

INTERNATIONAL CIVIL AVIATION ORGANIZATION



**REPORT OF THE SEVENTH MEETING OF THE ASIA/PACIFIC
REGIONAL SEARCH AND RESCUE WORK GROUP
(APSAR/WG/7)**

BANGKOK, THAILAND, 24 – 27 MAY 2022

The views expressed in this Report should be taken as those of the
Meeting and not the Organization

Approved by the Meeting
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APSAR/WG/7
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INTRODUCTION

Meeting

1.1 The Seventh Meeting of the Asia/Pacific Regional Search and Rescue Work Group (APSAR/WG/7) was held from 24 to 27 May 2022 by Video Teleconference hosted by the ICAO Asia and Pacific Regional Office, Bangkok, Thailand.

Attendance

2.1 There were 135 participants registered for the meeting from 25 Administrations and three international organizations including Australia, Cambodia, China, Hong Kong China, Fiji, France, India, Indonesia, Japan, Lao People's Democratic Republic, Malaysia, Maldives, Myanmar, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, Timor Leste, United States of America, Viet Nam, Cospas-Sarsat, IATA, and ICAO.

2.2 A list of registered participants is provided at **Appendix A** to this report.

Officers and Regional Office

3.1 Mr. Tai Kit, Head Air Traffic Control Specialist (Search and Rescue/Contingency Planning), Civil Aviation Authority of Singapore presided over the APSAR/WG/6 meeting throughout its duration as Chair.

3.2 Mr. Shane Sumner, Regional Officer ATM/AIM and Mr. Ying Weng Kit, ATM Officer, ICAO Asia/Asia and Pacific Regional Office, were Secretaries for the meeting. They were supported by Ms. Prakayphet Chalayonnawin, Programme Analysis Associate (ATM).

Opening of the Meeting

4.1 Mr. Tai Kit welcomed participants to the meeting as APSAR/WG Chair.

4.2 On behalf of Mr. Tao Ma, Regional Director of the ICAO Asia and Pacific Office, Mr. Shane Sumner welcomed participants to the APSAR/WG/7 meeting.

Documentation and Working Language

5.1 The working language of the meeting and all documentation was English. There were 12 Working Papers (WP), six Information Papers (IP) and one Flimsy considered by the meeting.

5.2 A list of papers is included at **Appendix B** to this report.

5.4 **DISCLAIMER:** The presentation of material in this report does not imply the expression of any opinion whatsoever on the part of ICAO, APANPIRG the ATM Sub-Group of APANPIRG or APSAR/WG concerning the legal status of any country, territory, city or area of its authorities, or concerning the delimitation of its frontiers or boundaries

Draft Conclusion APSAR/WG/7-2: Revised Asia/Pacific Regional SAR Plan	
What: That, 1. the revised Asia/Pacific Regional SAR Plan at Attachment A be adopted, and uploaded to the Asia/Pacific Regional Office eDocuments web-page to replace the existing version; and 2. States are urged to update their national SAR Plans to align with the revised Regional SAR Plan.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To conduct the triennial review of the Regional SAR Plan, including new and/or updated information on the Global Aeronautical Distress and Safety System (GADSS)	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 27-May-22	Status: Draft to be adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: XXXX	

7.3 List of Decisions

Nil

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REPORT ON AGENDA ITEMS

Agenda Item 1: Adoption of Agenda

Adoption of Agenda (WP/1)

1.1 The provisional agenda had been revised to insert a new Agenda Item 5 *GADSS Workshop Outcomes* and to re-order Agenda Item 7 *Any Other Business* and Agenda Item 8 *APSAR/WG Task List* to correctly reflect the order in which they would be considered by the meeting, the Task List review being the last item of business, conducted after the reading of the Draft Report.

Agenda Item 2: Review Outcomes of Related Meetings

Relevant Meetings Outcomes (WP/2)

2.1 The meeting was informed of SAR-related outcomes from the Ninth Meeting of the Air Traffic Management Sub-Group (ATM/SG/9, 01 to 05 November 2021) of the Thirty-Second Meeting of APANPIRG (APANPIRG/32, 01 to 03 December 2021), noting that there were no formal SAR-related outcomes (Conclusions/Decisions) from these meetings.

2.2 The ATM/SG/9 and APANPIRG/32 meetings had been reminded that due to the lack of a current reporting system the regional implementation status of the performance expectations of the Asia/Pacific Seamless ANS Plan had not been updated. Element 7.42 of the Seamless ANS Plan was the Priority 1 performance expectation for SAR implementation.

2.3 The meeting was also informed of State Letters arising from the 219th Session of the ICAO Air Navigation Commission (ANC) held in March 2022:

- State Letter Ref. AN 15/1.3-22/24, proposing an amendment to Annex 12 *Search and Rescue*. States' comments were requested to reach ICAO not later than 21 October 2022. The amendment addressed:
 - a standard regarding drift measurement;
 - responsiveness of SAR points of contact;
 - methods for allowing other States to assist in SAR operations;
 - safety of SAR personnel at accident sites;
 - conduct of exercises; and
 - procedures to be followed by pilots when intercepting a distress transmission or a transmission from a distress beacon when monitoring 121.5 MHz;
- State Letter Ref. AN 13/13.1 AN 15/1.3, AN 13/2.5 – 22/47, proposing *inter alia* amendments to Annex 11 *Air Traffic Services* and Annex 12, and ICAO Doc 4444 – *Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM)* concerning the Global Aeronautical Distress and Safety System (GADSS). States' comments were requested to reach ICAO not later than 27 October 2022.

2.4 For the proposed new Annex 12 Standard 5.6.6 (State Letter 22/24) Australia informed the meeting that it would likely advocate in its State Letter response that this be a Recommended Practice. Rationale included that there were situations where the dropping of such a device was not necessary, and also that there were situations where dropping of articles from aircraft was not safe such as at night, in cloud or reduced visibility. This was supported by New Zealand.

Agenda Item 3: Global Update

ICAO Update on the LADR (WP/3)

3.1 ICAO provided an update on the Location of an Aircraft in Distress Repository (LADR), which would support the Autonomous Distress Tracking (ADT) Standards in Annex 6 *Operation of Aircraft Part I International Commercial Air Transport – Aeroplanes*. The LADR was intended to meet the requirements for information sharing as part of the Global Aeronautical Distress and Safety System (GADSS). The GADSS concept of operations and the functional specifications for the LADR were available at <https://www.icao.int/safety/globaltracking>.

3.2 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.

3.3 The meeting was informed that EUROCONTROL would develop and host the LADR, and Benin would develop and host a regional satellite LADR to serve States in Africa. The term *satellite* was used in this case to describe a supplementary or ancillary LADR service, rather than relating to earth-orbiting space vehicles.

3.4 User access to the LADR would be controlled through the ICAO OPS CTRL directory. It was envisaged that data in the LADR could be accessed by users through a web-viewer¹, or by extracting the data for use in their own software. It was currently intended that data inputs to the LADR would be in Flight Information Exchange Model (FIXM) 4.2 format, and that outputs would be in FIXM 4.2 and GML 3.2 over OGC Web Feature Service (WFS) 2.0, based on a schema to be provided by EUROCONTROL.

GADSS, the ELT(DT), and a Model Template/Letter for Communication with SAR Authorities (WP/4)

3.5 Cospas-Sarsat presented information on deployment of a new beacon type, the Emergency Locator Transmitter (Distress Tracking) – ELT(DT) – developed to support GADSS. ELT(DT)s would activate while an aircraft was in flight if certain distress conditions were detected, necessitating handling by SAR authorities of alerts in ways that could be different from legacy ELTs. As deployment of ELT(DT)s could commence in the fourth quarter of 2022 there was a need for ATS and RCCs to adapt their operating procedures and practices to handle the new notifications received from ELT(DT)s.

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

3.6 Information summarizing the current status of ELT(DT) development was provided in **APSAR/WG/7 WP/4 Attachment 1**. The information included inter alia ELT(DT) notification and distribution characteristics that should be taken in to account by SAR Authorities.

3.7 A draft model/template for use by Mission Control Centres (MCCs) to inform SAR authorities/RCCs on GADSS, ELT(DT)s and alerts originating from aircraft in a distress condition was provided in **APSAR/WG/7 WP/4 Attachment 2**. The draft would be further developed by the Cospas-Sarsat Secretariat. Meeting participants were invited to provide feedback to Cospas-Sarsat by not later than 03 June 2022. States were also invited to consider using the draft to inform SAR authorities.

3.8 Regarding registration of ELT(DT)s, Cospas-Sarsat informed the meeting that the International Beacon Registration Database (IRBD) was being upgraded to ensure ELT(DT)s and Second Generation Beacons (SGBs), including ELT(DT)s based on second generation technology, could be accommodated. Administrations that maintained their own databases needed to be proactive now in preparing their databases to accommodate these beacon types.

Status of the Cospas-Sarsat Programme (WP/5)

3.9 The meeting was provided with a status report on the Cospas-Sarsat system, including system operations, significant developments, space and ground segments, beacons, false alerts, reporting by RCCs on use of the distress alert data provided, and results of Cospas-Sarsat MCC – Single Point of Contact (SPOC) communication tests.

3.10 Since September 1982 the Cospas-Sarsat system had provided assistance in rescuing at least 53,790 persons in 16,514 SAR events (**Figure 1**). The distribution of all SAR events was 23% for aviation, 37% for land and 40% for maritime (**Figure 2**).

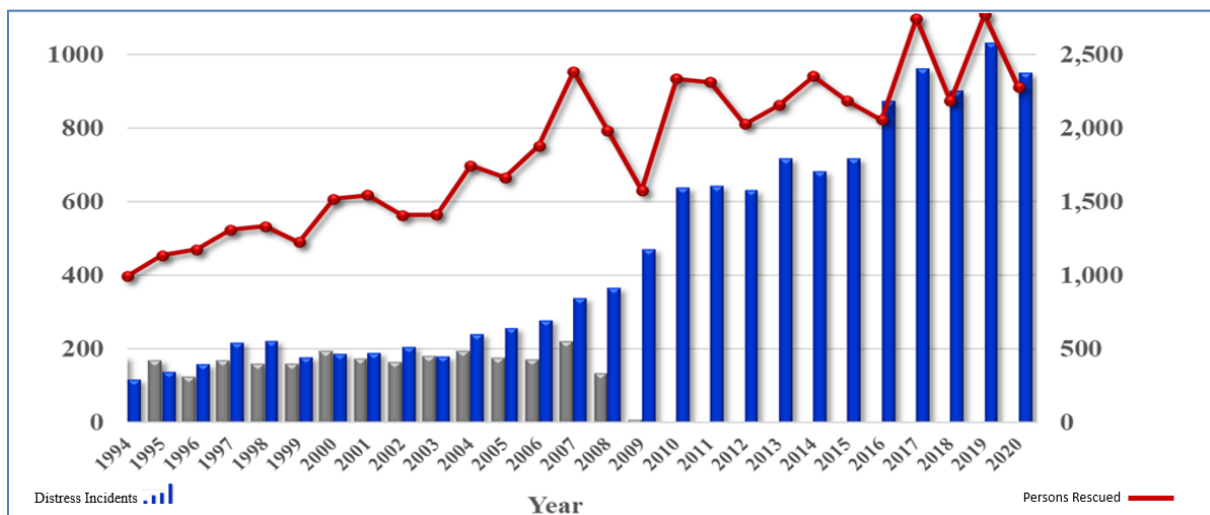


Figure 1: SAR Events with the Assistance of Cospas-Sarsat Data (Jan. 1994 - Dec. 2020)

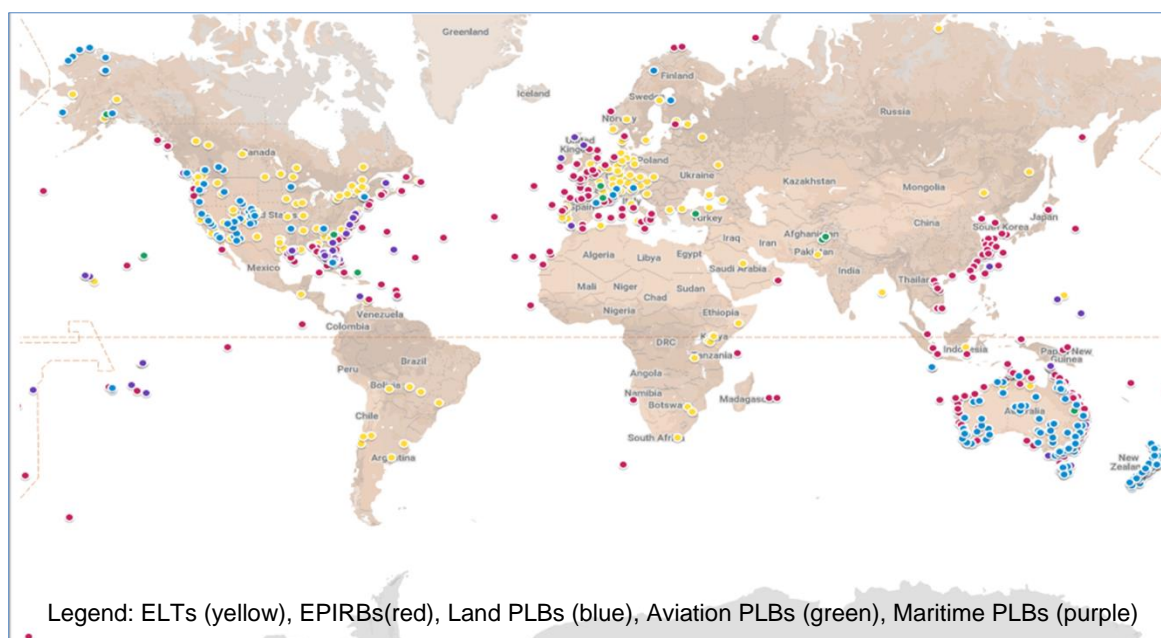


Figure 2: 2020 Geographic Distribution of SAR Events

3.11 Regular testing of communications between MCCs that distributed alerts received from satellites and receiving SPOCs resulted in 19 of 31 operational MCCs reporting results (**Table 1**). Some MCCs did not support SPOCs outside their State and therefore were not required to conduct the tests

	2017	2018	2019	2020	2021
Number of SPOCs tested by MCCs	157	154	161	165	171
Non-responsive SPOCs (no response to tests)	11.46%	8.44%	8.70%	7.23%	8.19%
Rarely responsive SPOCs (less than 20% successful tests)	8.28%	6.49%	5.59%	6.02%	3.51%
SPOCs with low success ratio (between 20 and 50% successful tests)	5.09%	10.39%	9.94%	7.23%	9.94%
Insufficiently responsive SPOCs	24.84%	25.32%	24.22%	20.48%	21.44%

Table 1: SPOC Communication Test Results (2017 – 2021)

3.12 The Cospas-Sarsat Secretariat held copies of Agreements between MCCs 31 State SPOCs globally. Agreements between MCCs and APAC SPOCs at 15 April 2022 were:

- French MCC – JRCC Tahiti;
- Vietnam MCC – Cambodia; and
- Vietnam MCC – Lao PDR

3.13 Cospas-Sarsat encouraged States to enter into agreements or understandings between SPOCs and their supporting MCCs and to provide a copy of such agreements/understandings to the Cospas-Sarsat Secretariat.

3.14 Distress-alert messages were sent to SAR authorities in the SIT 185 human-readable text format. As the Cospas-Sarsat System developed the size and content of the distress messages increased, but no significant changes were made to the message format. Beginning in 2023 distress information would be delivered to SPOCs in a revised SIT 185 message. Two significant changes were the use of the terms *MCC Reference Position* replacing *Confirmed Position* and *GNSS Position* replacing *Encoded Position*. Full details were available in the Cospas-Sarsat RCC Handbook available at:

<https://cospas-sarsat.int/images/stories/SystemDocs/Current/G007-MAR-25-2022.pdf>

3.15 Future system enhancements were focused primarily on advancing the Medium Earth Orbit SAR satellite (MEOSAR) system, and beginning operational phases for ELT(DT)s and SGBs, which would transmit more information in their distress message and have greater location accuracy.

3.16 The Return Link Service (RLS) that provided an acknowledgement to the user of a beacon that the distress signal had been received and located (**Figure 3**) was declared at full operational capability within Cospas-Sarsat effective 26 March 2021.

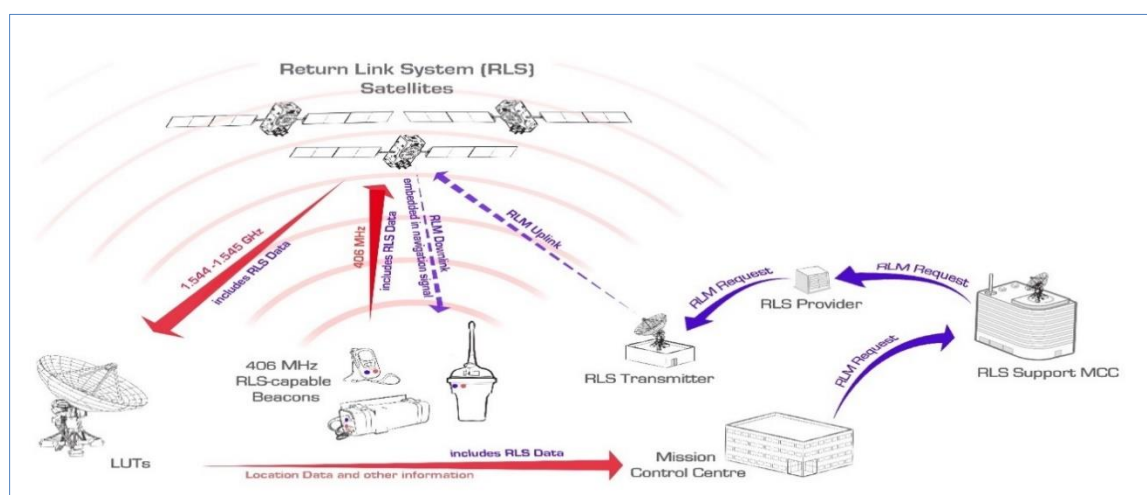


Figure 3: The Return Link Service and the Cospas-Sarsat System Concept

3.17 Development of video material for training continued with the creation of a series of video FAQs. All videos were available free-of-charge on youtube, and the videos and other training material were also available on an alternate platform:

<https://cospas-sarsat.int/en/search-and-rescue/programme-videos-en>; or alternately
<https://moodle.406.org/>

3.18 A system test had showed that the Cospas-Sarsat system had demonstrated the capability to receive, process and distribute messages from First Generation Beacon (FGB) ELT(DT)s, SGB ELT(DT)s and other SGBs, and that the introduction of these new beacon types would not adversely affect the performance of the existing system. Connectivity and distribution of distress data to the ICAO LADR had not yet been tested as the LADR was still under development.

3.19 In response to the extensive discussion of WP/4 and WP/5, the meeting agreed as follows:

- Potential use of the draft model/template in any regional guidance material would be further discussed under Agenda Item 5;
- ICAO APAC Office would approach ICAO Headquarters on the matter of what global activity (workshops, training, guidance) for GADSS, including ELT(DT), may be within the scope of ICAO;

- ICAO APAC Office would consider whether a further workshop or seminar may be programmed for the APAC Region before the end of 2022.

Cospas-Sarsat False Alerts (IP/2)

3.20 New Zealand provided a summary for the year January to December 2021 of false 406 MHz Cospas-Sarsat alerts received by RCCNZ compared to real alerts received for a distress situation in the same period (**Table 2**). False alerts were beacon activations that did not result in a rescue of a person or persons in distress. False activations were treated as real alerts until they could be confirmed as false. It was also noted that with the increasing use of Satellite Emergency Notification Devices (SENDS) there was also an increase in their inadvertent activations, albeit at a lower rate than for other beacon types. This required SEND providers to be more thorough when assessing the validity of SAR alerts.

Beacon Statistics 2021								
Month	EPIRB		ELT		PLB		SEND	
	Real	False	Real	False	Real	False	Real	False
Total	20	210	11	136	296	272	48	8
Total by group	230		147		568		56	
% of false activations	91%		93%		48%		14%	
Total % of false activations	77%							

Note: A monthly breakdown of the false alert data was provided in IP/2

Table 2: Beacon False Alert Statistics, New Zealand, 2021

3.21 In response to meeting discussion, New Zealand undertook to submit a paper on the subject to the ICAO/IMO Joint Working Group on SAR (ICAO/IMO JWG-SAR), as part of the JWG's efforts to fix this global issue.

Sharing the Experience of Tokyo RCC (IP/3)

3.22 Japan presented information sharing the experience of the Tokyo RCC, and in particular Japan's watch-standing system and how the system operated at the initial stage of a SAR response. The Japan Civil Aviation Bureau (JCAB) had consolidated flight watch offices into two: Tokyo Flight and Airport Information Base (FAIB) and Kansai FAIB. In the near future all civil flights, regardless of whether IFR or VFR, would be watched by Tokyo or Kansai FAIB. Information was provided on the watch-standing system, means of flight-watch, initial response to alert or distress information by Tokyo RCC, characteristics of Tokyo RCC, the mandatory reporting system for filed flight plans, initial response to emergency phases, and coordination and communication.

Agenda Item 4: Asia/Pacific and Inter-Regional SAR Planning, Coordination and Cooperation

BASARNAS – CAAM SAREX (WP/6)

4.1 Indonesia and Malaysia provided information on a Search and Rescue Exercise (SAREX) jointly conducted by the National Search and Rescue Agency of the Republic of Indonesia (BASARNAS) and Malaysia's leading agency for aeronautical SAR, the Civil Aviation Authority of Malaysia (CAAM). SAR cooperation had been established through the SAR Working Group Malaysia – Indonesia (SAR MALINDO), and had been further enhanced by the establishment of the BASARNAS-CAAM Aeronautical SAR Working Group (ASWG).

4.2 SAREX BASARNAS-CAAM 2/2021 (**Figure 4**) was conducted by video teleconference from 07 to 08 December 2021. Participants in the Level II (table-top) SAREX included the Makassar (Indonesia) Air Traffic Service Centre (MATSC), Indonesia RCC, Tarakan (Indonesia) RSC, Kota Kinabalu (Malaysia) Air Traffic Control Centre (KK ATCC), Kota Kinabalu Aeronautical RCC (KK ARCC) and various SAR supporting agencies from both States.

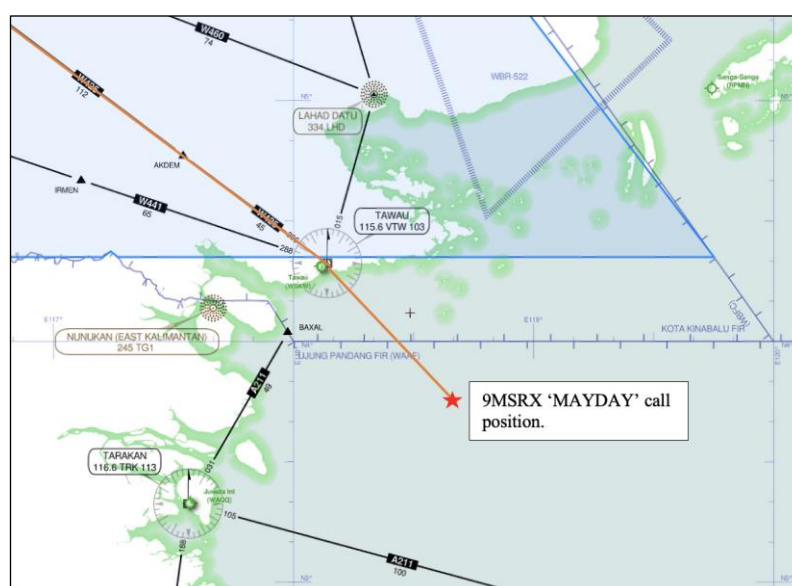


Figure 4: 9MSRX Flight Track and MAYDAY position

4.3 The SAREX was to be concluded within four hours, and guidelines were used as key performance indicators (KPIs) to monitor participant actions. Verification of participant actions were checked by the exercise recorder, for use in the debrief session.

4.4 The meeting was informed of recommendations and lessons learnt arising from the SAREX, which was considered to have been a success. All objectives had been met, and the recommendations would be tested in the next joint SAREX to be held in Q4 2022. A mutual training program for RCC/RSC Officers would be conducted, and an online briefing on Indonesia and Malaysia SAR systems would improve understanding of each State's SAR organization, systems and procedures.

4.5 The meeting noted the benefits of using online meeting platforms to conduct important multinational SAREX.

Establishment of Malaysia's National Preventative SAR Day (IP/4)

4.6 Malaysia informed the meeting of action by the Malaysian Maritime Enforcement Agency (MMEA) establishing the National Preventive SAR Day. MMEA was responsible for taking appropriate efforts to prevent the loss of lives at sea. Information was provided on objectives, and activities, which had been limited at the first National Preventive SAR Day in 2021 due to the COVID-19 pandemic. The National Preventive SAR Day would be organized on 06 June each year, and all MMEA units would conduct their own preventive SAR programs.

Search and Rescue System of Pakistan (IP/6)

4.7 The meeting was provided with a brief update on the aeronautical SAR system of Pakistan, including ongoing works for its improvement and training program. The update included legislation, area of responsibility and Search and Rescue Regions (SRRs), MoUs with stakeholders, joint SAR exercises, a pool of adequately trained ATCOs established to address any emergency and to complement RCC and RSC in the event of SAR operations, SAR training, SAR organization, points of contact, the document system, engagement with Cospas-Sarsat, communication facilities and ongoing works.

Regional Air Navigation Plan Update (WP/7)

4.8 ICAO provided an update on the Asia/Pacific Regional Air Navigation Plan (ANP), which was available on the ICAO APAC Regional Office website at:

<http://www.icao.int/APAC/Pages/APAC-eANP.aspx>

4.9 Proposals for Amendment (PfAs) to the ANP Volume I to include Flight Information Region (FIR) and SRR were necessary to enable the establishment by States of SRRs under the provisions of Annex 12, and required approval by the Council of ICAO.

4.10 PfAs concerning SRRs submitted by the following States had been approved by the Council and incorporated in the APAC ANP Vol I:

Lao PDR, Maldives, Nauru, Nepal, Papua New Guinea, Mongolia.

4.11 PfAs that were currently awaiting submission to the Council had been submitted by:

Australia, China (Beijing, Lanzhou, Sanya and Wuhan SRRs), Malaysia (Kuala Lumpur and Kota Kinabulu SRRs), Philippines and Singapore.

4.12 **Figure 5** indicated the status of SRR verification as at 27 May 2022:

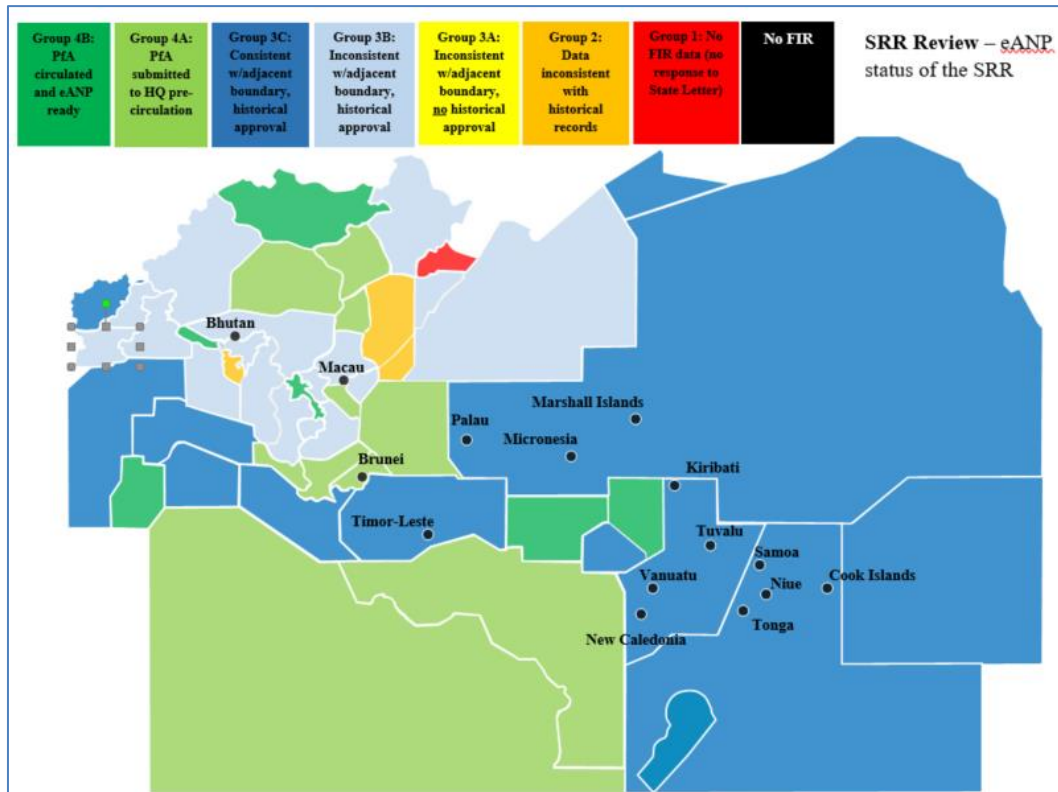


Figure 5: SRR Verification Status, as at May 2022

4.13 A PfA template was provided on the IAO APAC Regional Office website at:

<http://www.icao.int/APAC/APAC%20eANP/ANP%20Amendment%20Template.doc>

4.14 **APSAR/WG/7 WP07 Attachment B** provided SRR data to be included in the draft Table SAR I-1 in APAC ANP Volume I. All administrations were requested to review the data and provide feedback to ICAO on its accuracy.

4.15 The meeting was reminded that APAC ANP Volume II Part I Section 3 contained special provisions for the establishment and maintenance of a National Air Navigation Plan (NANP) that contained Basic Planning Elements (BPE)s that aligned with the APAC ANP. These NANP requirements included SAR planning as a part of a whole-of-government approach to ensure integrated and harmonized planning in accordance with the national priorities of States.

4.16 In response to a query, the meeting was informed that if any data provided in the attachments to this working paper appeared to be in error, the ICAO APAC Office should be informed by email in the first instance for follow-up action.

4.17 In response to a query on establishing SRR boundaries that were different than FIR boundaries, the meeting was informed that, while Annex 12 included the Recommendation that SRRs should in so far as practicable be coincident with corresponding flight information regions, it was recognized that differing SAR capability and resources of neighbouring States, or other matters, may make such alignment impracticable. A PfA to amend the SRR data should be submitted by all States concerned.

4.18 ICAO informed the meeting that, in cases where the SRRs of neighbouring States had not yet been submitted in any PfA, it was important that the States concerned coordinated directly to ensure that there were no gaps between the areas they considered to be within their SAR responsibility, and no overlaps, pending submission of PfAs which should also be agreed beforehand in order that they reach the necessary Regional Air Navigation Agreement before presentation to the Council for approval.

4.19 Those States that had not yet submitted their data in a PfA should review the SRR data in APSAR/WG/7 WP/7 Attachment B and provide feedback to ICAO on the accuracy of the data.

4.20 In the event that any State did not have access to details of the SAR Points of Contact of neighbouring States they could contact the ICAO Regional Office for assistance.

Regional SAR Status (WP/8)

4.21 The meeting was provided with an update of SAR implementation status in the APAC Region. The ICAO APAC Regional Office maintained records of the information provided from its accredited Administrations regarding SAR status, in order to report to APANPIRG.

4.22 The 2020 revision of the USOAP CMA Protocol Questions (PQs) had resulted in the total number relating to SAR being reduced from 26 to 16.

4.23 An analysis of the 16 revised SAR-related PQs indicated that the overall Effective Implementation (EI) for SAR had decreased when compared to the previous assessment. ICAO was still in the process of transitioning the revised USOAP Protocol questions on the USOAP website to reflect the changes, and the States would have been made aware of any corresponding changes to the PQ results. Regional average EI scores for the last three years (2020 and 2021 – 26 PQs, 2022 – 16 merged PQs):

- May 2020 – 60%
- April 2021 – 59%
- May 2022 – 55%

4.24 The same analysis undertaken in July 2015 yielded an average EI score of 51%. While the general trend of improvement was welcomed, it was recognized that all Administrations needed to continue their efforts to address weak areas and to assist other States where possible.

4.25 From the PQ analysis there was still weakness in the major areas of SAR indicated by USOAP:

- **CE-3:** 7.517 (26%) – [SAR service provider] SAR coordination agreements;
- **CE-4:** 7.499 (29%) – [SAR regulatory oversight] Implementation of training plan;
- **CE-7:** 7.505, 7.543 and 7.545 (35%, 47% and 49%) – [SAR regulatory oversight] effective regulatory surveillance oversight of SAR, Detailed Plans of SAR operations and checks that SAR operational personnel have regular training, including the conduct of SAREX; and
- **CE-8:** 7.507 (38%) – [SAR regulatory oversight and service provider] mechanism to eliminate SAR regulatory deficiencies.

4.26 **APSAR/WG/7 WP/8 Attachment B** provided more detailed information on PQ status for each audited State.

4.27 **Figure 6** illustrated the implementation status of the 41 elements of the Asia/Pacific Regional SAR Plan as at April 2021 that provided a metric of implementation of the performance expectations of the SAR Plan as at 27 May 2022.

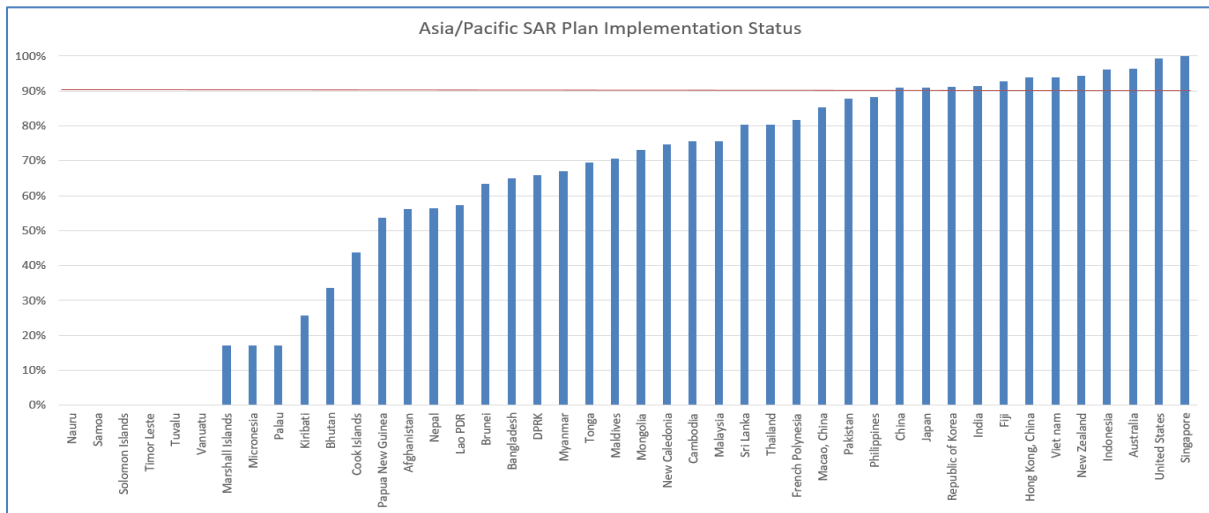


Figure 6: Asia/Pacific SAR Plan Implementation Status as at 27 May 2022

4.28 Regional policy established that States below 90% implementation would be considered to have an APANPIRG ANS Deficiency recorded for SAR implementation. There was an increase from 10 to 12 States/Administrations that had reported implementation of 90% as compared to APSARWG/6:

Australia, China, Fiji, Hong Kong China, India, Indonesia, Japan, New Zealand, Republic of Korea, Singapore, USA and Viet Nam

4.29 **Figure 7** provided an overview of reported Asia/Pacific SAR Plan compliance as at 04 May 2021.

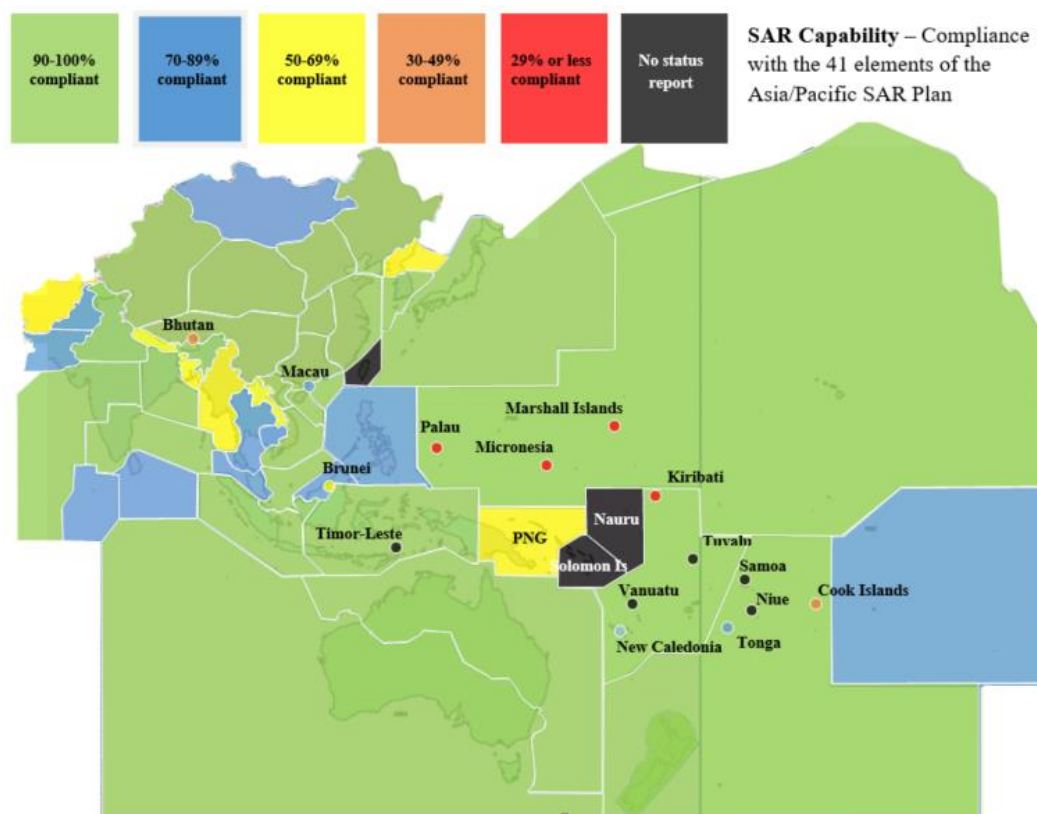


Figure 7: Reported Compliance with the Asia/Pacific SAR Plan, 27 May 2022.

4.30 **Appendix C** to this report provides an overview of the SAR implementation status of each APAC Administration, including updates provided immediately prior to or during the APSAR/WG/7 meeting.

4.31 The meeting was informed that Philippines and USA had formalized a SAR agreement on 30 July 2021. Fiji and New Zealand formalized their SAR agreement on 19 November 2021.

Agenda Item 5: GADSS Workshop Outcomes

GADSS Workshop Outcomes (Flimsy 1)

5.1 ICAO provided a summary of outcomes from the GADSS Workshop, held on 23 May 2022. All presentations made to the workshop were available on the APSAR/WG/7 meeting web-page. The information provided included the results of a pre-workshop poll which revealed that more than 50% of respondents had indicated their knowledge of the topic was either ‘low’ or ‘none’ or, in cases where either a ‘yes’, ‘no’ or ‘don’t know’ answers were requested, the response was ‘no’ or ‘don’t know’.

5.2 A list of key considerations for Aviation Regulators, Aircraft Operators, SAR Services and Air Navigation Service Providers was included in the Flimsy, together with a summary of key discussion points. Questions posed by workshop participants using the online application made available for the purpose, together with other relevant questions from the meeting online interface, were provided in **APSAR/WG/7 Flimsy 1 Attachments B and C**.

5.3 Noting the planned ADT applicability date of 01 January 2023, the meeting agreed that there was an urgent need for effort to be made to improve knowledge of GADSS among Regulatory, Airline, SAR and ANSP stakeholders, and to promote development of procedures among them in preparation for the likely appearance of ADT, including ELT(DT) before the end of 2022 and increasingly after the applicability date.

5.4 The meeting agreed as follows:

- ICAO would consider what further workshop activity could be undertaken before end of 2022 to improve stakeholder knowledge and preparedness for ADT;
- Brief guidance should be developed in the form of a checklist of considerations for when an ADT is activated;
- ICAO would issue an APAC 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 the 01 January 2023 applicability of ADT;
 - Be circulated informally to all relevant POCs, in addition to the formal State Letter distribution.

5.5 The meeting agreed to the following Draft Conclusion:

Draft Conclusion APSAR/WG/7-1: Checklist of Considerations in Readiness for Autonomous Distress Tracking

Noting:

1. the applicability of Autonomous Distress Tracking (ADT) from 01 January 2023; and
2. the likelihood that ADT equipped aircraft will increasingly be operating from late 2022 onwards;

States are urged to implement a programme of education and procedure development for aviation regulators, aircraft operators, SAR services and ANSPs, using the Checklist of Considerations for Response to ADT Notifications at **Appendix D to the Report**.

