GUIDELINES
FOR PARTICIPATING IN THE COSPAS-SARSAT SYSTEM

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COSPAS SARSAT

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GUIDELINES FOR PARTICIPATING IN THE COSPAS-SARSAT SYSTEM

This document provides basic information on principles governing the access to, and use of the Cospas-Sarsat System, and recommendations which States should endeavour to implement for ensuring efficient System operations. Basic information is also provided on the procedure for association with the International Cospas-Sarsat Programme.

1. PRINCIPLES GOVERNING THE USE OF THE COSPAS-SARSAT SYSTEM

The International Cospas-Sarsat Programme Agreement

The Cospas-Sarsat Programme is established under the International Cospas-Sarsat Programme Agreement (referred to as the Agreement), signed in Paris on 1 July 1988 by Canada, France, the USSR[1] and the USA. This Agreement is open for accession by other States which provide, in agreement with the Parties, space segment capabilities. The Secretary-General of the International Civil Aviation Organization (ICAO) and the Secretary-General of the International Maritime Organization (IMO) are the joint Depositaries of the International Cospas-Sarsat Programme Agreement.

The Agreement, which entered into force on 30 August 1988, ensures the continuity of the satellite system and its availability to all States on a non-discriminatory basis, and free of charge for the end-user in distress (Preamble and Article 6 of the Agreement). The Agreement also specifies that the transmission and the reception of distress alert data through the Cospas-Sarsat Space Segment shall be provided free of charge to all States (Article 6.3).

Availability of the System to States Non-Party to the Cospas-Sarsat Agreement

The International Cospas-Sarsat Programme Agreement provides for the association of non-Party States with the Programme. Such association is welcomed by the Cospas-Sarsat Parties and is considered mutually beneficial, although any State may avail itself of the Cospas-Sarsat System by authorising the use of compatible distress beacons, and may use alert data from the System, without being formally associated with the Programme.

In this context, it should be noted that the frequency bands (beacon-to-satellite and satellite-to-ground receiving stations) used in the Cospas-Sarsat System, are limited to distress and safety operations. The Radio Regulations of the International Telecommunication Union (ITU) impose strict discipline on the use of distress and safety frequencies and require that distress alerts be routed as soon as possible to Rescue Co-ordination Centres (RCCs).

[1] **Russian Party:** The Russian Federation has replaced the former USSR as a Party to the International Cospas-Sarsat Programme Agreement.

Alert and location data from distress beacon transmissions at 406 MHz obtained by existing Cospas-Sarsat ground receiving stations (referred to as Local User Terminals or LUTs) are distributed to nationally designated search and rescue (SAR) Authorities by the appropriate Cospas-Sarsat Mission Control Centre (MCC), as defined in the Cospas-Sarsat Data Distribution Plan (document C/S A.001).

Ground Segment Providers

The objective of the Cospas-Sarsat Programme is to provide and distribute Cospas-Sarsat alert data world-wide, in support of efforts in the International Maritime Organization to establish the Global Maritime Distress and Safety System (GMDSS) of which Cospas-Sarsat is part, and in the International Civil Aviation Organization to enhance aeronautical SAR services. Managing a Cospas-Sarsat MCC and one or more LUTs requires a sustained national commitment to provide reliable, accurate and timely alert data continuously, to organizations with search and rescue responsibilities.

National authorities wishing to become Cospas-Sarsat Ground Segment Providers need to co-ordinate their MCC and LUT operations with the providers of the satellite system and other Cospas-Sarsat Participants. This involves, in particular, notifying their formal association with the Cospas-Sarsat Programme as described in section 3 of this document, and participating in the international meetings of the Cospas-Sarsat Programme. International co-ordination requirements for Ground Segment Providers are further detailed in section 2.1.

All Ground Segment elements are to be commissioned before their use in the Cospas-Sarsat System. Commissioning procedures have been developed to ensure the reliability of alert data provided by LUTs and their timely distribution by MCCs to the appropriate RCC or other SAR Point of Contact (SPOC). Only States formally associated with the Cospas-Sarsat Programme can have their LUTs and MCCs commissioned in the Cospas-Sarsat System.

