



ICAO

*International Civil Aviation Organization*

**Fifth Meeting of the Asia/Pacific Regional Search and Rescue Working Group (AP SARWG/5)**

Video Teleconference, 09 – 11 June 2020

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

### **NEW ZEALAND'S GADSS PREPARATION**

(Presented by NEW ZEALAND)

#### **SUMMARY**

This paper presents information outlining New Zealand's work in preparing for the implementation of GADSS ADT.

## **1. INTRODUCTION**

1.1 GADSS implementation being scheduled for 1 January 2021 (2023), there is a need to agree on a coordination procedure when an ADT system is triggered. A coordination procedure based on FIRs and aeronautical SRRs has been proposed.

1.2 Following AP SARWG/4 RCCNZ initiated work with other applicable New Zealand agencies to formulate a Statewide response.

## **2. DISCUSSION**

### Preparation

2.1 RCCNZ initiated contact with State agencies in New Zealand with the aim of establishing a GADSS Implementation Group and terms of reference.

2.2 Membership of the working group include The Civil Aviation Authority (CAA), Maritime New Zealand (MNZ) (RCCNZ), Airways Corporation New Zealand Ltd (ATS), Air New Zealand, Ministry of Transport (MoT), New Zealand Search and Rescue Secretariat (NZSAR), New Zealand Police and Board of Airline Representatives of New Zealand (BARNZ).

2.3 Two meetings have been convened as of December 2019 with MNZ, CAA, NZSAR and MoT. These meetings established the terms of reference (**Appendix A**). Further meetings will be convened to include the other agencies as the work progresses and definite solutions are implemented.

### Work in progress/ completed

2.4 The CAA advises they will review the need for a regulation change to amend Annex 6 part 1 related to aircraft tracking. CAA are anticipating a proposal in the next six months. RCCNZ urged the CAA to adopt Cir 347 notification form in any amendments to the regulations and to continue the use of the ALR message between ATSU's and RCCNZ.

2.5 RCCNZ has registered with Aireon’s Aircraft Locating and Emergency Response Tracking (ALERT) (see SEA/BOB ADS-B WG/14 – IP/07) and has developed an SOP for access. Although this is not an ADT the service is available to all registered RCCs and can promptly provide an aircraft’s last known position. The aircraft has to be carrying ADS-B and the responding RCC has to be previously registered with Aireon.

2.6 RCCNZ has also attempted to register with OPS CTRL Directory (see APSARWG/4 – IP/02). At present RCCs are not eligible to register. New Zealand urges the Secretariat to approach the ANB ICAO and allow RCCs to access to this valuable resource.

2.7 RCCNZ has run a training session for all SAROs with regard to GADSS including Aireon access as part of a programme of continuation training and situational awareness of the latest developments.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) discuss any relevant matters as appropriate: and
- c) request the secretariat to approach ANB ICAO to allow RCCs access to the OPS CTRL Directory.

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## **GADSS Implementation Working Group**

### **Term of Reference**

#### **1. Purpose**

A GADSS Implementation Working Group will be established to ensure the seamless implementation of the Global Aeronautical Distress Safety System (GADSS) into New Zealand's aviation system.

#### **2. Background**

The loss of Malaysian Airlines flight MH 370 in 2014 and Air France Flight 447 in 2009 highlighted the limitations of the current air navigation systems which led to issues with the timely location of the aircraft in distress. These delays restricted effective search and rescue efforts.

Search and rescue and the recovery of the casualties is the highest priority in aviation accidents, however, recovery of data to support the accident investigation are also important aspects. For this reason the International Civil Aviation Organization (ICAO) has developed, and is now implementing GADSS which address all phases of commercial flights under all circumstances including abnormal flight.

ICAO Annex 6 Part 1 (Amendment 42) to the Convention on International Civil Aviation 1944 required all airline operators to establish tracking capability of aeroplanes throughout their area of operations from 8 November 2018. This applied to all oceanic areas, maximum certified take-off weight (MCTOW) over 45,000 kg, seating capacity of 19 or more, with Air Traffic Services (ATS) receiving position reports at 15 minute intervals.

This same Annex states that operators, from 8 November 2018, should track position of aircraft every 15 minutes for aircraft with a MCTOW of 27,000 kg or more, and seating capacity of 19 or more.

Operators shall establish procedures approved by the State for retention of aircraft tracking data to assist SAR with last known position.

From 1 January 2021, all aeroplanes of a MCTOW of over 27,000 kg, effectively built after 1 January 2021, shall autonomously transmit information from which a position can be determined by the operator at least once every minute, when in distress.

The exact system for tracking and distress alerting has not yet been determined but is the subject of many international meetings within Cospas-Sarsat, ICAO and IMO.

Due to the importance of this work, it is crucial that all agencies who may have a connection with GADSS are working together to ensure the seamless implementation of rules, system and standard operating procedures so that they avoid any 'gaps' between the agencies or make incorrect assumptions about another agencies role and work.