5.6 The Checklist of Considerations supported by the Draft Conclusion would form the basis of the survey on ADT readiness that would be circulated by the Regional Office.

Agenda Item 6: Asia/Pacific Regional SAR Plan

Asia/Pacific Regional SAR Plan Update (WP/9)

6.1 The meeting was provided with an updated version of the Asia/Pacific Regional SAR Plan, prepared jointly by Australia, Singapore, USA and ICAO as arranged under APSAR/WG Task List Action Item 6/3. The draft updated SAR Plan also included a generic version of an MOU between the SAR service and the Accident Investigation Authority, in response to Action Item 6/2.

6.2 It was noted that SAR Plan Section 5 – *Background Information* paragraphs 5.14 to 5.20, which provided information on Cospas-Sarsat, would need to be updated to include ELT(DT) information. This would be updated before the APSAR/WG/7 meeting report was finalized (expected by 03 June 2022) in coordination between Cospas-Sarsat and ICAO, and subject to the agreement of the APSAR/WG Chair.

6.3 Section 6 – *Current Situation* paragraphs 6.1 to 6.6 would be also be updated with the latest USOAP and APAC SAR implementation status data as presented and agreed at APSAR/WG/7.

6.4 States wishing to provide examples of SAR support provided to other States for inclusion in Appendix 2 to the SAR Plan were requested to do so by not later than 31 August 2022, to permit review by the Chair and expert group and subsequent inclusion in the final update presented to ATM/SG/10 in October 2022.

6.5 The meeting discussed and agreed to several further minor amendments, and subsequently agreed to the following Draft Conclusion:

Draft Conclusion APSAR/WG/7-2: Revised Asia/Pacific Regional SAR Plan

That,

1. the revised Asia/Pacific Regional SAR Plan at **Appendix E to the Report** be adopted, and uploaded to the Asia/Pacific Regional Office eDocuments web-page to replace the existing version; and
2. States are urged to update their national SAR Plans to align with the revised Regional SAR Plan.

Agenda Item 7: Any Other Business

APANPIRG ATM and Airspace Safety Deficiencies in the SAR Field (WP/10)

7.1 ICAO presented the SAR-related ATM and Airspace Safety Deficiencies as updated by APANPIRG/32 in December 2021, and by information provided to the Regional Office in 2022. Deficiencies were recorded for States that had not reported implementation of 90% or more of the 41 elements of the Regional SAR Plan.

7.2 The following deficiency was removed from the list by APANPIRG/32:

- SAR Capability
 - China

Information provided by China prior to APANPIRG/32

7.3 The following Deficiency is proposed for deletion the list:

- SAR Capability
 - Fiji

Information provided in Fiji's 2022 SAR implementation status report.

- 7.4 The following new Deficiency has been added to the list:
- Tuvalu
Tuvalu became a member State of ICAO in 2017. No SAR implementation status reports have been received from Tuvalu.
- 7.5 Deficiencies remain listed for the following Asia/Pacific Administrations:
Afghanistan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, Macao China, Cook Islands, DPR Korea, French Polynesia, Kiribati, Lao PDR, Malaysia, Maldives, Marshall Islands, Micronesia, Mongolia, Myanmar, Nauru, Nepal, New Caledonia, Pakistan, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Tonga, Vanuatu.
- 7.6 The updated list of Deficiencies in the SAR Field is appended in **Appendix F to the report**.
Aeronautical SAR Contact List (WP/11)
- 7.7 The consolidated Air Traffic Management Points of Contact (POC) List, including SAR POCs, was provided for review. The POC List as updated by the meeting is at **Appendix G** to the Report. All Administrations were reminded to inform the ICAO Regional Office if at any time there was a change to their SAR POC/s.

Agenda Item 8: APSAR/WG Task List

APSAR/WG Terms of Reference and Task List (WP/12)

- 8.1 The APSAR/WG Terms of Reference and Task List were presented for review by the meeting.
- 8.2 The Task List as updated by the meeting is appended at **Appendix H to the Report**.

Agenda Item 9: Date and Venue of Next Meeting

- 9.1 APSAR/WG/8 was expected to be held in the May/June 2023 timeframe. The format of the meeting, whether by video teleconference, face-to-face or in a hybrid form, was yet to be determined. Any State wishing to host the APSAR/WG/8 meeting was invited to contact the Secretariat.

Closing of the meeting

In closing the meeting the Chairman summarized the positive progress that had been achieved by the meeting and thanked participants for their contributions.

List of Participants

	STATE/NAME		TITLE/ORGANIZATION
1.	AUSTRALIA (1)		
	1.	Mr. Scott Constable	Principal Advisor Aviation Policy Australian Maritime Safety Authority <u>AUSTRALIA</u>
2.	CAMBODIA (1)		
	2.	Mr. Khun Chantheara	Acting Chief of Search and Rescue Standards State Secretariat of Civil Aviation Cambodia <u>CAMBODIA</u>
3.	CHINA (13)		
	3.	Ms. Yang Liu	Deputy Director Air Traffic Regulation Office Civil Aviation Administration of China (CAAC) <u>CHINA</u>
	4.	Mr. Yu Wang	Deputy Director China MRCC <u>CHINA</u>
	5.	Ms. Li Xiaomeng	Assistant Air Traffic Regulation Office Civil Aviation Administration of China (CAAC) <u>CHINA</u>

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	STATE/NAME		TITLE/ORGANIZATION
	6.	Mr. Zhu Peiran	Chief engineer Operation Supervisory Office, Operation Supervisory Center, Civil Aviation Administration of China (CAAC) <u>CHINA</u>
	7.	Mr. Xu Zhang	ATC Operation Supervisory Center, Civil Aviation Administration of China (CAAC) <u>CHINA</u>
	8.	Mr. Pan Weijun	Professor/Dean Air Traffic Management College Civil Aviation Flight University of China <u>CHINA</u>
	9.	Mr. Li Xingchao	Engineer ATMB of CAAC <u>CHINA</u>
	10.	Mr. Chen Wenwei	Director ATMB East China Air Traffic <u>CHINA</u>
	11.	Mr. Yi Zhang	Senior Engineer <u>CHINA</u>

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	STATE/NAME		TITLE/ORGANIZATION
	12.	Mr. CUI Kaitao	Engineer The Second Research Institute of the Civil Aviation Authority of China <u>CHINA</u>
	13.	Mr. Liu Ao	Engineer The Second Research Institute of the Civil Aviation Authority of China <u>CHINA</u>
	14.	Mr. Meng Li	Associate Professor Dalian Maritime University <u>CHINA</u>
	15.	Mr. Wang rundong	Instructor Civil Aviation Flight University of China <u>CHINA</u>
4.	HONG KONG, CHINA (5)		
	16.	Mr. Wesley Yung	Acting Chief Air Traffic Control Officer Civil Aviation Department <u>HONG KONG, CHINA</u>
	17.	Mr. Franklin Li	Acting Senior Operations Officer (Support) Civil Aviation Department <u>HONG KONG, CHINA</u>

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	STATE/NAME		TITLE/ORGANIZATION
	18.	Mr. Ho Yin Chung	Evaluation Officer Civil Aviation Department <u>HONG KONG, CHINA</u>
	19.	Mr. Manfred LEUNG	Senior Accident and Safety Investigator Air Accident Investigation Authority <u>HONG KONG, CHINA</u>
	20.	Mr. Reginald LAM	Accident and Safety Investigator Air Accident Investigation Authority <u>HONG KONG, CHINA</u>
5.	FIJI (3)		
	21.	Ms. Alisi Namoro	Air Navigation Service Inspector – SAR/ATM Civil Aviation Authority of Fiji <u>FIJI</u>
	22.	Mr. Ilimeleki Navula	Controller Standard/SAR Air Traffic Management Fiji Airports <u>FIJI</u>
	23.	Mr. Joseva Vatubulitinibua	SAR/ATC Officer Nadi Aeronautical Rescue Subcentre <u>FIJI</u>

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	STATE/NAME		TITLE/ORGANIZATION
6.	FRANCE (2)		
	24.	Mr. Pierre Sylvestre-Baron	Head of ATSU/ARSC Direction Générale de l'Aviation Civile (DGAC) <u>FRANCE</u>
	25.	Mr. Philippe Plantin de Hugues	Senior Investigator BEA <u>FRANCE</u>
7.	INDIA (6)		
	26.	Mr. SLV Santhosh David	Deputy Director Directorate General of Civil Aviation of India <u>INDIA</u>
	27.	Mrs. Archana Sunil Jadoo	Assistant Director Directorate General of Civil Aviation of India <u>INDIA</u>
	28.	Mr. Rishi Shankar Jha	Assistant Director (Operations) Directorate General of Civil Aviation of India <u>INDIA</u>
	29.	Mr. Yogendra Kumar Rohilla	Joint General Manager (ATM - AIS & SAR) Airports Authority of India <u>INDIA</u>

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	STATE/NAME		TITLE/ORGANIZATION
	30.	Mr. Rajiv Kumar Bansal	Joint General Manager Airports Authority of India <u>INDIA</u>
	31.	Mr. Amit Kumar Yadav	Manager (ATM) Airports Authority of India <u>INDIA</u>
8.	INDONESIA (5)		
	32.	Mr. Ogi Gustira	Inspector of Air Navigation DGCA Indonesia, Directorate of Air Navigation <u>INDONESIA</u>
	33.	Mr. Otty Rusinarsetyo	Chief of Section of International Cooperation National Search and Rescue of Indonesia <u>INDONESIA</u>
	34.	Mr. Jon Haris Butar Butar	Analyst Cooperation National Search and Rescue of Indonesia <u>INDONESIA</u>
	35.	Mr. I Kadek Dedi Karyadi	SAR Officer BASARNAS <u>INDONESIA</u>
	36.	Mr. Bagus Ardilestian	SAR Officer BASARNAS <u>INDONESIA</u>

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	STATE/NAME		TITLE/ORGANIZATION
9.	JAPAN (6)		
	37.	Mr. Yoshitaka Oota	Chief Japan Civil Aviation Bureau <u>JAPAN</u>
	38.	Mr. Hidenori Shinada	Special assistant to the director Japan Civil Aviation Bureau <u>JAPAN</u>
	39.	Mr. Tomotaka Sato	Air Traffic Services Flight Information Officer Japan Civil Aviation Bureau <u>JAPAN</u>
	40.	Mr. Haruki Kikunaga	Air Traffic Services Flight Information Officer Japan Civil Aviation Bureau <u>JAPAN</u>
	41.	Ms. Rika Matsumoto	Air Traffic Services Flight Information Officer Japan Civil Aviation Bureau <u>JAPAN</u>
	42.	Mr. Mitsuaki Matsumoto	Air Navigation Service Safety Oversight Officer Japan Civil Aviation Bureau <u>JAPAN</u>

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	STATE/NAME		TITLE/ORGANIZATION
10.	LAO PDR (1)		
	43.	Mr. Vixay VORLACHIT	Aviation Search and Rescue Officer Air Navigation Standards Division Department of Civil Aviation of Lao PDR <u>LAO PDR</u>
11.	MALAYSIA (9)		
	44.	Mr. Md Nastain Mahazur	Deputy Director ATM Civil Aviation Authority of Malaysia <u>MALAYSIA</u>
	45.	Mr. Mani Vannan Ketena Samy	Principal Assistant Director Civil Aviation Authority of Malaysia <u>MALAYSIA</u>
	46.	Mr. Megat Ahmad Zuhri Megat Ahmad Zubir	Senior Assistant Director Civil Aviation Authority of Malaysia <u>MALAYSIA</u>
	47.	Commander Maritime Suzanna Razali Chan	Principle Assistant Director Malaysian Maritime Enforcement Agency (MMEA) <u>MALAYSIA</u>
	48.	Lieutenant Commander Maritime Wan Mohd Fuad Hanif Wan Hasan	Senior Assistant Director Malaysian Maritime Enforcement Agency <u>MALAYSIA</u>

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	STATE/NAME		TITLE/ORGANIZATION
	49.	Lieutenant Commander Maritime Siti Nur Fariha binti Jamalluddin	Senior Assistant Director Malaysian Maritime Enforcement Agency <u>MALAYSIA</u>
	50.	Mrs. Fadilah Yusof	Manager Telekom Malaysia Berhad <u>MALAYSIA</u>
	51.	Mr. Muhammad Faiz Noor Izhar	Project Manager Advance Air Traffic Systems (M) Sdn. Bhd. <u>MALAYSIA</u>
	52.	Mr. Mohd Sharil Abdul Razak	CNS-ATM Engineer Advance Air Traffic Systems (M) Sdn. Bhd. <u>MALAYSIA</u>
12.	MALDIVES (5)		
	53.	Mr. Ahmed Giyas	Senior ANS Inspector Maldives Civil Aviation Authority <u>MALDIVES</u>
	54.	Mr. Ibrahim Hameed	General Manager, ATS Maldives Airports Company Ltd <u>MALDIVES</u>
	55.	Mr. Ahmed Mohamed	Watch Manager, ATC Maldives Airports Company Ltd <u>MALDIVES</u>

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	STATE/NAME		TITLE/ORGANIZATION
	56.	Mr. Moosa Shahid Hussain	Manager, ATC Maldives Airports Company Ltd <u>MALDIVES</u>
	57.	Mr. Ismail Jiyad	Higher Air Traffic Control Officer Maldives Airports Company Ltd <u>MALDIVES</u>
13.	MYANMAR (3)		
	58.	Mr. Aung Zaw Thein	Assistant General Manager (En Route ATM) Department of Civil Aviation of Myanmar <u>MYANMAR</u>
	59.	Ms. SweSwe Aung	Assistant General Manager (HR) Department of Civil Aviation of Myanmar <u>MYANMAR</u>
	60.	Mr. Tin Maung Kyi	Assistant General Manager Department of Civil Aviation of Myanmar <u>MYANMAR</u>
14.	NEPAL (7)		
	61.	Mr. Nabin Acharya	Deputy Director, ATM Department, SAR Division Civil Aviation Authority of Nepal <u>NEPAL</u>
	62.	Mr. Sanjay Kumar	Deputy Director Civil Aviation Authority of Nepal <u>NEPAL</u>

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	STATE/NAME		TITLE/ORGANIZATION
	63.	Mr. Hiron Shah	Deputy Director Civil Aviation Authority of Nepal <u>NEPAL</u>
	64.	Mr. Dinesh Raj Ghimire	Deputy Director Civil Aviation Authority of Nepal <u>NEPAL</u>
	65.	Mr. Shreeker Prajapati	Manager Civil Aviation Authority of Nepal, TIACAO <u>NEPAL</u>
	66.	Ms. Sabita K. C.	ATS Manager Civil Aviation Authority of Nepal, TIACAO <u>NEPAL</u>
	67.	Mr. Nawa Raj Dahal	Deputy Manager Civil Aviation Authority of Nepal, TIACAO <u>NEPAL</u>
15.	NEW ZEALAND (3)		
	68.	Mr. Rodney Bracefield	Senior Search and Rescue Officer Joint Rescue Coordination Centre, New Zealand (JRCCNZ) <u>NEW ZEALAND</u>

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	STATE/NAME		TITLE/ORGANIZATION
	69.	Mr. John Simpson	Policy Advisor Airways New Zealand Training Centre <u>NEW ZEALAND</u>
	70.	Mrs. Tracy Brickles	Senior Search and Rescue Officer Rescue Coordination Centre, New Zealand <u>NEW ZEALAND</u>
16.	PAKISTAN (4)		
	71.	Mr. Syed Munawar Ali	Senior Joint Director Pakistan Civil Aviation Authority - Ops. Directorate <u>PAKISTAN</u>
	72.	Mr. Muhammad Rafiq	Senior Joint Director (ATM/SAR) Pakistan Civil Aviation Authority <u>PAKISTAN</u>
	73.	Mr. Ali Waqas	Deputy Director – Search and Rescue Pakistan Civil Aviation Authority – Ops. Directorate <u>PAKISTAN</u>
	74.	Mr. Faisal Sajjad	Assistant Director, Airworthiness Inspector Pakistan Civil Aviation Authority – Airworthiness Directorate <u>PAKISTAN</u>

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17.	PAPUA NEW GUINEA (3)		
	75.	Ms. Elizabeth Wohengu	Search and Rescue Inspector Civil Aviation Safety Authority of Papua New Guinea <u>PAPUA NEW GUINEA</u>
	76.	Mr. Paul Kafafi	Supervisor Air Traffic Service NiuSky Pacific Limited <u>PAPUA NEW GUINEA</u>
	77.	Mr. Daniel Elisa	RCC Coordinator NiuSky Pacific Limited <u>PAPUA NEW GUINEA</u>
18.	PHILIPPINES (10)		
	78.	Ms. Alicia Bagot	Acting Division Chief AIS Civil Aviation Training Center Civil Aviation Authority of the Philippines <u>PHILIPPINES</u>
	79.	Ms. Jesseelyn Heje	Asst. Division Chief – AIS/MAPS Division Air Traffic Service Civil Aviation Authority of the Philippines <u>PHILIPPINES</u>
	80.	Mr. Reonel Cordova	Aviation Services Safety Inspector Civil Aviation Authority of the Philippines <u>PHILIPPINES</u>

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	STATE/NAME		TITLE/ORGANIZATION
	81.	Mr. Braulio I. Meneses	Air Traffic Management Officer/Facility-In-Charge Philippine Aeronautical Rescue Coordination Center (PARCC) <u>PHILIPPINES</u>
	82.	Ms. Joyce Santos	Air Traffic Management Officer IV Air Traffic Service Civil Aviation Authority of the Philippines <u>PHILIPPINES</u>
	83.	Ms. Maria Jazel Collada	Air Traffic Management Officer Air Traffic Service Civil Aviation Authority of the Philippines <u>PHILIPPINES</u>
	84.	MA. Shiela Cuesta	Air Traffic Management Officer, Air Traffic Service - Civil Aviation Authority of the Philippines <u>PHILIPPINES</u>
	85.	Ms. Eleonor Daileg	Air Traffic Management Officer, Civil Aviation Authority of the Philippines (CAAP) <u>PHILIPPINES</u>
	86.	Ms. Patrisha Lorraine Ching	Air Traffic Management Officer Civil Aviation Authority of the Philippines (CAAP) <u>PHILIPPINES</u>

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	STATE/NAME		TITLE/ORGANIZATION
	87.	Mr. Christian Earl Caballo	Air Traffic Management Officer I Civil Aviation Authority of the Philippines <u>PHILIPPINES</u>
19.	REPUBLIC OF KOREA (3)		
	88.	Mr. Yoo, Dong-seon	Assistant Director Air Traffic Management Office Ministry of Land, Infrastructure and Transport <u>REPUBLIC OF KOREA</u>
	89.	Mr. Jaeho Shin	Assistant Director Korea Office of Civil Aviation <u>REPUBLIC OF KOREA</u>
	90.	Mr. Min-Hyeon KIM	SAR Division Korea Coast Guard <u>REPUBLIC OF KOREA</u>
20.	SINGAPORE (7)		
	91.	Mr. Tai Kit	Head ATC Specialist (Search and Rescue/Contingency Planning) Air Traffic Services Division Civil Aviation Authority of Singapore <u>SINGAPORE</u>
	92.	Mr. Joel Tan	Senior Assistant Director (International Relations) Ministry of Transport Singapore <u>SINGAPORE</u>

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	STATE/NAME		TITLE/ORGANIZATION
	93.	Mr. Chan Guolong	Senior Assistant Director (International Relations) Ministry of Transport Singapore <u>SINGAPORE</u>
	94.	Ms. Choo Meijing	Head (ATM-AP) Civil Aviation Authority of Singapore <u>SINGAPORE</u>
	95.	Mr. Tan Chee Han	Senior Air Traffic Control Manager (ATM-SEA2) Civil Aviation Authority of Singapore <u>SINGAPORE</u>
	96.	Mr. Muhammad Hafidz bin Ja'afar	Master Air Traffic Control Officer (SAR/CP) Civil Aviation Authority of Singapore <u>SINGAPORE</u>
	97.	Ms. Tan Shuyi Neptina	Lead Air Traffic Control Officer Civil Aviation Authority of Singapore <u>SINGAPORE</u>
21.	SRI LANKA (4)		
	98.	Mr. Thilina Warnasinghe	Senior Civil Aviation Inspector Civil Aviation Authority of Sri Lanka <u>SRI LANKA</u>
	99.	Mr. Cecil Kiriieldeniya	Senior Manager ATC-SAR Airport & Aviation Services (Sri Lanka) Ltd <u>SRI LANKA</u>

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	STATE/NAME		TITLE/ORGANIZATION
	100.	Ms. Priyasha Hettiarachchi	Air Traffic Controller Airport & Aviation Services (Sri Lanka) Ltd <u>SRI LANKA</u>
	101.	Mr. Randika Anuranga	Air Traffic Controller Airport & Aviation Services (Sri Lanka) Ltd <u>SRI LANKA</u>
22.	THAILAND (8)		
	102.	Mr. Sakpon Chaimongkol	Senior Officer of Search and Rescue Oversight Standards Division The Civil Aviation Authority of Thailand <u>THAILAND</u>
	103.	Ms. Chalintra Thanakankorn	Senior Officer of Search and Rescue Oversight Standards Division The Civil Aviation Authority of Thailand <u>THAILAND</u>
	104.	Mr. Punlop Sungsilert	Chief of Technical and Standard Group Office of of the Search and Rescue Comission Ministry of Transport <u>THAILAND</u>
	105.	Mr. Patompong Wongsakda	Transport Technical Officer, Practitioner Level Office of the Search and Rescue Commission <u>THAILAND</u>

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	STATE/NAME		TITLE/ORGANIZATION
	106.	Ms. Phojchanee Saelim	Transport Technical Officer, Practitioner Level Office of the Search and Rescue Commission <u>THAILAND</u>
	107.	Ms. Awassada Phopratab	Transport Technical Officer Office of the Search and Rescue Commission <u>THAILAND</u>
	108.	Ms. Phattaraporn Sarikkha	Transport Technical Officer, Practitioner Level Office of the Search and Rescue Commission <u>THAILAND</u>
	109.	Mr. Thanaset Suwannajan	Transport Technical Officer, Practitioner Level Office of the Search and Rescue Commission <u>THAILAND</u>
23.	TIMOR LESTE (1)		
	110.	Mr. Jose Nivio De Fatima Soares	Chief Department of Meteorology and SAR Civil Aviation Authority of Timor-Leste <u>TIMOR LESTE</u>
24.	UNITED STATES OF AMERICA (4)		
	111.	Mr. Michael Watkins	Senior Air Traffic Representative, Asia Pacific Federal Aviation Administration <u>SINGAPORE</u>

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	STATE/NAME		TITLE/ORGANIZATION
	112.	Mr. Shayne Campbell	Senior Air Traffic Representative, Asia Pacific Federal Aviation Administration <u>SINGAPORE</u>
	113.	Mr. David Edwards	U.S. Coast Guard – Search and Rescue United States Coast Guard <u>UNITED STATES OF AMERICA</u>
	114.	Ms. Jennifer Conklin	Search and Rescue Manager U.S. Coast Guard <u>UNITED STATES OF AMERICA</u>
25.	VIET NAM (6)		
	115.	Mr. Do Quang Huy	Official Civil Aviation Authority of Vietnam (CAAV) <u>VIET NAM</u>
	116.	Mr. Dinh Cong Nguyen	Deputy Director General Viet Nam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>
	117.	Mr. Khanh Nguyen Nang	Manager, Division of SAR Operations, Aviation Search & Rescue Coordination Center (RCC) Vietnam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>

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	STATE/NAME		TITLE/ORGANIZATION
	118.	Mr. Mai Hong Quan	Safety audit Manager Vietnam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>
	119.	Ms. Minh Khan Nghiem Thi	International Relations Official Vietnam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>
	120.	Mr. Hanh Hoa Bui	Official Vietnam Air Traffic Management Corporation (VATM) <u>VIET NAM</u>
26.	COSPAS-SARSAT PROGRAMME (3)		
	121.	Mr. Steven Lett	Head of Secretariat International Cospas-Sarsat Programme <u>CANADA</u>
	122.	Ms. Cheryl Bertoia	Deputy Head of Secretariat Principal Operations Officer International Cospas-Sarsat Programme <u>CANADA</u>
	123.	Mr. Arnaud Sindou	Operation Officer International Cospas-Sarsat Programme <u>CANADA</u>

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	STATE/NAME		TITLE/ORGANIZATION
27.	IATA (8)		
	124.	Mr. John Moore	Assistant Director, Safety and Flight Operations, ASPAC IATA <u>SINGAPORE</u>
	125.	Mr. Nobumichi Akagi	Staff Director IATA / Japan Airlines (JAL) <u>JAPAN</u>
	126.	Mr. Peter Gear	Operations Development Manager Cathay Pacific Airways (Hong Kong) <u>HONG KONG, CHINA</u>
	127.	Mr Sachie Ito	Manager Japan Air lines <u>JAPAN</u>
	128.	Mr. Leonard Wee	Head of Operations Singapore Airlines <u>SINGAPORE</u>
	129.	Mr. Steve Kelly	Manager Flight Operations Regulatory Affairs ATA – Air New Zealand <u>NEW ZEALAND</u>

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	STATE/NAME		TITLE/ORGANIZATION
	130.	Mr. Manu Bhasin	Associate Director Flight Operations InterGlobe Aviation Ltd. 'Indigo' <u>INDIA</u>
	131.	Mr. Pierre Frenay	Chief Pilot IATA <u>UNITED STATES OF AMERICA</u>
28.	ICAO (4)		
	132.	Mr. Shane Sumner	Regional Officer, Air Traffic Management ICAO Asia and Pacific Regional Office <u>THAILAND</u>
	133.	Mr. Hiroyuki Takata	Regional Officer, Air Traffic Management ICAO Asia and Pacific Regional Office <u>THAILAND</u>
	134.	Mr. Weng Kit Ying	Air Traffic Management Officer ICAO Asia and Pacific Regional Office <u>THAILAND</u>
	135.	Ms. Prakayphet Chalayonnawin	Programme Analysis Associate, Air Traffic Management ICAO Asia and Pacific Regional Office <u>THAILAND</u>

LIST OF WORKING PAPERS AND INFORMATION PAPERS

WORKING PAPERS

NUMBER	AGENDA	TITLE	PRESENTED BY
WP01	1	Provisional Agenda	Secretariat
WP02	2	Relevant Meetings Outcomes	Secretariat
WP03	3	ICAO Update on LADR	Secretariat
WP/04	3	GADSS, the ELT(DT), and a Model Template/Letter for Communication with SAR Authorities	Cospas-Sarsat
WP05	3	Status of the Cospas-Sarsat Programme	Cospas-Sarsat Secretariat
WP/06	4	BASARNAS – CAAM SAREX	Indonesia and Malaysia
WP07	4	Regional Air Navigation Plan Update	Secretariat
WP08	4	Regional SAR Status	Secretariat
WP09	6	Asia/Pacific SAR Plan Update	Secretariat
WP10	7	APANPIRG ATM and Airspace Safety Deficiencies in the SAR Field	Secretariat
WP11	7	Aeronautical SAR Contact List	Secretariat
WP12	9	APSAR/WG Terms of Reference and Task List	Secretariat

INFORMATION PAPERS

NUMBER	AGENDA	TITLE	PRESENTED BY
IP01	-	Provisional List of Working Papers and Information Papers	Secretariat
IP/02	3	Cospas-Sarsat False Alerts	New Zealand
IP/03	3	Sharing the Experience of Tokyo RCC	Japan
IP/04	4	Establishment of Malaysia's National Preventative SAR Day	Malaysia
IP/05	4	<i>withdrawn</i>	-
IP/06	4	Search and Rescue System of Pakistan	Pakistan
IP/07	5	SAR Promotional Programmes	New Zealand

PRESENTATIONS

NUMBER	AGENDA	TITLE	PRESENTED BY
-	-	-	-

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FLIMSIES

NUMBER	AGENDA	TITLE	PRESENTED BY
Flimsy 1	5	GADSS Workshop Outcomes	Secretariat

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**REGIONAL SAR PLAN MONITORING AND REPORTING FORM
SAR PERFORMANCE INDICATORS**

Following is a bank of indicators based on the Asia/Pacific Plan's performance improvement section (which should be read in conjunction with these questions), that can be used to assess whether an administration is either compliant or not and to internally evaluate their implementation status of the Asia/Pacific SAR Plan. Using the drop down menu for each of the 41 elements, please indicate implementation status with either 0 (not implemented), or 0.5 (50% implemented - note - other partial implementation may be indicated such as 0.1 = 10%) or 1 (fully implemented).

Indicate whether your Administration has:		Afghanistan	Australia	Bangladesh	Bhutan	Brunei	Cambodia	China	Hong Kong, China	Macao, China	Cook Islands	DPRK	Fiji	French Polynesia	India	Indonesia	Japan
1	Enacted legislation that incorporates or is aligned to applicable international Conventions	1	1.0	1.0	0.5	1.0	1.0	1.0	1.0	0.5	0.0	1.0	0.5	1.0	1.0	1.0	1.0
2	Unless delegated, established an entity that provides H24 SAR services within its area of responsibility/SRR	1	1.0	1.0	0.5	1.0	0.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
3	Established a national SAR committee	1	1.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
4	Empowered SAR Mission Coordinators with the authority to adequately carry out their responsibilities	1	1.0	1.0	0.0	1.0	0.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
5	Established an Administrative Single Point of Contact for SAR (ASPOCS) for non-urgent, administrative matters	1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.5	0.0	1.0	1.0	1.0	1.0	1.0	1.0
6	Conducted studies to integrate aviation and maritime SAR, and as far as practicable, civil and military activities	1	1.0	1.0	1.0	0.5	1.0	1.0	1.0	0.5	1.0	0.5	1.0	1.0	1.0	1.0	1.0
7	Conducted studies to align, as far as practicable, aeronautical and maritime SRRs, and SRRs and FIRs	1	1.0	1.0	1.0	0.5	0.5	1.0	1.0	0.5	1.0	0.5	1.0	1.0	1.0	1.0	1.0
8	Established a single State SAR Plan	1	1.0	1.0	0.5	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.8
9	Established aerodrome emergency plans that provide for co-operation and co-ordination with RCCs	0.5	1.00	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
10	Established SAR agreements with States having adjoining SRRs or FIRs	0.5	0.95	0.0	0.5	1.0	1.0	0.5	0.5	1.0	0.9	1.0	0.5	0.0	0.5	0.9	0.5
11	Provided up to date cross-border information on SAR capability to adjoining States	0	0.8	1.0	0.0	1.0	1.0	0.8	1.0	1.0	0.0	0.5	0.5	1.0	0.5	1.0	0.5
12	Pre-arranged procedures for cross-border SAR responses	1	0.95	0.0	0.0	1.0	1.0	0.6	0.5	1.0	1.0	0.5	0.5	0.0	0.5	1.0	0.5
13	Established RCC plans for response to Mass Rescue Operations (MROs) integrated with national disaster plans	0.5	0.90	0.5	0.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0
14	Established operational plans and procedures for SRUs, provision of support, communication and reporting	0.5	1.00	1.0	0.5	1.0	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.5
15	Established SAR Alerting procedures which are tested, integrated and include civil/military protocols	0.5	1.0	0.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
16	Provided a fully equipped RCC of sufficient size with adequate provision for operational positions and human factors	0.5	1.0	1.0	0.5	0.5	0.5	1.0	1.0	1.0	1.0	0.5	1.0	1.0	1.0	1.0	1.0
17	Provided adequate supervisory ATC resources to allow timely SAR alerts and information to RCCs	0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.5	1.0	1.0	1.0	1.0	1.0
18	Provided sufficient RCC staffing	0	1.0	1.0	0.5	0.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
19	Provided a sufficient number of trained specialist RCC officers including SMCs and A/SMCs	0	1.0	0.1	0.0	0.5	0.5	0.8	1.0	1.0	1.0	0.5	1.0	1.0	1.0	1.0	1.0
20	Availability of a pool of RCC support staff who are familiar with RCC operations, but not trained as coordinators	0	1.0	0.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	1.0	1.0	1.0
21	Developed SAR personnel position descriptions detailing responsibilities and eligibility criteria	1	1.0	1.0	0.5	1.0	0.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
22	Developed a comprehensive training programme that includes SAR training for SAR Coordinators and SRU staff	0.5	1.0	1.0	0.0	0.5	0.5	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.8
23	Facilitated RCC staff to be proficient in the English language	1	1.0	1.0	1.0	1.0	0.5	1.0	1.0	1.0	1.0	0.5	1.0	1.0	1.0	1.0	1.0
24	Facilitated a programme of regular liaison visits between relevant RCCs, ATC units and airline operating centres	0	0.7	0.5	0.5	0.5	0.5	0.7	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
25	Established additional oceanic SAR capability as far as practicable to ensure a timely and adequate SAR response	1	1.0	1.0	1.0	0.0	0.5	1.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0
26	Established sufficient SRU capabilities (crews, availability, military assets, communications, authority, etc.)	0.5	1.0	1.0	0.0	0.5	1.0	0.8	1.0	1.0	0.0	0.5	1.0	1.0	1.0	1.0	1.0
27	Established procedures and necessary infrastructure to coordinate distress beacon alert responses	0	1.0	0.5	0.0	0.5	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0	1.0	1.0	1.0
28	Established a reliable distress beacon registration system	0	1.0	1.0	0.0	0.0	0.5	1.0	1.0	1.0	0.0	0.5	1.0	1.0	1.0	1.0	1.0
29	Planned and prepared for the implementation of next generation beacons	0	1.0	1.0	0.0	0.0	0.5	1.0	0.5	0.5	1.0	0.5	0.5	0.5	0.5	1.0	1.0
30	Established an appropriate nationwide means of disposal for old distress beacons	0	0.5	1.0	0.0	0.0	1.0	1.0	1.0	0.0	0.0	0.5	1.0	0.0	1.0	0.4	1.0
31	Established contingency facilities, or procedures for the temporary delegation of SAR to another body or State	1	1.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0	0.5	0.0	1.0	1.0
32	Established a centralised information source publishing all AIP information required on SAR	1	0.9	1.0	1.0	1.0	0.5	1.0	1.0	0.5	0.0	0.5	1.0	1.0	1.0	1.0	1.0
33	Established an Internet-based SAR information sharing system	1	1.0	0.0	0.0	0.0	1.0	0.5	1.0	0.5	0.0	0.5	1.0	0.0	0.5	1.0	0.5
34	Established systems for the maximum practicable cooperation between State entities for information when required	1	1.0	0.0	0.0	0.5	1.0	1.0	1.0	1.0	0.0	0.5	1.0	1.0	1.0	1.0	1.0
35	Developed and maintained a current, comprehensive electronic list of State SAR Facilities, SAR Equipment, and SRUs	0.5	1.0	0.0	0.0	1.0	0.5	0.8	0.0	1.0	0.0	0.5	1.0	1.0	1.0	1.0	1.0
36	Established an Internet-based SAR Library, or cooperate by contributing to an Internet-based Asia/Pacific resource	0.5	1.0	0.0	0.0	0.0	0.5	0.6	1.0	0.0	1.0	0.0	0.5	0.5	1.0	0.6	0.5
37	Provided each RCC and SAR Authority with ready access to a current copy of SAR reference documents	1	1.0	1.0	0.3	0.5	0.5	0.8	1.0	1.0	0.0	0.5	1.0	1.0	1.0	1.0	1.0
38	Conducted regular SAREX to test and evaluate coordination procedures, data and information sharing and SAR responses	0.5	0.9	0.5	0.0	0.5	0.5	1.0	1.0	1.0	0.0	0.5	1.0	1.0	1.0	1.0	0.7
39	Implemented SAR System Improvement and Assessment measures, including Safety Management and QA systems	0	0.9	0.0	0.0	0.5	1.0	0.6	1.0	1.0	0.0	0.5	1.0	1.0	1.0	0.5	1.0
40	Conducted an annual or more frequent analysis of their current State SAR system to identify specific gaps in capability	0.5	1.0	0.5	0.5	0.5	0.5	1.0	1.0	1.0	0.0	0.5	1.0	1.0	1.0	1.0	1.0
41	Conducted SAR promotional programs	0	1.0	0.0	0.0	0.0	0.5	0.8	1.0	0.5	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Total (of 41)		23.0	39.5	26.6	13.8	26.0	31.0	37.3	38.5	35.0	17.9	27.0	38.0	33.5	37.5	39.4	37.3
%		56%	96%	65%	34%	63%	76%	91%	94%	85%	44%	66%	93%	82%	91%	96%	91%

*2022 Update - Higher than previous year

*2022 Update - Less than previous year

*2022 Update - No Change

* Carried over from pre-2019 reporting process. No reports against Regional SAR Plan Monitoring and Reporting Form Received

**REGIONAL SAR PLAN MONITORING AND REPORTING FORM
SAR PERFORMANCE INDICATORS**

Following is a bank of indicators based on the Asia/Pacific Plan's performance improvement section (which should be read in conjunction with these questions), that can be used to assess whether an administration is either compliant or not and to internally evaluate their implementation status of the Asia/Pacific SAR Plan. Using the drop down menu for each of the 41 elements, please indicate implementation status with either 0 (not implemented), or 0.5 (50% implemented - note - other partial implementation may be indicated such as 0.1 = 10%) or 1 (fully implemented).