2. RESPONSIBILITIES OF ADMINISTRATIONS / GOVERNMENT AGENCIES

2.1 Ground Segment Management

LUT/MCC Operations

States contributing a Cospas-Sarsat MCC and LUT facility are also committing to support continuous operations, 24 hours a day, seven days a week. Sufficient personnel must be made available to maintain this ongoing responsibility. Contingency plans should be established for the loss of LUT or MCC operations.

System Maintenance and Enhancements

The Cospas-Sarsat System is a dynamic system that may require reactive, adaptive modifications or enhancements to Ground Segment elements. Reactive modifications may be necessary to resolve anomalies in Ground Segment processing. Adaptive modifications may be necessary to accommodate changes in message formats between MCCs or data formats received from Cospas-Sarsat satellites. Enhancement modifications can result from agreed changes in data distribution procedures.

All Ground Segment Providers should ensure that the proper management structure and contractual instruments exist to maintain, modify and enhance their LUT(s) and MCC, according to the agreed specifications and procedures provided in the Cospas-Sarsat System documentation, as approved and amended from time to time by the Cospas-Sarsat Council.

Co-ordination of Activities

The designated national Representative in Cospas-Sarsat is responsible for all actions required for the integration of Ground Segment elements in the Cospas-Sarsat System. Although Administrations may seek the support of commercial contractors, national authorities are requested to establish and maintain direct lines of communications with other Cospas-Sarsat Participants and the Cospas-Sarsat Secretariat.

Attendance and participation at open Cospas-Sarsat Council meetings and Joint Committee meetings is vital to information exchange and helps ensure that national MCCs and LUTs are operating within the requirements of Cospas-Sarsat. The head of the national programme or designated Representative should attend the Open Meetings of Cospas-Sarsat Council sessions. MCC/LUT operation managers should attend Cospas-Sarsat Joint Committee meetings. The benefits of the meetings offer each participating country a comprehensive working knowledge of the Cospas-Sarsat System and documentation to reinforce their experience of System operations.

Communication with neighbouring MCCs should be accompanied by visits to observe management techniques and operation procedures. National organizations responsible for the management of Cospas-Sarsat Ground Segment equipment are highly encouraged to schedule meetings/visits with the associated nodal MCC which provides the interface with the Cospas-Sarsat network.

Elimination of Interference

Interference in the 406 MHz frequency band limits the performance of the Cospas-Sarsat System by preventing receipt of distress beacon transmissions in regions where interfering transmitters are operating. Participants should endeavour to detect, locate and turn off these interfering signals in their national areas of responsibility, as described in ITU Recommendation ITU-R SM.1051.

2.2 Practical Aspects of the Use of The Cospas-Sarsat System

Distress beacons for use with the Cospas-Sarsat System operate at 406 MHz. They are referred to as:

- Emergency Position Indicating Radio Beacons (EPIRBs) when designed for use on vessels;
- Emergency Locator Transmitters (ELTs) when designed for use on aircraft; and
- Personal Locator Beacons (PLBs) when designed for use by individuals.

To ensure efficient use of the Cospas-Sarsat System, the following matters should be addressed by all administrations or government agencies responsible for search and rescue services:

SAR Points of Contact (SPOCs)[2]

- Designate a single SAR point of contact (SPOC) for receiving Cospas-Sarsat alert and location data, for distress locations in their SAR area of responsibility.
- Provide the address, telephone, telex or facsimile number or AFTN address of their SPOC to the Cospas-Sarsat Secretariat.
- Develop a comprehensive plan for the distribution of alert and location data to SAR authorities, as appropriate.

[2] **SPOCs / MCCs Co-ordination**: SPOCs serve as the interface with the Cospas-Sarsat System when co-ordination is required or when information is requested from Cospas-Sarsat on a specific SAR event. Information on the designated SPOC should be forwarded to IMO, ICAO or the Cospas-Sarsat Secretariat.

