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Seminar on Satellite-Aided Distress Tracking

Agenda Item 4 – RCCs and SPOCs





Contents

What is a SPOC

IAMSAR Manual Guidance Ref.

Integrating Cospas-Sarsat

Steps Receiving SIT 185

RCC Feedback

Coordination with other Countries

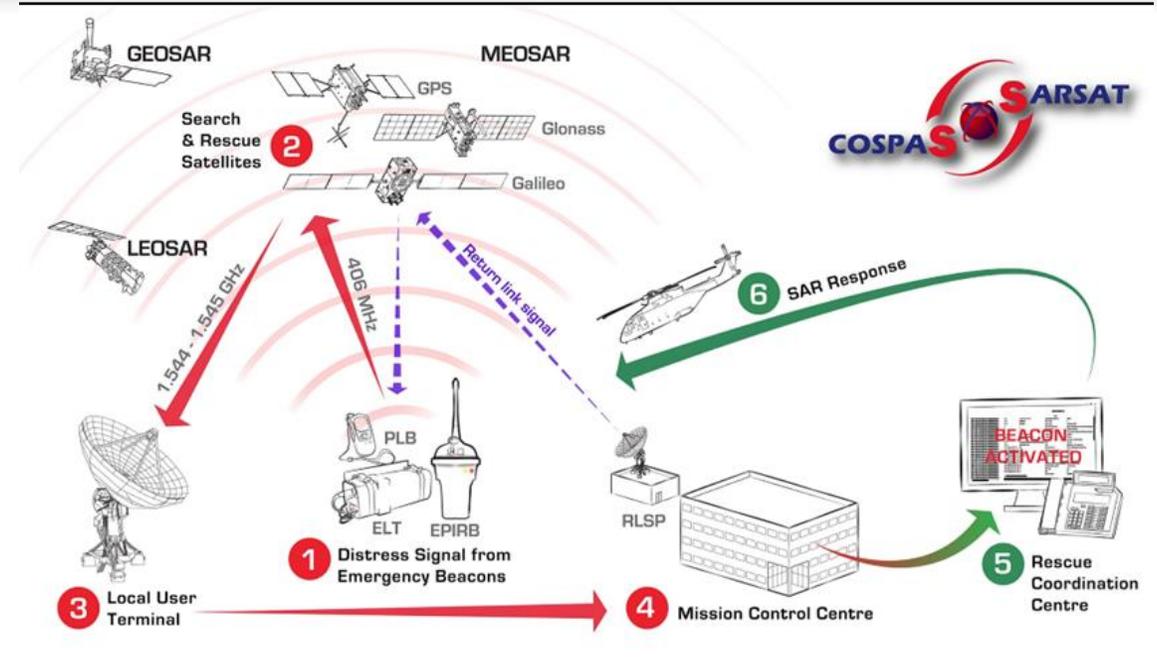




What is a SPOC?

A Cospas-Sarsat SAR point of contact is either an **MCC**, an **RCC**, or other established and recognized **national points of contact** that can **accept or assume responsibility** for the coordination of the fast and effective transfer of **Cospas-Sarsat alert data** to enable the rescue of people in distress.

(S.011 – Cospas-Sarsat Glossary)



Mission:

The International Cospas-Sarsat Programme provides accurate, timely, and reliable distress alert and location data to help search and rescue authorities assist persons in distress.



COSPAS SARSAT

The logo graphic for COSPAS Sarsat, featuring a stylized satellite with a red and blue body and a blue ring, set against a red swoosh that forms a partial circle around it.

MISSION CONTROL CENTRE (MCC) &
SEARCH & RESCUE POINT OF CONTACT
(SPOC) REQUIREMENTS





Mission Control Centre

Distribution Function

- An MCC that receives alert data for a beacon position in its own service area forwards the alert data to the appropriate SPOC or national RCC, in accordance with the applicable Cospas-Sarsat or national procedures.

Requirements

- Provide and confirm distress alert and location data from the Cospas-Sarsat System from the MCC to the SPOC; and
- Provide information concerning the System status to the SPOC.
- The Notice of Country of Registration (NOCR) service provides notification to the SPOC of a country when an alert is located outside of that country's SRR for a beacon registered to the country.