		Kiribati	Lao PDR	Malaysia	Maldives	Marshall Islands	Micronesia	Mongolia	Myanmar	Nauru	Nepal	New Caledonia	New Zealand	Pakistan	Palau	Papua New Guinea	Philippines
Indicate whether your Administration has:																	
1	Enacted legislation that incorporates or is aligned to applicable international Conventions	0.0	1.0	1	1	0	0	1.0	1.0		0.7	1.0	1.0	1.0	0	1.0	1.0
2	Unless delegated, established an entity that provides H24 SAR services within its area of responsibility/SRR	0.5	1.0	1	1	1	1	1.0	1.0		0.5	1.0	1.0	1.0	1	1.0	1.0
3	Established a national SAR committee	1.0	1.0	1	1	0	0	1.0	1.0		1.0	1.0	1.0	1.0	0	0.5	1.0
4	Empowered SAR Mission Coordinators with the authority to adequately carry out their responsibilities	0.5	1.0	1	0.5	0	0	1.0	1.0		0.5	1.0	1.0	1.0	0	0.5	1.0
5	Established an Administrative Single Point of Contact for SAR (ASPOCS) for non-urgent, administrative matters	1.0	1.0	1	0	0	0	1.0	1.0		1.0	1.0	1.0	1.0	0	1.0	1.0
6	Conducted studies to integrate aviation and maritime SAR, and as far as practicable, civil and military activities	0.0	0.5	1	1	0	0	1.0	1.0		1.0	1.0	1.0	1.0	0	1.0	1.0
7	Conducted studies to align, as far as practicable, aeronautical and maritime SRRs, and SRRs and FIRs	0.0	0.5	0	0.5	0	0	0.0	1.0		0.5	0.5	1.0	1.0	0	1.0	0.5
8	Established a single State SAR Plan	0.5	1.0	1	1	0	0	1.0	0.5		0.2	1.0	1.0	1.0	0	0.0	1.0
9	Established aerodrome emergency plans that provide for co-operation and co-ordination with RCCs	1.0	0.5	1	0	0	0	1.0	0.5		0.5	1.0	1.0	1.0	0	1.0	0.8
10	Established SAR agreements with States having adjoining SRRs or FIRs	0.5	0.5	0.5	0.5	1	1	1.0	0.5		0.0	0.66	0.9	0.0	1	0.5	0.8
11	Provided up to date cross-border information on SAR capability to adjoining States	0.5	0.5	0.5	0.5	1	1	0.5	0.0		0.5	0.0	1.0	0.0	1	0.0	1.0
12	Pre-arranged procedures for cross-border SAR responses	0.5	0.5	0.5	0.5	1	1	1.0	1.0		0.0	0.0	1.0	0.5	1	0.5	1.0
13	Established RCC plans for response to Mass Rescue Operations (MROs) integrated with national disaster plans	0.0	0.0	1	1	0	0	0.5	0.5		0.5	0.0	1.0	0.5	0	0.5	0.8
14	Established operational plans and procedures for SRUs, provision of support, communication and reporting	1.0	1.0	1	1	0	0	1.0	1.0		0.5	1.0	0.8	1.0	0	0.5	0.7
15	Established SAR Alerting procedures which are tested, integrated and include civil/military protocols	0.0	0.5	1	1	0	0	1.0	0.5		0.8	1.0	1.0	1.0	0	0.5	1.0
16	Provided a fully equipped RCC of sufficient size with adequate provision for operational positions and human factors	0.0	1.0	1	1	0	0	1.0	1.0		0.7	1.0	1.0	1.0	0	0.5	0.3
17	Provided adequate supervisory ATC resources to allow timely SAR alerts and information to RCCs	0.5	1.0	1	1	0	0	1.0	1.0		1.0	1.0	1.0	1.0	0	1.0	1.0
18	Provided sufficient RCC staffing	0.5	1.0	1	1	0	0	1.0	1.0		0.5	1.0	1.0	1.0	0	1.0	0.7
19	Provided a sufficient number of trained specialist RCC officers including SMCs and A/SMCs	0.0	0.5	1	1	0	0	1.0	1.0		0.3	1.0	1.0	1.0	0	0.5	1.0
20	Availability of a pool of RCC support staff who are familiar with RCC operations, but not trained as coordinators	0.0	0.5	1	1	0	0	0.5	1.0		0.5	1.0	1.0	1.0	0	0.5	1.0
21	Developed SAR personnel position descriptions detailing responsibilities and eligibility criteria	0.5	0.5	1	1	0	0	1.0	0.5		0.4	1.0	1.0	1.0	0	0.5	1.0
22	Developed a comprehensive training programme that includes SAR training for SAR Coordinators and SRU staff	0.5	0.5	1	0.5	0	0	1.0	1.0		0.7	1.0	1.0	1.0	0	0.5	1.0
23	Facilitated RCC staff to be proficient in the English language	0.5	1.0	1	1	1	1	0.5	1.0		0.0	1.0	1.0	1.0	1	0.5	1.0
24	Facilitated a programme of regular liaison visits between relevant RCCs, ATC units and airline operating centres	0.0	0.5	0.5	0	0	0	0.5	1.0		0.5	0.5	0.8	1.0	0	0.5	0.7
25	Established additional oceanic SAR capability as far as practicable to ensure a timely and adequate SAR response	0.0	1.0	0.5	1	1	1	0.0	1.0		1.0	1.0	1.0	1.0	1	1.0	0.5
26	Established sufficient SRU capabilities (crews, availability, military assets, communications, authority, etc.)	0.0	0.5	1	1	0	0	1.0	1.0		0.5	1.0	0.9	1.0	0	0.5	1.0
27	Established procedures and necessary infrastructure to coordinate distress beacon alert responses	0.0	1.0	1	1	1	1	1.0	1.0		0.7	1.0	1.0	1.0	1	0.5	1.0
28	Established a reliable distress beacon registration system	0.0	1.0	0.5	0.5	0	0	1.0	0.5		1.0	1.0	1.0	1.0	0	0.5	1.0
29	Planned and prepared for the implementation of next generation beacons	0.0	0.5	0	0	0	0	0.5	0.0		0.4	0.5	1.0	1.0	0	0.0	0.5
30	Established an appropriate nationwide means of disposal for old distress beacons	0.0	1.0	0	0	0	0	0.0	0.0		1.0	0.0	0.9	1.0	0	0.0	1.0
31	Established contingency facilities, or procedures for the temporary delegation of SAR to another body or State	0.5	0.0	1	1	0	0	0.0	0.0		0.0	0.0	0.5	1.0	0	0.5	0.7
32	Established a centralised information source publishing all AIP information required on SAR	0.0	1.0	1	1	0	0	1.0	1.0		1.0	1.0	1.0	1.0	0	0.5	1.0
33	Established an Internet-based SAR information sharing system	0.0	0.0	0	0	0	0	1.0	0.0		0.6	0.5	0.9	1.0	0	0.5	1.0
34	Established systems for the maximum practicable cooperation between State entities for information when required	0.0	0.0	0.5	0.5	0	0	1.0	0.5		0.5	1.0	1.0	1.0	0	0.5	1.0
35	Developed and maintained a current, comprehensive electronic list of State SAR Facilities, SAR Equipment, and SRUs	0.0	0.0	0.5	1	0	0	0.0	0.5		0.8	0.5	0.9	0.5	0	0.5	1.0
36	Established an Internet-based SAR Library, or cooperate by contributing to an Internet-based Asia/Pacific resource	0.0	0.0	0	0	0	0	0.0	0.0		0.3	0.0	1.0	1.0	0	0.0	0.5
37	Provided each RCC and SAR Authority with ready access to a current copy of SAR reference documents	0.0	0.5	1	1	0	0	0.5	0.0		0.5	1.0	1.0	1.0	0	1.0	1.0
38	Conducted regular SAREX to test and evaluate coordination procedures, data and information sharing and SAR responses	0.0	0.0	1	1	0	0	1.0	1.0		0.7	1.0	0.6	0.5	0	0.0	0.7
39	Implemented SAR System Improvement and Assessment measures, including Safety Management and QA systems	0.0	0.0	1	0	0	0	0.5	0.0		0.5	1.0	0.75	0.5	0	0.5	1.0
40	Conducted an annual or more frequent analysis of their current State SAR system to identify specific gaps in capability	0.0	0.0	0.5	1	0	0	1.0	0.5		0.3	0.5	1.0	0.5	0	0.5	1.0
41	Conducted SAR promotional programs	0.5	0.0	0.5	1	0	0	0.0	0.5		0.5	0.0	0.75	1.0	0	0.0	1.0
Total (of 41)		10.5	23.5	31.0	29	7.0	7.0	30.0	27.5		23.1	30.7	38.7	36.0	7.0	22.0	36.2
%		26%	57%	76%	71%	17%	17%	73%	67%	0%	56%	75%	94%	88%	17%	54%	88%

*2022 Update - Higher than previous year
*2022 Update - Less than previous year
*2022 Update - No Change

* Carried over from pre-2019 reporting process. No reports against Regional SAR Plan Monitoring and Reporting Form Received

**REGIONAL SAR PLAN MONITORING AND REPORTING FORM
SAR PERFORMANCE INDICATORS**

Following is a bank of indicators based on the Asia/Pacific Plan's performance improvement section (which should be read in conjunction with these questions), that can be used to assess whether an administration is either compliant or not and to internally evaluate their implementation status of the Asia/Pacific SAR Plan. Using the drop down menu for each of the 41 elements, please indicate implementation status with either 0 (not implemented), or 0.5 (50% implemented - note - other partial implementation may be indicated such as 0.1 = 10%) or 1 (fully implemented).

Indicate whether your Administration has:		Republic of Korea	Samoa	Singapore	Solomon Islands	Sri Lanka	Timor Leste	Tonga	Thailand	Tuvalu	United States	Vanuatu	Viet nam
1	Enacted legislation that incorporates or is aligned to applicable international Conventions	1.0		1.0		1.0		1.0	1.0		1.0		1.0
2	Unless delegated, established an entity that provides 24-hour SAR services within its area of responsibility/SRR	1.0		1.0		1.0		1.0	1.0		1.0		1.0
3	Established a national SAR committee	1.0		1.0		1.0		1.0	1.0		1.0		1.0
4	Empowered SAR Mission Coordinators with the authority to adequately carry out their responsibilities	1.0		1.0		1.0		1.0	0.6		1.0		1.0
5	Established an Administrative Single Point of Contact for SAR (ASPOCS) for non-urgent, administrative matters	1.0		1.0		1.0		1.0	1.0		1.0		1.0
6	Conducted studies to integrate aviation and maritime SAR, and as far as practicable, civil and military activities	1.0		1.0		1.0		0.5	0.8		1.0		1.0
7	Conducted studies to align, as far as practicable, aeronautical and maritime SRRs, and SRRs and FIRs	0.5		1.0		1.0		0.5	1.0		1.0		1.0
8	Established a single State SAR Plan	0.8		1.0		0.7		1.0	0.5		1.0		1.0
9	Established aerodrome emergency plans that provide for co-operation and co-ordination with RCCs	1.0		1.0		0.8		0.5	1.0		1.0		1.0
10	Established SAR agreements with States having adjoining SRRs or FIRs	0.7		1.0		0.8		1.0	0.8		0.7		0.5
11	Provided up to date cross-border information on SAR capability to adjoining States	1.0		1.0		1.0		1.0	1.0		1.0		1.0
12	Pre-arranged procedures for cross-border SAR responses	1.0		1.0		0.8		0.5	0.8		1.0		1.0
13	Established RCC plans for response to Mass Rescue Operations (MROs) integrated with national disaster plans	1.0		1.0		0.6		0.5	1.0		1.0		0.5
14	Established operational plans and procedures for SRUs, provision of support, communication and reporting	0.8		1.0		0.5		0.5	0.5		1.0		1.0
15	Established SAR Alerting procedures which are tested, integrated and include civil/military protocols	1.0		1.0		0.7		1.0	0.5		1.0		1.0
16	Provided a fully equipped RCC of sufficient size with adequate provision for operational positions and human factors	1.0		1.0		0.7		0.5	0.8		1.0		1.0
17	Provided adequate supervisory ATC resources to allow timely SAR alerts and information to RCCs	1.0		1.0		1.0		0.5	1.0		1.0		1.0
18	Provided sufficient RCC staffing	1.0		1.0		0.9		0.5	0.5		1.0		1.0
19	Provided a sufficient number of trained specialist RCC officers including SMCs and A/SMCs	1.0		1.0		0.9		0.5	0.5		1.0		0.5
20	Availability of a pool of RCC support staff who are familiar with RCC operations, but not trained as coordinators	1.0		1.0		1.0		1.0	1.0		1.0		1.0
21	Developed SAR personnel position descriptions detailing responsibilities and eligibility criteria	1.0		1.0		1.0		0.5	0.7		1.0		1.0
22	Developed a comprehensive training programme that includes SAR training for SAR Coordinators and SRU staff	1.0		1.0		0.9		1.0	0.7		1.0		1.0
23	Facilitated RCC staff to be proficient in the English language	1.0		1.0		1.0		0.5	1.0		1.0		0.5
24	Facilitated a programme of regular liaison visits between relevant RCCs, ATC units and airline operating centres	1.0		1.0		0.7		1.0	1.0		1.0		1.0
25	Established additional oceanic SAR capability as far as practicable to ensure a timely and adequate SAR response	1.0		1.0		0.7		1.0	0.8		1.0		1.0
26	Established sufficient SRU capabilities (crews, availability, military assets, communications, authority, etc.)	1.0		1.0		0.6		1.0	0.5		1.0		1.0
27	Established procedures and necessary infrastructure to coordinate distress beacon alert responses	1.0		1.0		1.0		0.5	1.0		1.0		1.0
28	Established a reliable distress beacon registration system	1.0		1.0		1.0		0.5	1.0		1.0		1.0
29	Planned and prepared for the implementation of next generation beacons	1.0		1.0		0.6		0.5	1.0		1.0		1.0
30	Established an appropriate nationwide means of disposal for old distress beacons	0.0		1.0		0.5		0.0	0.5		1.0		1.0
31	Established contingency facilities, or procedures for the temporary delegation of SAR to another body or State	0.8		1.0		0.4		0.5	0.5		1.0		1.0
32	Established a centralised information source publishing all AIP information required on SAR	1.0		1.0		1.0		0.5	0.8		1.0		1.0
33	Established an Internet-based SAR information sharing system	0.8		1.0		0.0		0.5	0.8		1.0		1.0
34	Established systems for the maximum practicable cooperation between State entities for information when required	1.0		1.0		0.7		1.0	0.5		1.0		1.0
35	Developed and maintained a current, comprehensive electronic list of State SAR Facilities, SAR Equipment, and SRUs	1.0		1.0		0.8		0.5	0.7		1.0		1.0
36	Established an Internet-based SAR Library, or cooperate by contributing to an Internet-based Asia/Pacific resource	1.0		1.0		1.0		0.0	0.8		1.0		0.5
37	Provided each RCC and SAR Authority with ready access to a current copy of SAR reference documents	1.0		1.0		1.0		1.0	1.0		1.0		1.0
38	Conducted regular SAREX to test and evaluate coordination procedures, data and information sharing and SAR responses	1.0		1.0		0.9		1.0	0.8		1.0		1.0
39	Implemented SAR System Improvement and Assessment measures, including Safety Management and QA systems	0.5		1.0		0.5		0.5	0.5		1.0		1.0
40	Conducted an annual or more frequent analysis of their current State SAR system to identify specific gaps in capability	0.5		1.0		0.6		0.5	1.0		1.0		1.0
41	Conducted SAR promotional programs	1.0		1.0		0.6		1.0	1.0		1.0		1.0
Total (of 41)		37.4	0.0	41.0	0.0	32.9	0.0	28.5	32.9	0.0	40.7	0.0	38.5
%		91%	0%	100%	0%	80%	0%	70%	80%	0%	99%	0%	94%

*2022 Update - Higher than previous year

*2022 Update - Less than previous year

*2022 Update - No Change

* Carried over from pre-2019 reporting process. No reports against Regional SAR Plan Monitoring and Reporting Form Received

SURVEY OF STATE READINESS FOR AUTONOMOUS DISTRESS TRACKING (ADT)

(Annex 6 Operation of Aircraft Part 1 International Commercial Air Transport – Aeroplanes section 6.18)

The survey questions in the following pages resulted from the discussion outcomes of the Seventh Meeting of the Asia/Pacific SAR Working Group (APSAR/WG/7, 24 to 27 May 2022), and are intended to:

1. Gauge State readiness for ADT alerts; and
2. Serve as a checklist of considerations for regulatory authorities, SAR services and Air Traffic Service Units (ATSUs) to support their preparation for the reception and handling of ADT alerts.

APAC Administrations are requested to ensure the survey is circulated to the following entities, and their responses provided in a consolidated State response to the survey:

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

States are requested to provide their consolidated response to the ICAO Asia/Pacific Regional Office (apac@icao.int) by **not later than 07 October 2022**, in order that regional readiness for ADT may be assessed by the 10th Meeting of the Air Traffic Management Sub-Group of APANPIRG (ATM/SG/10, 17 to 21 October 2022), and subsequently by APANPIRG/33 (21 to 23 November 2022).

Notes:

The ADT provisions of Annex 6 *Operation of Aircraft Part I* section 6.18 were originally applicable from 01 January 2023. However, at the sixteenth meeting of its 226th Session (18 July 2022) the Council of ICAO adopted Amendment 48 to the Annex, revising the provision as follows (ICAO State Letter AN 11/1.3.35-22/75 dated 29 July 2022 refers.):

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 2023⁴, 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.

However, regardless of the deferral of the Annex 6 provisions, airlines, Search and Rescue (SAR) Services and Air Traffic Service Units (ATSUs) may receive ADT alerts or notifications before the applicability date as increasing numbers of aircraft complying with the standard become operational from late 2022 onwards. Some aircraft manufacturers have chosen the Emergency Locator Transmitter (Distress Tracking) - ELT(DT) – as their ADT solution and it is expected that delivery of new aircraft fitted with the ELT(DT) may commence in increasing numbers from late 2022. ELT(DT) alerts will be processed via the Cospas-Sarsat system and also later through the new ICAO Location of an Aircraft in Distress Repository (LADR) when that system is commissioned. Therefore, State SAR Services and ATSUs will need to be prepared to respond to ELT(DT) alerts as increasing numbers of aircraft fitted with this system may become operational from late 2022 onwards.

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

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SAR SERVICE PROVIDER (RCC/RSC)		
Check the box if the Air Navigation Service Provider has:		
1.	<input type="checkbox"/>	Registered in the ICAO OPS CTRL Directory (email: aircrafttracking@icao.int website: https://www4.icao.int/opsctrl/)
2.	<input type="checkbox"/>	Commenced preparation for subscription to LADR notifications, when the service is commissioned.
3.	<input type="checkbox"/>	Developed procedures for the initial response to ADT notifications received from ATS units.
4.	<input type="checkbox"/>	Developed procedures for the initial response to ELT(DT) alerts.
5.		Developed procedures for the use of LADR
6.	<input type="checkbox"/>	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.	<input type="checkbox"/>	Registered in the ICAO OPS CTRL Directory (email: aircrafttracking@icao.int website: https://www4.icao.int/opsctrl/)
2.	<input type="checkbox"/>	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.	<input type="checkbox"/>	Developed procedures for the response to ADT notifications received from aircraft operators.
5.	<input type="checkbox"/>	Developed procedures for the response to ELT(DT) coordination received from SAR authorities.
6.	<input type="checkbox"/>	Trained relevant ATS personnel to understand ADT notifications and ELT(DT) alerts, and to coordinate in accordance with procedure.

Reference Material

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

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

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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=ZbD3IIdkzvk>

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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INTERNATIONAL CIVIL AVIATION ORGANIZATION



ASIA/PACIFIC SEARCH AND RESCUE (SAR) PLAN

Version ~~3.0-13.9-August 2019~~ May 2022 **MARKUP VERSION**

This Plan was developed by the Asia/Pacific Search and Rescue Task Force (APSAR/TF) and the Asia/Pacific Search and Rescue Work Group (APSAR/WG)

Approved by the ATM/SG/7 and published by the
ICAO Asia and Pacific Office, Bangkok

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SCOPE OF THE PLAN

Plan Structure

1.1 The Asia/Pacific Search and Rescue (SAR) Plan (hereinafter referred to as the 'Plan') references different levels. At the higher level are global requirements established by the ICAO Annex 12 to the ICAO Convention on International Civil Aviation (ICAO Doc 7300). Global guidance material is provided by the International Maritime Organization (IMO) and ICAO's joint publication, the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual. Beneath this is regional planning guidance primarily provided by this Plan and other regional guidance material, in order to enable States to define the goals and means of meeting objectives for State planning towards improving State SAR System capability, such as the performance objectives of Asia/Pacific (APAC) Regional Air Navigation Plan (RANP, ICAO Doc 9673) objectives and Seamless Air Navigation Services (ANS) Plan.

1.2 The global air navigation perspective is guided mainly by the *Global Air Navigation Plan* (GANP, Doc 9750), the *Global ATM Operational Concept* (Doc 9854) and the *Global Aviation Safety Plan* (GASP).

1.3 The scope of the Plan is the identification of:

- the current status of SAR preparedness of Asia/Pacific Region States and State SAR arrangements; and
- recommendations for SAR planning and preparedness enhancements, in terms of compliance with Annex 12 of the ICAO Convention, IAMSAR Manual guidance, and accepted best international practice.

1.4 References in the Plan to 'States' are intended to include Special Administrative Regions and territories.

Plan Review

1.5 As an iterative process, the Plan requires regular updating to keep current with changes in ICAO Annexes and guidance material, outcomes from the ICAO-IMO JWG-SAR, the IAMSAR manual, regional aviation activity, developments in the Air Traffic Management (ATM) system, new technology, political considerations, human performance and lessons learned from actual SAR responses. Plan updates should also focus on the SAR system being an important component of an integrated regional and global air navigation system. It is intended that APANPIRG and its contributory bodies conduct a complete review every three years from 2019 (or a shorter period determined by Asia/Pacific Air Navigation Planning and Implementation Regional Group - APANPIRG) of the Plan to align with the review cycle of the GANP and the IAMSAR Manual. The review should be guided by a consultative process involving States and relevant International Organisations and technical bodies.

OBJECTIVES

Introduction

2.1 Asia/Pacific States who are signatories to the Chicago Convention accept the responsibility for the provision of SAR services per the requirements of Annex 12 – *Search and Rescue*. Increases in both aviation and maritime traffic throughout the Asia/Pacific region places additional importance on the ability for States to be adequately prepared for potentially increased demand for aeronautical and maritime SAR services.

2.2 The world's citizens, who frequently fly over or sail through the Asia/Pacific, expect a timely and adequate SAR response to be provided should it be required. States in the region need to be adequately prepared for the provision of efficient and effective SAR services. To assist in achieving this, it is essential for States to cooperate, collaborate and in some cases assist with resources to neighbouring and sub-regional RCCs.

2.3 ICAO Regional Office maintains a record, as reported to ICAO by the States themselves, of the status of individual State SAR compliance against Annex 12 requirements. There are significant variations in the level of State SAR capability across the region with significant gaps requiring urgent action, especially in oceanic areas. A number of States have not reported their status at all to ICAO. The ICAO Universal Safety Oversight Audit Programme – Continuous Monitoring Approach (USOAP-CMA) also provides a useful tool to States to self-assess their individual SAR system status. Since the establishment of this Plan, there had already been commendable improvements to the SAR systems of some States which have contributed to building better regional SAR capability. However, there was still considerable work required to address capability gaps.

2.4 There is a high risk of negative consequences to a State which does not provide an adequate SAR response to an aircraft or vessel in distress. The primary concern is the higher probability for loss of lives which may have been saved. The ability for news to spread rapidly in today's technologically connected world also provides the opportunity for a poor or ineffective SAR response to quickly reach a global audience resulting in damage to that State's reputation internationally and potential economic loss to sensitive State industries such as tourism and transport. However, the benefits of an effective and reliable SAR service to States offers many advantages. Besides reduction of loss of life and human suffering, other advantages include the following aspects.

- a) Safer and more secure environment for aviation and maritime related industries, commerce, recreation and travel. Increased safety may promote use and enjoyment of aviation and maritime environments, tourism and economic development. This is especially true when the SAR system utilised programmes aimed at preventing or reducing the effects of mishaps, sometimes referred to as 'Preventative SAR'.
- b) Availability of SAR resources often provides the initial response and relief capabilities critical to saving lives in the early stages of natural and man-made disasters. SAR services offer an integral part of local, national and regional emergency management systems.
- c) Well performed SAR operations can provide positive publicity about situations which may otherwise be viewed negatively. This can lead to improved public confidence in that State's reputation and commitment to providing a safe environment, leading to increased confidence to conduct activities beneficial to that State's economy.
- d) As SAR is a relatively non-controversial and humanitarian mission, it provides an excellent opportunity to enhance cooperation and communication in general between States and organisations, not only for SAR. It can also foster better working relationships between States and organisations at the local, national and international levels, including civil/military cooperation.

2.5 In 2014 Malaysia Airlines flight MH370, a Boeing 777 with 239 persons on board, disappeared when flying from Kuala Lumpur, Malaysia to Beijing, China, and Air Asia QZ8501 was lost on a flight from Surabaya to Singapore. The MH370 event resulted in probably the largest and most expensive search response for a missing aircraft in human history. Together with Air France flight AF447, which crashed into the Atlantic Ocean in 2009, these tragedies ~~have~~ highlighted vulnerabilities in the ~~current~~ air navigation system, including the SAR system, which have hampered timely identification and localisation of aircraft in distress, hindering effective response efforts. ICAO is addressing these vulnerabilities through implementation of functions of the Global Aeronautical Distress and Safety System (GADSS) concept of operations; however, this new system is also dependent on –improvements in global SAR capability, especially for remote and oceanic SAR response.

2.6 The Plan is designed to address both civil and military SAR authorities and has been developed in consultation with Asia/Pacific States, SAR administrations and relevant International Organisations. States should consult with stakeholders nationally, regionally and internationally as appropriate and determine actions in order to commit to achieving the objectives of this Plan in order to meet at least the minimum SAR service requirements in accordance with ICAO Annex 12. It is noted that where a State is unable to meet minimum SAR Standards and Recommended Practices (SARPs) of ICAO Annex 12, Article 38 to the ICAO Convention requires notification to ICAO of the differences between its own practice and that established by the international standards.

2.7 It is a common practice for the military to conduct or have a major role in SAR operations to fulfil or assist in fulfilling the State's obligation to provide SAR services. From the perspective of providing SAR services, civil-military coordination takes on many forms. This includes coordination during an actual SAR response, national coordination with other agencies to determine the military role, part of an international agreement or set of procedures with a neighbouring State to assist in SAR response, or other types of coordination. ICAO Document 10088 – Civil/Military Cooperation is focused on airspace management and includes SAR matters relevant to civil-military coordination in airspace management.

2.8 The ~~2019 edition of the~~ IAMSAR Manual, Volume II, ~~Chapter 7~~ has guidance on Multiple Aircraft Operations ~~has guidance on~~ and establishing areas of SAR action to assist with the safe coordination and management of aircraft operations during SAR operations. SAR authorities should have procedures in place to rapidly notify airspace users of SAR operations and the establishment of any temporary airspace operation such as danger areas or restricted areas through appropriate State authorities. The combination of guidance in the IAMSAR Manual and ICAO Document 10088 should enable a State to have an appropriate plan in place for civil-military coordination and cooperation in readiness for efficient and effective SAR response.

2.9 States should aim to meet their obligations progressively in a strategically structured and planned manner with improvement goals set for short term, medium term and long term implementation. It may be more productive to make gains in small steps commencing with measures that are more easily achievable in the short term and have a minimal cost, progressing to measures which will take longer to implement over the medium to long term. Short term measures that may be implemented relatively easily include the establishment of a national SAR Committee and ensuring SAR Agreements are in place with neighbouring States allowing for seamless cross-border transit of search assets engaged in SAR activity. A SAR agreement can be in the form of 'Letter of Agreement' (LOA) or a Memorandum of Understanding or other acceptable term indicating a lower form of arrangement for operational matters between SAR service providers (such as RCCs and/or RSCs) or a more formal agreement for arrangements between governments concerned.

2.10 All States are encouraged to use the guidance provided within this Plan as a way forward, thus ensuring a timely, well-coordinated response to any SAR incident within their area of responsibility, or during cooperative responses involving more than one Search and Rescue Region (SRR) including overlapping aeronautical and maritime SRRs which may be the responsibility of different RCCs.

Plan Objective

2.11 The objective of this SAR Plan is to provide a framework to assist Asia/Pacific States to meet their SAR needs and obligations accepted under the Convention on International Civil Aviation and for the harmonised and interoperable delivery of both aeronautical and maritime SAR services within the region, and across other ICAO regional boundaries, where practicable.

2.12 The Plan is to be consistent with the SARPs of ICAO Annex 12 - *Search and Rescue*, and aligned where appropriate with the SAR technical and operational standards and guidance of the IMO.

2.13 The Plan recognizes that ICAO serves as the forum for the implementation of practical and achievable measures to improve SAR services for international civil aviation. The Plan also recognizes that the IMO provides a similar forum for SAR services to maritime shipping.

2.14 Both ICAO and IMO share the same goal of ensuring that SAR services are available globally wherever people sail or fly. The SAR services that ICAO and IMO promote are complementary and offer tangible opportunities to derive mutually beneficial efficiencies for both the aviation and maritime transportation SAR systems globally, regionally and nationally. The objective of this Plan includes encouraging States to take advantage of such efficiencies. States should, where practicable, align their SAR systems with the guidance provided by the IAMSAR Manual, which also provides the benefit for standardised SAR coordination between RCCs and across SRR lines of delineation.

2.15 State SAR plans describe how SAR services will be provided, organized and supported in order for States to meet their obligations under the relevant Conventions. Search and Rescue Coordinators (SC) and SAR managers oversee and implement these plans. National SAR plans should be signed by all Government agencies which can provide or support SAR services. These agencies should all be represented on the State's Search and Rescue Coordinating Committee (SCC), which oversees these plans.

Note: The SC should not be confused with the operational nature of the SAR Mission Coordinator (SMC). The primary purpose of the national SC is to enable a whole-of-government approach to make efficient and effective use of a State's capabilities for SAR.

Plan Development

2.16 The Plan was developed as part of a suite of Asia/Pacific air navigation plans, including the *Asia-Pacific Seamless ATM Plan*, the *Asia-Pacific Plan for Collaborative Aeronautical Information Management (AIM)*, the *Asia-Pacific Framework for Collaborative Air Traffic Flow Management (ATFM)*, and the *Regional ATM Contingency Plan*, so the Plan should not be considered in isolation.

2.17 The Plan is expected to provide guidelines and recommendations for Asia/Pacific States to consider for the enhancement and improvement of national, sub-regional and regional SAR capability including:

- a) compliance with Annex 12 SARPs;
- b) identification and addressing of deficiencies in SAR capability;
- c) continuous and coherent development of SAR capability;
- d) harmonisation of aeronautical and maritime SAR services;
- e) civil/military cooperation and coordination (including SAR response, information sharing and use of airspace);

- f) remote oceanic SAR response capability (including provision for Mass Rescue Operations (MRO));
- g) establishment and review of arrangements between neighbouring States to expeditiously facilitate SAR coordination, operations and cooperation across regional boundaries including sharing SAR resources and contingency procedures;
- h) facilitation of the implementation of SAR systems and services including the establishment of JRCCs where suitable and practicable;
- i) supporting the sharing of SAR information, data and expertise;
- j) integration with ATM systems and future ATS developments, where appropriate;
- k) monitoring of outcomes from APANPIRG Sub-Groups, other ICAO Region SAR groups, ICAO/IMO Joint Working Group on Harmonisation of Aeronautical and Maritime SAR (JWG) and related forums for issues that may affect the Plan;
- l) facilitation of a continuous reporting mechanism of State SAR capability, Annex 12 compliance and SAR performance data to the APAC Regional Office through the APANPIRG Air Traffic Management Sub-Group (ATM/SG);
- m) implementation of a SAR System Improvement and Assessment measures, including Safety Management System, Quality Assurance programme and risk assessment, and programs to reduce the number of SAR incidents;
- n) coordinating the introduction of new technology affecting the regional SAR system;
- o) sharing future research and development concepts;
- p) seeking efficiencies, through the coordination and facilitation of concurrent regional SAR meetings, seminars, workshops and exercises, including joint ICAO and IMO, and sub-regional forums where practicable; and
- q) conducting efficient SAR Exercises (SAREXs) that identify improvements and latent problems.

2.18 The Plan elements should be periodically reviewed by APANPIRG to ensure that they remain relevant to the SAR system, particularly for new technology developments and alignment with other relevant global and regional SAR plans and the Global Air Navigation Plan.

EXECUTIVE SUMMARY

3.1 Before the COVID-19 pandemic, the Asia/Pacific Region had the largest share of Passenger Kilometres Performed (PKP), accounting for more than one third of the global total at 34.5% (Europe and North America were the two other key regions, with shares of 26.7% and 22.4% respectively). As the world's major manufacturing and distribution hub, the Asia/Pacific Region also accounted for the largest share of global air freight traffic in 2018, at 35.5%. As the world emerges from the effects of the pandemic, it is likely that the Asia/Pacific Region will return to pre-pandemic levels of aviation activity and potentially grow further.

3.2 For the maritime industry, the United Nations Conference on Trade and Development (UNCTAD) Review of Maritime Transport 2017-2020 reported that Asia ~~remained the main global cargo loading and unloading area in 2016 with the largest world shipping tonnage share of 40% Loaded and 61% Unloaded~~continued to dominate the global maritime trade arena. In 2019 the region accounted for 41% of goods unloaded, and had strengthened its position as a maritime hub that brings together more than 50% of global maritime trade volumes.- Before the COVID-19 pandemic, growth ~~Growth~~ in the cruise ship industry together with the many other forms of maritime transport such as fishing vessels and passengers ferries ~~creates~~created added potential demand for regional SAR services. Whilst IMO assists the Parties to the Maritime SAR Convention, particularly their implementation related to the provision of maritime SAR services, the demand for aeronautical SAR services which frequently support responses to maritime SAR incidents is also likely to rise.

3.3 Asia/Pacific States who are signatories to the Chicago Convention accept the responsibility for the provision of SAR services per the requirements of Annex 12 - *Search and Rescue*. Increases in both aviation and maritime traffic throughout the Asia/Pacific region places additional importance on the ability for States to be adequately prepared for potentially increased demand for aeronautical and maritime SAR services.

3.4 Considering that many of the Asia/Pacific States have the challenging responsibility for providing a SAR service over vast and remote areas, including three of the world's five oceans, the importance for States with oceanic SAR responsibility to cooperate, collaborate and share resources with their neighbouring and regional/sub-regional RCCs is essential.

3.5 High-level support might be necessary from regional bodies that can effectively support the Plan's implementation, such as the:

- Association of Southeast Asian Nations (ASEAN) and ASEAN Regional Forum (ARF);
- Asia Pacific Economic Cooperation (APEC);
- South Asian Association for Regional Cooperation (SAARC);
- ~~Secretariat of the~~ Pacific Community (SPC); and
- Indian Ocean Rim Association (IORA).

SAR System Funding

3.6 The level of funding provided for effective SAR systems is a matter of concern for all senior decision-makers. An effective SAR system helps prevent lives being lost that may have been saved which provides a persuasive argument for proper funding. The resources should be sufficient to develop and/or maintain the required SAR service per their obligations as signatories to the relevant aeronautical and maritime SAR conventions. This may require the development of business cases to governments outlining where additional funding is required.

3.7 Such business cases should include consideration of amendments to existing State SAR

arrangements which may provide more efficient delivery of the SAR service by better utilisation of existing resources (for example by establishing Joint RCCs (JRCCs), or additional funding sources where required (for example charging a levy to aircraft operators for providing the SAR service or seeking company sponsorship for SRUs). The economic value of a life saved when compared against the economic value of a life lost can also be a significant persuasive factor in any business case.

Joint Rescue Coordination Centres (JRCCs)

3.8 Where practicable, States are encouraged to examine the potential benefits that may be derived by the establishment of JRCCs to incorporate the aeronautical and maritime SAR activities and/or facilities of ARCCs/ARSCs and MRCC/MRSCs. JRCCs have the potential to not only provide a more effective SAR service to both the aeronautical and maritime industries, but also offer potential financial efficiencies by releasing funds for improvements in other SAR areas.

Note 1: Where JRCCs are not practicable, facilities and procedures should be developed which provide and/or enhance effective SAR coordination and collaboration between the ARCCs and MRCCs in support of each other, to provide an efficient and integrated State SAR system for both aeronautical and maritime SAR incident response.

Note 2: A JRCC may be established either physically or by virtual means using the integration of communications, information and computer technology between an ARCC and an MRCC to achieve full search and rescue coordination functionality.

3.9 Where practicable, the JRCC evaluation may consider consolidation of two or more different State RCCs into single sub-regional JRCCs:-

Note: a single sub-regional JRCC may be established in partnership with a group of States and serve as a 24 hour nodal JRCC supported by Joint Rescue Sub-Centres (JRSCs) of the other partner States which may not necessarily need to be ~~manned~~ staffed 24 hours but could be activated when required.

ABBREVIATIONS AND ACRONYMS

ADS-B	Automatic Dependent Surveillance-Broadcast
ADS-C	Automatic Dependent Surveillance-Contract
ADT	Autonomous Distress Tracking
<u>ANP</u>	<u>(Regional) Air Navigation Plan</u>
ANRF	Air Navigation Reporting Form
ANSP	Air Navigation Service Provider
APANPIRG	Asia/Pacific Air Navigation Planning and Implementation Regional Group
APEC	Asia Pacific Economic Cooperation
AP SAR/TF	Asia/Pacific SAR Task Force
<u>AP SAR/WG</u>	<u>Asia/Pacific SAR Working Group</u>
ARCC	Aeronautical Rescue Coordination Centre
ARF	ASEAN Regional Forum
ARSC	Aeronautical Rescue Sub-Centre
A/SMC	Assistant SMC
ASEAN	Association of Southeast Asian Nations
ASPOCS	Administrative Single Point of Contact for SAR
ATC	Air Traffic Control
ATFM	Air Traffic Flow Management
ATM	Air Traffic Management
<u>ATSU</u>	<u>Air Traffic Service Unit</u>
CONOPS	Concept of Operations
COSPAS-SARSAT	C osmicheskaya S istema P oiska A varynyh S udov-Search and Rescue Satellite-Aided Tracking
EI	Effective Implementation
ELT	Emergency Locator Transmitters
<u>ELT(DT)</u>	<u>Emergency Locator Transmitter (Distress Tracking)</u>
<u>EPIRB</u>	<u>Emergency Position Indicating Radio Beacon</u>
<u>FIR</u>	<u>Flight Information Region</u>
GADSS	Global Aeronautical Distress and Safety System
GANP	Global Air Navigation Plan
GASP	Global Aviation Safety Plan
GLONASS	Global Navigation Satellite System
GPS	Global Positioning System
IAMSAR	International Aeronautical and Maritime SAR (Manual)
<u>ICAO</u>	<u>International Civil Aviation Organization</u>
IMO	International Maritime Organization
IORA	Indian Ocean Rim Association
iSTARS	Integrated Safety Trend Analysis and Reporting System
JRCC	Joint (aeronautical and maritime) Rescue Coordination Centre
JRSC	Joint Rescue Sub-Centre
JWG-SAR	ICAO/IMO Joint Working Group on the Harmonisation of Aeronautical and Maritime Search and Rescue
LOA	Letter of Agreement
MCC	Mission Control Centres
MEOSAR	Medium-altitude Earth Orbit Search and Rescue
MRCC	Maritime Rescue Coordination Centre
MRO	Mass Rescue Operations
MRSC	Maritime Rescue Sub-Centre
OJT	On-the-Job Training
<u>PLB</u>	<u>Personal Locator Beacon</u>
PQs	Protocol Questions
PSCS	Preferred SAR Capability Specifications

RANP	Regional Air Navigation Plan
RCC	Rescue Coordination Centre
RPK	Revenue Passenger Kilometres
RPAS	Remotely Piloted Aircraft Systems
SAR	Search and Rescue
SARPs	Standards and Recommended Practices
SAARC	South Asian Association for Regional Cooperation
SAREX	SAR Exercises
SC	Search and Rescue Coordinator
SCC	Search and Rescue Coordinating Committee
SMC	Search and Rescue Mission Coordinator
SMS	Safety Management System
SOLAS	International Convention for the Safety of Life at Sea
SPC	Secretariat of the Pacific Community
SPOC	SAR Point of Contact
SRR	Search and Rescue Region
SRU	Search and Rescue Unit
SWIM	System Wide Information Management
UNCLOS	United Nations Convention on the Law of the Sea
USOAP-CMA	Universal Safety Oversight Audit Programme – Continuous Monitoring Approach
VSP	Variable Set Parameter

BACKGROUND INFORMATION

Improvement Drivers

5.1 The ICAO USOAP-CMA focuses on a State's capability in providing safety oversight by assessing whether the State has effectively and consistently implemented the critical elements of a safety oversight system and determining the State's level of implementation of ICAO's safety-related SARPs, including ~~Annex 12 — Search and Rescue~~^{12 Search and Reseue}, and associated procedures and guidance material.

5.2 ICAO APAC Regional Office maintains ~~an the APANPIRG Air Navigation Deficiencies Lists, including the ATM and Airspace Safety Deficiencies List where SAR-related deficiencies are recorded.~~^{Air Navigation Deficiencies List}. This list is based on the uniform methodology for identification, assessment and reporting of such deficiencies as described in Part V of the APANPIRG Procedural Handbook. ~~By identifying and addressing specific deficiencies, APANPIRG and its Sub-groups facilitate the development and implementation of action plans by States to resolve identified deficiencies, where necessary.~~

5.3 The ~~ANS Deficiency~~^{APANPIRG Air Navigation Deficiencies} information ~~had~~^{has} been populated into the ICAO iSTARS (Integrated Safety Trend Analysis and Reporting System) CHECK database and ~~was~~^{is} accessible through the ICAO Secure Portal. The intention is to merge this data with the CMA Data, and manage the deficiencies using a single web-based process.

Asia/Pacific SAR System Monitoring

5.4 Significant Annex 12 compliance weaknesses had been identified within the Asia/Pacific region based upon information provided (and in many cases not provided) by States to the ICAO Regional Office. This regional ~~information~~^{status of the SAR capability and SAR agreements} ~~as reported by States~~^{was is} recorded in tables made available to APANPIRG, ~~which was.~~^{This process is} expected to be enhanced with the integration of SAR elements into the Seamless ATM on-line monitoring system.

ICAO Global Aeronautical Distress and Safety System (GADSS)

5.5 The tragedies of Malaysia Airlines flight MH370 in 2014 and Air France flight AF447 in 2009 highlighted vulnerabilities in the air navigation system which hampered timely identification and location of aircraft in distress, particularly in remote oceanic areas. This significantly hindered effective SAR efforts and recovery operations.

5.6 As part of the response to the Conclusions and Recommendations from the 2014 ICAO Multi-disciplinary Meeting on Global Tracking, ICAO developed a Concept of Operations (CONOPS) for a GADSS. The implementation of this target concept affects the provision of services such as air traffic control, SAR and accident investigation. It contained a large number of measures targeting improvements in SAR system response integrated within the wider ATM and aircraft/airline operations systems.

5.7 The CONOPs notes that the effectiveness of the current alerting systems and SAR services should be addressed by a number of key improvement areas. The CONOPS also included aspects which potentially involve use of different distress systems, including for example 406 MHz Emergency Locator Transmitters (ELTs) and the Cospas-Sarsat system as part of the proposed GADSS solution.

5.8 Guidance on the aircraft tracking function is provided in ICAO Circular 347, *Aircraft Tracking Implementation guidelines*. Chapter 8 outlines procedures to be followed when an operator

notifies an ATSU of a missed aircraft 15 minute tracking report. This circular is for aircraft operators and civil aviation authorities, and applies to the aircraft tracking function that commenced on 8 November 2018. Of particular relevance is information from the circular Section 8.2 and Appendix C Missed 4D/15 Position Report Form for Operator, which has been updated and is now included in ICAO Doc 8168 Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS) Volume III – Aircraft Operating Procedures Section 10 – Flight Tracking. The operator is required to notify the air traffic services unit (ATSU) of a missed aircraft 4D/15 tracking report (four-dimensional position of individual aircraft in flight at 15-minute intervals). The information that the operator has to provide the ATSU closely aligns with what the ATSU has to provide the RCC (using the ALR message described in ICAO Doc 4444 – PANS – Air Traffic Management (PANS-ATM) Appendix 3). However, the ATSU-to-RCC requirement ~~does not have a standard form and it~~ is not automated (machine-to-machine).