Distress Beacons Control

- Ensure that only type-approved 406 MHz distress beacons are used with the Cospas-Sarsat System.

- Take measures to ensure that the protocols used for coding beacons are compatible with the specification in ITU Recommendation ITU-R M.633-3 or Cospas-Sarsat document C/S T.001.

- Ensure that the transmitted digital message includes an identification code which makes it possible to identify with the greatest possible certainty, ships, aircraft or land users in distress, and comprises:
  - three digits identifying the county of registration in accordance with the list of country codes, (which is based on the ITU list of Maritime Identification Digits (MIDs); and
  - about 40 bits used to identify the individual beacon, according to one of the agreed protocols defined in Recommendation ITU-R M.633-3 or Cospas-Sarsat document C/S T.001.

Beacon Registration

- Maintain, in accordance with the requirement of Annex 10 of the ICAO Convention and with IMO Assembly Resolution A.887(21), a current register for all 406 MHz ELTs and EPIRBs, to establish the correspondence between a 406 MHz ELT/EPIRB and its owner or its carrier vehicle. Beacon registration is particularly important when serialized protocols are used (i.e. each beacon is identified by a unique serial number), as the beacon register is the only means by which the identity of the beacon owner/user, or the carrier vehicle in distress, can be established.

- Maintain a current register for all 406 MHz PLBs, to establish the correspondence between a PLB and its owner or user.

- Provide Cospas-Sarsat with the details of their 406 MHz beacon register (address, telephone, facsimile, or telex number, etc.) where SAR services can obtain information on the ship, or aircraft which is carrying a transmitting beacon, or the owner of a PLB. The information contained in the beacon register should be made available to SAR services, 24 hours/day and 7 days/week, to facilitate the expeditious processing of Cospas-Sarsat distress alerts.

- In the event that a national beacon register for 406 MHz beacon is not available, inform beacon owners of the availability of the International Beacon Registration Database (IBRD) for registration of their 406 MHz beacons.

- Request appropriate usernames and passwords for access to the IBRD and inform the IBRD Administrator (i.e. the Cospas-Sarsat Secretariat) of the appointed national contact for IBRD matters. The national IBRD point of contact is responsible for distributing the appropriate usernames and passwords to national SAR services, authorized ship and aircraft inspectors and maintenance facilities, as appropriate.

Beacon Specifications

Administrations should note that the satellite processing of 121.5 MHz transmissions ceased on 1 February 2009.

Transmission requirements applicable to 406 MHz beacons are defined in Recommendation ITU-R M.633-3, in Annex 10 of the ICAO Convention, and in the Cospas-Sarsat specification document C/S T.001.

The Cospas-Sarsat specification addresses the transmission characteristics of Cospas-Sarsat beacons, but does not address other international or national requirements regarding packaging or installation. These requirements should, however, be included in the appropriate national specification for 406 MHz EPIRBs, ELTs or PLBs.

Beacon Type Approval

The purpose of type approval is to ensure that satellite EPIRBs, ELTs or PLBs operating through the Cospas-Sarsat System will not degrade the System performance and to ensure that their emissions are compatible with the space-borne equipment. The responsibility for type approval of all types of distress beacons is that of individual States.

To assist States on type approval of 406 MHz beacons, Cospas-Sarsat has developed a procedure which is defined in document C/S T.007. Once a beacon model has been successfully tested according to the Cospas-Sarsat procedure, the Cospas-Sarsat Secretariat will provide the manufacturer a Cospas-Sarsat 406 MHz Beacon Type Approval Certificate. States may choose to rely on the results of Cospas-Sarsat type approval testing for national type approval, as an alternative to re-testing the 406 MHz transmission characteristics of the beacons.