### **3. Problem Definition**

In the current aviation environment, there is a possibility that an aircraft is unable to be located when it is in a distress condition or in other various phases throughout a flight. The outcomes of this may be catastrophic and pose a great risk to the safety and reputation of the operator and other relevant parties. This also allows for further negative implications, including;

- i. If an aircraft is unable to be located, the chance of being able to locate potential survivors in a timely manner is heavily minimised;
- ii. Recovery of the aircraft can prove costly if it is unable to be located; and
- iii. The ability for the aviation industry to learn from the accident and recover data to support accident investigation becomes difficult. This poses a threat of being unable to accordingly improve safety systems as a result of an accident.

### **4. Membership**

The Working Group will comprise appropriate representation from the following agencies:

- a) Air New Zealand
- b) Airways Corporation of New Zealand Ltd (Airways)
- c) Board of Airline Representatives of New Zealand (BARNZ)
- d) Civil Aviation Authority (CAA)
- e) Maritime New Zealand (Rescue Coordination Centre)
- f) Ministry of Transport (MoT)
- g) New Zealand Police
- h) New Zealand Search and Rescue Secretariat

### **5. Chairperson**

The CAA will act as the Chairperson for the Working Group. Any changes to the Chairperson will be made by full agreement of the group.

### **6. Scope**

- i. Ensure that New Zealand implements an appropriate GADSS 'system' which is tested and fully 'operational'. This includes a robust system of response where all agencies involved have absolute clarity in their role within this process.
- ii. This system will link to the National Security System (NSS) where required.
- iii. Document any Standard Operating Procedures and agreements as necessary.
- iv. Understand the implications for New Zealand registered aircraft, including both within New Zealand Flight Information Region (NZZC FIR) and the Auckland

Oceanic Flight Information Region (NZZO FIR) and in other flight information regions (FIRs).

- v. Understand the implications for air traffic services and search and rescue services within the New Zealand Flight Information Region (NZZC FIR) and the Auckland Oceanic Flight Information Region (NZZO FIR). This includes coordination requirements with neighboring FIRs, noting the following:
  - i. Airways have confirmed in the ICAO survey that air traffic services in NZZC & NZZO FIRs receive aircraft position reports at intervals of 15 minutes or less (refer Appendix below for ICAO Annex 6, Part 1 s3.5.2 & s3.5.3 requirements);
  - ii. Airways delegates the McMurdo Sector to the McMurdo Centre as required for Operation Deep Freeze; Airways confirmed that McMurdo Centre also receive aircraft position reports at intervals of 15 minutes or less; and
  - iii. Existing CAR Part 172.67 Co-ordination Requirements (see Appendix below).
- vi. Coordination to ensure ICAO SARPs are reviewed and determine which SARPs are relevant for New Zealand.
- vii. Development and implementation of civil aviation rules and other regulatory interventions as appropriate.
- viii. Develop and submit contribution papers as appropriate to ICAO, APAC, IMO and ICAO/IMO JWG.
- ix. Liaison with Australia, American Samoa, Chile, Cook Islands, Fiji, French Polynesia, New Caledonia, Niue, Samoa, and Tonga, USA plus any other states as appropriate.
- x. Liaise with the National Emergency Management Agency (NEMA), Ministry of Foreign Affairs and Trade (MFAT), New Zealand Defence Force (NZDF), and Transport Accident Investigation Commissioner (TAIC).
- xi. Airways to liaise with McMurdo Centre, who are delegated as required the air traffic services within the McMurdo Sector of NZZO FIR for Operation Deep Freeze.

## **7. Roles and Responsibilities**

### **a) All**

- i. Contribution to the GADSS working group and conduit into each organisation represented
- ii. Comply with New Zealand Civil Aviation Rules

### **b) Airways Corporation of New Zealand Ltd**

- iii. Provide air traffic services, including an alerting service, within the NZZC FIR and NZZO FIR.

- xii. Airways to liaise with McMurdo Centre, who are delegated as required the air traffic services within the McMurdo Sector of NZZO FIR for Operation Deep Freeze.

**c) Air New Zealand**

**d) Board of Airline Representatives of New Zealand Inc. (BARNZ)**

**e) Civil Aviation Authority**

- i. Assess ICAO SARPs related to GADSS requirements for New Zealand
- ii. Develop and implement civil aviation rules and other regulatory interventions as appropriate.
- iii. Regulatory oversight of participants in the civil aviation system, this includes Part 119, 129 and 172 certificate holders.
- iv. State representation with ICAO for New Zealand, delegate to other agencies as appropriate.
- v. Liaison with TAIC

**f) NZ Police**

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**g) NZSAR Secretariat**

- i. Monitor and oversight of the work on behalf of the NZSAR Council.

**h) Maritime NZ**

- i) Manage this terms of reference and work
- ii. contact with Cospas-Sarsat, IMO and ICAO/IMO Joint Working Group on SAR

**i) Ministry of Transport**

- i. Identify linkages to wider Transport related issues such as the Transport Response Team (TRT) and Major Transport Incident Framework (MTIF)
- ii. Ministry to Ministry related matters including the National Security System
- iii. Consider Resilience and security
- iv. Facilitate proposals and amendments to rules

- v. Liaison with Minister
- vi. Governance, assurance, and connection of the networks

## 8. Timeframes

### To be determined

Appendix 1:

ICAO Annex 6 Operation of Aircraft; Part 1 – International Commercial Air Transport – Aeroplanes, 11<sup>th</sup> ed, Jul 2018

#### 3.5 AIRCRAFT TRACKING

3.5.1 The operator shall establish an aircraft tracking capability to track aeroplanes throughout its area of operations.