5.9 The ADT device notifies the aircraft operator (~~the~~ airline, air cargo, business jet or similar) of the last known position of ~~an~~ aircraft that may be in a distress condition in flight. ADT activation is a notification, not a distress alert. This would be as a minimum at one-minute intervals while the aircraft is in flight. The operator is responsible to make the position information available to the ATSUs and RCCs. To facilitate this ICAO is leading the effort to create an ADT ~~distress tracking repository (DTR)~~ Location of Aircraft in Distress Repository (LADR) as a database for storing the ADT information. The ~~DTR-LADR~~ would then notify the aircraft operator, and if subscribed, the ATSU and RCC that ADT information relevant to them is in the DTRLADR for those stakeholders to pull the data.

5.10 When ADT activates, ~~the~~ ATS unit may already be informed by other means of an emergency situation, such as ~~from~~ the aircrew. For aircraft in-flight, ~~the~~ aeronautical alerting process is based on the ATS unit making the decision about whether or not the aircraft is in distress and, if determined to be a distress situation, must notify the RCC immediately before contacting the operator per Annex 11. ICAO has not prescribed a specific technology for ~~the~~ ADT ~~device~~ but one of the technologies will be a new ~~version-beacon type~~ of the aeronautical 406 MHz emergency locator transmitter – the ELT Distress Tracking ELT(DT). The ELT(DT), as an ADT device, does not have a requirement to meet all of the ELT standards such as being crash-survivable or having the 121.5 homing signal.

5.11 ADT notifications from the ELT(DT) will be delivered directly to SAR services using the existing Cospas-Sarsat ground segment infrastructure and also via the LADR. ~~Having the~~

5.12 Having the ADT notifications from the ELT(DT) going directly to an RCC in addition to via the LADR was not the original intent of ICAO and is a major change in the aeronautical alerting process envisaged under the GADSS. RCCs need to prepare ~~for to be able to respond to the~~ ADT activations ~~capability~~ and that the aircraft could remain in flight across multiple SAR regions. RCC staff also need to be provided with training to ensure understanding of the ADT system and processes. ~~Appendix 1 contains specific guidance on RCC.~~

5.13 For ADT notifications from the ELT(DT) or other types of ADT systems, RCCs may need to update SAR practices and procedures ~~before 1 January 2021~~ for concerns such as:

- accurate delimitation of SAR regions to ensure proper transfer of the SAR operation to the next responsible RCC;
- effective and efficient coordination between the ATS unit (or aeronautical RCC) and the maritime RCC;
- harmonized operations between aeronautical and maritime SAR services; and
- initial response to an ADT notifications from the ELT(DT), including rapid contact with the ATS unit to notify and confirm if the aircraft is in distress, as is the case now with ELT activations.

5.1x It will be necessary to develop common ADT procedures, nationally and regionally, among the three primary stakeholders (aircraft operators, ATS units, and RCCs) for efficient handling of information received from the ADT system. The 2022 edition of the IAMSAR Manual provides a comprehensive overview of ADT. The IAMSAR Manual, Volume II appendix *Autonomous distress tracking of aircraft in flight* includes a *Schematic sequence of events arising from an ADT device activation* that serves as a flowchart of actions. The schematic sequence of events together with background notes is provided in **Appendix 1**.

5.1xx ICAO is in the final stage of completing a formal, comprehensive manual on GADSS: ICAO Doc 10165 *Manual on Global Aeronautical Distress and Safety System (GADSS)*. Doc 10165 complements the ICAO Concept of Operations, (CONOPS), *Global Aeronautical Distress & Safety System, (GADSS)*, version 6.0, and incorporates all of its pertinent information. Doc 10165 also incorporates the information provided in ICAO Circular 347, and ICAO Document 10054, *Manual on Location of Aircraft in Distress and Flight Recorder Data Recovery*.

Cospas-Sarsat System

5.14 Cospas-Sarsat has been developing two major enhancements to its distress-alerting System of value to all System users, including the aviation industry. One is the introduction of 2020, a new space-segment architecture based primarily on Medium-altitude Earth Orbit Search and Rescue (MEOSAR) payloads aboard the European Commission's Galileo system, the Russian Federation's Global Navigation Satellite System (GLONASS) and the United States' Global Positioning System (GPS) satellites.– Another potential satellite system from China, the Beidou Navigation Satellite System, could be part of the Cospas-Sarsat Space Segment.–

5.15 This architecture would permit determination of an end-of-flight distress incident location (independent of any location data transmitted in the beacon message) beginning with the first burst from the distress beacon.– This could mean near real-time and very frequent delivery of distress alerts.

5.16 The SAR/Galileo space segment would also provide a Return Link Service (RLS) that, among other possible future uses, would provide an acknowledgment from the MCC back to the beacon to confirm that the distress message has been received.

5.17 The technical specifications for the second generation 406 MHz distress beacon has been approved, including ELTs. –This new generation of beacons should further improve speed and accuracy in locating an activated distress beacon. –The period from beacon activation to first transmission was expected to be reduced from 50 seconds to three seconds.– The specification would consider in-flight activation of ELTs when certain flight parameters were exceeded. –Consequently, false alerts would affect real SAR events significantly.

5.18 States needed to continue to ensure that aviators were aware that 121.5 MHz and 243 MHz beacons cannot be detected by the global Cospas-Sarsat System and the low-power 121.5 MHz signal on the 406 MHz distress beacon was only intended as a final homing signal.

5.19 States also need to ensure the critical requirement to provide for a suitable, clear and simple means for aircraft owners to register and keep updated their 406 MHz distress beacon details.

Note: information on beacon registration is at: <http://www.cospas-sarsat.int/en/beacons-pro/beacon-regulations-pro/ibrd-user-information-for-professionals>).

5.20 Entries in the beacon register should be available to both aeronautical and maritime RCCs on a 24 hour basis (Annex 12 – *Search and Rescue* refers, although Annex 10 establishes the registration requirement).

ICAO Annexes and PANS

5.21 States should note that Annex 12 should be read in conjunction with elements of the following ICAO Annexes and PANS:

Annex 6 – *Operation of Aircraft*;

Annex 10 – *Aeronautical Telecommunications*;

Annex 11 – *Air Traffic Services* (particularly Chapter 5 Alerting Service);

Annex 14 – *Aerodromes* (particularly aerodrome emergency planning with the RCC);

Annex 15 – *Aeronautical Information Services*, particularly Section 6.3.2 *NOTAM*; and

Annex 19 – *Safety Management* ~~(particularly SAR services under the authority of an ATS provider);~~

DOC 4444 – PANS-ATM

Doc 8168 – PANS-OPS Volume III, particularly Section 10 *Flight Tracking*; and

Doc 10066 – PANS – *Aeronautical Information Management (PANS-AIM)*

CURRENT SITUATION

Global Situation

6.1 The ICAO USOAP Report of audit results, 3rd Edition, April 2005 to August 2010 revealed a number of SAR deficiencies during the audits of 165 Member States: ~~REVIEW AND UPDATE~~

- ~~38%~~ of States had not laid down provisions for entry into their territory of SAR units (SRU) of other States for the purpose of search for the site of aircraft accidents and rescuing survivors;
- ~~44%~~ of States had not developed a detailed plan on f operation for the conduct of SAR operations within their respective Search and Rescue Regions (SRRs); ~~and~~
- ~~67%~~ of States had not established the necessary coordination of their SAR organisations with those of neighbouring States, including the conclusion of bi-lateral SAR agreements in order to coordinate SAR operations; and
- regarding RCCs –
 - i. about ~~40%~~ of States had not developed job descriptions for their technical staff;
 - ii. ~~45%~~ did not ensure that RCC personnel using radiotelephony communications were proficient in the use of the English language; and
 - iii. about ~~56%~~ of States do not regularly train their SAR personnel, and nor did they conduct SAREXs.

Asia/Pacific SAR Analysis

6.2 The last decade has seen a steady increase in air traffic in the Asia/Pacific Region. Maritime traffic is also increasing, adding further urgency to ensure that States with oceanic SAR responsibilities in the region meet the requirements of both ICAO and IMO for the provision of aviation and maritime SAR services.

6.3 An analysis of the 26 Universal Safety Oversight Audit Programme (USOAP) SAR-related Protocol Questions (PQs) indicated that the overall Effective Implementation (EI) in the Asia/Pacific Region for SAR had risen from 50.7% in July 2015 to 58.99% in March 2019. **Figure 1** provides the EI of individual SAR-related PQs in March 2019.

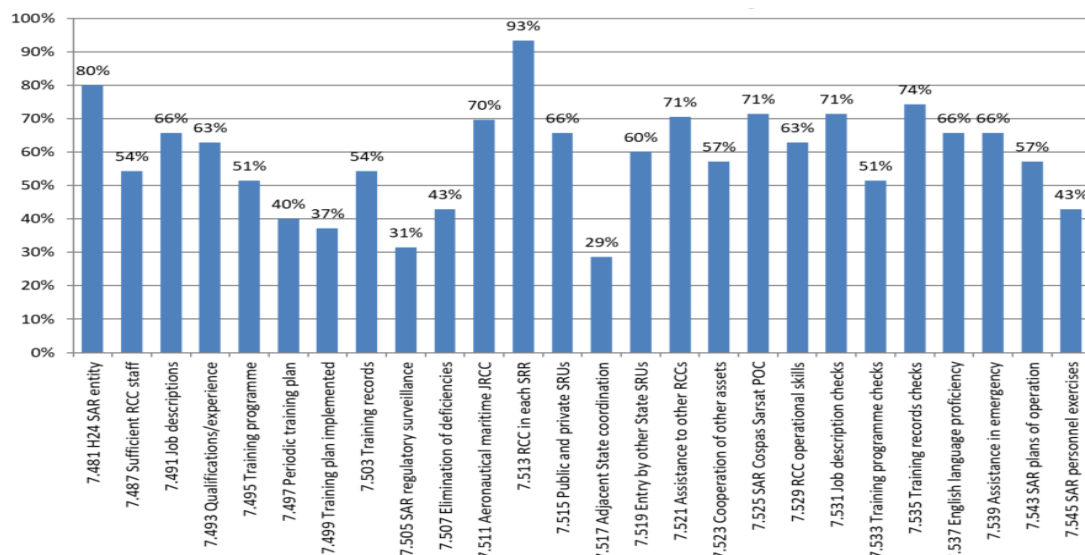


Figure 1: APAC USOAP CMA SAR PQ Compliance (average: 59%, **March 2019**)

6.4 From this analysis, it appeared that the major areas of weakness is in coordination with adjacent States, effective SAR oversight, and training of SAR staff that provide the SAR services. Therefore, a focus on the minimisation of barriers associated with the efficient cross-border coordination of SRU (such as pre-arranged approval) and other coordination mechanisms, including updates of SAR agreements (whatever their form) was vital. Finally, there was a need for improved systemic approaches to training for both SAR inspectors and personnel responsible for the provision of SAR services, including the regular organisation of effective SAR exercises that test systems and personnel. It should be noted that the training of SAR inspectors did not require SAR-specific technical training, but was more focused on effective audit and inspection techniques, etc.

6.5 The current analysis indicated significant Annex 12 compliance weaknesses remained in the South Asia area and the Southwest Pacific. In addition, there were parts of Southeast Asia and East Asia that indicated a need for compliance improvement.

6.6 With the advent of the Asia/Pacific SAR Plan and its more comprehensive expectations, an accurate assessment of capability aligned with the SAR Plan was developed. This assessment could be used by States as a means of internal gap analysis, in addition to providing a more accurate metric of the Asia/Pacific SAR Plan implementation, noting that implementation was scheduled for 2019.

Asia/Pacific SAR Coordination Forums

6.7 The Asia/Pacific Region will benefit from the cooperation and coordination of States and International Organizations involved in the APSAR-SAR Working Group. The establishment of permanent joint ICAO/IMO Regional SAR Forums to enable collaboration and cooperation on oceanic SAR matters across the specific oceanic regions and including adjacent ICAO regions should be considered.

6.8 There were several regional initiatives for cooperative support and development already being undertaken in the Asia/Pacific Region to assist with SAR capability enhancement.

6.9 Such improvement programmes could result from a request by a State needing assistance, ICAO/IMO oversight, the users of the SAR system itself, an audit or following a SAR 'Go-Team' visit that identifies weaknesses in the State's SAR capability (a 'Go Team' normally consists of external SAR experts from ICAO/IMO, more advanced 'champion' States or external agencies such as Cospas-Sarsat). The programs can be conducted by experts from a 'champion' State, or through a cooperative effort by several States or a regional body.

Note: Appendix ~~xxx~~ 2 provides a summary of benefits to the SAR System of States assisting other States.

Barriers

6.10 The following potential issues should be considered to ensure they do not become barriers to the achievement of the expected SAR capability:

- a) absence of established appropriate legal framework designating, recognizing, supporting and giving authority to national SAR authorities, RCCs and SMCs;
- b) inadequate funding and equipping of SAR authorities and in particular, resourcing of RCCs;
- c) absence of an appropriate SAR organizational framework;
- d) absence of a national SAR committee;
- e) lack of clarity of responsibilities for each component of the SAR system;

- f) inadequate collaboration and cooperation between aeronautical and maritime SAR agencies;
- g) absence of bilateral/multi-lateral/international SAR Agreements;
- h) inadequate civil/military cooperation; and
- i) complacency about, or lack of recognition of, the importance or priority given to SAR.

Global and Regional SAR Issues

6.11 States should monitor outcomes from global and regional ICAO and IMO SAR forums to ensure their State SAR authorities are updated on relevant SAR developments, otherwise State planning may not be synchronized with external international expectations, including users. Such forums may include APANPIRG and its Sub-Groups, other ICAO Region SAR groups, the JWG, ICAO High Level Safety Conferences, etc.

6.12 The provision of sufficient resources is critical in a number of areas, including:

- a) Financial-
 - funding for 24 hour RCC facility and staff;
 - funding for use/hire of search and rescue units; and
 - provision of a suitable administrative process enabling financial support including the ability for SAR authorities to quickly authorise payments required for emergency response aircraft, vessels and supporting logistics such as fuel.
- b) RCC personnel- a suitable number of trained and skilled staff, supplemented by a pool of trained RCC support staff where appropriate;
- c) RCC facilities-
 - appropriate RCC facility space;
 - minimum RCC tools (such as current charts, plotting equipment, documentation, etc.);
 - ability to identify and task available SRUs;
 - aircraft and vessel tracking information including ATS surveillance, Automatic Identification System, etc.;
 - reliable and rapid H24 communications, and a suitable means to-
 - receive, communicate and acknowledge distress alerts
 - communicate with ATS units, other RCCs/RSCs, Coastal Radio Stations, COSPAS-SARSAT Mission Control Centres (MCCs), military units, medical services, meteorological offices, etc.;
 - information technology-
 - RCC workstation computers;
 - Software including basic databases, drift modelling, incident management, etc.;
- d) Contingency- back-up RCC facility, or arrangement with another RCC as a contingency against inability to operate from the primary RCC due to the need to evacuate or loss of systems, etc.;
- e) Search and Rescue Units (SRUs)-
 - available and suitable SAR aircraft and crews;

- funding arrangements/agreements for hiring/payment/sharing of SRUs to permit rapid deployment; and
 - Available and suitable SAR survival equipment for delivery by aircraft to survivors and to assist SAR coordination efforts (e.g.: SAR Datum Buoys, droppable life rafts and survival supplies, etc.);
- f) Training support-
- RCC staff – basic and ongoing;
 - SRU crews – pilots, air crew and air observers; ~~and~~
 - RCC support staff – basic and refresher; ~~and~~
 - SAR inspectorate staff- basic and on-going; ~~and~~
 - Other SAR Units-
 - aeronautical units
 - maritime units
 - land units
 - specialised units (paramedical, divers, etc.)

PERFORMANCE IMPROVEMENT PLAN

Preferred SAR Capability Specifications (PSCS)

Note 1: PSCS are the non-mandatory expectations on all Asia/Pacific Region States to enhance SAR systems in order to meet a minimum level of SAR capability, with a high degree of interoperability and harmonisation, and interoperability with other ATM components such as Air Navigation Service Providers (ANSPs) and aerodrome operators, and between aeronautical and maritime SAR services. PSCS were not expected to contravene existing Annex 12 standards.

~~PSCS (expected implementation by 07 November 2019)~~

~~Note 2: Asia/Pacific SAR Plan Version 1.0, published in September 2015, included the expectation that all PSCS would be implemented by 07 November 2019. Noting that the implementation date is, at the time of publication of this fourth version of the Plan, several years in the past, and also noting that further changes to PSCS are expected to be incremental and relatively minor in scope, dates for future implementation are not included. All States should note that APANPIRG ATM and Airspace Safety Deficiencies for non-implementation of 90% of the elements of this plan will continue to be raised and maintained by the ICAO Asia/Pacific Regional Office.~~

7.1 *Legal Framework and Structure Planning:* All States should develop statutes and related provisions that establish or enhance the legal foundation for a State SAR organization and its framework, resources, policies and procedures, where appropriate, to:

- a) ensure that it is party to, and/or aligned with the following Conventions, as applicable –
 - i. Convention on International Civil Aviation 1944;
 - ii. International Convention on Maritime Search and Rescue, 1979;
 - iii. International Convention for the Safety of Life at Sea (SOLAS), 1974;
 - iv. Convention on the High Seas, 1958; and
 - v. United Nations Convention on the Law of the Sea (UNCLOS), 1982;
- b) unless delegated by written agreement, establish an entity that provides, on a 24-hour basis, SAR services within its territories and designated area of responsibility/SRR;
- c) establish a national SAR committee consisting of civil and, where appropriate, military members to enable a whole-of-government approach;
- d) empower SAR Mission Coordinators with the authority to adequately carry out their responsibilities;
- ~~e) establish an Administrative Single Point of Contact for SAR (ASPOCS) for non-urgent, administrative matters, such details to be submitted to the ICAO Regional Office;~~
- ~~f)e)~~ conduct studies to check the feasibility for, and develop an implementation plan if practicable, the integration of aviation and maritime SAR activities, and as far as practicable, civil and military activities, including joint training and familiarisation of staff and review of documentation to ensure harmonisation of procedures, and joint exercises;
- ~~g)f)~~ conduct studies to align, as far as practicable, aeronautical and maritime Search and Rescue Regions (SRRs); and SRRs and Flight Information Regions (FIRs); and

- h)g) establish a single State SAR Plan that –
- i. designates the responsible RCC(s), RSC(s) and 24-hour SPOC/ASPOC;
 - ii. describes the relevant aeronautical and maritime SRRs, including the coordinates and geographical chart depiction of the aeronautical and maritime SRR and neighbouring aeronautical and maritime SRRs;
 - iii. establishes an Administrative Single Point of Contact for SAR (ASPOCS) for non-urgent, administrative matters, such details to be submitted to the ICAO Regional Office;
 - ~~iii~~-iv. details the National SAR Committee;
 - ~~iv~~-v. details the governmental and non-governmental agencies with authority and responsibility for SAR coordination and supporting of SAR response operations within its territories and designated area of responsibility;
 - ~~v~~-vi. details required and available SAR facilities, personnel, and equipment;
 - ~~vi~~-vii. ~~details~~ describes the SAR manuals, plans and procedures used for national and regional cooperative SAR response arrangements;
 - ~~vii~~-viii. details the SAR personnel training and competency programme, qualification standards, SAR certification if applicable and SAR cooperation training;
 - ~~viii~~-ix. ~~details~~ lists the SAR agreements required;
 - ~~ix~~-x. is electronic and accessible on the Internet, such details to be submitted to the ICAO Asia/Pacific Regional Office; and
 - ~~x~~-xi. is monitored by quality assurance processes.

7.2 SAR Standards and Procedures: All States should:

- a) establish aerodrome emergency plans that provide for co-operation and co-ordination with RCCs (plans should include clear responsibilities for response to emergencies in proximity to aerodrome boundaries including adjacent waterways);
- b) establish SAR agreements with States having adjoining SRRs or FIRs, including trans-regional neighbours (the agreements should include clear responsibilities for overlapping or non-adjointing aeronautical and maritime SRRs);
- c) provide up to date cross-border information on SAR capability (this should be included in bilateral SAR agreements);
- d) pre-arrange procedures for cross-border SAR responses (this should be included in bilateral SAR agreements);
- e) establish a program for regular SAREX, which may be a desktop communications exercise, with each alternate SAREX being ~~a~~ full exercise (this expectation may be fulfilled by participating in a sub-regional SAREX that tests the State's SAR system); ~~and~~
- f) establish RCC plans for response to Mass Rescue Operations (MROs) integrated with national disaster plans;
- g) establish SAR Operations Plans between the State's SAR Authorities and Government, Military and Commercial operators, including those with an ~~o~~ver-water rotary wing or sea plane capability, to include:
 - i. procedures for cooperation and deployment of foreign SRUs;
 - ii. provision for translators/liaison Officers/Embassy Officers for the daily

- tasking of the SRUs at the RCC;
- iii. provision of information for logistic and administrative support (hotels, fuel, security passes, food, medicine, etc.);
 - iv. instructions on communication (ops normal reports, sightings, etc.) for search planning, command and control to foreign SRUs;
 - v. planning and arrangements that ensure the availability of State and other SRU assets, especially over-water rotary wing capability where applicable, to support a timely and effective SAR response; and
 - vi. daily end of day report by SRUs to the RCC (via mobile, email, fax, etc.); and
- h) establish SAR Alerting procedures which:
- i. are tested and fully integrated with RCC procedures so that RCCs are rapidly notified of any SAR event 24 hours a day;
 - ii. include procedures for joint aeronautical and maritime distress alert notification, including reliable delivery and acknowledgement of Cospas-Sarsat distress alerts, support and response to both aviation and maritime SAR incidents; ~~and~~
 - iii. where applicable, include protocols for civil and military support and sharing of information.
- i) establish arrangements for situations where RCCs need to conduct SAR operations (in accordance with Annex 12) at the same time as the accident investigation authority needs to conduct search and recovery operations (in accordance with Annex 13).

Note: A sample MOU between the SAR service and the accident investigation authority is provided in Appendix 3.

SAR Facilities and Resources

7.3 RCC Facility: All States should ensure that RCCs are of sufficient size with adequate provision for operational positions designed in accordance with human factors principles (such as human machine interface) for all SAR incidents from small scale to a major searches involving civil and military assets where applicable, and facilities such as:

- a) workstations, telephones (with international access), plotting tables, wall notice/status boards, computer, and communications equipment and systems, briefing/debriefing areas, room for storage including incident records and recorders, RCC staff break and rest facilities;
- b) computer resources which may provide support to RCCs with incident management, plotting, search planning, mapping, contact databases, web-based information, etc.;
- c) charts, electronic or paper, which:
 - i. apply to SAR (aeronautical, nautical, topographic and hydrographic);
 - ii. depict aeronautical and maritime SRR(s), neighbouring aeronautical and maritime SRRs, FIR(s),
 - iii. depict SAR resources and SAR Units locations and made available for all relevant aeronautical and maritime RCCs,
 - iv. depict FIR(s), ATS units, aircraft operators, and airspace boundaries including military and Prohibited, Restricted and Danger Areas;
 - ii-v. depict maritime navigation information including hazardous and

environmentally sensitive areas:

~~iii~~.vi. provide a means of plotting;

d) ability to reliably receive and acknowledge distress alerts 24 hours a day;

~~e)~~ ~~maritime broadcast facilities;~~

~~f)~~e) a means of recording, playback and archiving of communications and SAR incident data;

~~g)~~f) shipping/vessel communications and maritime broadcast facilities such as Coastal Radio Stations, RCC radio and satellite communications, marine radio networks;

~~h)~~g) aircraft communications – via ATS units, aircraft operators, satellite communications or direct between RCC and aircraft;

~~i)~~h) access to aircraft and ship tracking data, e.g. ATS surveillance data, GADSS Autonomous Distress Tracking data, commercial satellite tracking data, Automatic Identification System and Long Range Identification and Tracking of Ships (LRIT) allowing rapid identification of potential aircraft and vessels that may divert to assist;

~~j)~~i) a means of obtaining meteorological information – forecast, present and historical data;

~~k)~~j) if applicable, drift modelling software;

~~l)~~k) if applicable, ocean data including sea temperature, currents, winds, tides, etc.;

~~m)~~l) if applicable, SAR Datum Buoys, preferably with satellite tracking capability; ~~and~~

~~n)~~m)R
CC documentation and reference material such as plans of operation, procedures manuals, guidance material, ICAO and IMO references, SAR agreements;

~~o)~~n) Cospas-Sarsat equipment and reference material; and

~~p)~~o) SWIM-enabled systems that can evolve the sharing of Flight Data, Aeronautical Information and MET data in alignment with contemporary practices being implemented under global and regional planning.

7.4 Personnel and Training All States should, where applicable to maintain a 24 hour service:

a) provide adequate ~~ATIS~~ resources (either an ATS supervisor or other staff) that can provide relief within Area Control Centres (ACCs) to allow timely response to SAR alerts and information to RCCs;

b) provide sufficient RCC staffing;

c) provide a sufficient number of trained specialist RCC officers including SMCs and Assistant SMCs (A/SMCs);

d) provide availability of a pool of RCC support staff who are familiar with RCC operations, but not trained as coordinators, that can assist with the functioning of the RCC during SAR incident response;

e) develop SAR personnel position descriptions that detail responsibilities and eligibility criteria for recruitment of operational staff;

f) develop a comprehensive training programme that includes SAR training for:

i. RCC SAR Coordinators (SCs) based on a competency-based assessment approach to ensure technical ~~and English language proficiency~~ proficiency, cyclical (periodic) instruction that provides continuous training to ensure

- competency is maintained, and a system for maintaining training records; and
- ii. SRU staff, including military personnel.
- g) facilitate RCC staff to be proficient in the English language; and
- h) facilitate a programme of regular liaison ~~visits~~ between relevant RCCs, ATSE units and airline operating centres in order to understand those organizations, facilities and capabilities (reference Annex 12, paragraph 3.1.9).

7.5 *Oceanic Capability*: Where applicable, States should establish additional oceanic SAR capability as far as practicable to ensure a timely and adequate SAR response is available to all oceanic areas of their SRRs.- This may be met through cooperative arrangements with neighbouring States or other RCCs.

7.6 *Search and Rescue Units*: All States should establish capabilities enabling:

- a) availability and deployment of suitably crewed, trained and equipped SRUs (including a pool of air search observers trained in visual search techniques), public and/or private, civil and military, for rapid SAR response;
- b) availability and deployment of SRU craft that may be in use for another primary purpose but made available to RCCs for SAR purposes on an as needed emergency basis (vessels, aircraft and land units);
- c) protocols for civil SAR authorities to request the assistance of military assets, and similarly military SAR authorities to request civil assets;
- d) a communication means and information protocols between the State's Aeronautical and Maritime SAR Authorities;
- e) cooperative use and/or sharing of SAR assets with protocols incorporated within National SAR Plans and bilateral SAR Agreements;
- f) pre-arranged government authority for funding of costs associated with hiring of SRUs, and payment for critical supporting logistics such as fuel, to avoid any delays in response availability;
- g) pre-approval of specified SRU assets that may be utilised cross-border (requiring diplomatic pre-approval) or cross-SRR boundary (which may not require diplomatic approval if operating within international airspace); and
- h) aircraft with the ability and regulatory approval to safely conduct SAR missions.

Note: guidance material on SAR aircraft capability is found in the IAMSAR manual.

7.7 *Distress Beacons*: All States should:

- a) where separate ARCCs and MRCCs exist with responsibility for coincident aviation and maritime SRRs, coordinate distress beacon alert procedures to ensure both RCCs are aware of any distress beacon activations within their areas to avoid duplication of response. For example, MRCCs should ensure their procedures alert ARCCs and ATS units to any EPIRB activations;
- b) have a reliable distress beacon registration system that:
 - i) provides a readily-accessible mechanism (preferably one that is available by Internet as well as other conventional means) to enable distress beacon owners to fulfil their obligation to register ELTs, EPIRBs and PLBs, and update the registration data as information changes (e.g., change in ownership);
 - ii) is available to RCCs 24 hours a day and includes up-to-date registration details for all national civil and military ELTs, EPIRBs and PLBs;

- c) take steps (including education) required to prepare for, and to implement changes related to, the introduction of second generation beacons, the transition to the MEOSAR satellite architecture, and the pending Return Link Service provided by the Galileo constellation;
- d) establish an appropriate nationwide means of disposal for old distress beacons; and
- e) conduct promotional programmes, including, where appropriate, with airworthiness agencies and civil aviation authorities, related to the minimization of false alerts. –

Note 1: Information on beacon registration is at: <http://www.cospas-sarsat.int/en/beacons-pro/beacon-regulations-pro/ibrd-user-information-for-professionals>.)

Note 2: Incorrect disposal of distress beacons often causes the deployment of scarce and often expensive SAR resources only to have the beacon located as a non-distress event in a rubbish dump or similar location. – This also creates the risk of SAR resources being diverted away from a real emergency should it arise at the time. – Beacon batteries are hazardous items which should be disposed of in an environmentally friendly manner.

Note 3: Education should include matters such as an update on beacon registration systems to be compatible with new beacon hexadecimal identifications, the transition to the MEOSAR satellite architecture (e.g.: update local user terminals and mission control centres to properly receive and manage MEOSAR data), in accordance with Cospas-Sarsat specification documents (<http://www.cospas-sarsat.int/en/documents-pro/system-documents>).

7.8 Contingency Facilities: All States should ensure there are established contingency facilities, or when a SAR service is not able to be provided, procedures in place for the temporary delegation of the SAR responsibility to another appropriate national body or State. – All States should test their contingency arrangements periodically, but not less than once every six months.

SAR Information

7.9 Provision of Information: All States should ensure the:

- a) establishment of a centralised information source publishing all Asia/Pacific State Aeronautical Information Publication (AIP) information (refer ICAO Doc 10066 PANS-AIM Appendix 2, GEN 3.6 Search and Rescue):
 - i. The agency responsible for providing SAR services;
 - ii. The area of SAR responsibility where SAR services are provided;
 - iii. The type of SAR services and facilities provided including indications where SAR aerial coverage is dependent upon significant deployment of aircraft;
 - iv. SAR agreements;
 - v. The conditions of SAR facility and service availability; and
 - vi. SAR procedures and signals used;
- b) establishment of an Internet-based SAR information sharing system (with security protocols as required and in accordance with the emerging System Wide Information Management – SWIM – concept as applicable) to share SAR activity with States and key stakeholders participating in a SAR activity (the information sharing system should include a means of handling media and next of kin enquiries, and recognise the need to avoid premature media statements); and
- c) maximum practicable cooperation between State entities in the provision of accurate and timely information when required, including from military sources, except

where national security could be adversely affected.

7.10 *SAR Facilities and Equipment Lists*: All States should develop and maintain a current, comprehensive electronic list of State SAR Facilities, SAR Equipment, and SAR Units (SRUs), including joint or shared facilities and equipment, ~~and provide the Internet link to that list to the ICAO Asia/Pacific Regional Office.~~

7.11 *SAR Library*: All States should:

- a) establish a web-based SAR Library, or cooperate by contributing to an Internet-based Asia/Pacific resource (such as <https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Response-Policy-CG-5R/Office-of-Incident-Management-Preparedness-CG-5RI/US-Coast-Guard-Office-of-Search-and-Rescue-CG-SAR/SAR-Publications/>); and
- b) ensure that each RCC and SAR Authority has ready access to a current copy (either electronic or hard copy) of the following reference documents at a minimum:
 - i. ICAO Annex 12;
 - ii. IAMSAR Manual Volumes I, II and III;
 - iii. International Convention on Maritime SAR (SAR Convention);
 - iv. Asia/Pacific SAR Plan/electronic Air Navigation Plan; and
 - v. relevant regional, national and agency SAR documents.

Note: The Asia/Pacific SAR Library hosted by the US Coast Guard contains a list of documents that may be held by RCCs and JRCCs as appropriate. In addition, a list of documents (SAR.7/Circ.12) would be available on the IMO web site at: (<http://www.imo.org/en/OurWork/Safety/RadioCommunicationsAndSearchAndRescue/SeArchAndRescue/Pages/Default.aspx>).

SAR Improvement

7.12 *Search and Rescue Exercises (SAREX)*: All States should conduct regular SAREX (at least once every two years) to test and evaluate existing coordination procedures, data and information sharing and SAR response arrangements involving:

- a) both aeronautical and maritime SAR authorities including both civil and military agencies as applicable, and related bodies such as Air Navigation Service Providers (ANSPs) and Airline Operations Centres (AOCs);
- b) where appropriate, cross-aeronautical SRR boundary coordination (SAREX should routinely involve SAR authorities of adjacent SRRs); and
- c) **improvement of** SAREX effectiveness through a post-SAREX review and written report, completed to ensure that deficient areas or latent problems are identified and remedied.

Note 1: a SAREX template is provided in the ~~2019 edition of the IAMSAR Manual, Volume I, Appendix O, Sample template for a joint SAREX.~~

Note 2: SAREX should test the SAR system, including unannounced alerts that allow an actual search (whether it is a desktop or a physical operation); to be conducted which will indicate weaknesses in the system. SAREX should not be confused with, or take the form of, simulated crash fire exercises such as for Aerodrome Emergency Procedures that do not have a search component.

Note 3: Real SAR incident responses which include an adequate post-response review

and evaluation with lessons learned may replace the need for a SAREX.

7.13 SAR Quality Assurance: All States should implement SAR System Improvement and Assessment measures, including Safety Management and Quality Assurance systems, that:

- a) provide performance and safety indicators, including post-incident/accident lessons learned and management reviews (RCC and SAR System Continuous Improvement process), and feedback from RCC staff, SAR system users or SAR stakeholders;
- b) identifies risk and corrective and preventive actions that prevent or minimise risk and the possibility of substandard SAR performance;
- c) establishes an internal quality assurance programme, which includes regular internal audits of the RCC, SAR operations, SAR facilities and procedures that are conducted by trained auditors;
- d) ensures the person responsible for internal quality assurance within the entity responsible for SAR services has direct access to report to the Head of the entity responsible for SAR services on matters of quality assurance; and
- e) where appropriate, provides submissions to the [ICAO/IMO JWG-SAR](#) to share lessons learned and experiences with other global States for the continuous improvement of the worldwide SAR system.

Note 1: Resourcing of SAR system audit arrangements could be mitigated by States entering cooperative arrangements, including sub-regional regulation, between States for auditing of each other's SAR systems to share expertise and costs.

Note 2: Provisions of Annex 19 for a Safety Management System (SMS) may apply where a SAR service is provided under the authority of an ATS provider (~~Annex 19, Chapter 3, 3.1.3 e refers~~).

Note 3: Peer review, either external or internal, may provide a useful internal quality assurance tool.

7.14 SAR Management Review: All States should conduct an annual or more frequent analysis of their current State SAR system to identify specific gaps in capability against the minimum requirements of Annex 12 and the guidelines of the IAMSAR Manual to:

- a) enable the ICAO Asia/Pacific SAR data to be updated to accurately reflect the State's capability;
- b) be informed regarding the availability and capability of SAR services in neighbouring States;
- c) identify SAR research and development programmes, especially those which could be conducted if possible in cooperation with other States;
- d) establish a common set of basic SAR system statistics, which include-
 - i. number of SAR incidents per year;
 - ii. number of lives at risk versus number of lives saved;
 - iii. records of time from first alert to tasking the SRU;
 - iv. records of time from first alert to arrival on scene of first SRU; and
 - v. records of time from first alert to rescue.
 - ~~vi.~~ records of false alerts or unnecessary activation of SAR services.
- e) plan for any necessary improvements to gradually build and improve capability over time, which would be detailed in the State SAR Plan; and

f) regularly review and update SAR agreements as appropriate.

Note 1: The National self-assessment on SAR found in IAMSAR Manual Vol I Appendix H and the ICAO USOAP-CMA Protocol Questions for SAR may assist States with their reviews.

Note 2: The number of incidents should identify the type (e.g.: Cospas-Sarsat alert, ATS alerts, etc.) and outcome of SAR incidents.

7.15 SAR Promotion: All States should conduct SAR promotional programs (e.g. Seminars, Workshops and public safety campaigns) to:

- a) encourage higher SAR preparedness by persons that may require SAR services through public safety campaigns aimed at preventing persons getting into distress situations (i.e.: 'preventative SAR');
- b) foster a reduction in false alerts to avoid wasting valuable SAR resources and risk to SAR crews responding unnecessarily;
- a) ensure the support of government decision-makers for SAR facilities and improvements, in particular adequate funding availability;
- b) assist media to understand SAR operations in order to minimise the need for explanations during SAR responses;
- c) recognise improvement in State SAR systems;
- d) enhance cooperation between SAR services and –
 - i. civil, military and police agencies;
 - ii. ANSPs;
 - iii. aerodrome and port operators;
 - iv. aircraft and shipping operators;
 - v. meteorological agencies;
 - vi. accident investigation ~~agencies~~authorities;
 - vii. government and non-government agencies affected by SAR operations, in particular large scale national and international responses involving whole of government agencies; and
 - viii. other States.

Note: social media may be an effective means of SAR promotion that reduces the workload of SAR staff during major SAR responses.

EMERGING ISSUES AND FUTURE DEVELOPMENTS

Planning for the Future

8.1 States should monitor developments such as improvements to existing and new technologies and other emerging matters which may impact on the SAR system of the future as part of State, regional and global aviation strategic direction and planning. This may include matters such as:

- the need to cater for increased growth or changes in air and maritime traffic through SAR regions which may increase the demand, or present changed capability requirements, for SAR services. This may include, for example, new air routes using longer range aircraft into more remote areas or increased numbers of, and/or larger, cruise ships; and
- new technology such as:
 - UASRPAS UAS,
 - autonomous vessels,
 - new distress alerting devices and systems,
 - new tracking systems,
 - new electronic search equipment (such as optical radar systems),
 - online virtual conferencing platforms,
 - smartphone apps,
 - artificial intelligence, and
 - data driven decision making tools.

Research and Development

8.2 To develop the tools and systems required to meet foreseeable long-term requirements, there is a need for States to undertake planning and co-operation on SAR matters. This includes major efforts to define concepts, to extend knowledge and invent new solutions to future SAR challenges so these new concepts are selected and applied in an appropriate timely manner. – Such efforts could be forged through collaborative partnerships between, States, ANSPs, International Organizations, institutes of higher learning and specialised technical agencies. – This concept is consistent with Seamless ATM Principle 36 (*Inter-regional cooperation ('clustering') for the research, development and implementation of ATM projects*), and may manifest itself in joint projects such as:

- ICAO and/or IMO regional SAR training opportunities, where provided, to assist States that are unable to provide their own SAR training;
- Joint Sub-regional RCCs (ASEAN States in particular may be candidates for a single centre of excellence that brings together civil and military SAR experts from all ASEAN States and provides a single SAR facility that is cost-effective and has a level of resources and facilities that would be difficult for all States to maintain by themselves); and
- Regional online eLearning packages.

Note: ~~Appendix 2~~Appendix 1 provides a summary of benefits to the SAR System of States assisting other States.

8.3 With the end goal of a globally interoperable SAR system in mind, the region will have to consider planning for a long term supporting concept and infrastructure, including possible integration of the new technologies listed in paragraph 8.1 for SAR application. -The following are possible areas that should be considered for future SAR research and development, in order to promote the maximum possible harmonisation and interoperability of SAR systems:

- a) data sharing such as aircraft and ship tracking information;
- b) automated data link communication to RCCs when an aircraft or ship exceeds a Variable Set Parameter (VSP) in terms of its operating envelope, or activation of an emergency status (could be displayed as a symbol, and the data could include certain operating parameters such as acceleration and altitude for an aircraft) – note the ICAO GADSS includes this concept;
- c) regional ~~UAS RPAS~~UAS and autonomous vessels for use in SAR and their safe operation alongside crewed aircraft and vessels;
- d) inclusion of the SAR system and RCC access as a component of the ~~new~~-ICAO SWIM concept of operation and implementation;
- e) on-going development of standardised SAR training objectives and advanced training systems, including the use of high fidelity simulators;
- f) enhanced technology oriented systems to improve SAR system effectiveness such as use of virtual conferencing platforms to enhance real-time SAR incident coordination between RCCs and other stakeholders, and live imagery and video streaming from SAR units to RCCs; and
- ~~g)~~—transition to MEOSAR System and second generation beacons-

MILESTONES, TIMELINES, PRIORITIES AND ACTIONS

Milestones

9.1 Section 7 (*Performance Improvement Plan*) provides a scheme for the implementation of a collective set of enhancements for a number of elements in the PSCS, ~~effective 07 November 2019~~.

9.2 States should ~~commence planning for implement~~ the various PSCS elements ~~from the approval~~ of this Plan ~~without delay, to ensure a smooth transition by 07 November 2019~~, and should include consideration of issues such as:

- safety/operational analysis and assessment;
- cost-effectiveness;
- budgetary issues;
- development of operational procedures; and
- training.

