of MEOSAR on 28 degree N & 84 degrees E and around South Asia region?

Is ADT required to transmit the flight position etc. in the normal condition or only required to be in the distress condition?

Could you please, explain how a RCC & ATSU can be integrated with LADR system and get benefits of receiving distress signal ?

How can a device be considered autonomous when it is receiving power/position information from the aircraft and therefore in theory be powered down?

Is there any possibility for postpone of applicable date 1.Jan 2023 or later due to COVID19 impact?

Apart from latitude and longitude, is there any altitude shown in LADR?

SARPs say that ADT must transmit to the Operator once every minute. What happens with aircraft that are operating in FIRs that are not their State of Design/Manufacture/registration? cont....

Will the ELT(DTs) be able to be activated from the ground?

When will the LADR be available for us (RCC, ATSU)?

When will the LADR be available for access by ATS and RCC units?

Will the SIT 185s that have "rotating fields" be obvious to the SAROs?

Can all the Cospas-Sarsat constellations process the ELT(DTs)?

Test test test

When will the LADR be available for access by ATS and RCC units?

How ADT is triggered automatically ? Like squawking 7500, 7600 and 7700? What if the emergency squawk code is not set?

Which manual holds the definition of distress condition? A depress event was referred to by Mr Constable, this is an event that is planned for and may not result in an emergency.

1. Difference of LADR Administrator & Contributors? 2. Is ICAO in cooperation with IMSO(International Mobile Satellite Organisation) 3. Is IMSO one of the Contributors?

Any idea of number of ADT equipped aircraft ready feom 1 Jan 2023?

Question and Answer Session 3

Regarding IT solution for LADR and ELT DT in RCC, is the reliable internet sufficient to subscribers or need any additional software and specific training to RCC staffs ?

Is there any country has MRCC responding the aircraft accident from the beginning and monitoring the aircraft as ARCC

Any idea of how many aircraft will be fitted ready with ADT from 1Jan 2023

Has there been any indication of how many countries are ready to implement SARPs by the applicability date or will be filing an interim difference?

Sorry, I may have missed it earlier - who is running the OPs Control Directory? Is it also done by Eurocontrol with the LADR?

Questions extracted from MS Teams Chat

Note: verbal responses may also have been provided for questions in the chat.

Is there any process which can validate the data received from ADT..in terms of accuracy.. during operation or in the distress condition. Available onboard or with Ground control / RCC.

If emirates can enlighten us about any solutions they have short listed for GADSS ADT?

I would like to ask the house about the guidance material that ANSP has to prepare for the airline and RCC staff of the state regarding GADSS ADT ? what is expected out of ANSP by the airline operators?

Which is the agency notifying Airline oprator regarding ..it mandatory requirement from Jan 2023