*Note.* — *Guidance on aircraft tracking capabilities is contained in the Aircraft Tracking Implementation Guidelines (Cir 347).*

3.5.2 **Recommendation.** — *The operator should track the position of an aeroplane through automated reporting at least every 15 minutes for the portion(s) of the in-flight operation(s) under the following conditions:*

- a) *the aeroplane has a maximum certificated take-off mass of over 27 000 kg and a seating capacity greater than 19; and*
- b) *where an ATS unit obtains aeroplane position information at greater than 15 minute intervals.*

*Note.* — *See Annex 11, Chapter 2, for coordination between the operator and air traffic services providers regarding position report messages.*

3.5.3 The operator shall track the position of an aeroplane through automated reporting at least every 15 minutes for the portion(s) of the in-flight operation(s) that is planned in an oceanic area(s) under the following conditions:

- a) the aeroplane has a maximum certificated take-off mass of over 45 500 kg and a seating capacity greater than 19; and
- b) where an ATS unit obtains aeroplane position information at greater than 15 minute intervals.

*Note 1.* — *Oceanic area, for the purpose of aircraft tracking, is the airspace which overlies waters outside the territory of a State.*

*Note 2.* — *See Annex 11, Chapter 2, for coordination between the operator and air traffic services providers regarding position report messages.*

3.5.4 Notwithstanding the provisions in 3.5.2 and 3.5.3, the State of the Operator may, based on the results of an approved risk assessment process implemented by the operator, allow for variations to automated reporting intervals. The process shall demonstrate how risks to the operation, resulting from such variations, can be managed and shall include at least the following:

- a) capability of the operator's operational control systems and processes, including those for contacting ATS units;
- b) overall capability of the aeroplane and its systems;
- c) available means to determine the position of, and communicate with, the aeroplane;
- d) frequency and duration of gaps in automated reporting;
- e) human factors consequences resulting from changes to flight crew procedures; and
- f) specific mitigation measures and contingency procedures.

*Note.* — *Guidance on development, implementation and approval of the risk assessment process, which allows for variations to the need for automatic reporting and the required interval, including variation examples, is contained in the Aircraft Tracking Implementation Guidelines (Cir 347).*

3.5.5 The operator shall establish procedures, approved by the State of the Operator, for the retention of aircraft tracking data to assist SAR in determining the last known position of the aircraft.

*Note.* — *Refer to 4.2.1.3.1 for operator responsibilities when using third parties for the conduct of aircraft tracking under 3.5.*

#### 6.18 LOCATION OF AN AEROPLANE IN DISTRESS

6.18.1 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 2021, 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 2021, 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.*— *Refer to 4.2.1.3.1 for operator responsibilities when using third parties.*

## ICAO Annex 11 Air Traffic Services 15<sup>th</sup> ed, Jul 2018

### 2.17 Coordination between the operator and air traffic services

2.17.1 Air traffic services units, in carrying out their objectives, shall have due regard for the requirements of the operators consequent on their obligations as specified in Annex 6, and, if so required by the operators, shall make available to them or their designated representatives such information as may be available to enable them or their designated representatives to carry out their responsibilities.

2.17.2 When so requested by an operator, messages (including position reports) received by air traffic services units and relating to the operation of the aircraft for which operational control service is provided by that operator shall, so far as practicable, be made available immediately to the operator or a designated representative in accordance with locally agreed procedures.

*Note.*— *For aircraft subjected to unlawful interference, see 2.24.3.*

### Civil Aviation Rule Part 172.67 Co-ordination Requirements:

a) An applicant for the grant of an air traffic service certificate must establish systems and procedures for ensuring, if applicable, co-ordination between each ATS unit listed in the applicant's exposition and the following agencies—

- (1) each holder of an aeronautical telecommunication service certificate issued in accordance with Part 171; and
- (2) each holder of an instrument flight procedure service certificate issued in accordance with Part 173; and
- (3) each holder of a meteorological service certificate issued in accordance with Part 174; and
- (4) each holder of an aeronautical information service certificate issued in accordance with Part 175; and
- (5) aircraft operators; and
- (6) the New Zealand Defence Force; and
- (7) search and rescue authorities; and
- (8) if the listed ATS unit is an aerodrome control or aerodrome flight information unit—
  - (i) the aerodrome operator; and
  - (ii) the apron management service, if the service is not provided by the aerodrome control unit.

(e) An applicant must provide systems and procedures for ensuring that ATS units, aircraft operators, and aviation meteorological service providers, if they require the information, are provided, through the exchange of ATS messages, with details of —

- (1) the intended movement of each aircraft for which a flight plan has been filed, and any amendments to the flight plan; and
- (2) current information on the actual progress of the flight.