9.3 Section 8 (*Research and Future Development*) provides, subject to future agreement by concerned parties, possible SAR improvements ~~beyond 2020 until 2030~~ over the next 10 years.

Priorities

9.4 It is a matter for each State to determine priorities in accordance with its own economic, environmental, safety and administrative drivers.

Actions

9.5 This Plan necessitates a number of implementation actions. ~~It is expected that each Asia/Pacific State report progress on each applicable element to APANPIRG through the ATM Sub-Group. All States should note the importance of SAR status monitoring, which is expected to be conducted as part of the Seamless ATM-ANS on-line monitoring. Reporting of implementation progress of SAR elements from this Plan is expected to be conducted by the on-line Seamless ANS Reporting and Monitoring system, once this system is enabled to include the subsidiary plan such as the Asia/Pacific SAR Plan.~~

9.6 Section 6 (*Current Situation*) provides analysis and major concerns in the region, which should be considered in the formulation of specific State plans.

9.7 SAR Coordination Forums, which are likely to be based on sub-regional development (such as a Pacific Ocean SAR Forum and Indian Ocean SAR Forum) need to be promoted, established and supported to ensure the on-going implementation work and future review of SAR expectations linked to this Plan are conducted.

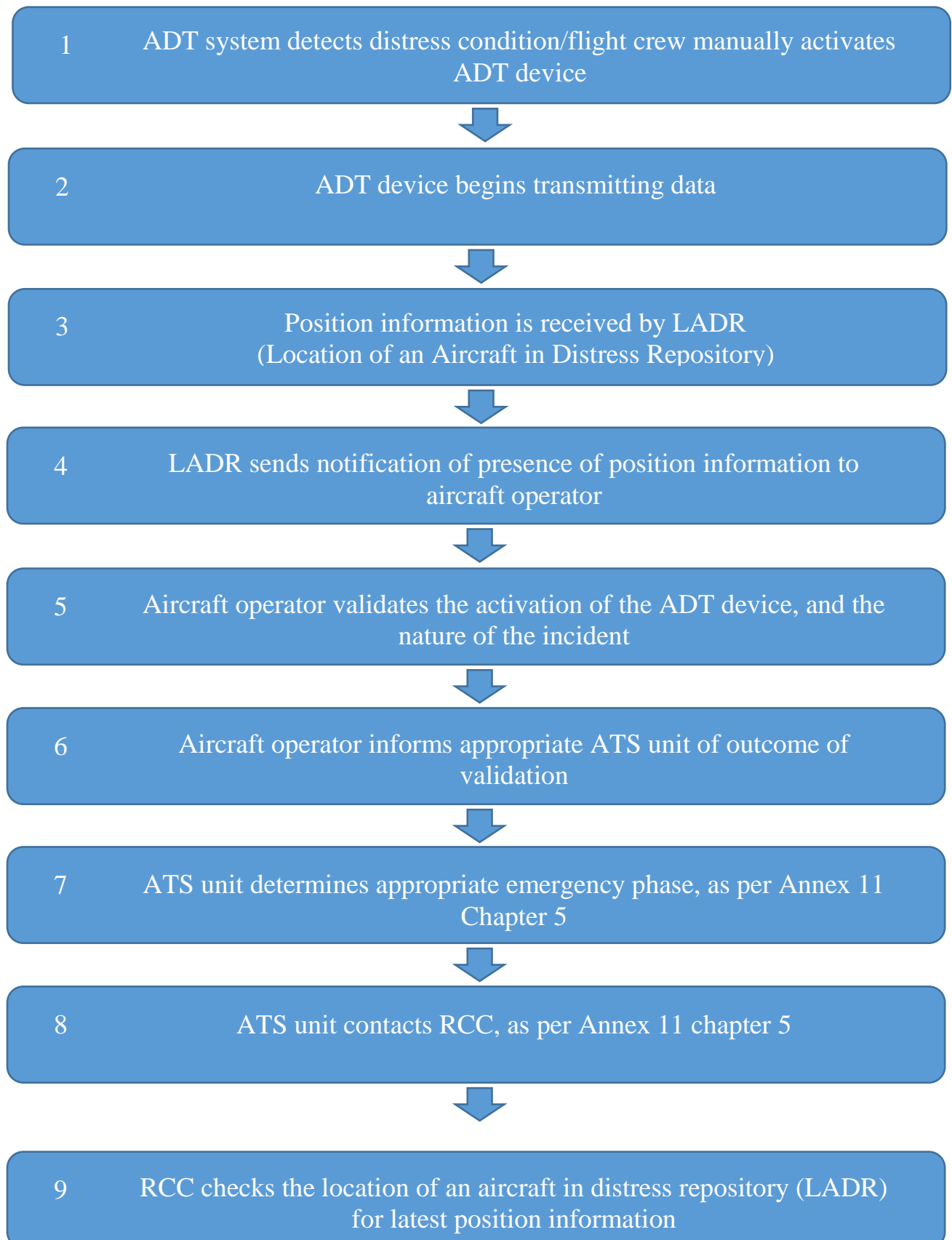
SAREX

9.8 A program is expected to be established for an annual SAREX in each sub-region (South Asia, Southeast Asia, East Asia and the Pacific), with every second year being a desktop communications exercise, and alternate years being a full exercise. The SAREX outcomes and lessons learned should be reported to APANPIRG through the ATM Sub-Group.

9.9 The ICAO Asia and Pacific Regional Office is responsible for taking actions that assist the implementation of SAR within its accredited States, in cooperation with the IMO. ~~In addition, the Asia and Pacific Regional Office was responsible for coordinating with adjacent ICAO regional offices on an ad hoc basis or at relevant trans-regional meetings.~~

APPENDIX 1: FLOWCHART OF ACTIONS FOLLOWING ACTIVATION OF AN ADT DEVICE.

Reproduced from IAMSAR Manual Volume II Appendix V Figure 1, with explanatory annotations.



Notes on the nine steps in the Flowchart of Actions:

1. ADT system detects distress condition.
 - a. The ADT system activates under certain conditions when the aircraft is in flight, there is no requirement to operate after an accident.
 - b. Activated automatically or manually by flight crew. De-activated by the same means it was activated.
2. ADT device begins transmitting data
 - a. Aircraft operator (airline) required to obtain information from which a position can be determined at least once every minute, and make the position information available to the appropriate ATS unit and RCC.
3. Position information received by the LADR
 - a. All ADT devices send ADT information to the LADR.
 - b. The ELT(DT) also sends a Cospas-Sarsat formatted message to the relevant RCC.
 - c. The mandatory ADT information to be sent to the LADR is:
 - i. Last known position (latitude/longitude, altitude, time stamp, flight track (past position reports))
 - ii. Date and time of transmission
 - iii. Aircraft operator identifier (3-Letter Designator (3LD))
 - iv. Nationality mark and Aircraft registration mark (i.e., tail number)
 - v. Contributor, data source (e.g., Cospas-Sarsat).
 - d. Optional information may also be in the LADR.
4. LADR sends notifications to subscribers
 - a. Subscribers (RCCs, ATS units, aircraft operator)
 - b. Subscribers are notified that ADT information is available to view or download
 - c. Notification sent from LADR for the first received position and normally not sent for each position report.
 - d. New LADR notification sent when an aircraft is distress transits from one FIR to a second (and any subsequent) FIR.
 - e. Notification from LADR sent by email, SMS, or ATS message over AFTN/AMHS
 - f. ELT(DT) data also automatically sent to relevant RCC in a Cospas-Sarsat SIT 185 message.
 - g. Cospas-Sarsat MCC will automatically send all ADT information to the LADR but will not send all ELT(DT) messages to the RCC because of the large number of transmissions.
5. Aircraft operator validates/attempts to validate
 - a. Aircraft operator has various methods to validate if its aircraft is in distress or not.
 - b. Aircraft operator needs to be aware that the relevant ATS unit and associated RCC have likely been notified.

- c. ADT concept envisioned the current alerting process as per Annex 11 chapter 5 would not change.
- 6. Aircraft operator informs appropriate ATS unit
 - a. Aircraft operator needs to be aware that the relevant ATS unit and associated RCC have likely been notified.
 - b. Aircraft operator, ATS unit and RCC need common ADT procedures, nationally and regionally, for efficient handling of information received from the ADT system.
- 7. ATS unit determines emergency phase
 - a. As per Annex 11 chapter 5.
 - b. ATS unit, RCC and aircraft operator need common ADT procedures, nationally and regionally, for efficient handling of information received from the ADT system.
- 8. ATS unit contacts RCC
 - a. As per Annex 11 chapter 5.
 - b. ATS unit, RCC and aircraft operator need common ADT procedures, nationally and regionally, for efficient handling of information received from the ADT system.
- 9. RCC checks the LADR
 - a. In addition to the initial notification other information may be available.
 - b. If aircraft is equipped with an ELT(DT), the RCC will also receive an ELT(DT) message from the Cospas-Sarsat system.
 - c. RCC, ATS unit and aircraft operator need common ADT procedures, nationally and regionally, for efficient handling of information received from the ADT system.

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~~APPENDIX 1: RCC PROCEDURES FOR AUTONOMOUS DISTRESS TRACKING (ADT) SIGNALS~~

~~Asia/Pacific States and territories need to prepare for the implementation of functions of the Global Aeronautical Distress and Safety System (GADSS). GADSS applies to certain passenger and cargo aircraft. The first phase commenced 8 November 2018 for the aircraft tracking function of automated reporting of position at least every 15 minutes. The next phase commences 1 January 2021 for the autonomous distress tracking (ADT) function of reporting at least once every minute. It is possible for the ADT to transmit as the aircraft flies across multiple SAR regions and flight information regions. WP13 US comments change ADT to ...~~

~~The sharing of GADSS alerting information requires global coverage and a global interoperable systems approach. Aircraft tracking and ADT alert notification information for aircraft emergency conditions need rapid distribution to the aircraft operator, and possibly the responsible ATSU and the responsible RCC. Effective sharing of this information to the responsible stakeholders requires well defined, accurate and readily accessible global flight information region and SAR region data, plus reliable 24-hour contact details for the aircraft~~

~~operators, ATSU and RCCs. For many States, these are key areas needing improvement to enable effective SAR response. And, Territories which may not have an RCC but have an international airport, need to be prepared to correctly react when an RCC or ATSU informs it of such a possible inflight emergency.~~

~~RCC Procedures for no later than 1 January 2021~~

~~The RCC will greatly benefit from autonomous distress tracking (ADT), which provides timely detection of an aeroplane in distress and the last known location of the aeroplane. Current RCC processes are established under the provisions of ICAO Annex 11 and ICAO Annex 12 – Search and Rescue, and apply to the aeronautical RCC (ARCC). However, the International Convention on Maritime SAR also established a global maritime search and rescue system but uses maritime RCCs (MRCCs). To ensure close coordination between the aeronautical and maritime SAR services, States are expected to either establish a joint RCC (JRCC) or to ensure the closest practicable coordination between the ARCC and MRCC.~~

~~*Note: In this plan, the term RCC will be used to apply to an ARCC, MRCC or JRCC.*~~

~~While the ADT process is new, it is anticipated that the alerting process for the RCC will not fundamentally change.~~

~~The distress alert notification processes associated with ADT, based on ICAO Annex 11, Chapter 5 can be summarized as follows:~~

~~if an ATSU detects an aeroplane in distress it will notify the RCC and the operator;~~

~~if the operator detects an aeroplane in distress, it will notify the ATSU who will in turn notify the RCC;~~

~~if an ELT is activated, the RCC will be notified via the Cospas-Sarsat system and the RCC will subsequently notify the ATSU and the aircraft operator;~~

~~ADT notifications, including from the ELT(DT), provide the last known position of an aircraft that may be in a distress condition in flight; and, the aircraft operator, ATSU and RCC will be notified when the information is available from the ADT distress tracking repository; and~~

~~The RCC should confer with the ATSU to decide if the ADT notification is a distress alert. It may be appropriate to consider this as in at least the uncertainty phase until further~~

~~information is provided by the ATSU or aircraft operator.~~

~~As specified in Annex 11, Chapter 5, not only is the ATSU expected to notify the RCC immediately when an aeroplane is considered to be in a state of emergency, the notification is expected to contain as much as is available of information listed in that chapter. This list of information closely aligns with content of the “Missed 4D/15 Position Report Form for Operator” that the operator should provide in notifying an ATSU, as identified in ICAO Circular 347, *Aircraft Tracking Implementation Guidelines*, Chapter 8 *Operator Missed Reports Notifications to ATS Unit*.~~

~~Once notified of a distress, the RCC will initiate action based on preparatory measures and operating procedures set forth in Annex 12. Under preparatory measures, the RCC is required to have readily available at all times up-to-date information concerning its search and rescue region, including ATSUs addresses and telephone numbers of all operators, or their designated representatives, engaged in operations in the region, and MRCCs which are not part of a JRCC.~~

~~If the ATSU was not the notification source, the RCC should contact the ATSU to confirm the possible distress and have the ATSU gather further information, which would be the list of information in Annex 11 and the most recent 4D aeroplane position data leading up to the ADT activation. These actions are taken concurrently as the RCC immediately initiates search and rescue actions. When the information concerning the emergency is received from another source, such as the ELT alert going directly to the RCC via the Cospas-Sarsat system, the RCC will notify the associated ATSU and also notify the operator, where possible, and keep the operator informed of all developments. (The MRCC does not have a requirement to notify the operator but should try to have arrangements in place to notify or seek the support of the ARCC or ATSU to notify the operator.)~~

~~The responsible RCC and the associated ATSU serving the flight information region (FIR) in which the aeroplane is operating coordinate their activities and work closely together. The RCC is expected to provide that ATSU with planned SAR action initiated by the RCC so that such information can be passed to the aeroplane.~~

~~If the aeroplane in distress continues in flight and crosses into other SAR region(s), the first RCC originally notified will contact and coordinate with the other RCC(s) to decide which RCC will have responsibility to coordinate the SAR operation. If coordination is handed off to another RCC then its associated ATSU would be expected to support that RCC.~~

~~The RCC and ATSU will keep each other informed as to changes in the emergency phase after the initial declaration as well as if the aeroplane has resumed normal operations or safely landed, and, as soon as practicable, notify the operator concerned.~~

APPENDIX 2: BENEFITS TO THE SAR SYSTEM OF STATES ASSISTING OTHER STATES

APAC States Face Demanding SAR Responsibilities with Few Resources

2.1 Many APAC States have the challenging responsibility of providing SAR services over vast and remote land and oceanic areas and several have few resources available to meet Annex 12 requirements.

Taking A Regional Approach Improves Effectiveness and Efficiency

2.2 To provide an effective and efficient SAR service in the region it is important that States focus not only on meeting their own national obligations, but also take the broader view that their State SAR system is only one part of the wider regional SAR system. States therefore need to cooperate, collaborate and share resources and technical expertise with their neighbouring and regional RCCs, with the more developed SAR States in particular looking for opportunities to assist their lesser developed State neighbours.

When Developed SAR States Support Less Developed Neighbours, Everyone Wins

2.3 Sometimes simple measures can reduce the incidence of SAR operations in a State's Area of Responsibility.

2.4 An example of this is where New Zealand has been regularly requested to send resources to Kiribati, which is not in New Zealand's SRR, to conduct aerial searches for people missing in small vessels at sea. New Zealand recognised that with the provision of basic aids, the number of people going missing at sea could be reduced. The work was completed through an aid program and the benefit was immediate and twofold. There has been a large reduction in the number of people going missing at sea and New Zealand has reduced costs through less aerial searches being required.

2.5 Another example is where Australia has recognised that increasing aircraft and vessel traffic in the north and western areas of its SRR in the Indian Ocean region comes with increased likelihood of more frequent SAR responses in that region. As a result, Australia ~~has commenced a new project worked~~ in partnership with the Maldives, Mauritius and Sri Lanka to fund and provide technical assistance to improve the SAR capabilities of those countries that will also assist Australia's SAR response obligations in that area of its SRR. Similarly, since 2008 Australia has been providing funding and development assistance to Indonesia to improve SAR capability and cooperation.

2.6 States who aren't compliant with Annex 12 SARPs and who are unable to meet the minimum SAR service requirements could consult and seek assistance from 'champion' States who are compliant and have well developed SAR systems in place.

2.7 Examples of assistance that could be provided by States, International Organisations (such as IMO and ICAO) or multi-lateral initiatives include:

- a) conducting of a SAR Gap Analysis;
- b) advice on the establishment of a SAR organisational framework;
- c) advice for the establishment of a National SAR Committee;
- d) technical assistance in the development of a National SAR Plan;
- e) providing copies of relevant SAR documents to be used as templates;
- f) technical assistance on the establishment of SAR agreements;
- g) technical assistance in the development of RCC position descriptions;
- h) training of SAR personnel;

- i) provision of SRU where appropriate and training of SRU crews;
- j) provision/sharing of computerised SAR tools including incident management systems, databases, maritime drift modelling software, etc.;
- k) establishing data and information sharing agreements between RCCs;
- l) provision of operational search plan data;
- m) providing advice on how to conduct a SAREX and post-SAREX analysis; and
- n) set up of SAR system publicity and safety awareness campaigns.-

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APPENDIX 3: SAMPLE MOU BETWEEN THE SAR SERVICE AND THE ACCIDENT INVESTIGATION AUTHORITY

Notification and Cooperation during concurrent [Search and rescue service] Search and Rescue (SAR) and [Accident investigation authority] Accident Investigation Operations

1. **Purpose.** This MOU between the [Search and rescue service] and the [Accident investigation authority] is to address the [Search and rescue service's] obligations under the Convention on International Civil Aviation (ICAO), Annex 12 Search and Rescue; and, the [Accident investigation authority's] obligations under ICAO Annex 13 Aircraft Accident and Incident Investigation during concurrent responses to an aircraft accident.
2. **General.** The [Search and rescue service] is the [State name] lead agency with regard to its obligations in support of Annex 12. It establishes and provides SAR services in accordance with the Annex. The [Search and rescue service] is the national SAR Coordinator for aircraft in distress in the [maritime and/or aeronautical] search and rescue region(s). The [Accident investigation authority] leads the investigation of all civil aircraft accidents or incidents.
3. **SAR and Accident Investigation Protocols.** The [Search and rescue service] and [Accident investigation authority] agree that mutual coordination and cooperation between the two agencies promotes efficient and effective SAR and accident investigation operations. The [Accident investigation authority] does not participate in the search and rescue of persons that are involved in an aircraft accident but may assist [SAR authority] with information and expertise that assists the SAR operation. The [SAR authority] may assist the [Accident investigation authority] with information resulting from the SAR operation that assists with accident investigation and may also provide assistance with search and recovery operations.
 - a. When a SAR operation involving an aircraft accident occurs in a SAR region in which the [Search and rescue service] is responsible, the [Search and rescue service] will notify the [Accident investigation authority] at the earliest opportunity. The point of contact for the [Accident investigation authority] is: [contact details such as telephone number and email address].
 - i. If an [Accident investigation authority] investigator-in-charge has been named, the [Accident investigation authority] point of contact will inform the Search and rescue service] point of contact.
 - ii. The [Accident investigation authority] point of contact may share the investigator-in-charge's contact information with the [Search and rescue service] point of contact.
 - iii. The [Search and rescue service] SAR point of contact is the rescue coordination centre (RCC) or rescue sub-centre (RSC) responsible for the coordination of the SAR operation.
 - b. The State of occurrence, i.e. the State in the territory (and territorial sea) of which an accident or incident occurs, is responsible for the conduct of the investigation in accordance with ICAO Annex 13. For accidents and incidents outside the territory and territorial sea of any State, the State of Registry of the aircraft is responsible for the conduct of the investigation.
 - c. States nearest the scene of an accident in international waters, particularly the State with the search and rescue region responsibility, are to provide assistance as they are able and respond to requests by the State of Registry. If the State of Registry takes control of the investigation, then the [Accident investigation authority] will coordinate with the State of Registry investigator-in-charge to meet the intent of this MOU.

- d. Typically, the [Accident investigation authority's] on-scene investigative work begins after the SAR operation concludes and the recovery phase begins, but it may begin during the SAR operation on the understanding that the SAR operation takes priority whilst there is opportunity to rescue survivors.
- i. The [Accident investigation authority] may conduct its investigation of wreckage recovered during a SAR operation. The [Accident investigation authority] investigator-in-charge will coordinate with the RCC or RSC responsible for coordinating the SAR operation to ensure neither agency's work hinders that of the other, and that both coordinate any updates to the media to ensure consistency of facts.
- e. The [Search and rescue service] will provide data and information related to the SAR operation requested by the [Accident investigation authority] for its accident investigation. Where appropriate, arrangements should also be mutually agreed for the securing of any debris or wreckage retrieved during the SAR operation as practicable without diverting effort from the SAR operation.
- f. The [Search and rescue service] and the [Accident investigation authority] will abide by the terms of this MOU.

Note: This template serves as guidance for States to draft an agreement or amend an existing agreement (which may take the form of an MOU or Arrangement or other instrument title) and the text to be included in this document is for the Parties involved to decide.

Depending on national rules and procedures, this sample MOU may need to be modified for arrangements between one national search and rescue service and one national accident investigation authority.

This template may also assist with the development of separate arrangements for investigation of maritime craft.

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ATM and Airspace Safety Deficiencies in the SAR Field (Updated 18 May 2022)

States/facilities	Deficiencies			Corrective Action		
	Description	Date first reported	Remarks	Executing body	Target date	Priority **
	SAR capability: Requirements of Annex 12 as defined in the Regional Air Navigation Plan Volume II Part I – GENERAL PLANNING ASPECTS Section 3 SPECIFIC REGIONAL REQUIREMENTS, failure to reach 90% or more implementation of the Asia/Pacific SAR Plan					
Afghanistan	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/6 56%	Afghanistan	2019	U
Bangladesh	Asia/Pacific SAR Plan	17/05/2019	APSAR/WG/6 67%	Bangladesh	2019	U
Bhutan	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/4 34%	Bhutan	2019	U
Brunei Darussalam	Asia/Pacific SAR Plan	17/05/2019	APSAR/WG/4 63%	Brunei	2019	U
Cambodia	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/4 76%	Cambodia	2019	U
Macao, China	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/4 85%	Macao, China	2019	U
Cook Islands	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/5 44%	Cook Islands	2019	U
DPR Korea	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/4 66%	DPR Korea	2019	U
Fiji	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/6 89% APSAR/WG/7 93%	Fiji	2019	U
French Polynesia	Asia/Pacific SAR Plan	17/05/2019	APSAR/WG/5 82%	French Polynesia	2019	U
Kiribati	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/2 26%	Kiribati	2019	U
Lao PDR	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/4 57%	Lao PDR	2019	U
Malaysia	Asia/Pacific SAR Plan	17/05/2019	APSAR/WG/6 77% APSAR/WG/7 76%	Malaysia	2019	U

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States/facilities	Deficiencies			Corrective Action		
	Description	Date first reported	Remarks	Executing body	Target date	Priority **
Maldives	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/6 71%	Maldives	2019	U
Marshall Islands	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/5 17%	Marshall Islands	2019	U
Micronesia	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/5 17%	Micronesia	2019	U
Mongolia	Asia/Pacific SAR Plan	17/05/2019	APSAR/WG/5 73%	Mongolia	2019	U
Myanmar	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/4 67%	Myanmar	2019	U
Nauru	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/4 0%	Nauru	2019	U
Nepal	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/5 56%	Nepal	2019	U
New Caledonia	Asia/Pacific SAR Plan	17/05/2019	APSAR/WG/5 71%	New Caledonia	2019	U
Pakistan	Asia/Pacific SAR Plan	17/05/2019	APSAR/WG/4 84% APSAR/WG/7 88%	Pakistan	2019	U
Palau	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/5 17%	Palau	2019	U
Papua New Guinea	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/4 30%	Papua New Guinea	2019	U
Philippines	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/4 61% APSAR/WG/6 88%	Philippines	2019	U
Samoa	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/4 0%	Samoa	2019	U

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States/facilities	Deficiencies			Corrective Action		
	Description	Date first reported	Remarks	Executing body	Target date	Priority **
Solomon Islands	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/4 0%	Solomon Islands	2019	U
Sri Lanka	Asia/Pacific SAR Plan	17/05/2019	APSAR/WG/5 75% APSAR/WG/7 80%	Sri Lanka	2019	U
Thailand	Asia/Pacific SAR Plan	17/05/2019	APSAR/WG/6 78%	Thailand	2019	U
Timor-Leste	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/4 0%	Timor-Leste	2019	U
Tonga	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/4 70%	Tonga	2019	U
Tuvalu	Asia/Pacific SAR Plan	28/05/2022	APSAR/WG/7 0%	Tuvalu	2024	U
Vanuatu	Asia/Pacific SAR Plan	6/07/2015	APSAR/WG/4 0%	Vanuatu	2019	U

** Note: In accordance with the *APANPIRG Handbook - Asia/Pacific Supplement to the Uniform Methodology for the Identification, Assessment and Reporting of Air Navigation Deficiencies*, priority for Air Navigation Deficiencies is guided by the principle that a deficiency with respect to an ICAO Standard is accorded a “U” status, while a non-compliance with a Recommended Practice or a PANS is considered as “A” or “B” subject to additional expert evaluation. The final prioritization of deficiencies is the prerogative of APANPIRG.

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ATM POINTS OF CONTACT

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UPDATED: 14 June 2022

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<i>ADM= Administration, AIS= Aeronautical Information Service, ARC= Asia/Pacific Region ATS Route Catalogue ATC= Air Traffic Control, ATFM= Air Traffic Flow Management, CCT= Contingency Coordination Team, SAF= Safety, SAR= Search and Rescue</i>				
AFGHANISTAN Provisional Points of Contact				
	H.E Hasibullah Soroush	Deputy Minister	Tel: +93786626922	s.hasib78@gmail.com ;
	Capt. Ghulam jailani Wafa	General Director of Flight Safety Standards	Tel: +93 700304828	jailaniw63@gmail.com ;
	Obaidullah Rashidi	Acting Director of ATM	Tel: +93700200765	obaidr@hotmail.com ;
	Eng. Mohammad Homayoon stanikzai	General Director of Flight Safety	Tel: +93 700 28 6762	h.stanikzai.fsacaa@gmail.com ;
ARMENIA				
CCT	Mr. Artur Gasparyan	Director General "ARMATS" CJSC	Tel: +374 10284142 Fax: +374 10284142	arthur.gasparyan@armats.am ;
CCT	Mr. Sergey Danielyan	Chief of ATC Centre ARMATS	Tel: +37410282673 Fax: +37410282673	sergey.danielyan@armats.am ;
AZERBAIJAN				
CCT	Mr. Bala Mirzayev	Head of ATS, Azeraeronavigation	Tel: +99 4124971604 Fax: +99 4124971604	BalaMirzayev@azans.az ;
CCT	Mr. Agabek Balabekov			agabek.balabekov@azans.az ;
AUSTRALIA				
SAR	Mr. Scott Constable	Principal Advisor Aviation Policy Australian Maritime Safety Authority GPO Box 2181 Canberra ACT 2601	Tel: +61 2 6279 5706 Mobile: +61 459 164 627	scott.constable@amsa.gov.au ;

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ATC	Mr. Neil Bain	ATS Specialist Team Leader Operational Standards Airservices Australia Locked Bag 747 Eagle Farm, Qld, 4009	Tel: +61 7 3866 3526 Fax: +61 7 38663742 Mobile: +61 409069851	neil.bain@airservicesaustralia.com ; international@airservicesaustralia.com ;
AIS	Mr. Timothy Hurley	Aviation Safety Inspector (AIM & IFP) Civil Aviation Safety Authority GPO Box 2005, Canberra ACT 2600	Tel: +61 7 3144 7609 Fax: +61 7 3144 755	timothy.hurley@casa.gov.au ; cns.atm@casa.gov.au ;
AIS	Mr JP. Lamilla	AIS Business Manager Airservices Australia	Tel: +61 2 6268 4552	jplamilla@airservicesaustralia.com ; international@airservicesaustralia.com ;
SAF	Dr. Amelia Gontar	Risk Intelligence Specialist Chief Safety and Risk Office Airservices Australia Australian Airspace Monitoring Agency (AAMA)		aama@airservicesaustralia.com ; international@airservicesaustralia.com ;
ARC	Mr Adrian Sloopjes	Team Leader Airspace Operations Office of Airspace Regulation - Civil Aviation Safety Authority GPO Box 2005, Canberra ACT 2600	Tel: +16 2 6217 1362	Adrian.Sloopjes@casa.gov.au ; oar@casa.gov.au ;
ADM	Ms. Pip Spence	Deputy Secretary Department of Infrastructure and Regional Development GPO Box 594 Canberra ACT 2601	Tel: +61 (2) 6274 7086 Fax: +61 (2) 6274 7804	austicao@infrastructure.gov.au ; InternationalICAO@infrastructure.gov.au ;

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ADM	Mr. Andrew Sparrow	Section Head Air Navigation, Airspace and Aerodromes Branch Civil Aviation Safety Authority GPO Box 2005 Canberra ACT 2601	Tel: +61 2 6217 1690 Fax: +61 2 6217 1500	andrew.sparrow@casa.gov.au ;
BAHRAIN				
CCT	Abdallal Alquadhi	Director AIS		aalqadhi@mtt.gov.bh ;
CCT	Ahmed Bucheery	Director ATM		aalqadhi@mtt.gov.bh ;
BANGLADESH				
SAR	Md. Kamal Miah Sarker	Deputy Director Air Traffic Control Center Hazrat Shahjalal International Airport, Dhaka.	Tel: +8801967520924	kamalm.sarker@yahoo.com ;
SAR	Mr. Mahmud Akhter Hossain	Assistant Director (ATM) Air Traffic Control Center Hazrat Shahjalal International Airport, Dhaka.	Tel: +8801712181013	makhtercaab@gmail.com ;
SAR	Md. Shakhaoat Hossain	Assistant Director Air Traffic Control Center Hazrat Shahjalal International Airport, Dhaka.	Tel: +8801792252519	shakhaoat@gmail.com ;
CCT	Md. Mizanur Rahman	Director (ATM) ATM Division Civil Aviation Authority of Bangladesh	Tel: +88028901404 +8801894903100 +8801911529066	datm@caab.gov.bd ; azad_mizan@yahoo.com ;
CCT	Md. Masud Rana	Deputy Director (ATM) ATM Division Civil Aviation Authority of Bangladesh	Tel: +8801913575853 +8801894903120	mdmrana@yahoo.com ; ddats@caab.gov.bd ;

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CCT	Md. Kamal Miah Sarker	Deputy Director (SMS) Station AirTraffic Officer Air Traffic Control Center Hazrat Shahjalal International Airport, Dhaka.	Tel: +8801967520924	kamalm.sarker@yahoo.com ; satohsia@caab.gov.bd ;
ATC	Md. Masud Rana	Deputy Director (ATM) ATM Division Civil Aviation Authority of Bangladesh	Tel: +8801913575853 +8801894903120	mdmrana@yahoo.com ; ddats@caab.gov.bd ;
ATC	Mohammad Shamsudduha	Assistant Director Air Traffic Control Center Hazrat Shahjalal International Airport, Dhaka.	Tel: +8801913575769	sdoha70@gmail.com ;
ATC	Reazul Islam Masoud	Assistant Director (ATM) Air Traffic Control Center Hazrat Shahjalal International Airport, Dhaka.	Tel: +8801626873232	reazulcaab@gmail.com ;
AIS	Zahid Qayum	Deputy Director (Aerodromes) ATM Division Civil Aviation Authority of Bangladesh.	Tel: +8801912912430	zahidqayum57@gmail.com ; adaishq@caab.gov.bd ;
AIS	Sabera Rahman	Assistant Director (ATS) ATM Division Civil Aviation Authority of Bangladesh	Tel: +8801715161126	mitasr@gmail.com ; adaishq@caab.gov.bd ;
AIS	Md.Sultanul Arafin	Assistant Director (AIM) ATM Division Civil Aviation Authority of Bangladesh	Tel: +8801618886619	emailarafin@gmail.com ; adaishq@caab.gov.bd ;
SAF	Mr. Mahmud Akhter Hossain	Assistant Director (ATM) Air Traffic Control Center Hazrat Shahjalal International Airport, Dhaka.	Tel: +8801712181013	makhtercaab@gmail.com ;

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SAF	Sushanta Datta	Assistant Director (ATM) Air Traffic Control Center Hazrat Shahjalal International Airport, Dhaka.	Tel: +8801712181013	dattasushan@gmail.com ;
ARC	Sabera Rahman	Assistant Director (ATS) ATM Division Civil Aviation Authority of Bangladesh	Tel: +8801715161126	mitasr@gmail.com ;
ARC	Mohammad Shamsudduha	Assistant Director (ATM) Air Traffic Control Center Hazrat Shahjalal International Airport, Dhaka.	Tel: +8801913575769	sdoha70@gmail.com ;
ARC	Md. Abdullah Al Faruk	Assistant Director (ATM) Air Traffic Control Center Hazrat Shahjalal International Airport, Dhaka	Tel: +8801826107002	mdfaruk3232@gmail.com ;
ADM	Air Vice Marshal M Mafidur Rahman	Chairman Civil Aviation Authority of Bangladesh Headquarters, Kurmitola. Dhaka-1229	Tel: +88028901400 +8801894901000 Fax: +88028901411	chairman@caab.gov.bd ;
ADM	Air Commodore Md. Readad Hossain	Member (Air Traffic Management) ATM Division Civil Aviation Authority of Bangladesh	Tel: +88028901241, +8801894903000	matm@caab.gov.bd ;
ADM	Md. Mizanur Rahman	Director (ATM) ATM Division Civil Aviation Authority of Bangladesh	Tel: +88028901404, +8801894903100 +8801911529066	datm@caab.gov.bd ; azad_mizan@yahoo.com ;
	BHUTAN			

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SAR	Mr. Yonten Dendup	ATS/SAR Inspector Air Navigation Services Section Bhutan Civil Aviation Authority (BCAA) 2nd Floor BCAA Building, Paro Int. Airport - Bhutan	Tel: +975 (8) 271 374 (Ext. 219)	ydendup@bcaa.gov.bt ;
SAR	Mr. Karma Yonten	Sr. ATCO/AIS Officer ANSP Division Department of Air Transport Paro Int. Airport - Bhutan	Tel: +975 (8) 272306	kyonten@doat.gov.bt ;
ATC	Ms. Phuntsho Yeozer	ATC Officer ANSP Division Department of Air Transport Paro Int. Airport - Bhutan	Tel: +975 (8) 272306	Pyeozer@doat.gov.bt ;
ATC	Mr. Yonten Dendup	ATS Inspector Air Navigation Services Section Bhutan Civil Aviation Authority (BCAA) 2nd Floor BCAA Building, Paro Int. Airport - Bhutan	Tel: +975 (8) 271 374 (Ext. 219)	ydendup@bcaa.gov.bt ;
AIS	Mr. Kencho Tshering	AIS/CHARTS/PANS-OPS Inspector Air Navigation Services Section Bhutan Civil Aviation Authority (BCAA) 2nd Floor BCAA Building, Paro Int. Airport - Bhutan	Tel: +975 (8) 271 374 (Ext. 217)	ktshering@bcaa.gov.bt ;
AIS	Mr. Karma Yonten	Sr. ATCO/AIS Officer ANSP Division Department of Air Transport Paro Int. Airport - Bhutan	Tel: +975 (8) 272306	kyonten@doat.gov.bt ;

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SAF	Mr. Kencho Tshering	AIS/CHARTS/PANS-OPS Inspector Air Navigation Services Section Bhutan Civil Aviation Authority (BCAA) 2nd Floor BCAA Building, Paro Int. Airport - Bhutan	Tel: +975 (8) 271 374 (Ext. 217)	ktshering@bcaa.gov.bt ;
SAF	Ms. Kinley Yangden	AIS Officer ANSP Division Department of Air Transport Paro Int. Airport - Bhutan	Tel: +975 (8) 272306	kyangden@doat.gov.bt ;
ARC	Mr. Kencho Tshering	AIS/CHARTS/PANS-OPS Inspector Air Navigation Services Section Bhutan Civil Aviation Authority (BCAA) 2nd Floor BCAA Building, Paro Int. Airport - Bhutan	Tel: +975 (8) 271 374 (Ext. 217)	ktshering@bcaa.gov.bt ;
ADM	Mr. Kinley Wangchuk	Director (Head) Bhutan Civil Aviation Authority (BCAA) 1 st Floor BCAA Building, Paro Int. Airport - Bhutan	Tel: +975 (8) 271 374 (Ext. 207)	kinleyw@bcaa.gov.bt ; bcaa-techdiv@bcaa.gov.bt ;
ADM	Mr. Karma Wangchuk	Director (Head) Department of Air Transport (DoAT) Paro Int. Airport - Bhutan	Tel: +975 (8) 271 403	kwangchuk@doat.gov.bt ;
BRUNEI DARUSSALAM				
SAR	Mr. Hafizul H. A. Hamid	SAR Officer/ATS Brunei	Tel: +6738249229 +6732330142 ext 1831	hafizul.hamid@dca.gov.bn ;

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CCT	Mr. Mohammad Amir Rabbani Hj Rosli	Air Traffic Officer/ATS Brunei	Tel: +673 2330454	amir.rosli@dca.gov.bn ;
ATC	Mr. Mohammad Amir Rabbani Hj Rosli	Air Traffic Officer/ATS Brunei	Tel: +673 2330454	amir.rosli@dca.gov.bn ;
AIS	Mr. Muhammad Ruzaini Hj Rosli	Aeronautical Telecommunications Engineer/Brunei ATELS	Tel: +673 2330142 ext 1815	ruzaini.hjrosli@dca.gov.bn ;
SAF	Mr. Hafizul H. A. Hamid	SAR Officer/ATS Brunei	Tel: +673 8249229 +673 2330142 ext 1831	hafizul.hamid@dca.gov.bn ;
ARC	Mr. Muhammad Ruzaini Hj Rosli	Aeronautical Telecommunications Engineer/Brunei ATELS	Tel: +673 2330142 ext 1815	ruzaini.hjrosli@dca.gov.bn ;
ARC	Ms. Siti Norhain Hj Emran	AIS Officer/ATS Brunei	Tel: +673 2331730	norhain.emran@dca.gov.bn ;
ATFM	Ms. Hjh Rospiahani Hj Rosli	Aeronautical Telecommunications Engineer/Brunei ATELS	Tel: +673 2330142 ext 1221	rospiahani.rosli@dca.gov.bn ;
ADM	Mr. Hafizul H. A. Hamid	SAR Officer/ATS Brunei	Tel: +6738249229 +6732330142 ext 1831	hafizul.hamid@dca.gov.bn ;
CAMBODIA				
SAR	Capt. Kim Sophorn	Secretary of State, State Secretariat of Civil Aviation of Cambodia	Tel: +855 15 883 388 +855978 883 336 Fax: +855 23 222 035	ssca_kimsophorn@yahoo.co ;
SAR	Mr. Em Yuthea	Permanent member, Disaster Secretariat of State Secretariat of Civil Aviation State Secretariat of Civil Aviation of Cambodia	Tel: +855 98 658 168 Fax: +855 23 809 106	emyuthea@gmail.com ; emyuthea@ssca.gov.kh ;

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SAR	Mr. Khun Chantheara	Chief of Search and Rescue ANS Department State Secretariat of Civil Aviation (SSCA) No. 44 Phnom Penh International Airport Russian Federation Blvd.	Tel: +855 23 890 160 Fax: +855 23 890 159 H/P: +855 15 222392	kctkhunchantheara@gmail.com ; kctheara@ssca.gov.kh ;
CCT	Ms. Tith Phoumith	Deputy Director of ANS Department State Secretariat of Civil Aviation No. 44 Phnom Penh International Airport Russian Federation Blvd.	Tel: +855 23 890 160 Fax: +855 23 890 159 H/P: +855 16 354 519	tphoumith9999@gmail.com ; tithphoumith@ssca.gov.kh ;
ATC	Ms. Tith Phoumith	Deputy Director of ANS Department State Secretariat of Civil Aviation No. 44 Phnom Penh International Airport Russian Federation Blvd.	Tel: +855 23 890 160 Fax: +855 23 890 159 H/P: +855 16 354 519	tphoumith9999@gmail.com ; tithphoumith@ssca.gov.kh ;
AIS	Mr. Peou Vuthy	Chief of AIS State Secretariat of Civil Aviation (SSCA) No. 44 Phnom Penh International Airport Russian Federation Blvd.	Tel: +855 23 890 160 Fax: +855 23 890 159	ansops_ssca@yahoo.com ;
SAF	Ms. Tith Phoumith	Deputy Director of ANS Department State Secretariat of Civil Aviation No. 44 Phnom Penh International Airport Russian Federation Blvd.	Tel: +855 23 890 160 Fax: +855 23 890 159 H/P: +855 16 354 519	tphoumith9999@gmail.com ; tithphoumith@ssca.gov.kh ;
ARC	Mr. Kim Rathanak	Chief of Flight Procedure Design and Chart ANS Department State Secretariat of Civil Aviation (SSCA) No. 44 Phnom Penh International Airport, Russian Federation Blvd., Khan Por Senchey	Tel: +855 23 890 160 Fax: +855 23 890 159	k_rathanak@yahoo.com ;