The Cospas-Sarsat type approval procedure for 406 MHz beacons does not cover the mechanical and environmental specifications of distress beacons, or their installation on board ships or aircraft. Therefore, States should ensure that the applicable requirements have been properly addressed by manufacturers, before approving a particular model.

3. NON-PARTY STATES ASSOCIATION WITH THE COSPAS-SARSAT PROGRAMME

States which are not Parties to the Agreement can participate formally in the Cospas-Sarsat System either as Ground Segment Providers or User States.

Notification of Association

Ground Segment Providers are those States which establish and operate a LUT, to receive and process satellite transmissions, and an MCC, to receive the required System information and forward alert and location data according to the Cospas-Sarsat Data Distribution Plan. In order to ensure that this ground segment equipment is efficiently operated and adequately integrated into the Cospas-Sarsat ground network, Ground Segment Provider States co-ordinate their activities with other States participating in the Cospas-Sarsat System and notify their participation pursuant to Article 11 of the Agreement.

User States are those States which participate in the Cospas-Sarsat System and co-ordinate their activities with other participating States, but which do not implement ground segment facilities. These States are invited to notify their participation as User States pursuant to Article 12 of the Agreement.

The notification procedure calls for Ground Segment Providers and User States to notify one of the Depositaries of the Agreement of their participation, through standard letters approved by the Cospas-Sarsat Council.

The purpose of the notification procedure is:

(i) to specify clearly the respective responsibilities of the Parties to the Agreement and of participating States, as defined in Articles 11 and 12 of the International Cospas-Sarsat Programme Agreement; and

(ii) to establish the basis of future working relations between the Co-operating Agencies designated by the Parties for implementing the Agreement, and the Agencies designated by the participating States to carry out their responsibilities.

Participation in the Meetings of the Programme

The following principles govern the participation of non-Party States associated with the Programme in Cospas-Sarsat meetings:

- All States (i.e. User States and Ground Segment Provider States) having notified their association with the Cospas-Sarsat Programme, pursuant to Article 11 or Article 12 of the Agreement, are entitled to participate in the open meetings of the Programme, including the open meetings of the Council and the meetings of its subsidiary organs (e.g. the Joint Committee and its Working Groups).

- States associated with the Programme are entitled to receive all documents pertaining to the open meetings of the Council and its subsidiary organs, to address those meetings, submit papers, propose agenda items and have their views recorded in the Summary Record of the Council Session or the Joint Committee Report to the Council.

- Administrations may request to attend Cospas-Sarsat meetings pending completion of the procedure for their association with the Cospas-Sarsat Programme.

Contributions to the Common Costs of the Programme

Pursuant to Article 6 of the Agreement, non-Party Participants contribute financially towards the Common Costs of the Programme as decided in agreement with the Council. The Common Costs of the Programme are those associated with the organization, the administration and co-ordination of the Programme, including Cospas-Sarsat Meetings and Secretariat expenditures. In accordance with the decisions taken by the Council, the following principles govern the contribution by non-Party Participants towards the Common Costs of the Programme.

- All associated States pay each year a flat fee (payable in CAN$), as their contribution to the Common Costs of the Programme.

- This flat fee is fixed at CAN$ 42,000.00. The level of the yearly contribution applicable after 2011 will be reviewed by the Council in agreement with non-Party States associated with the Programme.

- Details regarding the Common Costs of the Programme will be provided to Participants for discussion at the open meeting of the Council, three years in advance of any proposed changes in non-Party States' contributions.

- The costs incurred by the Parties or the Ground Segment Providers for the establishment of the System, its maintenance and its operation are not included in the Common Costs of the Programme.

4. ADDITIONAL INFORMATION ON COSPAS-SARSAT

Further details regarding the Cospas-Sarsat Programme and the procedure for the Notification of association as a Ground Segment Provider or as a User State, and additional information on the Cospas-Sarsat System operation can be obtained from the Cospas-Sarsat website at www.cospas-sarsat.org or the Cospas-Sarsat Secretariat (mail@cospas-sarsat.int).

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