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ADM	Mr. Bean Han	Deputy Chief of Technical Document ANS Department State Secretariat of Civil Aviation (SSCA) No. 44 Phnom Penh International Airport, Russian Federation Blvd., Khan Por Senchey	Tel: +855 23 890 160 Fax: +855 23 890 159	hanbean79@ssca.gov.kh ;
ADM	Capt. Kim Sophorn	Under Secretary of State State Secretariat of Civil Aviation	Tel: +855 15 883 388/ 978 883 336 Fax: +855 23 222 035	ssca_kimsophorn@yahoo.com ;
CHINA				
SAR	Mr. Dai Jun	Director of Operation Supervisory Division of Operation Supervisory Center, CAAC	Tel: +86 10 64092111 Fax: +86 10 65135983	daijun@caac.gov.cn ;
SAR	Ms. Li Xiaomeng	Assistant Air Traffic Regulation Office Civil Aviation Administration of China (CAAC)	Tel: +86 10 64092679	xm_li@caac.gov.cn ;
CCT	Mr. Wang Haibo	Director of Department of General Affairs CAAC	Tel: +86 10 64091504 Mobile: +86 13 911403951	
CCT	Mr. Li Zhe	Deputy Director of Emergency Response Office CAAC	Tel: +86 10 64092125 Mobile: +86 15 810978307	lizhe00162@163.com ;
ATC	Mr. Fu Yongqiang	Deputy Director of Sanya Area Control Center, ATMB CAAC	Tel: +86-13876027727	hnsfyq@gmail.com ;
AIS	Mr. Su Hang	Deputy Director, ATC Division of ATMB of CAAC	Tel: +86 10 8778 6813 Fax: +86 10 8778 6810	hanssued@atmb.net.cn ;
AIS	Mr. Zhang Baiweng	Deputy Director, AIS Center of ATMB of CAAC	Tel: +86 10 6749 9218	zhangbaiweng@sina.com ;
SAF	Ms. Susan Jun Zhao	Coordinator of China RMA, ADCC, ATMB of CAAC		rmachina@rmachina.cn ;

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SAF	Mr. Zou Guoliang	Deputy Director of Safety Management Division Civil Aviation Administration of China No. 155 Dongsi Xidajie, Beijing 100710	Tel: +86 10 640 92676 Fax: +86 10 640 92646	Gl_zou@caac.gov.cn ;
SAF	Ms Liu Yang	Deputy Director Safety Division of the Office of Air Traffic Regulation	Tel: +86 10 64092636	liuyang@caac.gov.cn ;
SAF	Ms Li Xiaomeng	Assistant Safety Division of the Office of Air Traffic Regulation	Tel: +86 10 64092679	xm_li@caac.gov.cn ;
ARC	Ms. Wang Mingxin	Engineer of Airspace Management Office of AMC ATMB	Tel: +86 10 8647 2590	18500163429@163.com ;
ARC	Mr. Fu Yongqiang	Deputy Director of Sanya Area Control Center, ATMB CAAC	Tel: +86-13876027727	hnsfyq@gmail.com ;
ADM	Ms. Zhao Can	Engineer ADCC, ATMB, CAAC Floor 14, Bai Yan Building, No. 238 Bei Si Huan Zhong Road, Haidian, District, Beijing	Tel: +86 10 82325050- 6815 Fax: +86 10 82325552	zhaoc@adcc.com.cn ;
ADM	Mr. Tian Fang	Director International Cooperation Division of ATMB, CAAC #12 East San-huan Road Middle, Chaoyang District, Beijing	Tel: +86 10 87786051 Fax: +86 10 87786055	tianfang@atmb.net.cn ;

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ADM	Mr. Guo Hang	Assistant of ATC Division, ATMB of CAAC No.12 East 3rd Ring Road Middle Chaoyang District, Beijing	Tel: +86 10 8778 6861 Fax: +86 10 8778 6810	guohang@atmb.net.cn ;
ADM	Mr. Su Hang	Deputy Director ATC Division of ATMB, CAAC #12 East San-huan Road, Middle Chaoyang District, Beijing	Tel: +86 10 8778 6813 Fax: +86 10 8778 6810	hanssued@atmb.net.cn ;
ADM	Mr. Wang HaoYu	Engineer ADCC, ATMB, CAAC Floor 14, Bai Yan Building, No. 238 Bei Si Huan Zhong Road, Haidian, District, Beijing	Tel: +86 10 82325050- 6965 Fax: +86 10 82325552	wanghy@adcc.com.cn ;
ADM	Ms. Hu Huiling	Deputy Director of ATC Division Middle & South Regional ATMB of CAAC No.3 Nanyundong street, Jichang Road, Guangzhou	Tel: +86 20 86122223 Fax: +86 20 36229685	hhl@atmb.org ;
ADM	Mr. Li Jingwei	Assistant ATC Division of ATMB, CAAC #12 East San-huan Road, Middle Chaoyang District, Beijing	Tel: +86 10 8778 6828 Fax: +86 10 8778 6810	lijingwei@atmb.net.cn ;
ADM	Mr. Wang Jun	Assistant ATC Division of ATMB, CAAC #12 East San-huan Road, Middle Chaoyang District, Beijing	Tel: +86 10 8778 6819 Fax: +86 10 8778 6810	junwang@atmb.net.cn ;

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ADM	Mr. Kang Nan	Deputy Director of ATC Division ATMB, CAAC #12 East San-Huan Road Middle, Chaoyang District, Beijing	Tel.: +86 010 87786812 Fax: +86 010 87786810	knknkn222@163.com ;
ADM	Ms. Zhang Ying	Deputy director of Planning and Research Office of Airspace Management Centre of ATMB, CAAC	Tel: +86 10 86472572	zhangying@atmb.net.cn ;
ADM	Mr. Zhao Tong	Assistant of Air Traffic Control Division Southwest Regional ATMB of CAAC Shuangliu International Airport, Chengdu, Sichuan	Tel: +86 28 85705307 Fax: +86 28 85706376	zhaotong2000@gmail.com ;
ADM	Mr. Li Xingchao	Engineer ATMB of CAAC No.12 Dongsanhuan Middle Rd., Chaoyang District, Beijing	Tel: +86 10 8778 6569 Fax: +86 10 8778 6464	5518437@qq.com ;
ADM	Ms. Huang Yan	Administration Office Manager East China Regional ATMB of CAAC No.171 First Airport Rd, Changning District Shanghai	Tel: +86 21 2232 6511 Fax: +86 21 2232 6510	huangyantina@sina.com ;
ADM	Mr. Feng Zhenglin	Administrator Civil Aviation Administration of China 155 Dongsi Street West Beijing 100710	Tel: +86 10 64092517 Fax: +86 10 64016918, 64091341	china_icao@caac.gov.cn ;
ADM	Mr. Wang He (Space Vehicle Launch and Re-Entry Coordination)	Deputy Director of Operation Supervisory Division of Operation Supervisory Centre, CAAC	Tel: 86-10-64012907 Fax: 86-10-65135983	zongdiao@caac.gov.cn

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HONG KONG, CHINA				
SAR	Mr. Franklin CY Li	Acting Senior Operations Officer (Support) 2 2/F, Office Building, Civil Aviation Department Headquarters, 1 Tung Fai Road, Hong Kong International Airport, Lantau, Hong Kong	Tel: +852 2910 6466 Fax: +852 2910 0186	fcyli@cad.gov.hk ;
CCT	Ms. Olivia SM Chan	Senior Operations Officer (Technical) 2/F, Office Building, Civil Aviation Department Headquarters, 1 Tung Fai Road, Hong Kong International Airport, Lantau, Hong Kong	Tel: +852 2910 6446 Fax: +852 2910 0186	osmchan@cad.gov.hk ;
ATC	Mr. Alex KT Ng	Senior Safety & Quality Officer (En-route) 2/F, Office Building, Civil Aviation Department Headquarters, 1 Tung Fai Road, Hong Kong International Airport, Lantau, Hong	Tel: +852 2910 6448 Fax: +852 2910 0186	aktng@cad.gov.hk ;
AIS	Mr. Ken WC Leung (Primary point of contact)	Evaluation Officer 2/F, Office Building, Civil Aviation Department Headquarters, 1 Tung Fai Road, Hong Kong International Airport, Lantau, Hong Kong	Tel: +852 2910 6513 Fax: +852 2910 0186	kwcleung@cad.gov.hk ;

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AIS	Ms. Elsa TP Kwan	Operations Officer Aeronautical Information Management Centre, Civil Aviation Department Headquarters, 1 Tung Fai Road, Hong Kong International Airport, Lantau, Hong Kong	Tel: +852 2910 6461 Fax: +852 2910 0186	etpkwan@cad.gov.hk ;
AIS	Ms. Gladys Koon	Electronics Engineer 2/F, Office Building, Civil Aviation Department Headquarters, 1 Tung Fai Road, Hong Kong International Airport, Lantau, Hong Kong	Tel: +852 2910 6517 Fax: +852 2845 7160	gskoon@cad.gov.hk ;
SAF	Ms. Erin YY Siu	Senior Safety Manager 2/F, Office Building, Civil Aviation Department Headquarters, 1 Tung Fai Road, Hong Kong International Airport, Lantau	Tel : +852 2910 6442 Fax: +852 2910 0186	eyysiu@cad.gov.hk ;
ARC	Mr. Timothy KC Yeung	Senior Operations Officer (Operations) 2/F, Office Building, Civil Aviation Department Headquarters, 1 Tung Fai Road, Hong Kong International Airport, Lantau	Tel: +852 2901 6443 Fax: +852 2910 0186	tkcyeung@cad.gov.hk ;

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ATFM	Mr. Anfernee WH Poon	Acting Senior Operations Officer (Strategic Planning) 3/F, Office Building, Civil Aviation Department Headquarters, 1 Tung Fai Road, Hong Kong International Airport, Lantau, Hong Kong	Tel: +852 2910 6289 Fax: +852 2910 0186	awhpoon@cad.gov.hk ;
ADM	Ms. Erin YY Siu (Primary Point of Contact)	Senior Safety Manager 2/F, Office Building, Civil Aviation Department Headquarters, 1 Tung Fai Road, Hong Kong International Airport, Lantau	Tel: +852 29106442 Fax: +852 29100186	eyysiu@cad.gov.hk ;
ADM	Mr. Tommy HL Au Yeung (Alternate Point of Contact)	Acting Assistant Director General of Civil Aviation (Air Traffic Management) 6/F, Office Building, Civil Aviation Department Headquarters, 1 Tung Fai Road, Hong Kong International Airport, Lantau, Hong Kong	Tel: +852 2910 6988 Fax: +852 2910 0139	hlauyeung@cad.gov.hk ;
	MACAO, CHINA			
SAR	Mr. Taft Tat Ming LAM	Director of Airport Infrastructure & Air Navigation Civil Aviation Authority, Macao SAR 18/F, Cheng Feng Commercial Centre, 336-342, Alameda Dr. Carlos D'Assumpção, Macao	Tel: +853 8796 4127 Fax: +853 2833 8089	taflam@aacm.gov.mo ;

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CCT	Mr. Stanley Wa Kin PUN	Vice President Civil Aviation Authority, Macao SAR 18/F, Cheng Feng Commercial Centre, 336-342, Alameda Dr. Carlos D'Assumpção, Macao	Tel: +853 8796 4136 Fax: +853 2833 8089	stanleypun@aacm.gov.mo ;
CCT	Mr. Bryan Kuan Hou CHIU	Safety Officer (ATC) Civil Aviation Authority, Macao SAR 18/F, Cheng Feng Commercial Centre, 336-342, Alameda Dr. Carlos D'Assumpção, Macao	Tel: +853 8796 4142 Fax: +853 2833 8089	bryanchiu@aacm.gov.mo ;
ATC	Mr. Bryan Kuan Hou CHIU	Safety Officer (ATC) Civil Aviation Authority – Macao, China SAR 18/F, Cheng Feng Commercial Centre, 336-342, Alameda Dr. Carlos D'Assumpção, Macao	Tel: +853 8796 4142 Fax: +853 2833 8089	bryanchiu@aacm.gov.mo ;
AIS	Mr. Edward Ip Veng Chon	Assistant Safety Officer (AIS) Civil Aviation Authority, Macao SAR 18/F, Cheng Feng Commercial Centre, 336-342, Alameda Dr. Carlos D'Assumpção, Macao	Tel: +853 8796 4118 Fax: +853 2833 8089	edwardip@aacm.gov.mo ;
AIS	Ms. Brendah Vai Man CHOI	Senior Head of AIC Service Airport Operations Department Macao International Airport Co. Ltd. Macao International Airport PAC on, Taipa	Tel: +853 8898 2200 Fax: +853 2886 1145	brendahchoi@aod.macao-airport.com ;
SAF	Mr. Bryan Kuan Hou CHIU	Safety Officer (ATC) Civil Aviation Authority, Macao SAR 18/F, Cheng Feng Commercial Centre, 336-342, Alameda Dr. Carlos D'Assumpção, Macao	Tel: +853 8796 4142 Fax: +853 2833 8089	bryanchiu@aacm.gov.mo ;

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ARC	Mr. Edward Ip Veng Chon	Assistant Safety Officer (AIS) Civil Aviation Authority of Macao		edwardip@aacm.gov.mo ;
ADM	Mr. Simon W. H. CHAN	President Civil Aviation Authority, Macao SAR 18/F, Cheng Feng Commercial Centre, 336-342, Alameda Dr. Carlos D'Assumpção, Macao	Tel: +853 2851 1213 Fax: +853 2833 8089	aacm@aacm.gov.mo ;
ADM	Mr. Stanley Wa Kin PUN	Vice President Civil Aviation Authority, Macao SAR 18/F, Cheng Feng Commercial Centre, 336-342, Alameda Dr. Carlos D'Assumpção, Macao	Tel: +853 8796 4136 Fax: +853 2833 8089	stanleypun@aacm.gov.mo ;
	DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA (DPRK)			
CCT	Mr. An Kyong Hwa	Deputy Director Air Traffic Management Bureau (ATM) General Administration of Civil Aviation	Tel: +850 2 18111 X 8108 Fax: +850 2 3814625 Ext-4625	gaca@silibank.net.kp ;
AIS	Mr. Kim Chol Guk	Officer Aeronautical Information Service, ATMD Sunan District, Pyongyang,	Tel: +850 2 18111 ext- 8108 Fax: +850 2 381 4625	gaca@silibank.net.kp ;
ARC	Mr. Rj Yong Chol	Chief of ATS ATMD General Administration of Civil Aviation		gaca@silibank.net.kp ;
ARC	Mr. Kim Jong Chol	Officer Air Traffic Control Division, ATMD		

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ADM	Mr. Rim Kwang Ung	Director General General Administration of Civil Aviation Sunan District Pyongyang	Tel: +850 (2) 18111 Ext. 8108 Fax: +850 (2) 3814410	gaca@silibank.net.kp ;
ADM	Mr. Mun Hyok Chol	Officer External Relations Department Sunan District, Pyongyang	Tel: +850 2 18111 ext- 8108 Fax: +850 2 381 4625	gaca@silibank.net.kp ;
FIJI				
SAR	Mr. Amit Singh	Assistant General Manager ATM & Operations Fiji Airports Limited Private Mail Bag Nadi Airport	Tel: +679 6725777 Fax: +679 6731125 Mobile: +679 9906127	AmitS@fijiairports.com.fj ;
SAR	Ms. Alisi Namoro	Air Navigation Service Inspector Air Traffic Management & SAR Civil Aviation Authority of Fiji, Private Mail Bag, NAP 0354 Nadi International Airport	Tel: +679 8923167 +679 8923155 ext 3373 Fax: +67 9 672 1500	alisi.namoro@caaf.org.fj ;
CCT	Mr. Isei Tudreu	General Manager ATM & Operations Fiji Airports Limited Private Mail Bag Nadi Airport	Tel: +679 6725777 Fax: +679 6731125 Mobile: +679 9906617	IseiT@fijiairports.com.fj ;
CCT	Theresa Levestam	Controller Ground Safety Civil Aviation Authority of Fiji Private Mail Bag, NAP 0354 Nadi International Airport	Tel: +679 8923167 +679 8923155 ext 3371 Fax: +679 672 1500	cgs@caaf.org.fj ;
ATC	Mr. Amit Singh	Assistant General Manager ATM & Operations Fiji Airports Limited Private Mail Bag Nadi Airport	Tel: +679 6725777 Fax: +679 6731125 Mobile: +679 9906127	AmitS@fijiairports.com.fj ;

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ATC	Mr. Ivan Wong	ATM Head of Operations Fiji Airports Limited Private Mail Bag Nadi Airport	Tel: +679 6725777 Fax: +679 6731125 Mobile: +679 9906128	IvanW@fijiairports.com.fj ;
ATC	Mr. Makiti Raratabu	Air Navigation Service Inspector Air Traffic Management & Meteorology Civil Aviation Authority of Fiji, Private Mail Bag, NAP 0354 Nadi International Airport	Tel: +679 8927907 +679 8923155 ext 3405 Fax: +679 672 1500	makiti.raratabu@caaf.org.fj ;
AIS	Mr. Amit Singh	Assistant General Manager ATM & Operations Fiji Airports Limited Private Mail Bag Nadi Airport	Tel: +679 6725777 Fax: +679 6731125 Mobile: +679 9906127	AmitS@fijiairports.com.fj ;
AIS	Mr. Makiti Raratabu (Interim)	Air Navigation Service Inspector Air Traffic Management & Meteorology Civil Aviation Authority of Fiji, Private Mail Bag, NAP 0354 Nadi International Airport	Tel: +679 8927907 +679 8923155 ext 3405 Fax: +679 6721 500	makiti.raratabu@caaf.org.fj ;
SAF	Theresa Levestam	Controller Ground Safety Civil Aviation Authority of Fiji Private Mail Bag, NAP 0354 Nadi International Airport	Tel: +679 8923167 +679 8923155 ext 3371 Fax: +679 672 1500	cgs@caaf.org.fj ;
SAF	Mr. Isei Tudreu	General Manager ATM & Operations Fiji Airports Limited Private Mail Bag Nadi Airport	Tel: +679 6725777 Fax: +679 6731125 Mobile: +679 9906617	IseiT@fijiairports.com.fj ;
ARC	Mr. Amit Singh	Assistant General Manager ATM & Operations Fiji Airports Limited Private Mail Bag Nadi Airport	Tel: +679 6725777 Fax: +679 6731125 Mobile: +679 9906127	AmitS@fijiairports.com.fj ;

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ARC	Makiti Raratabu (Interim)	Air Navigation Service Inspector Air Traffic Management & Meteorology Civil Aviation Authority of Fiji, Private Mail Bag, NAP 0354 Nadi International Airport	Tel: +679 8927907 +679 8923155 ext 3405 Fax: +679 6721 500	makiti.raratabu@caaf.org.fj ;
ADM	Alumita Lagicere	P O Box 2213 Government Buildings Suva, Fiji		alagicere@govnet.gov.fj ;
	FRANCE (FRENCH POLYNESIA)			
SAR	Mr. Antoine FERRI	Head of JRCC Tahiti – French Polynesia JRCC Tahiti	Tel: +689 4054 1618 Fax: +689 4042 3915 Mobile: +689 8775 7424	directeur@jrcc.pf ;
ATC	Mr. Nicolas Hinchliffe	Head of ATC Department SEAC/PF – DGAC	Tel: +689 4086 1147 Fax: Mobile: +689 8953 4894	nicolas.hinchliffe@aviation-civile.gouv.fr ;
ARC	Mr. Nicolas Hinchliffe	Head of ATC Department SEAC/PF – DGAC	Tel: +689 4086 1147 Fax: Mobile: +689 8953 4894	nicolas.hinchliffe@aviation-civile.gouv.fr ;
ADM	Mr. PERETTI Charles	Head of ATS Division Department of Civil Aviation BP6011 – 98702 Faaa	Tel: +689 40 86 10 41 +689 782 440 Fax: +689 40 86 13 29	charles.peretti@aviation-civile.gouv.fr
ADM	Mr. Patrick Mouysset	Director Civil Aviation Authority		lucette.lasserre@aviation-civile.gouv.fr ;

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	FRANCE (NEW CALEDONIA)			
SAR	Mr. Pierre SYLVESTRE-BARON	Head of Tontouta Air Traffic Services Head of New Caledonian ARSC Department of Civil Aviation Air Navigation Service, BP H1 Noumea Cedex	Tel: +687 352421 Mobile: +687 785739	pierre.sylvestre-baron@aviation-civile.gouv.fr ;
SAR	Mr. Thierry DURIGNEUX (copy to)	Head of Air Navigation Service Department of Civil Aviation Air Navigation Service, BP H1 Noumea Cedex	Tel: +687 265270	thierry.durigneux@aviation-civile.gouv.fr ;
CCT	Mr. Thierry DURIGNEUX	Head of Air Navigation Service Department of Civil Aviation Air Navigation Service, BP H1 Noumea Cedex	Tel: +687 265270	thierry.durigneux@aviation-civile.gouv.fr ;
CCT	Mr. Sébastien BURGER	Deputy Head of Air Navigation Service Department of Civil Aviation Air Navigation Service, BP H1 Noumea Cedex	Tel: + 687 265285	sebastien.burger@aviation-civile.gouv.fr ;
CCT	Mr. Jean-Claude GOUHOT (copy to)	Director, Department of Civil Aviation New Caledonia, France		jean-claude.gouhot@aviation-civile.gouv.fr ;
CCT	Mr. Pierre SYLVESTRE-BARON (copy to)	Head of Tontouta Air Traffic Services Head of New Caledonian ARSC Department of Civil Aviation Air Navigation Service, BP H1 Noumea Cedex	Tel: +687 352421 Mobile: +687 785739	pierre.sylvestre-baron@aviation-civile.gouv.fr ;
ATC	M. Thierry HORLAIT	Head of Tontouta Air Traffic Services Head of New Caledonian ARSC	Tel: +687 35.24.01 Mobile: +687 78 57 39	
ATC	Mr. Fabien LEMOINE	Head of ATS Division Department of Civil Aviation, Air Navigation Service, BP H1 Noumea Cedex		fabien.lemoine@aviation-civile.gouv.fr ;

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ATC	Mr. Pierre SYLVESTRE-BARON (copy to)	Head of Tontouta Air Traffic Services Head of New Caledonian ARSC Department of Civil Aviation Air Navigation Service, BP H1 Noumea Cedex	Tel: +687 352421 Mobile: +687 785739	pierre.sylvestre-baron@aviation-civile.gouv.fr ;
AIS	Mr. Christophe PAPON	Head of FPD Division Department of Civil Aviation, Air Navigation Service, BP H1 Noumea Cedex		christophe.papon@aviation-civile.gouv.fr ;
AIS	Mr. Fabien LEMOINE (copy to)	Head of ATS Division Department of Civil Aviation, Air Navigation Service, BP H1 Noumea Cedex		fabien.lemoine@aviation-civile.gouv.fr ;
AIS	Mr. Pierre SYLVESTRE-BARON (copy to)	Head of Tontouta Air Traffic Services Head or New Caledonian ARSC Department of Civil Aviation Air Navigation Service, BP H1 Noumea Cedex	Tel: +687 352421 Mobile: +687 785739	pierre.sylvestre-baron@aviation-civile.gouv.fr ;
SAF	Ms. Emmanuelle GRONDIN	Safety Manager Department of Civil Aviation Air Navigation Service, BP H1 Noumea Cedex		emmanuelle.grondin@aviation-civile.gouv.fr ;
SAF	Mr. Sébastien BURGER (copy to)	Deputy Head of Air Navigation Service Department of Civil Aviation Air Navigation Service, BP H1 Noumea Cedex	Tel: +687 265285	sebastien.burger@aviation-civile.gouv.fr ;
ARC	Mr. Christophe PAPON	Head of FPD Division Department of Civil Aviation, Air Navigation Service, BP H1 Noumea Cedex		
ARC	Mr. Fabien LEMOINE (copy to)	Head of ATS Division Department of Civil Aviation, Air Navigation Service, BP H1 Noumea Cedex		

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ARC	Mr. Jean-Claude Gouhot	Director, Department of Civil Aviation New Caledonia, France		jean-claude.gouhot@aviation-civile.gouv.fr ;
ARC	Mr. Christophe Verges	Deputy Director, Department of Civil Aviation New Caledonia, France		christophe.verges@aviation-civile.gouv.fr ;
ARC	Mr. Jude Mariadassou (copy to)	Chef du bureau "coordination multilatérale" Sous direction de l'Europe et de l'international, Direction Générale De L'aviation Civile		jude.mariadassou@aviation-civile.gouv.fr ;
ADM	Mr. Delvallee Olivier	Head of ATS Division Department of Civil Aviation, Air Navigation Service, BP H1 Noumea Cedex	Tel: +687 265643	olivier.delvallee@aviation-civile.gouv.fr ;
ADM	Mr. Calmejane Patrick	Head of Air Navigation Service Department of Civil Aviation Air Navigation Service, BP H1 Noumea Cedex	Tel: +687 26 52 70	patrick.calmejane@aviation-civile.gouv.fr ;
ADM	Mr. Thierry DURIGNEUX	Head of Air Navigation Service Department of Civil Aviation Air Navigation Service, BP H1 Noumea Cedex	Tel: +687 265270	thierry.durigneux@aviation-civile.gouv.fr ;
ADM	Mr. Sébastien BURGER	Deputy Head of Air Navigation Service Department of Civil Aviation Air Navigation Service, BP H1 Noumea Cedex	Tel: + 687 265285	sebastien.burger@aviation-civile.gouv.fr ;
ADM	Mr. Jean-Claude GOUHOT (copy to)	Director, Department of Civil Aviation New Caledonia, France		jean-claude.gouhot@aviation-civile.gouv.fr ;

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ADM	Mr. Louis TEODORO (copy to)	Chef du bureau "coordination multilatérale" Sous-direction de l'Europe et de l'international, Direction Générale De L'aviation Civile		louis.teodoro@aviation-civile.gouv.fr ;
	INDIA			
SAR	Mr. A K Meena	Executive Director (ATM) Airports Authority of India, Rajiv Gandhi Bhawan, Safdarjung Airport, New Delhi -110003	Tel: +91 11 20818217 Mobile: +91 9650108662	edatm@aai.aero ;
SAR	N.S. Dagar	General Manager (ATM-SAR) Airports Authority of India Rajiv Gandhi Bhawan Safdarjung Airport New Delhi – 110003	Tel: +91 11 24610204 Mobile: +91 9811385422	gmsar@AAI.AERO ;
CCT	Mr. A K Meena	Executive Director (Air Space Management) Airports Authority of India Rajiv Gandhi Bhawan Safdarjung Airport New Delhi – 110003	Tel: +91 11 20818217 Mobile: +91 9650108662	edasm@aai.aero;
CCT	Mr. K Vasudevan	Executive Director (Air Space Management) Airports Authority of India Rajiv Gandhi Bhawan Safdarjung Airport New Delhi – 110003	Tel: +91 11 20819167 Fax: +91 11 24610528 Mobile: +91 9920065132	edasm@aai.aero ;
CCT	Mr. S. K. Srivastava	General Manager (ASM) Airports Authority of India Rajiv Gandhi Bhawan Safdarjung Airport New Delhi – 110003	Tel: +91 11 24629012 Fax: +91 11 24629012 Mobile: +91 9871751468	gmasm@aai.aero ;

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ATC	Watch Supervisory Officer, Chennai FIR	Area Control Centre, ATS Complex Chennai Airport, Chennai	Tel: +91 44 22560894 Fax: +91 44 22561365 (24 hours) Mobile: +91 9514074449	vomm.wso@aai.aero ;
ATC	Watch Supervisory Officer, Delhi FIR	Area Control Centre, ATS Complex I.G.I. Airport, New Delhi	Tel: +91 11 25653283, +91 11 28705100 Fax: +91 11 25653284 (24 hours) Mobile: +91 9968679958	wsoigidelhi@aai.aero ;
ATC	Watch Supervisory Officer, Kolkata FIR	Area Control Centre, ATS Complex NSCBI Airport, Kolkata	Tel: +91 33 25119520 Fax: +91 33 25130134 (24 hours) Mobile: +91 9831479366	vecc.wso@aai.aero ;
ATC	Watch Supervisory Officer, Mumbai FIR	Area Control Centre, ATS Complex CSMI Airport Mumbai	Tel: +91 22 20888088 Fax: +91 22 26828066 (24 hours) Mobile: +91 9869062250	vabb.wso@aai.aero ;
AIS	Mr. Davinder Arora	General Manager (ATM-AIS/SAR) Airports Authority of India Rajiv Gandhi Bhawan Safdarjung Airport New Delhi – 110003	Tel: +91 11 24615508 Fax: +91 11 24615508 Mobile: +91 9871405220	gmais@aai.aero ;
AIS	Mr. Yogendra Kumar Rohilla	Jt. General Manager (ATM-AIS & SAR) Airports Authority of India Rajiv Gandhi Bhawan Safdarjung Airport New Delhi – 110003	Tel: +91 11 24610536 Fax: +91 11 24615508 Mobile: +91 9910840303	yogendra@AAL.AERO ;

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SAF	Mr. A. P. Udayanarayanan	Joint General Manager (ATM) India Bay of Bengal Arabian Sea Indian Ocean Safety Monitoring Agency (BOBASMA)	Tel: +91 44 22561253 Fax: +91 44 22561740 Mobile: +91 9445035614	bobasmachennai@gmail.com ; bobasma@aai.aero ;
ARC	Mr. K. Vasudevan	Executive Director (Air Space Management) Airports Authority of India Rajiv Gandhi Bhawan Safdarjung Airport New Delhi – 110003	Tel: +91 11 20819167 Tel: +91 11 24632992 Tel: +91 11 20819167 Fax: +91 11 24610528 Mobile: +91 9920065132	edasm@aai.aero ;
ADM	Mr. Arun Kumar	Director General of Civil Aviation Directorate of Civil Aviation Department Technical Centre, Opp. Safdarjung Airport New Delhi 110003	Tel: +91 11 24627830 +91 11 24620784 +91 11 24652491 Fax: +91 11 24652760	dgoffice.dgca@nic.in ;
ADM	Mr. Kalyan Choudhury	Executive Director (ATM) Airports Authority of India, Rajiv Gandhi Bhawan, Safdarjung Airport, New Delhi 110003.	Tel: +91 11 2463 1684 Fax: +91 11 2461 1078 Mobile: +91 9161005544	edatm@aai.aero;
ADM	Mr. A K Meena	Executive Director (ASM) (ATM) Airports Authority of India, Rajiv Gandhi Bhawan, Safdarjung Airport, New Delhi -110003	Tel: +91 11 2463 2992 Fax: +91 11 2461 0528 Tel: +91 11 24631684 Fax: +91 11 24611078 Tel: +91 11 20818217 Mobile: +91 9650108662	edasm@aai.aero ; edatm@aai.aero ;
	INDONESIA			

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SAR	Mr. Otty Rusinarsetyo	Chief, International Organization Technical Cooperation, Planning and International Cooperation Division National Search and Rescue Agency of Republic of Indonesia (BASARNAS)	Tel: +62-21-6570 1116 ext. 1751 Fax: +62-21-654 0638	otty.rs@gmail.com ;
CCT	Mr Tian Kusdinar	Chief of ATM Section Directorate of Air Navigation DGCA Indonesia 23rd Floor Karya Building Medan Merdeka Barat No. 8 Jakarta 10110	Tel: +62 21 3506451, 3506617 Fax: +62 21 3507569 Mobile: +62 813 8449 7414	tian231182@gmail.com ;
CCT	Mrs. Dina Yunita	Chief of AIM, Aviation MET & Aeronautical SAR DGCA – Indonesia Karya Building 23rd Floor Ministry of Transportation, Medan Merdeka Barat st. No. 8 Jakarta,	Mobile: +62 812 96075249	dina_yunita@dephub.go.id ; dn.yunita22@gmail.com ;
CCT	Mr. Hermawan Novitriyanto	Manager of Area Control Center and Terminal Control Area AirNav Indonesia Directorate of Operation 2nd floor Support Building of AirNav Indonesia Headquarters Ir. H. Juanda # 1, Tangerang 15121Banten	Tel: +62 21 55915000, Fax: +62 21 55915100 Mobile: +62 81284173391	hermawan.airnav@gmail.com ;
CCT	Mr. Indra Gunawan	Deputy Director of Air Navigation Operation, DGCA of Indonesia		indraate31@gmail.com ;

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ATM POINTS OF CONTACT

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CCT	Mrs. Theresia Damayanti	Air Navigation Inspector DGCA of Indonesia	Mobile: +62 813 81715594	dama_th07@yahoo.com ;
CCT	Mrs. Annisa Dwi Kurniati	Air Navigation Inspector DGCA of Indonesia	Mobile: +62 812 95105187	nisaku80@gmail.com ;
CCT	Mrs. Nurdini Tambunan	Air Navigation Inspector DGCA of Indonesia		nurdini_tambunan@dephub.go.id ; truedien@gmail.com ;
CCT	Mr. Rahmat Widiyana	ATFM and CDM Planning Manager AirNav Indonesia		rachmat.widiyana@airnavindonesia.co.id ;
ATC	Mr. Dwianto Suprayitno	Manager of Planning and Evaluation Jakarta ACC, Jakarta Air Traffic Services Centre (JATSC)	Mobile: +62 812 9033 5522	dwianto1970@gmail.com ;
ATC	Mr. Ari Nugraha Harsawardhana	Manager of Planning and Evaluation of Ujung Pandang ACC Makassar Air Traffic Services Centre (MATSC)	Tel: +62 877 8008 1977	arieharsa@gmail.com ;
AIS	Mr. Ulul Azmi	General Manager AIS Center AirNav Indonesia	Tel: +62 21 5591 5000 Fax: +62 21 5591 5100	azmi@aviasi.org ;
AIS	Mr. R. Ahmad Hasyim	QMS Junior Manager AirNav Indonesia	Tel: +62 21 5591 5000 Fax: +62 21 5591 5100	r.ahmadhasyim@gmail.com ;
AIS	Mr. Roy Johanis	Head of Data and Evaluation Air Navigation Services Division Airnav Indonesia	Tel: +62 857 5730 8060	roy.johanis@airnavindonesia.co.id ;
AIS	Mr. Ruby Nugraha	Manager of Publication AIS Center Airnav Indonesia	Tel: +62 812 9619 1500	aerocareindo@yahoo.com ;
AIS	Mr. Agung Dwi Putra	Air Navigation Service Airnav Indonesia	Tel: +62 813 8133 3322	agungdp0893@gmail.com ;
AIS	Mr. Haris Defriyan	Project Specialist Airnav Indonesia	Tel: +62 819 3125 9364	haris.defriyan@airnavindonesia.co.id ;

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AIS	Mr. Wahyudi Ilham	Manager of AIM AIS Center Airnav Indonesia	Tel: +62 811 5406 679	wahyudi_ilham76@yahoo.com ;
AIS	Mr. Syamsudin Wahyudi	Junior Manager of AIM Planning and Development AIS Center Airnav Indonesia	Tel: +62 821 5820 4824	youdie23@hotmail.com ;
AIS	Mr. Obor Rudiansyah Mandala	AIS Publication Officer AIS Center Airnav Indonesia	Tel: +62 823 1274 4259	obor.rudiansyah@airnavindonesia.co.id ;
ARC	Mr. Yayat Supriyatna	Aeronautical Information Evaluation Junior Manager AirNav Indonesia	Tel: +62 21 5591 5000 Fax: +62 21 5591 5100	yhatk3s@yahoo.com ;
ADM	Mr. Haris Achadi	Deputy Director for International Cooperation Planning and International Cooperation Division	Tel: +62 21 6570 1116 ext. 1751 Fax: +62 21 654 0638	habasarnas@gmail.com ;
ADM	Mr. Hedriansyah	Air Navigation Inspector Karya Building 23 rd Floor Ministry of Transportation, Medan Merdeka Barat st. No. 8 Jakarta	Tel: +62 878 2422 2263 Fax: +62 21 350 7569	hedriansyah@dephub.go.id ;
ADM	Mr Nur Sa'id Eko Nugroho	Air Navigation Inspector and ATM Officer Directorate of Air Navigation DGCA Indonesia 23rd Floor Karya Building Medan Merdeka Barat No. 8 Jakarta 10110	Tel: +62 21 3506451, 3506617 Mobile: +62 813 2546 9339 Fax : +62 21 3507569	ecko.atc@gmail.com ;
ADM	Mr. Muji Subagyo	Head of Service Development Division AirNav Indonesia Directorate of Operation 2nd floor Support Building of AirNav Indonesia Headquarters Ir. H. Juanda # 1, Tangerang 15121 Banten	Tel: +62 21 55915000 Fax : +62 21 55915100 Mobile: +62 81383034781	muji_subagyo@yahoo.com ;

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ADM	Aditya Wibisono	Air Navigation Inspector DGCA – Indonesia Karya Building 23 rd Floor Ministry of Transportation, Medan Merdeka Barat St. No. 8 Jakarta	Tel: +62 8571920 9856	wibisono.aditya@gmail.com;
ADM	Mr. Iqbal Maududi	Air Navigation Inspector DGCA – Indonesia Karya Building 23 rd Floor Ministry of Transportation, Medan Merdeka Barat St. No. 8 Jakarta	Tel: +62 81806620088 Fax: +62 21 350 7569	iqbal.maududi8909@gmail.com;
ADM	Mrs. Dessy Christiany	Air Navigation Inspector DGCA – Indonesia Karya Building 23 rd Floor Ministry of Transportation, Medan Merdeka Barat St. No. 8 Jakarta	Tel: +62 813 8076 5157	chistiany.dessy@gmail.com;
ADM	Mr. Tresna Alamanda	Aerodrome Inspector DGCA – Indonesia	Tel: +62 852 1113 5777	tresna.alamanda@gmail.com;
ADM	Mr. Subangkit Meianto	Aerodrome Inspector DGCA – Indonesia	Tel: +62 813 9990 7406	subangkitmeianto@gmail.com;
	IRAN			
CCT	Mr. Ahmad Kaveh Firouz	Deputy of Tehran ACC	Tel: +982144544119 Tel: +982144544119 (H) Fax: 989123230447 Mobile: +982144433100	ahmadkavehfiroz@gmail.com;
	JAPAN			

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SAR	Mr. HAMADA Takahisa Mr. SHINADA Hidenori	Special Assistant to the Director, Operations and Flight Inspection Division, Japan Civil Aviation Bureau (JCAB), Ministry of Land, Infrastructure, Transport and Tourism 2-1-3 Kasumigaseki, Chiyodaku, Tokyo 100-8918	Tel: +81 3 5253 8111 ext. 51332 Fax: +81 3 5253 1664	hamada-t01na@mlit.go.jp ; shinada-h41i2@mlit.go.jp ;
SAR	Ms. Matsumoto Rika	Air Traffic Services Flight Information Officer, Tokyo airport office, Japan Civil Aviation Bureau (JCAB), 3-3-1 Haneda-kuko Otaku, Tokyo 144-0041	Tel: +81 3 5757 3022 Fax: +81 3 5756 1512	cab-hnd-rcc@mlit.go.jp ; matsumoto-r10tb@mlit.go.jp ;
CCT	Mr. OOSETO Hideki	Special Assistant to the Director, Air Traffic Control Division Japan Civil Aviation Bureau, Japan Airspace Ministry of Land, Infrastructure, Transport and Tourism 2-1-3 Kasumigaseki, Chiyodaku, Tokyo 100-8918	Tel: +81 3 5253 8749 Fax: +81 3 5253 1664	ooseto-h23s@mlit.go.jp ;
CCT	Ms. ITOU Miho	Special Assistant to the Director, Air Traffic Control Division Japan Civil Aviation Bureau, Japan Airspace Ministry of Land, Infrastructure, Transport and Tourism 2-1-3 Kasumigaseki, Chiyodaku, Tokyo 100-8918	Tel: +81 3 5253 8749 Fax: +81 3 5253 1664	itou-m46be@mlit.go.jp ;

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ATC	Ms. ITOU Miho	Special Assistant to the Director, Air Traffic Control Division, Japan Civil Aviation Bureau (JCAB), Ministry of Land, Infrastructure, Transport and Tourism 2-1-3 Kasumigaseki, Chiyodaku, Tokyo 100-8918	Tel: +81 3 5253 8749 Fax: +81 3 5253 1664	itou-m46be@mlit.go.jp ;
ATC	Mr. AOTO Hajime	Special Assistant to the Director, Air Traffic Control Division, Japan Civil Aviation Bureau (JCAB), Ministry of Land, Infrastructure, Transport and Tourism 2-1-3 Kasumigaseki, Chiyodaku, Tokyo 100-8918	Tel: +81 3 5253 8749 Fax: +81 3 5253 1664	aoto-h074@mlit.go.jp ;
AIS	Ms. SAKAMOTO Takako	Deputy Chief Aeronautical Information Service Officer Aeronautical Information Service Center 133 Kanemae Furugome, Narita-shi Chiba 282-0004	Tel: +81 476 33 5506	sakamoto-t41zd@mlit.go.jp ;
AIS	Mr. SHIOMI Hisashi	Special Assistant to the Director, Aeronautical Information and Flight Inspection Planning Office, Operations and Flight Inspection Division, Japan Civil Aviation Bureau (JCAB), Ministry of Land, Infrastructure, Transport and Tourism 2-1-3 Kasumigaseki, Chiyodaku, Tokyo 100-8918	Tel: +81 3 5253 8753 Fax: +81 3 5253 1664	shiomi-h46jp@mlit.go.jp ;

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SAF	Mr. MARUTSUKA Yasuhiro	Special Assistant to the Director, Flight Procedures and Airspace Program Office, Japan Civil Aviation Bureau, Japan Airspace Safety Monitoring Agency (JASMA)	Tel: +81 3 5253 8750 Fax: +81 3 5253 1664	marutsuka-y0799@mlit.go.jp ; hqt-JASMA@gxb.mlit.co.jp ; jasma-hq@jasma.jp ;
SAF	Mr. IMADA Yukio	Special Assistant to the Director, Air Navigation Services Planning Division, Japan Civil Aviation Bureau (JCAB), Ministry of Land, Infrastructure, Transport and Tourism 2-1-3 Kasumigaseki, Chiyodaku, Tokyo 100-8918		imada-y037c@mlit.go.jp ;
ARC	Mr. SANO Atsushi	Special Assistant to the Director Air Traffic Control Division Japan Civil Aviation Bureau (JCAB), Ministry of Land, Infrastructure, Transport and Tourism 2-1-3 Kasumigaseki, Chiyodaku, Tokyo 100-8918	Tel: +81 3 5253 8749 Fax: +81 3 5253 1664	sano-a03ju@mlit.go.jp ;
ARC	Mr. AOTO Hajime	Special Assistant to the Director, Air Traffic Control Division, Japan Civil Aviation Bureau (JCAB), Ministry of Land, Infrastructure, Transport and Tourism 2-1-3 Kasumigaseki, Chiyodaku, Tokyo 100-8918	Tel: +81 3 5253 8749 Fax: +81 3 5253 1664	aoto-h074@mlit.go.jp ;
ATFM	Mr. AOTO Hajime	Special Assistant to the Director, Air Traffic Control Division, Japan Civil Aviation Bureau (JCAB), Ministry of Land, Infrastructure, Transport and Tourism 2-1-3 Kasumigaseki, Chiyodaku, Tokyo 100-8918	Tel: +81 3 5253 8749 Fax: +81 3 5253 1664	aoto-h074@mlit.go.jp ;

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ATFM	Ms. ITOU Miho	Special Assistant to the Director, Air Traffic Control Division Japan Civil Aviation Bureau, Japan Airspace Ministry of Land, Infrastructure, Transport and Tourism 2-1-3 Kasumigaseki, Chiyodaku, Tokyo 100-8918	Tel: +81 3 5253 8749 Fax: +81 3 5253 1664	itou-m46be@mlit.go.jp;
ADM	Ms. SATO Kyoko	Special Assistant to the Director Air Traffic International Affairs Office, Japan Civil Aviation Bureau (JCAB), Ministry of Land, Infrastructure, Transport and Tourism 2-1-3 Kasumigaseki, Chiyodaku, Tokyo 100-8918	Tel: +81 3 5253 8740 Fax: +81 3 5253 1663	satoh-k05zb@mlit.go.jp;
ADM	Mr. HARANO Kyotaro	Director, Air Traffic International Affairs Office Air Navigation Services Department Civil Aviation Bureau (JCAB), Ministry of Land, Infrastructure, Transport and Tourism 2-1-3 Kasumigaseki, Chiyodaku, Tokyo 100-8918	Tel: +81 3 5253 8740 Fax: +81 3 5253 1663	harano-k2pc@mlit.go.jp;
KIRIBATI				
ATC	Mrs. Aileen Martin	ATS Manager Airport Kiribati Authority Bonriki International Airport	Tel: +686 752 28280	mats@airportkiribatiauthority.com;
ARC	Ms. Aako Teikake	Director of Civil Aviation Civil Aviation Authority of Kiribati Bikenibeu, Tarawa	Tel: +686 730 44824	dca@mcttd.gov.ki;

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ADM	Mr. Tiamwa Teaiwa	Air Navigation & Aerodrome Inspector Civil Aviation Authority of Kiribati Bikenibeu, Tarawa	Tel: +686 730 55574	ans.ai@micttd.gov.ki ;
KUWAIT				
CCT	Shaine Al-Ghanim	Director Safety		sm.alghanim@dgca.gov.kw ;
CCT	Musatfa Al -ararh	Director ANS Safety		ma.altarrah@dgca.gov.kw ;
KYRGYZ REPUBLIC				
CCT	Mr. Dmitriy Chetvertak	Head of ATM Department SE Kyrgyzaeronavigatsia	Tel: +996-312393130 Fax: +996-312-393093	kan_atm@kan.kg ;
CCT	Mr. Ulukbek Rakhmanov	Director General	Tel: +996-312393559 Fax: +996-312-393 093	kan_atm@kan.kg ;
LAO PDR				
SAR	Mr. Vixay Vorlachit	Chief of SAR Section ATM and SAR Officer Air Navigation Standards Division Department of Civil Aviation of Lao PDR Souphanouvong RD, Wattay International Airport Vientiane capital, Lao PDR, P.O Box: 119	Tel: +856 21 513 163 Fax: +856 21 520 237 Mobile: +856 20 28008833	november.victor1991@gmail.com ;
SAR	Mr. Amphone Thanasine	Chief of RCC Air Traffic Services Division (ATSD) Lao Air Navigation Services (LANS) Souphanouvong RD, Wattay International Airport Vientiane capital, Lao PDR, P.O. Box 2985.	Tel.: +856 21 512237 Fax: +856 21 513041 Mobile: +856 20 54111219	amthanasine@gmail.com ; athanasin@yahoo.com ;

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CCT	Mr. Amdounla Salinthone (Primary)	Deputy Director General of LANS Souphanouvong Road, Wattay International Airport, Vientiane Capital, Lao PDR, P.O.Box 2985	Tel: +8562055668240 Fax: +856 21 512216 Mobile: +856 20 55668240	asalinthone@gmail.com ;
CCT	Mr. Maity Sylithammavong,	Director of Air Traffic Service Division, LANS Souphanouvong Road, Wattay International Airport, Vientiane Capital, Lao PDR, P.O.Box 2985	Tel: +8562055414040 Fax: +85621512216	maitymt1975@gmail.com ;
CCT	Mr. Thanongdeth Nalisak (Secondary)	Deputy Director of Air Navigation Standards Division Department of Civil Aviation of Lao PDR Souphanouvong Road, Wattay International Airport, Vientiane Capital, Lao PDR, P.O.Box 2985	Tel: +8562054212446 Fax: +856 21 520 237 Mobile: +856 20 54212446	thanongdeth@dcal.gov.la ; thanongdeth.nalisak@gmail.com ;
ATC	Mr. Maity Sylithammavong,	Director of Air Traffic Service Division, LANS Souphanouvong Road, Wattay International Airport, Vientiane Capital, Lao PDR, P.O.Box 2985	Tel: +8562055414040 Fax: +85621512216	maitymt1975@gmail.com ;
ATC	Mr. Thanongdeth Nalisak	Deputy Director of Air Navigation Standards Division Department of Civil Aviation of Lao PDR Souphanouvong Road, Wattay International Airport, Vientiane Capital, Lao PDR, P.O.Box 2985	Tel: +8562054212446 Fax: +856 21 520 237 Mobile: +856 20 54212446	thanongdeth@dcal.gov.la ; thanongdeth.nalisak@gmail.com ;

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AIS	Ms. Davone Vilayseng	Deputy Director of AISD Aeronautical Information Service Division Lao Air Navigation Services Souphanouvong RD, Wattay International Airport Vientiane Capital, Lao PDR, P.O. Box 2985.	Tel: +856 21 512006 Fax: +856 21 512216 Mobile: +856 20 22223498	davone.vs@gmail.com ;
AIS	Mrs. Chanthida Khammingsavath	Officer Air Navigation Standards Division Department of Civil Aviation of Lao PDR Souphanouvong RD, Wattay International Airport Vientiane Capital, Lao PDR, PO Box 119	Tel: +856 21 513163 Fax: +856 21 520237 Mobile: +856 20 78345004	chanthida@dcal.gov.la ; nang.khammingsavath@gmail.com ;
ARC	Mr. Sohnsacksit Khamkeo	Director of ANSD Air Navigation Standards Division Department of Civil Aviation of Lao PDR Souphanouvong RD, Wattay International Airport Vientiane capital, Lao PDR, P.O Box: 119.	Tel: +856 21 512163 Fax: +856 21 520237 Mobile: +856 20 22499936	sohnsacksit@dcal.gov.la ; saykhamkeo@gmail.com ;
ARC	Ms. Inseelee Bouapao	Flight Procedure Designer Aeronautical Information Service Division Lao Air Navigation Services Souphanouvong RD, Wattay International Airport Vientiane capital, Lao PDR, P.O. Box 2985.	Tel: +856 21 512006 Fax: +856 21 512 216 Mobile: +856 20 77893977	insee_lee@yahoo.com ;
ADM	Mr. Vanpheng Chanthaphone Mr. Viengxay Singkham	Director General Department of Civil Aviation of Lao PDR Souphanouvong RD, Wattay International Airport Vientiane capital, Lao PDR, P.O Box: 119	Tel: +856 21 512163 Fax: +856 21 520237 Mobile: +856 20 55888875 +856 20 22560000	laodca@laotel.com ;
ADM	Mr. Bountaeng Symoon	Deputy Director General Department of Civil Aviation of Lao PDR Souphanouvong RD, Wattay International Airport Vientiane capital, Lao PDR, P.O Box: 119.	Tel: +856 21 512163 Fax: +856 21 520237 Mobile: +856 20 22206472	bountaeng@dcal.gov.la ; bountaeng@gmail.com ;

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ADM	Mr. Bounthueng Soumontha	General Director of LANS Lao Air Navigation Services Souphanouvong RD, Wattay International Airport Vientiane capital, Lao PDR, P.O. Box 2985.	Tel: +856 21 512006 Fax: +856 21 512 216 Mobile: +856 20 55121314	gd.bountheung@lans.gov.la ;
	MALAYSIA			
SAR	Mr. Mani Vannan Ketena Samy	Principal Assistant Director, Civil Aviation Authority of Malaysia Air Traffic Management Division No. 27, Persiaran Perdana, Level 4, Podium Block B, Precinct 4, 62618 Putrajaya Malaysia Principal Assistant Director Civil Aviation Authority of Malaysia Air Traffic Management Division Kuala Lumpur Air Traffic Control Centre Jalan CTA 3 (KLIA) Kuala Lumpur International Airport 64000 Sepang, Selangor Malaysia	Tel: +60 3 8529 1225 Fax: +603 8787 8600	mani@caam.gov.my ;

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SAR	Mr. Megat Ahmad Zuhri Bin Megat Ahmad Zubir	Senior Assistant Director, Civil Aviation Authority of Malaysia Air Traffic Management Division No. 27, Persiaran Perdana, Level 4, Podium Block B, Precinct 4, 62618 Putrajaya Malaysia Senior Assistant Director Civil Aviation Authority of Malaysia Air Traffic Management Division Kuala Lumpur Air Traffic Control Centre Jalan CTA 3 (KLIA) Kuala Lumpur International Airport 64000 Sepang, Selangor Malaysia	Tel: +60 3 8529 1225 Fax: +603 8787 8600	megat@caam.gov.my ;
CCT	Mr. Nasuruddin Bin Zainol Abidin	Director Civil Aviation Authority of Malaysia Air Traffic Management Division No. 27 Persiaran Perdana, Level 4, Podium Block B, Precinct 4 62618 Putrajaya Malaysia	Tel: +603 8529 1301 Fax: +603 8529 1210	nasuruddin@caam.gov.my
CCT	Mr. Hood Bin Mustapha	Director Civil Aviation Authority of Malaysia Kuala Lumpur Air Traffic Control Centre Jalan CTA 3 (KLIA) Kuala Lumpur International Airport 64000 Sepang, Selangor Malaysia	Tel: 603 8529 1201 Fax: 603 8529 1210	hood@caam.gov.my

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CCT	Mr. Johnli Bin Idek	Director Civil Aviation Authority of Malaysia Regional Office Sabah Jalan Bunga Raya P.O. Box 2065 88618 Kota Kinabalu, Sabah Malaysia	Tel: 088 224911 Fax: 088 219198	johnli@caam.gov.my
CCT	Mr. Gillian Amy Masudal	Senior Assistant Director Civil Aviation Authority of Malaysia Kota Kinabalu Air Traffic Control Centre Jalan Kepayan, 88618 Kota Kinabalu, Sabah Malaysia	Tel: 088 224402 Fax: 088 219170	gillian@caam.gov.my
CCT	Ms. Noorashikin Binti Haron	Principal Assistant Director, Civil Aviation Authority of Malaysia Regional Office Sarawak LTAB Kuching P.O.BOX 1359 93728 Kuching, Sarawak Malaysia	Tel: 082 616532 Fax: 082 454523	noorashikin@caam.gov.my
CCT	Mr. Abdul Rali Bin Kassim	Principal Assistant Director, Civil Aviation Authority of Malaysia Air Traffic Management Division No. 27, Persiaran Perdana, Level 4, Podium Block B, Precinct 4, 62618 Putrajaya Malaysia	Tel: +603 8529 1311 Fax: +603 8529 1210	abdulrali@caam.gov.my ;

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CCT	Mr. Muhammad Hafidz Bin Ibrahim	Senior Assistant Director, Civil Aviation Authority of Malaysia Air Traffic Management Division No. 27, Persiaran Perdana, Level 4, Podium Block B, Precinct 4, 62618 Putrajaya Malaysia	Tel: +603 8529 1211 Fax: +603 8529 1210	mhafidz_ibrahim@caam.gov.my ;
CCT	Ms. Nur A'fifah Binti Mansor	Senior Assistant Director, Civil Aviation Authority of Malaysia Air Traffic Management Division No. 27, Persiaran Perdana, Level 4, Podium Block B, Precinct 4, 62618 Putrajaya Malaysia	Tel: +603 8871 4395 Fax: +603 8881 0510	afifah@caam.gov.my
ATC	Mr. Hood Bin Mustapha	Director Civil Aviation Authority of Malaysia Kuala Lumpur Air Traffic Control Centre Jalan CTA 3 (KLIA) Kuala Lumpur International Airport 64000 Sepang, Selangor Malaysia	Tel: 03 78467808 Fax: 03 7845 6590	hood@caam.gov.my ;
ATC	Mr. Johnli Bin Idek	Director Civil Aviation Authority of Malaysia Regional Office Sabah Jalan Bunga Raya P.O. Box 2065 88618 Kota Kinabalu, Sabah Malaysia	Tel: 088 224911 Fax: 088 219198	johnli@caam.gov.my ;

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ATC	Mr. Osman Bin Mohd Salleh	Principal Assistant Director Civil Aviation Authority of Malaysia Regional Office Sabah Jalan Bunga Raya P.O. Box 2065 88618 Kota Kinabalu, Sabah Malaysia	Tel: 082 224911 ext 210 Fax: 082 219170	osman@caam.gov.my ;
ATC	Ms. Noorashikin Binti Haron	Principal Assistant Director, Civil Aviation Authority of Malaysia Regional Office Sarawak LTAB Kuching P.O.BOX 1359 93728 Kuching, Sarawak Malaysia	Tel: 082 616532 Fax: 082 454523	noorashikin@caam.gov.my ;
AIS	Mr. Mohd Fitri Bin Ishak	Principal Assistant Director Civil Aviation Authority of Malaysia Air Traffic Management Division No. 27, Persiaran Perdana, Level 4, Podium Block B, Precinct 4, 62618 Putrajaya Malaysia	Tel: +603 8871 4210 Fax: +603 8881 0510	fitri@caam.gov.my ;
AIS	Mr. Ashaadi Fandzuri Bin Adnan	Assistant Director, Civil Aviation Authority of Malaysia Air Traffic Management Division No. 27, Persiaran Perdana, Level 4, Podium Block B, Precinct 4, 62618 Putrajaya Malaysia	Tel: +603 8871 4068 Fax: +603 8881 0510	ashaadi.fandzuri@caam.gov.my ;

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SAF	Mr. Mohd Rashidi Bin Abd Rahim	Principal Assistant Director, Civil Aviation Authority of Malaysia Air Traffic Management Division No. 27, Persiaran Perdana, Level 4, Podium Block B, Precinct 4, 62618 Putrajaya Malaysia	Tel: +60 3 8871 4239 Fax: +60 3 8881 0510	rashidi@caam.gov.my ;
SAF	Ms. Farhana Binti Mohamad Khairrudin	Senior Assistant Director, Civil Aviation Authority of Malaysia Air Traffic Management Division No. 27, Persiaran Perdana, Level 4, Podium Block B, Precinct 4, 62618 Putrajaya Malaysia	Tel: +603 8871 4266 Fax: +603 8881 0510	farhana@caam.gov.my ;
ARC	Mr. Abdul Rali Bin Kassim	Principal Assistant Director, Civil Aviation Authority of Malaysia Air Traffic Management Division No. 27, Persiaran Perdana, Level 4, Podium Block B, Precinct 4, 62618 Putrajaya Malaysia	Tel: +603 8871 4269 Fax: +603 8881 0510	abdulrali@caam.gov.my ;
ARC	Mr. Muhammad Hafidz bin Ibrahim	Senior Assistant Director, Civil Aviation Authority of Malaysia Air Traffic Management Division No. 27, Persiaran Perdana, Level 4, Podium Block B, Precinct 4, 62618 Putrajaya Malaysia	Tel: +603 8871 4235 Fax: +603 8881 0510	mhafidz_ibrahim@caam.gov.my

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ADM	Mr. Noor Izhar Bin Bahrin	Deputy CEO (Operations) Civil Aviation Authority of Malaysia Persiaran Perdana, Level 8, Galeria PJH, Precinct 4 62100 Putrajaya Malaysia	Tel: +60 3 8893 4188 Fax: +60 3 8893 4163	izhar@caam.gov.my ;
ADM	Ms. Hajjah Binti Mohd Bujang	Deputy Director Air Navigation Services Standards Division Civil Aviation Authority of Malaysia No. 27 Persiaran Perdana, Level 3, Podium Block B, Precinct 4 62618 Putrajaya Malaysia	Tel: +603 8529 1301 Fax: +603 8529 1210	nasuruddin@caam.gov.my ;
ADM	Mr. Nasuruddin Bin Zainol Abidin	Director Civil Aviation Authority of Malaysia Air Traffic Management Division No. 27 Persiaran Perdana, Level 4, Podium Block B, Precinct 4 62618 Putrajaya Malaysia	Tel: +603 8871 4225 Fax: +603 8881 0510	nasuruddin@caam.gov.my ;
ADM	Mr. Md Nastain Bin Mahazur	Deputy Director (Operation) Civil Aviation Authority of Malaysia Air Traffic Management Division No. 27 Persiaran Perdana, Level 4, Podium Block B, Precinct 4 62618 Putrajaya Malaysia	Tel: +603 8871 4272 Fax: +603 8881 0510	mdnastain@caam.gov.my ;

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	MALDIVES			
SAR	Moosa Shahid	Associate General Manager, Air Traffic Services, Maldives Airports Company Limited, Velana International Airport, Hulhule'22000	Tel: +960 333 7571 Mobile: +960 777 7173	moosa.h@macl.aero;
SAR	Ahmed Mohamed	Manager SAR, Air Traffic Services, Maldives Airports Company Limited, Velana International Airport, Hulhule'22000	Mobile: +960 7792686	ahmed.m@macl.aero;
ATC	Ibrahim Hameed	General Manager, Air Traffic Services, Maldives Airports Company Limited, Velana International Airport, Hulhule'22000	Tel: +960 333 7114 Mobile: +960 773 9100	i.hameed@macl.aero;
AIS	Mrs. Haseena Hadee	Assistant Manager, AIS Maldives Airports Company Limited Aeronautical Information Services, Air Traffic Management Section, Ibrahim Nasir International Airport, Hulhule'22000	Tel: +960 919 1266 Fax: +960 331 3258	hasyna@macl.aero;
AIS	Ms. Fathimath Samiya	Associate General Manager, AIS Maldives Airports Company Limited Aeronautical Information Services, Air Traffic Management Section, Ibrahim Nasir International Airport, Hulhule'22000	Tel: +960 777 9586 Fax: +960 331 3258	samiya@macl.aero;
SAF	Ibrahim Khalid	Associate General Manager, Air Traffic Services, Maldives Airports Company Limited, Velana International Airport, Hulhule'22000	Mobile: +960 777 1963	i.khalid@macl.aero;

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ADM	Mr. Ibrahim Thoha	Deputy Chief Officer, Aeronautical and Aerodrome Management Services, Maldives Airports Company Limited, Velana International Airport, Hulhule'22000	Tel: +960 333 1711 Mobile: +960 777 1963	thoha@macl.aero ;
ADM	Mr. Ibrahim Hameed	General Manager, Air Traffic Services, Air Traffic Management, Maldives Airports Company Limited, Velana International Airport	Tel: +960 333 7114 Mobile: +960 7739100	i.hameed@macl.aero ;
ADM	Mr. Hussein Jaleel	Chief Executive Civil Aviation Authority Ministry of Transport and Communication 11 th Floor, Velaanaage Ameeru Ahmed Magu Malé 20096	Tel: +960 (3) 324992 Fax: +960 (3) 323039	dgca@aviainfo.gov.mv ; jaleel@aviainfo.gov.mv ;
ADM	Ms. Fathimath Ramiza	Director Air Navigation & Aerodromes Maldives Civil Aviation Authority	Tel: +960 3342984 Mobile: +960 7774838	ramiza@caa.gov.mv ;
	MARSHALL ISLANDS			
ARC	Mr. Stanley Myazoe	Director Directorate of Civil Aviation Ministry of Transport and Communications		rmidca@yahoo.com ;
	MICRONESIA			

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ARC	Mr. Massy Halbert	Assistant Secretary (Minister) Division of Civil Aviation Department of Transportation, Communications and Infrastructure		mas.halbert@gmail.com ;
MONGOLIA				
SAR	Mr. Mungunkhuyag Gankhuu	Deputy Head of Air Navigation Service Department, National Civil Aviation Services Center, Civil Aviation Authority of Mongolia, Buyant-Ukhaa, Khan-Uul district, Ulaanbaatar 17120	Tel: +976 71 285022 Fax: +976 70 049640	mungunkhuyag.g@mcaa.gov.mn ;
SAR	Mr. Batkhaan Dorjnyam	Officer Search and rescue coordination unit, ATS Division, Civil Aviation Authority of Mongolia, Buyant- Ukhaa, Khan-Uul district, Ulaanbaatar 17120	Tel: +976 71 281154 Fax: +976 70 049640	ub_rcc@mcaa.gov.mn ; batkhaan@mcaa.gov.mn ;
CCT	Mr. Erdenebat Yondon	Deputy Director National Civil Aviation Services Center, Civil Aviation Authority of Mongolia, Buyant-Ukhaa, Khan-Uul district, Ulaanbaatar 17120	Tel: +976 71 285100 Fax: +976 70 049640	yo_erdenebat@mcaa.gov.mn ;
CCT	Mr. Urtnasan Doljin	Officer National Civil Aviation Service Center, Civil Aviation Authority of Mongolia, Buyant-Ukhaa, Khan-Uul district, Ulaanbaatar 17120	Tel: +976 71 285014 Fax: +976 70 049640	d_urtnasan@mcaa.gov.mn ;

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ATC	Mrs. Mandkhai Batjil	ATM officer Air Navigation and Airports Policy Regulation Department, Civil Aviation Authority of Mongolia, Buyant-Ukhaa, Khan-Uul district, Ulaanbaatar 17120	Tel: +976 71 282060 Fax: +976 70 049640	mandkhai.b@mcaa.gov.mn ;
ATC	Mr. Purevsukh Purev	Director ATS Division, National Civil Aviation Service Center, Civil Aviation Authority of Mongolia, Buyant-Ukhaa, Khan-Uul district, Ulaanbaatar 17120	Tel: +976 71 281700 Fax: +976 70 049640	purevsukh@mcaa.gov.mn ;
AIS	Mrs. Ariungerel Purev	Director AIS Division, National Civil Aviation Center, Civil Aviation Authority of Mongolia, Buyant-Ukhaa, Khan-Uul district, Ulaanbaatar 17120	Tel: +976 11 283131 Fax: +976 70049838	ariungerel@mcaa.gov.mn ;
AIS	Mr. Ulemj Davaa	Deputy Director AIS Division, National Civil Aviation Center Civil Aviation Authority of Mongolia Buyant-Ukhaa, Khan-Uul district, Ulaanbaatar 17120	Tel: +976 71 283129 Fax: +976 70049838	ulemj@mcaa.gov.mn ;

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SAF	Mr. Urantugs Badambazar	General Manager Aviation Safety Oversight and Regulation Department, Civil Aviation Authority of Mongolia, Buyant-Ukhaa, Khan-Uul district, Ulaanbaatar 17120	Tel: +976 71 285002 Fax: +976 70 049640	b.urantugs@mcaa.gov.mn ;
SAF	Mr. Odgerel Davaadorj	Safety Manager National Civil Aviation Services Center, Civil Aviation Authority of Mongolia, Buyant-Ukhaa, Khan-Uul district, Ulaanbaatar 17120	Tel: +976 71 285559 Fax: +976 70 049640	odgerel@mcaa.gov.mn ;
ARC	Mr. Lkhagvajav Dashdorj	Senior Officer Air Navigation Service Department, National Civil Aviation Services Center, Civil Aviation Authority of Mongolia, Buyant-Ukhaa, Khan-Uul district, Ulaanbaatar 17120	Tel: +976 71 285012 Fax: +976 70 049640	Lkhagvajav.d@mcaa.gov.mn ;
ARC	Mr. Khadbayar Tumurbaatar	Officer Air Navigation Service Department, National Civil Aviation Services Center, Civil Aviation Authority of Mongolia, Buyant-Ukhaa, Khan-Uul district, Ulaanbaatar 17120	Tel: +976 71 285012 Fax: +976 70 049640	khadbayar.tu@mcaa.gov.mn ;

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ARC	Mr. Batsaikhan Tserenjav	Head of ACC unit ATS division, National Civil Aviation Service Center, Civil Aviation Authority of Mongolia, Buyant-Ukhaa, Khan-Uul district, Ulaanbaatar 17120	Tel: +976 11 281614 Fax: +976 70 049640	batsaikhan.ts@mcaa.gov.mn ;
ADM	Mr. Munkhjargal Purevjav	Director National Civil Aviation Services Center, Civil Aviation Authority of Mongolia, Buyant-Ukhaa, Khan-Uul district, Ulaanbaatar-17120	Tel: +976 71 285000 Fax: +976 70 049640	munkhjargal.p@mcaa.gov.mn ;
MYANMAR				
SAR	Mr. Aung Zaw Thein	Assistant General Manager (ATM) Air Traffic Management Division Department of Civil Aviation Yangon International Airport Mingaladon 11021, Yangon	Tel: +959 533041 Fax: +951 533000	azawthein@gmail.com ;
CCT	Mr. Aung Kyaw Tun	Director General Department of Civil Aviation DCA Headquarters Building Yangon International Airport P.O.Box 11021, Mingaladon Yangon	Tel: +95 (1) 533015 Fax: +95 (1) 533016	dgdca@dca.gov.mm ;
ATC	Mr Aung Zaw Thein	Assistant General Manager(En route ATM)	Tel: +959 533041 Fax: +951 533000	azawthein@gmail.com ;

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ATC	Mr Tint Wai	Assistant General Manager(ASM)	Tel: +951 533 043 Fax: +951 533 000	dcatint@gmail.com ;
AIS	Mr. Than Lwin	Deputy General Manager (AIS) Department of Civil Aviation, Myanmar ATC Building, Yangon International Airport, Yangon 11021	Tel: +959 533085 Fax: +951 533016	aiso@ais.gov.mm ; thanlwin.ais@gmail.com ;
ARC	Mr. Than Lwin	Deputy General Manager (AIS) Department of Civil Aviation, Myanmar ATC Building, Yangon International Airport, Yangon 11021	Tel: +959 533085 Fax: +951 533016	aiso@ais.gov.mm ; thanlwin.ais@gmail.com ;
ARC	Mr. Tint Wai	Assistant General Manager (ATM) Air Traffic Management Division Department of Civil Aviation Yangon International Airport Mingaladon 11021, Yangon	Tel: +951 533 043 Fax: +951 533 000	dcatint@gmail.com ;
ADM	Mr. Soe Paing	General Manager (ANSP) Air Navigation Service Provider Department of Civil Aviation Yangon International Airport Mingaladon 11021, Yangon	Tel: +951 533 008 Fax: +951 533 000	soepng1@gmail.com ;
ADM	Mr. Aung Myint Thein	Deputy General Manager (ATMD) Air Traffic Management Division Department of Civil Aviation Yangon International Airport Mingaladon 11021, Yangon	Tel: +951 533 043 Fax: +951 533 000	aungmyintthein.dca@gmail.com ;

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ADM	Mr. Aung Zaw Thein	Assistant Director (ATM) Air Traffic Management Division Department of Civil Aviation Yangon International Airport Mingaladon 11021, Yangon	Tel: +959 533041 Fax: +951 533000	azawthein@gmail.com ;
ADM	Mr. Tint Wai	Assistant General Manager (ATM) Air Traffic Management Division Department of Civil Aviation Yangon International Airport Mingaladon 11021, Yangon	Tel: +951 533 043 Fax: +951 533 000	dcatint@gmail.com ;
	NAURU			
ARC	Ms. Li-May Uera	Secretary for Transport & Telecommunications		secretary.transport@naurugov.nr ;
ADM	Mr. Dominic Tabuna	Director of Civil Aviation Civil Aviation Authority Department of Transport Directorate of Civil Aviation Civil Aviation Head Office, Nauru International Airport Yaren District		djtabuna@gmail.com ;
ADM	Mr. Nodel Neneiya	Secretary for Transport Department of Transport Transport Secretariat Nauru International Airport Yaren Department		neneiya@gmail.com ;
	NEPAL			

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SAR	Mr. Nabin Prasad Achharya	Dy. Director, ATM Department, Civil Aviation Authority of Nepal, Head Office, Babarmahal, Kathmandu	Tel: +977 1 426 6139 Fax: +977 1 4262516 Mobile: +977 9840050909	nabinpd@yahoo.com ;
CCT	Mr. Mukul Mishra	Chief, CNS P & D Department Civil Aviation Authority of Nepal, Head Office, Babarmahal, Kathmandu	Tel: +977 1 4249379 Fax: +977 1 4262516 Mobile: +977 9849496700	mishramukul@hotmail.com ;
ATC	Mr. Suwarn Raj Upadhyay	Chief, ATM Department, Civil Aviation Authority of Nepal, Head Office, Babarmahal, Kathmandu	Tel: +977 1 4266139 Fax: +977 1 4262516 Mobile: +977 9841540578	suwarnr.upadhyay@caanepal.gov.np ;
ATC	Mr. Dinesh Raj Ghimire	Deputy Director, ATM Department, Civil Aviation Authority of Nepal, Head Office, Babarmahal, Kathmandu	Tel: +977 1 4266139 Fax: +977 1 4262516 Mobile: +977 9841216175	dineshr.ghimire@caanepal.gov.np ; dnghimire@gmail.com ;
AIS	Ms. Maiya Shrestha	Director, AIM Department, Civil Aviation Authority of Nepal, Head Office, Babarmahal, Kathmandu	Tel: +977 1 4257667 Fax: +977 1 4262516 Mobile: +977 9841297254	maiya.shrestha@caanepal.gov.np ; maiashrestha1@gmail.com ;
AIS	Ms. Sarita Sipahi	Manager, AIM Department, Civil Aviation Authority of Nepal, Head Office, Babarmahal, Kathmandu	Tel: +977 1 4257667 Mobile: +977 9843232440	sipahisarita@gmail.com ;
SAF	Mrs. Nabina Karmacharya	Director, ANS Safety & Standard Department, Civil Aviation Authority of Nepal, Head Office, Babarmahal, Kathmandu	Tel: +977 1 4267784 Fax: +977 1 4262516 Mobile: +977 9841485092	Nabina2008@live.com ;
ARC	Mr. Devendra Prasad Shrestha	Manager, ATM Department, Civil Aviation Authority of Nepal, Head Office, Babarmahal, Kathmandu	Tel: +977 01 4252206 Fax: +977 1 4262324 Mobile: +977 9841237079	airspace@caanepal.gov.np ; atcdeven@gmail.com ;

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ARC	Mr. Rajendra Singh Nayak	Manager, ATM Department, Civil Aviation Authority of Nepal, Head Office, Babarmahal, Kathmandu	Tel: +977 01 4252206 Fax: +977 1 4262324 Mobile: +977 9848186584	Nayakrajendra123@gmail.com ;
ADM	Mr. Raj Kumar Chhetri Mr. Pradeep Adhikari	Director General, Civil Aviation Authority of Nepal, Babarmahal, Kathmandu	Tel: +977 1 4262387, 4262518 Fax: +977 1 4262516 Mobile: +977 9851067834	dgca@caanepal.gov.np ; cnsatm@mos.com.np ;
ADM	Mr. Suwarn Raj Upadhyay	Chief, ATM Department Civil Aviation Authority of Nepal Head Office, Babar Mahal, Kathmandu	Tel: +977 1 426 6139 Fax: +977 1 4262516 Mobile: +977 9841540578	suwarnr.upadhyay@caanepal.gov.np ; nanpig@caanepal.gov.np ;
NEW ZEALAND				
SAR	Mr. Paul Craven	Operations Officer Rescue Coordination Centre New Zealand (RCCNZ) Maritime New Zealand	Tel: +64 4 577 8032 Fax: — Mobile: +64 27 491 8013	Paul.craven@maritimenz.govt.nz ;
SAR	Mr. Kevin Banaghan	Operations Officer Rescue Coordination Centre New Zealand (RCCNZ) Maritime New Zealand	Tel: +64 4 5 778049 Fax: — Mobile: +64 21 283 0830	Kevin.banaghan@maritimenz.govt.nz ;
CCT	Mr. Mark Blanchard	Head of Policy and Standards Airways New Zealand 26 Sir William Pickering Drive, Russley, Christchurch 8053 PO Box 14131, Christchurch, 8544	Tel: +64 3 3575430 ext. 3430 Fax: — Mobile: +64 27 5975604	Mark.Blanchard@airways.co.nz ;

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ATC	Mr. Mark Blanchard	Head of Policy and Standards Airways New Zealand 26 Sir William Pickering Drive, Russley, Christchurch 8053 PO Box 14131, Christchurch, 8544	Tel: +64 3 3575430 ext. 3430 Fax: Mobile: +64 27 5975604	Mark.Blanchard@airways.co.nz ;
AIS	Mr. Matt Day	Manager - Aeronautical Information Management Aeropath Level 7, 100 Willis Street Wellington 6011 Manager AIM Group EAD Asia/Pacific	Tel: +64 4 471 4795 Mobile: +64 27 437 0107	matt.day@aeropath.aero ; matt.day@groupead.co.nz ;
ARC	Mr. Matt Day	Manager - Aeronautical Information Management Aeropath Level 7, 100 Willis Street Wellington 6011 Manager AIM Group EAD Asia/Pacific	Tel: +64 4 471 4795 Mobile: +64 27 437 0107	matt.day@aeropath.aero ; matt.day@groupead.co.nz ;
ADM	Mr. Paul Craven	Operations Officer Rescue Coordination Centre New Zealand (RCCNZ) Maritime New Zealand	Tel: +64 4 577 8032 Fax: — Mobile: +64 27 491 8013	Paul.craven@maritimenz.govt.nz ;
ADM	Ms. Kate Madden	Aeronautical Services Officer Air Traffic Services Civil Aviation Authority of New Zealand P.O. Box 3555 Wellington 6140	Tel: +64 4 560 9645 Fax: +64 4 560 2024 Mobile: + 64 27 556 1512	Kate.Madden@caa.govt.nz ;
ADM	Mark Blanchard (ANSP)	Manager ATS P&S		mark.blanchard@airways.co.nz ;

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ADM	Mr. David Wills	Aeronautical Services Officer Telecommunications Civil Aviation Authority of New Zealand P.O. Box 3555 Wellington 6140	Tel: +64 4 560 9583 Fax: +64 4 560 2024	david.wills@caa.govt.nz ;
OMAN				
CCT	Mr. Saleh Al Harthy	Director of CNS	Tel: +968-24519789	saleh@paca.gov.om ;
CCT	Mr. Mubarak Al Ghelani	Director of ATC	Tel: +968-24518646	m.alghelani@paca.gov.om ;
CCT	Mr. Nasser Al Mazroui	Chief of ACC	Tel: +968-24518646	n.almazroui@paca.gov.om ;
PAKISTAN				
SAR	Mr. Syed Munawar Ali	Additional Director SAR, HQCAA, Terminal 1, Jinnah Intl Airport, Karachi	Tel: +92 21 99249153, +92 21 99072069 +92 322 2287585 Fax: +92 21 99249154	Adld.sar@caapakistan.com.pk ;
SAR	Mr Taqi Nasir	Officer-in Charge, Lahore RCC, Area Control Centre Radar Building Allama Iqbal Intl Airport Lahore	Tel.: +92 42 36611618, +92 42 99240624, +92 42 312922-25 Fax: +92 42 99240580 Mobile: +92 333 4277023	taqinasir64@gmail.com ;
SAR	Mr. Ali Hasan	Officer-in Charge, Karachi RCC, Area Control Centre Radar Building Jinnah Intl Airport Karachi	Tel: +92 21 99242401 +92 21 99071977 Fax: +92 21 99242404 Mobile: +92 310 7771211	RCKKARFIR@caapakistan.com.pk ;

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SAR	Mr. Akhtar Niqab	SAR Mission Coordinator, RSC Islamabad New Islamabad International Airport Islamabad	Tel: +92 51 9282009 +92 51 9252007-8 Fax: +92 51 9282006 Mobile: +92 334 8402650	Akhtar.Niqab@caapakistan.com.pk ;
SAR	Mr. Akhtar Mirza	Director Operations Headquarters, Pakistan Civil Aviation Authority Terminal No.1, Jinnah International Airport Karachi 75200	Tel: +92 2199242742 Fax: +92 2134604323 Mobile: +92 3202614648	Director.ops@caapakistan.com.pk ;
CCT	Mr. Naveed Ahmad Khan	Additional Director ATS Headquarters, Pakistan Civil Aviation Authority Terminal No.1, Jinnah International Airport Karachi 75200	Tel: +92 21 99242044 Fax: +92 21 99242045 Mobile: +92 3018267932	Adldops.atm@caapakistan.com.pk ;
AIS	Mr. Muhammad Azam Ghouri	Additional Director Aeronautical Information Management Headquarters, Pakistan Civil Aviation Authority, Terminal-1 Jinnah International Airport, Karachi	Tel: +92 21 99242155, +92 21 99072288 Fax: +92 21 99242089 Mobile: +92 301 2627768	AdID.AIM@caapakistan.com.pk ; AIMHQCAA@caapakista.com.pk ;
SAF	Mr. Muhammad Naeem Iqbal Quershhi	Director SQMS Headquarters, Pakistan Civil Aviation Authority, Terminal-1 Jinnah International Airport, Karachi 75200	Tel: +92 21 99242151 +92 21 99072302 Fax: +92 21 99242799 Mobile: +92 3332371552	AdIDSQMS.APSANS@caapakistan.com.p k ;
SAF	Mr. Hassan Mujahid	Additional Director (SSP) Headquarters, Pakistan Civil Aviation Authority, Terminal-1 Jinnah International Airport, Karachi 75200	Tel: +92 21 99242353 Fax: +92 21 99242124 Mobile: +92 300 2719467	AdID.SSP@caapakistan.com.pk ;
ARC	Flt Lt (Retd) Khaqan Murtaza	Director General Civil Aviation Authority	Tel: +92 21 99242002 +92 21 99242003 Fax: +92 21 99242004	DGCAA@caapakistan.com.pk ;

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ARC	Mr. Akhtar Mirza	Director Operations Headquarter Pakistan Civil Aviation Authority Terminal No.1, Jinnah International Airport Karachi 75200	Tel: +92 21 99242742 Fax: +92 21 34604323 Mobile: +92 3202614648	Director.ops@caapakistan.com.pk ;
ADM	Mr. Naveed Ahmad Khan	Additional Director ATS Headquarters, Pakistan Civil Aviation Authority, Terminal-1 Jinnah International Airport, Karachi 75200	Tel: +92 21 99242044, +92 21 99072281 Fax: +92 21 99242045 Mobile: +92 3018267932	AdIDOPS.ATM@caapakistan.com.pk ;
ADM	Mr. Shabbir Ahmed	Additional Director Airspace and Air Navigation Standards Headquarters, Pakistan Civil Aviation Authority Inspectorate Building, Jinnah International Airport Karachi 75200	Tel: +92 21 99242748, +92 21 99072665, Fax: +92 21 99242757 Mobile: +92 332 8262870	AdIDAAR.AANS@caapakistan.com.pk ;
PALAU				
ARC	Mr. Peter N. Polloi	Administrator Director General of Civil Aviation Palau National Aviation Administration		pnaa@palaunet.com ;
ADM	Mr. Peter N. Polloi	Administrator (DGCA) Palau National Aviation Administration P.O. Box 6051 Koror, Palau 96940	Tel: +680 587 2944, +680 587 4363 Mobile: +680 775 1828 Fax: +680 587 2945	pnaa@palaunet.com ;
PAPUA NEW GUINEA				
SAR	Mr. Gabriel Salayau	Executive Manager Aviation Facilities Civil Aviation Safety Authority P.O. Box 1941 Boroko, NCD, Port Moresby	Tel: +675 3027551	gsalayau@casapng.gov.pg ;

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SAR	Mr. Ilaitia M. Tabakauco	Acting Executive Manager Air Traffic Service NiuSky Pacific Limited	Tel: +6753121500 ext. 523	itabakauco@niuskyacific.com.pg ;
SAR	Mr. Phil Irvine	Executive Manager Air Traffic Service NiuSky Pacific Limited P.O. Box 273 Boroko, NCD, Port Moresby	Tel: +675 3121500 ext. 521	pirvine@niuskyacific.com.pg ;
CCT	Mr. Gabriel Salayau	Executive Manager Aviation Facilities Civil Aviation Safety Authority	Tel: +675 3027551	gsalayau@casapng.gov.pg ;
CCT	Mr. Ilaitia M. Tabakauco	Acting Executive Manager Air Traffic Service NiuSky Pacific Limited	Tel: +6753121500 ext. 523	itabakauco@niuskyacific.com.pg ;
CCT	Mr. Phil Irvine	Executive Manager Air Traffic Service PNG Airservices Limited	Tel: +675 3131521	pirvine@pngairservices.com.pg ;
ATC	Mr. Gabriel Salayau	Executive Manager Aviation Facilities Civil Aviation Safety Authority	Tel: +675 3027551	gsalayau@casapng.gov.pg ;
ATC	Mr. Ilaitia M. Tabakauco	Acting Executive Manager Air Traffic Service NiuSky Pacific Limited	Tel: +6753121500 ext. 523	itabakauco@niuskyacific.com.pg ;
ATC	Mr. Phil Irvine	Executive Manager Air Traffic Service PNG Airservices Limited	Tel: +675 3131521	pirvine@pngairservices.com.pg ;
AIS	Ms. Collette B Karang	Manager AIS PNG Air Services Ltd. P.O. Box 273 Boroko NCA, Port Moresby	Tel: +675 7615 5319 Fax: +675 325 0749	ckarang@pngairservices.com.pg ;
AIS	Ms. Joyce Nanong	Manager AIS NiuSky Pacific Limited P.O. Box 273 Boroko NCD, Port Moresby	Tel: +675 3121500 ext. 581	jananong@niuskyacific.com.pg ;

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AIS	Ms. Joyce Nanong	Manager AIS NiuSky Pacific Limited	Tel: +675 3121500 ext. 581	jananong@niuskyacific.com.pg ;
SAF	Mr. Gabriel Salayau	Executive Manager Aviation Facilities Civil Aviation Safety Authority	Tel: +675 3027551	gsalayau@casapng.gov.pg ;
SAF	Mr. Ilaitia M. Tabakaucoro	Acting Executive Manager Air Traffic Service NiuSky Pacific Limited	Tel: +6753121500 ext. 523	itabakaucoro@niuskyacific.com.pg ;
SAF	Mr. Phil Irvine	Executive Manager Air Traffic Service NiuSky Pacific Limited	Tel: +675 3121500 ext. 521	p Irvine@niuskyacific.com.pg ;
ARC	Ms. Collette B Karang	AIS Inspector Civil Aviation Safety Authority	Tel: +675 302 7541 Fax: +675 327 1919	ckarang@casapng.gov.pg ;
ARC	Ms. Freesia Wavine	Senior ATM Data Specialist NiuSky Pacific Limited	Tel: +675 3121500 ext. 522	fwavine@niuskyacific.com.pg ;
ADM	Mr. Roy Mumu	Secretary Department of Transport P.O.Box 1489 Port Moresby National Capital District	Tel: + (675) 325 7500/3236186 Fax: + (675) 323 3339	rmumu@transport.gov.pg
	PHILIPPINES			
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SAR	Ms. Joyce B. Santos	Asst. FIC for Operations, PARCC Civil Aviation Authority of the Philippines	Tel: +632 86727705 Tel: +632 86727706 Fax: +632 86727704 Mobile: +63917 6502302 AMHS: RPLLYCYX	caaphil.rcc@gmail.com ;
ATC	Ms. Jessica Adeline D. Jamero	Acting Department Manager, III Air Traffic Control and Management Department Air Traffic Service, Civil Aviation Authority of the Philippines	Tel: +632 7944 2214	jamerojessica@gmail.com ;
ATC	Mr. Romel Y. Matnog	Chief, Approach Division Air Traffic Control and Airspace Management Department Air Traffic Service, Civil Aviation Authority of the Philippines	Tel: +632 7944 2215	mdapproach@yahoo.com ;
ATC	Mr. Robin F. Alzona	Chief, Aerodrome Division Air Traffic Control and Airspace Management Department Air Traffic Service, Civil Aviation Authority of the Philippines	Tel: +632 7944 2222	ats_aerodrome@caap.gov.ph ;
ATC	Mr. Joseph Tyrone R. Arias	Facility Chief Manila Area Control Center Air Traffic Service, Civil Aviation Authority of the Philippines	Tel: +632 8672 7784	jtrakx06@gmail.com ;
AIS	Ms. Alicia C. Bagot	Acting Division Chief, AIS/MAPS Civil Aviation Authority of the Philippines	Tel: +632 8672 7730, +632 8672 7732	alicebagot@yahoo.com ;

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AIS	Ms. Jesseelyn P. Heje	Facility In Charge Manila Aeronautical Data Control Center Civil Aviation Authority of the Philippines	Tel: +632 8672 7733	ats_madcc@caap.gov.ph ;
AIS	Mr. George Don M. Narvaez	Facility in Charge, AIS Operations Civil Aviation Authority of the Philippines	Tel: +632 8672 7785	gdnarvaez@yahoo.com ;
AIS	Ms. Cyndi S. Balucating	Asst. FIC for Operations, AIS OPS Civil Aviation Authority of the Philippines		cyndi.balucating@gmail.com ;
SAF	Ms. Arlene B. Gentica	Safety Manager Air Traffic Service Civil Aviation Authority of the Philippines	Tel: +632 7944 2217	ats_sms@caap.gov.ph ; arlenegentica@gmail.com ;
ARC	Ms. Rebecah A. Rubias	Acting Chief, Airspace and Flight Procedure Design Division Air Traffic Control and Airspace Management Department Air Traffic Service, Civil Aviation Authority of the Philippines	Tel: +632 7944 2213 +632 7944 2214	afpd@caap.gov.ph ;
ARC	Mr. Charlemagne P. Gilo	Chief, Aeronautical Communication Division Aeronautical Information and Communications Department Air Traffic Service Civil Aviation Authority of the Philippines		Charlemagne.gilo@gmail.com ;

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ADM	Engr. Arnold R. Balucating (PIRG Deficiencies)	Assistant Director General I, Air Navigation Service Civil Aviation Authority of the Philippines MIA Road, Pasay City 1300 Metro Manila, Philippines	Tel: +63 2 79442194	arnoldrbalucatine@yahoo.com ;
ADM	Atty. Antonio G. Gonzales (PIRG Deficiencies ALT)	Acting Chief, Air Traffic Service Air Traffic Service Civil Aviation Authority of the Philippines	Tel: +63 2 7944 2218	antoniogonzales2003@yahoo.com ;
ADM	Ms. Ma. Antonia V. Bornas (Volcanic Activity)	Chief, Science Research Specialist, Volcanic Monitoring & Eruption Prediction Division Philippine Institute of Volcanology and Seismology (PHIVOLCS) PHIVOLCS Building, C.P. Garcia Avenue UP Campus, Diliman, Quezon City 1100	Tel: +63 (2) 426 1468	mariton.bornas@phivolcs.dost.gov.ph ; vmedp@phivolcs.dost.gov.ph ;
ADM	Vicente B. Malano, Ph.D. (Volcanic Activity)	Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) PAGASA Science Garden Complex, BIR Road, Brgy. Central, Quezon City I100 Metro Manila, Philippines	Tel: +63 2 8929 4865 +63 2 84349040	rzmalano@paqasa.dost.eov.ph ; vmalanoSS@yahoo.com ;
ADM	Ms. Amneris G. Gabriel	Department Manager, III Aeronautical Information and Communications Department Air Traffic Service Civil Aviation Authority of the Philippines	Tel: +632 7944 2221	vannieggabriel@gmail.com ;
ADM	Ms. Melba S. Acurantes	Division Chief, Progression Division Air Traffic Service Civil Aviation Authority of the Philippines	Tel: +632 7944 2245	Ms_acurantes@yahoo.com ; atppd@caap.gov.ph ;

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	NAME	TITLE/ORGANIZATION	TEL/FAX NUMBER	E-MAIL
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ADM	Ms. Marlene I. Singson	Acting Assistant Director General 1 Air Traffic Service Civil Aviation Authority of the Philippines	Tel: +63 2 79442218	ats_misingson@caap.gov.ph ;
ADM	Captain Jim C. Sydiongco	Director General Civil Aviation Authority of the Philippines Old MIA Rd., Pasay City Metro Manila	Tel: +632 7944-2000 Fax: +632 944-2168 +632 7944 2168	iirnsvd@gmail.com ; de@caap.sov.ph ;
REPUBLIC OF KOREA				
SAR	Mr. Sang-cheol Kim	Fire Fighting Equipment & Aviation Division Assistant Director Ministry of Public Safety and Security National Fire Service HQ SM Tower, #503, 10 Jeongbu 2 Cheongsa-ro, Sejong Special Self Governing City	Tel: +82 44 205 7388 Fax: +82 44 205 7326	godwater@korea.kr ;
SAR	Mr. Min-hyeon KIM	Assistant Inspector, Search and Rescue Division, Korea Coast Guard, 130, Haedoji-ro, Yeonsu-gu, Incheon, 21995, Republic of Korea	Tel: +82 32 835 2547 Fax: +82 32 835 2846	clearhate@korea.kr ;
SAR	Mr. Dong-sun Yoo	Assistant Director Air Traffic Management Office 50-12, Maeyeou-ro 1 gil, Dong-gu, Daegu City, 41059	Tel.: +82 53 668 0256 Fax: +82 53 668 0277	yds1992@korea.kr ;

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CCT	Mr. Chi-Hyoung Oh	Assistant Director Air Traffic Command Center Air Traffic Management Office 50-12, Maeyeou-ro 1 gil, Dong-gu, Daegu City, 41059	Tel.: +82 53 668 0493 Fax: +82 53 668 0490	Och5555@korea.kr ;
CCT	Ms. So-Jin Lim	Assistant Director Air Traffic Command Center Air Traffic Management Office 50-12, Maeyeou-ro 1 gil, Dong-gu, Daegu City, 41059	Tel.: +82 53 668 0494 Fax: +82 53 668 0490	sojinlim@korea.kr ;
CCT	Ms. So-hyun Park	Assistant Director Air Traffic Division Korea Office of Civil Aviation Ministry of Land, Infrastructure and Transport #11 Doum-ro 6, Sejong Special Self-governing City, 30103	Tel: +82 44 201 4196 Fax: +82 44 201 5631	psohyon@korea.kr ;
AIS	Ms. Jihyang KIM	Assistant Director, Air Traffic Management Office, 50-12, Maeyeou-ro 1 gil, Dong-gu, Daegu City, 41059	Tel: +82 53 668 0259 Fax: +82 53 668 0277	onlyjh8807@korea.kr ;
AIS	Ms. Gakyoun MIN	Assistant Director, Air traffic division of KOCA, MOLIT, #11, Doum-ro 6, Sejong Special Self- governing City, 30103	Tel: +82 44 201 4298 Fax: +82 44 201 5631	mgk1008@korea.kr ;

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ARC	Mr. Young-Min Kim	Deputy Director Air Traffic Division Korea Office of Civil Aviation Ministry of Land, Infrastructure and Transport #11 Doum-ro 6, Sejong Special Self-governing City, 30103	Tel.: +82 44 201 4303 Fax: +82 44 201 5631	gadmin777@korea.kr ;
ARC	Mr. Jun-ho Lee	Assistant Director Air Traffic Division Korea Office of Civil Aviation Ministry of Land, Infrastructure and Transport #11 Doum-ro 6, Sejong Special Self-governing City, 30103	Tel: +82 44 201 4301 Fax: +82 44 201 5631	garund9@korea.kr ;
ARC	Mr. Hyung-cheol Kwon	Assistant Director Air Traffic Management Office 50-12, Maeyeou-ro 1 gil, Dong-gu, Daegu City, 41059	Tel: +82 53 668 0253 Fax: +82 53 668 0277	cheol89@korea.kr ;
ADM	Mr. Young-Min Kim	Deputy Director, Air Traffic Division, Korea Office of Civil Aviation, Ministry of Land, Infrastructure and Transport, #11 Doum-ro 6, Sejong Special Self-governing City, 30103	Tel: +82 44 201 4303 Fax: +82 44 201 5631	gadmin777@korea.kr ;

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ADM	Mr. Jun-ho Lee	Assistant Director, Air Traffic Division, Korea Office of Civil Aviation, Ministry of Land, Infrastructure and Transport, #11 Doum-ro 6, Sejong Special Self-governing City, 30103	Tel: +82 44 201 4301 Fax: +82 44 201 5631	garund9@korea.kr ;
ADM	Ms. So-hyun Park	Assistant Director Air Traffic Division Korea Office of Civil Aviation Ministry of Land, Infrastructure and Transport #11 Doum-ro 6, Sejong Special Self-governing City, 30103	Tel: +82 44 201 4196 Fax: +82 44 201 5631	psohyon@korea.kr ;
	QATAR			
CCT	Mr. Majed Al Atawi	Acting Director Air Safety Department		Majed.Alatawi@caa.gov.qa ;
CCT	Mr. Ahmed Al-Eshaq	Director of Air Navigation Department		Ahmed@caa.gov.qa ;
	SAUDI ARABIA			
CCT	Mr. Ibrahim Al-Jabri			ialjabri@gaca.gov.sa ;
	RUSSIAN FEDERATION			
CCT	Mr. Sergey Pogrebnov	Deputy Director General, State ATM Corporation HQ	Tel: Fax:	Pogrebnov@matfmc.ru ;
CCT	Mr. Peter Shipil	Director, International Relations and Protocol, State ATM Corporation HQ	Tel: Fax:	shipil@gkovd.ru ;
CCT	Mr. Alexey Buevich	Head of ATFM & Strategic Planning, Main ATM Center of Russia, State ATM Corporation	Tel: +7 495 6010643 Fax: +7 495 601 07 64	matcc@aviacom.ru ;

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CCT	Mr. Konstantin Starostin,	Deputy Branch Director for ATM, Far East Air Navigation Branch (Khabarovsk), State ATM Corporation	Tel: Fax:	sko@dv.gkovd.ru ;
CCT	Mr. Viktor Trikopa,	Head of ATM unit, North East Air Navigation Branch (Magadan)	Tel: Fax:	trikopa@sv.gkovd.ru ; acc@sv.gkovd.ru ;
CCT	Mr. Alexey Khrabrov	Chief of ATM Services, PK ACC	Tel: +7 914 788 1874 Fax:	
	SAMOA			
ARC	Mr. Magele Hoe Viali	Secretary for Transport/Chief Executive Officer Ministry of Works, Transport and Infrastructure		hoe.viali@mwti.gov.ws ;
ARC	Mrs. Yvonne Tuioti Mariner-Viliamu	Director of Civil Aviation/Assistant Chief Executive Officer Civil Aviation Division Ministry of Works, Transport and Infrastructure		yvonne.mariner@mwti.gov.ws ;
	SINGAPORE			
SAR	Mr. Tai Kit	Head ATC Specialist (Search and Rescue/ Contingency Planning) Singapore Air Traffic Control Centre 60 Biggin Hill Road Singapore 509950	Tel: +65 6 595 4084 Fax: +65 6542 2548	tai_kit@caas.gov.sg ;
CCT	Mr. Yeo Khung Hui	Chief (ATM - 1) Civil Aviation Authority of Singapore, Singapore Changi Airport, P.O Box 1 Singapore 918141	Tel: +65 6541 2457 Fax: +65 6441 0221	YEO_Khung_Hui@caas.gov.sg ;

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ATC	Mr. Thomas Yeo	Senior Chief (SATCC) Singapore Air Traffic Control Centre 60 Biggin Hill Road Singapore 509950	Tel: +65 6541 2947 Fax: +65 6545 6252	thomas_yeo@caas.gov.sg ;
AIS	Mr. Vevaganandam Ravichandran	Head (Aeronautical Information Services) Civil Aviation Authority of Singapore Singapore Changi Airport P.O. Box 1 Singapore 918141	Tel: +65 64227036 Fax: +65 64410221	ravichandran_vevaganandam@caas.gov.sg
AIS	Ms. Wong Liang Fen	Specialist (Aeronautical Information Services) Civil Aviation Authority of Singapore Singapore Changi Airport P.O. Box 1 Singapore 918141	Tel: +65 6595 6051 Fax: +65 6441 0221	wong_liang_fen@caas.gov.sg ;
AIS	Mr. Kevin Koh	Manager (Aeronautical Information Services) Civil Aviation Authority of Singapore, Singapore Changi Airport, P.O Box 1 Singapore 918141	Tel: +65 6422 7550 Fax: +65 6441 0221	kevin_koh@caas.gov.sg ;
SAF	Mr. Chew Han Jun	Air Traffic Control Manager (ANS Safety & Security) Civil Aviation Authority of Singapore, Singapore Changi Airport, P.O Box 1 Singapore 918141	Tel: +65 6541 4080 Fax: +65 64410221	chew_han_jun@caas.gov.sg ;
SAF	Ms. Valerie Sim	ATC Specialist (Safety) Civil Aviation Authority of Singapore, Singapore Changi Airport, P.O Box 1 Singapore 918141	Tel: +65 6422 7551 Fax: +65 6441 0221	Valerie_SIM@caas.gov.sg ;

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ARC	Mr. Tommy Tan	Senior Air Traffic Control (ATM - South East Asia 2) Civil Aviation Authority of Singapore, Singapore Changi Airport, P.O Box 1 Singapore 918141	Tel: +65 6541 2436 Fax: +65 6441 0221	Tommy_TAN@caas.gov.sg ;
ADM	Mr. Han Kok Juan	Director General of Civil Aviation Civil Aviation Authority of Singapore Singapore Changi Airport P. O. Box 1 Singapore 918141	Tel: +65 6541 2010 Fax: +65 6542 1231	HAN_Kok_Juan@caas.gov.sg ;
ADM	Mr Vincent Hwa	Director Air Traffic Services Civil Aviation Authority of Singapore, Singapore Changi Airport P.O. Box 1 Singapore 918141	Tel: +65 6541 2669 Fax: +65 6441 0221	vincent_hwa@caas.gov.sg ;
ADM	Mr. Andrew Wee	Deputy Director (Safety & Standards) Air Traffic Services Division Civil Aviation Authority of Singapore, Singapore Changi Airport, P.O Box 1 Singapore 918141	Tel: +65 6541 3467 Fax: +65 6441 0221	andrew_wee@caas.gov.sg ;
SOLOMON ISLANDS				
ATC	Mr Alfred Pitaa	Manager Air Traffic Services Ministry of Communication and Aviation PO BOX 1850 HONIARA	Tel: +677 36326 OR +677 36271	APita'a@mca.gov.sb

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ADM	Mr. Brian Halisanau	Director of Civil Aviation (Acting) Civil Aviation Authority of Solomon Islands PO BOX R25, Honiara	Tel: +677 36563	halisanau_b@caasi.com.sb ;
ADM	Mr. Allen Zunia	Technical Officer – ANS/CNS/MET Civil Aviation Authority of Solomon Islands PO BOX R25, Honiara		zunia_a@caasi.com.sb ;
SRI LANKA				
SAR	Mr. Nishan Abeywardena	Head of Air Navigation Services Airport & Aviation Services (SL) (Pvt) Ltd Navigation Services Complex Bandaranaike International Airport, Katunayake. Sri Lanka	Tel: +94 11 2252062 Fax: +94 11 2252062 Mobile: +94 768242691	head.ans@airport.lk
CCT	Mr. M.A. J. Fernando	Senior Manager (Planning and Standards) Airport & Aviation Services (SL) (Pvt) Ltd Navigation Services Complex Bandaranaike International Airport, Katunayake Sri Lanka	Tel: +94 112264204 Mobile: +94 715302606	arunaatc.ans@airport.lk
ATC	Mr. Nishan Abeywardena	Head of Air Navigation Services Airport & Aviation Services (SL) (Pvt) Ltd Navigation Services Complex Bandaranaike International Airport, Katunayake. Sri Lanka	Tel: +94 11 2252062 Fax: +94 11 2252062 Mobile: +94 768242691	head.ans@airport.lk ;
AIS	Ms. Nishani Cooray	Manager - AIS Airport & Aviation Services (SL) (Pvt) Ltd Bandaranaike International Airport Katunayake, Sri Lanka	Tel: +94 11 226 4229 Fax: +94 11 225 9916 Mobile: +94 773655757	nishani.ais.ans@airport.lk ;

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AIS	Mr. Asanga Senarath Bandara	Senior Electronics Engineer (Surveillance/ATM/AIM) / Project Manager of AIM System Implementation Project of Sri Lanka Airport & Aviation Services (SL) (Pvt) Ltd. Electronics & Air Navigation Engineering Division Navigation Services Complex Bandaranaike International Airport, Katunayake	Tel: +94 76 824 2654, +94 11 226 3619 Fax: +94 11 225 2400	asanga.eane@airport.lk ; asangasenarath@gmail.com ;
ARC	Mr. Dhanula Jayarathna	Civil Aviation Inspector - AIS Civil Aviation Authority of Sri Lanka No. 152/1, Minuwangoda Road Katunayake	Tel: +94 11 2358856 Fax: +94 11 2253627	caiais1@caa.lk ;
ADM	Mr. M. A. K. Prasanna	Director Air Navigation Services, Civil Aviation Authority of Sri Lanka No. 152/1, Minuwangoda Road Katunayake	Tel: +94 11 2253863, +94 11 2358849 Fax: +94 11 2257159	dans@caa.lk ;
ADM	Mrs. N.S. Casseer	Deputy Director General - Aeronautical Services Regulation Civil Aviation Authority of Sri Lanka No. 152/1, Minuwangoda Road Katunayake	Tel: +94 112 253 496, +94 112 358 821 Fax: +94 112 253 521	ddgasr@caa.lk
ADM	Capt. Themiya Abeywickrama	Director General & Chief Executive Officer Civil Aviation Authority of Sri Lanka	Tel: +94 112 358 802 (direct line) Fax: +94 112 253 038, +94 112 257 154	sldgca@caa.lk ;

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ADM	Mr. Nishan Abeywardena	Head of Air Navigation Services Airport & Aviation Services (SL) (Pvt) Ltd Navigation Services Complex Bandaranaike International Airport, Katunayake	Tel: +94 11 2252062 Fax: +94 11 2252062 Mobile: +94 768242691	head.ans@airport.lk ;
TAJIKISTAN				
CCT	Mr. Alisher A. Shambiev,	First Deputy of Director General, SUE "Tajikairnavigation"	Tel: +992 48 701-17-20	a.shambiev@airnav.tj ;
THAILAND				
SAR	Mr. Punlop Sungsilert (Principle SAR Contact)	Chief of Technical and Standard Group Transport Technical Officer, Senior Professional Level Office of the Search and Rescue Commission Ministry of Transport	Tel: +66 2 287 4717 Mobile: +6689 7960 368 Fax: +66 2 286 2925	punlopsung@yahoo.com ; punlop.s@mot.go.th ;
SAR	Pol.Lt.Col.Phitak Rerngphitak	Chief of Search and Rescue Coordination Group Transport Technical Officer, Professional Level Office of the Search and Rescue Commission, Ministry of Transport	Mobile: +66 89 545 4699	rerngphitak@yahoo.com ;
SAR	Mr. Thanatip Jantarapakde	Chief of Vessel Traffic Control Section, Vessel Traffic Control and Maritime Security Office Marine Department of Thailand	Tel/Fax: +6638400271 +66 38 495161-3	thanatipj@hotmail.com ; thanatip.j@md.go.th ;
CCT	Mr. Piyawut Tantimekabut	Air Traffic Management Network Manager Network Operations Air Traffic Management Center Aeronautical Radio of Thailand Ltd (AEROTHAI) 102 Soi Ngamduplee, Tungmahamek, Sathon Bangkok 10120 Thailand	Tel: +66 2 287 8616 Fax: Mobile: +66 89 697 5859	piyawut@aerothai.co.th ;

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ATC	Ms. Suppanat Hannarongsag	Senior Director, Bangkok Area Air Traffic Control Management Bureau Aeronautical Radio of Thailand Ltd (AEROTHAI) 102 Soi Ngamduplee Tungmahamek, Sathorn, Bangkok 10120	Tel: +66 2 287 8808 Mobile: +66 85 481 1646	suppanat.ha@aerothai.co.th ;
AIS	Mr. Chai Kaewkitinarong	Chief of Aeronautical Information Service Oversight Division 333/105 9th Floor Laksi Plaza Building, Khampheng Phet 6 Rd., Talat Bangkhen, Laksi, Bangkok 10210	Tel: +66 2 568 8825	chai.k@caat.or.th ;
AIS	Mr. Jakrin Kutantham	Aeronautical Information and Chart Standards Officer 333/105 9 th Floor Laksi Plaza Building, Khampheng Phet 6 Rd., Talat Bangkhen, Laksi, Bangkok 10210	Tel: +66 2 568 8825 Fax:	jakrin.k@caat.or.th ;
AIS	Ms. Papasrin Jirawiwatkul	Chief of Aeronautical Information Division The Civil Aviation Authority of Thailand 333/105 7 th Floor Laksi Plaza Building, Khampheng Phet 6 Rd., Talat Bangkhen, Laksi, Bangkok 10210	Tel: +66 63 205 8830 Fax: +66 2 576 1903	papasrin.j@caat.or.th ;
AIS	Ms. Sujin Promduang	Director, Aeronautical Information and Flight Data Management Centre Aeronautical Radio of Thailand Limited 102 Ngarmduplee, Rama IV Road Tungmahamek, Sathorn Bangkok 10120	Tel: +66 2 285 9083 Fax: Mobile: +66 81 915 0560	sujin.pr@aerothai.co.th ;

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SAF	Mr. Kajonpat Maklin	Manager, Aviation Safety Management Department the Civil Aviation Authority of Thailand (CAAT) 333/105 11th Floor Laksi Plaza Building, Khampheng Phet 6 Rd., Talat Bangkhen, Laksi, Bangkok 10210	Tel: +66 2 568 8813	kajonpat.m@caat.or.th ;
SAF	Mr. Theeravut Sungseemek	Director, Safety Management Department Aeronautical Radio of Thailand Ltd. (AEROTHAI) 102 Soi Ngamduplee, Tungmahamek, Sathon Bangkok 10120 Thailand	Tel: +66 2 285 9677 Fax: Mobile: +66 61 403 1146	theeravut.su@aerothai.co.th ;
ARC	Mr. Pawat Harnbumrunakit	Chief of Airspace and Flight Procedure Oversight Division The Civil Aviation Authority of Thailand (CAAT) 333/105 9th Floor Laksi Plaza Building, Khampheng Phet 6 Rd., Talat Bangkhen, Laksi, Bangkok 10210	Tel: +66 2 568 8825	pawat.h@caat.or.th ;
ARC	Mr. Winyou Sriwong	Senior Director, Air Traffic Management Network Bureau Aeronautical Radio of Thailand Ltd. (AEROTHAI) 102 Soi Ngamduplee, Tungmahamek, Sathon Bangkok 10120 Thailand	Tel: +66 2 285 9692 Fax: Mobile: +66 89 039 7421	winyou.sr@aerothai.co.th ;
ADM	Mr. Sarun Benjanirat	Deputy Director General Acting for Director General the Civil Aviation Authority of Thailand (CAAT) 333/105 Lak Si Plaza, Khamphaeng Phet 6 Road Talat Bang Khen, Lak Si, Bangkok 10210	Tel: +66 2 568 8800 Fax: +66 2 568 8844	Sarun.b@caat.or.th ;

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ADM	Ms. Tawika Huayhongtong	Manager, Air Navigation Services Standards Department the Civil Aviation Authority of Thailand (CAAT) 333/105 Lak Si Plaza, Khamphaeng Phet 6 Road, Talat Bang Khen, Lak Si, Bangkok 10210	Tel: +66 2 568 8825 Fax: +66 2 568 8844	tawika.h@caat.or.th ;
ADM	Miss Amornrat Jirattigalachote	Strategic Planning Manager (Engineering) Policy and Strategy Management Bureau Aeronautical Radio of Thailand Ltd. (AEROTHAI) 102 Soi Ngamduplee, Tungmahamek, Sathon Bangkok 10120 Thailand	Tel: +66 2 287 8262 Mobile: +66 81 887 2535	amornrat.ji@aerothai.co.th ;
TONGA				
ATC	TBA			
ARC	Hon. Semisi K L Sika	Deputy Prime Minister and Minister for Infrastructure and Tourism		misisika@gmail.com ;
ARC	Mr. Ringo K Fa'oliu	Chief Executive Officer for Infrastructure		rfaoliu0708@gmail.com ; ringo.faoliu@moi.gov.to ;
TURKEY				
CCT	Mr. Ayhan Öztekin	Air Traffic Manager, DHMI HQ, Ankara	Tel: +90 312 2042290 Fax: +903122220976	Ayhan.Oztekin@dhmi.gov.tr ;
CCT	Mr. Sıtkı Kağan Ertas	Air Navigation Department General Directorate of State Airports Authority	Tel: +90 312 2042592 Fax: +90 3122220976	Kagan.Ertas@dhmi.gov.tr ;
TURKMENISTAN				

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CCT	Mr. Batyr Chikayev	Chief of Ashgabat ACC, "Turkmenhowayollary", State Civil Aviation Department	Tel: + 99 312233880 Fax: + 99 312230199	
	UAE			
CCT	Mr. Hamad Rashid Al Belushi	Director Air Traffic Management GCAA P.O Box 666, Abu Dhabi	Tel.: +971 2 5996830, +971 50 6164350 Fax: +971 2 5996836	hbelushi@szc.gcaa.ae ;
CCT	Mr. Ahmed Al Jallaf	Assistant Director General Air Navigation Services Sector GCAA P.O Box 666, Abu Dhabi	Tel.: +971 2 5996888, +971 50 6599242 Fax: +971 2 5996883	aljallaf@szc.gcaa.ae ;
ATC	UAE ANS			aldossari@gcaa.gov.ae ;
	UNITED STATES OF AMERICA			
SAR	Mr. David Edwards	Chairman, ICAO/IMO Joint Working Group SAR U.S. Coast Guard U.S. Coast Guard Search and Rescue	Tel: +1 202 372 2087 Fax: +1 202 372 8384	david.l.edwards@uscg.mil ;
SAR	Ms. Jennifer Conklin	Search and Rescue Manager Fourteenth Coast Guard District 300 Ala Moana Blvd Honolulu, Hawaii 96850-4982	Tel: +1 808 535 3342	Jennifer.J.Conklin@uscg.mil ;

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ATM/ CCT	Mr. Michael Watkins	Senior ATO Representative Asia/Pacific Region Air Traffic Organization, International Office Federal Aviation Administration Air Traffic Representative US Embassy 27 Napier Road Singapore 258508	Tel: +65 6476 9462 Fax: +65 9228 6216 Mobile: +65 9228 2612	michael.w.watkins@faa.gov ;
ATM/ CCT	Mr. Greg Byus	Manager, CDM and International Operations Federal Aviation Administration Air Traffic Control System Command Center	Tel: +1 540 422 4570 Mobile: +1 202 281 6513	Greg.Byus@faa.gov ;
CCT	Mr. Robert Roxbrough			robert.roxbrough@faa.gov ;
SAF	Ms. Christine Falk	Operations Research Analyst Separation Standards Analysis Team (PARMO RMA) Federal Aviation Administration William J. Hughes Technical Center Atlantic City, NJ 08405	Tel: +1 609 485 6877	christine.falk@faa.gov ; parmo@faa.gov ;
AIS	Ms. Jodi Brainard	International Aero Representative NGA Aeronautical Office 3838 Vogel Rd. Mail Stop L-27 Arnold, Missouri 63010	Tel: +1 314 676 0595 Fax: +1 314 676 3044	Jodi.A.Brainard@nga.mil ;
ARC	Mr. Jerry Torres	Manager U.S. NOTAM Office Operations and Policy Group		jerry_torres@faa.gov ;
ARC	Mr. Gary Bobik	FAA Contractor Senior Program Analyst		gary.ctr.bobik@faa.gov ;

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ADM	Mr. Sam El-Zoobi	International Office, Asia Pacific Region Air Traffic Organization, Systems Operations Federal Aviation Administration 800 Independence Ave. S.W. Washington, D.C. 20591	Tel: +1 202 3858089	sam.el-zoobi@faa.gov ;
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ARC	Ms. Jackie Langati Trief	Director Civil Aviation Authority of Vanuatu		civav@vanuatu.com.vu ; jlangati.civav@vanuatu.com.vu ;
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ATC	Mr. Bui Thanh Ha	Director ATS Department – VATM 6/200 Nguyen Son street, Long Bien District, Ha Noi	Tel: +8424 3872 5272 Fax: +8424 3872 5281	habt@vatm.vn ; buithanhhaatc@yahoo.com ;
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CCT	Mr. Hiroyuki Takata	Regional Officer, ICAO Bangkok	Tel: Fax:	htakata@icao.int ;

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	IFATCA			

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APSAR/WG - TASK LIST

(Last amended APSAR/WG/7, 27 May 2022)

ID	Task Description	Start Date	Expected Finish Date	Resource Names/Remarks
3/6	ICAO noted that, given the unique systems used by SAR, it was optimal for SAR personnel to be specialised. However, it was also noted that it was advantageous for at least some RCC staff to have had ATC experience. ICAO recalled the resource constraints and difficulties in managing the unfamiliar task of interacting with the public and media that Malaysian personnel experienced during the MH370 tragedy. Therefore, using current air traffic controllers for SAR responses was appropriate where there were resource constraints, but it was more optimal to have specialised SAR officers.	APSAR/WG/3	Closed	Asia/Pacific SAR Plan Review 2022 Carried into SAR Plan V3.3
4/1	States should provide feedback to Cospas-Sarsat on the status of the registration systems that were maintained by individual States.	May 2019	Closed	All APAC States APSAR/WG/6 – merged with Task 5/1
4/2	ICAO requested that States monitor and report the effectiveness of their false alert education programmes.	May 2019	On-going	All APAC States Updated to ‘ongoing’ at APSAR/WG/6
4/4	China was requested to submit information on the BDS capability to the ICAO-IMO Joint Working Group on SAR and the Cospas-Sarsat JC.	May 2019	Completed	China APSAR/WG/6 IP/09
4/6	China and Nepal were requested to provide more detailed analysis of the investigations into ELT non-activation problems in mountainous and high terrain areas.	May 2019	APSAR/WG/7 Closed	China and Nepal APSAR/WG/6 – update: there was insufficient data so far available to progress this task. Future update to be provided.

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ID	Task Description	Start Date	Expected Finish Date	Resource Names/Remarks
5/1	<p>Cospas-Sarsat requested States to provide feedback on notifications about system developments;</p> <ul style="list-style-type: none"> a) provide feedback on the Cospas-Sarsat Video Library; b) participate in the development of modifications to distress alert message format; and c) provide details of any existing MCC-SPOC agreements/arrangements, and proposals for improving MCC-SPOC communications during tests and real alerts. d) provide feedback to Cospas-Sarsat on the status of the registration systems that were maintained by individual States (prev task 4/1) 	APSAR/WG/5	APSAR/WG/7 Ongoing	<p>APSAR/WG/4 Task 4/1 APSAR/WG/5/WP03 – APAC States APSAR/WG/6 WP/05 –APAC States APSAR/WG/7 WP/04 – APAC States Cospas-Sarsat has copies of only three agreements between relevant MCCs and APAC RCCs (Tahiti, Cambodia, Lao PDR)</p>
5/2	<p>States to use APSAR/WG/6 WP/04 Attachment A (the International Maritime Organisation’s IMO Interim Guidance for SAR Services Regarding Implementation of Autonomous Distress Tracking of Aircraft in Flight) as a means to have their aeronautical and maritime SAR services coordinate to develop national and regional response procedures for ADT</p>	APSAR/WG/5	APSAR/WG/7 Closed	APSAR/WG/6/WP04 – APAC States
6/4	<p>Adapt ADT Implementation Guidance from APSAR/WG/6 WP/04 Attachment A for inclusion in updated Regional SAR Plan</p>	APSAR/WG/6	APSAR/WG/7 Completed	<p>APSAR/WG/6 WP/04 – USA APSAR/WG/7: incorporated in Revised SAR Plan at Appendix E to the Report Also to be considered for inclusion in checklist of items for consideration under Action Item 7/5</p>
6/2	<p>Develop a generic version of the MOU between the SAR Service and the Accident Investigation Authority for inclusion in updated Regional SAR Plan</p>	APSAR/WG/6	APSAR/WG/7 Completed	<p>APSAR/WG/6 WP/09 – Australia, Singapore, USA (includes WP to ICAO/IMO JWG September 2021 to seek input). APSAR/WG/7: incorporated in Revised SAR Plan at Appendix E to the Report</p>

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ID	Task Description	Start Date	Expected Finish Date	Resource Names/Remarks
6/3	2022 Update of Regional SAR Plan	APSAR/WG/6	APSAR/WG/7 Completed	APSAR/WG/6 WP/10 – Australia, Singapore, USA, coordinated by ICAO Regional Office, including coordination with other ICAO Regions for updated SAR plans. APSAR/WG/7: Completed apart from residual action item 7/6
7/1	Provide feedback to Cospas-Sarsat by not later than 03 June 2022 on the draft model/template for use by MCCs to inform State SAR SPOCs on GADSS, ELT(DT)s and alerts originating from aircraft in a distress condition	APSAR/WG/7	03 June 2022	APSAR/WG/7: Direct feedback to Cospas-Sarsat to avoid double handling due to the short timeframe.
7/2	Establish agreements between relevant Cospas-Sarsat MCCs and State SAR SPOCs, and provide a copy to Cospas-Sarsat.	APSAR/WG/7	APSAR/WG/8	APSAR/WG/7: Cospas-Sarsat is aware of only three such agreements in the APAC Region. Action Item 5/1 also refers. All States except Tahiti, Cambodia and Lao PDR requested to take action.
7/3	Establish what global activities such as workshops, training or guidance for ADT, including ELT(DT), and within the scope of ICAO, may be planned	APSAR/WG/7	03 June 2022 Completed	APSAR/WG/7: ICAO APAC to follow up with HQ. Feedback to be taken into account in consideration/planning in response to action item 7/4
7/4	Examine whether a further workshop or seminar on GADSS may be programmed for APAC Region before the end of 2022	APSAR/WG/7	31 August 2022	APSAR/WG/7: ICAO to see if/where a further workshop may be added to the work programme. Subject also to feedback from HQ to action item 7/3 and responses to survey under action item 7/7
7/5	Develop brief guidance in the form of a checklist of considerations for actions by Regulators, Airlines, SAR Services and ANSPs when an ADT is activated	APSAR/WG/7	03 June 2022	APSAR/WG/7: To be completed for inclusion as Appendix D to the Report. ICAO, Chair, Australia, USA, IATA, Cospas-Sarsat. Include Regulatory input
7/6	Update SAR Plan paragraphs: a) 5.14 to 5.20 to include ELT(DT) information b) 6.1 to 6.6 to include latest USOAP and Regional SAR status	APSAR/WG/7	03 June 2022	APSAR/WG/7: a) Cospas-Sarsat in coordination with ICAO; b) ICAO

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ID	Task Description	Start Date	Expected Finish Date	Resource Names/Remarks
7/7	ICAO APAC State Letter; a) Remind states of applicability date; b) Remind them of the OPS CTRL and LADR registration process and encourage them to register; c) Include survey of APAC States on readiness for applicability of ADT 01 January 2023	APSAR/WG/7	31 August 2022	APSAR/WG/7: ICAO Subject to completion of guidance in action item 7/5, to be used as the basis of the survey.