Search & Rescue Point of Contact (SPOC)

- States shall designate a SAR point of contact (SPOC) for receiving Cospas-Sarsat alert and location data for distress locations in their SAR area of responsibility and provide the address, telephone, telex or facsimile number or AFTN/AMHS address of their SPOC to MCC and the Cospas-Sarsat Secretariat.
- SPOCs will immediately notify their MCC of any changes to the provided contact details.
- SPOCs will develop a comprehensive plan for the distribution of distress alert and location data to SAR authorities within its SRR, as appropriate.
- SPOCs will maintain reliable communication links with the MCC and respond to monthly communication tests from the MCC immediately after receipt thereof (not using an automatically generated response) to verify the integrity of communications links between the MCC and SPOC.
- SPOCs will at all times endeavour to support the MCC in its efforts to fulfil its objectives and commitments under the ICSPA in accordance with the provisions of any agreement/arrangement.



Operational

- It is essential that MCCs establish appropriate arrangements with all the countries/SPOCs in their service area on communication links to be used for the distribution of alert data.
- The MCC and SPOC shall establish reliable communication links (AFTN/AMHS, FTP, fax, email) and operational procedures, which include backup routines.
- An MCC shall use an agreed format, I.E., the SIT 185 format as specified in document C/S A.002, to transmit alert messages to SPOCs of Administrations in their service area.





Maintaining Communications

- An MCC will perform a monthly communication test with each SPOC in its service area. The test will include a transmission of a test message from the MCC to the SPOC and an acknowledgement of the message by the SPOC/RCC operator (i.e. an automatic acknowledgement is not acceptable) to the MCC.
- A successful communication test requires that the manual acknowledgement from the SPOC/RCC be received within 30 minutes and the test message should clearly reflect this requirement. The test should be undertaken at various times throughout the day.





Requirements

- If SPOCs are an RCC they must comply with requirements and should follow the recommendations of ICAO Annex 12. They should also base their SAR practice/procedures on the IAMSAR Manual (noting they can derogate to any ICAO requirement as soon as the State makes available the local procedures in its national documentation)

ICAO Annex 12 — Search and Rescue

- 2.4.1 - Each RCC shall have means of rapid and reliable two-way communication with the Cospas-Sarsat Mission Control Centre servicing the search and rescue region.
- 3.2.5 - States shall designate a search and rescue point of contact for the receipt of Cospas-Sarsat distress data.
- According to paragraph 5.2.4, the RCC to coordinate SAR action can be determined as the RCC responsible for the region in which the distress site is located as identified by the Cospas-Sarsat System.





Model Agreement

[https://cospas-sarsat.int/images/templates/SPOC Model new 2017-06-30.docx](https://cospas-sarsat.int/images/templates/SPOC_Model_new_2017-06-30.docx)





IAMSAR manual guidance regarding Cospas-Sarsat

IAMSAR Vol II sections:

- 1.18.15: MCC training topics
- 2.1.4: Reliable source of distress alerts
- 2.6: Section dedicated to 406 MHz distress beacons
- 2.15.4: Beacon registration databases
- 2.16.2: Communication capabilities (Tel., Fax, AFTN, ATN)
- 2.28.3: Message formats (in doc. C/S G.007)
- 3.4.8: Awareness stage
- 4.3.4: Initial distress incident location probability distributions
- 5.6: Electronic search patterns / survival beacon search
- 8.4.2: SSAS alerts in case of piracy against ships
- Appendix B: RCC-C/S message formats





Integrating Cospas-Sarsat into an RCC: resources required (hardware and software comm links)

- Terminal to receive SIT185 messages from MCCs with acknowledgment system (redundancy)
- Appropriate maps (DD° $MM.M(M)^{\circ}$) and tools (95% error position accuracy), electronic search area patterns (IAMSAR Vol II section 5.6) (HMI as needed)
- Searchable national beacon registration database
- Fast/reliable internet connection to:
 - IBRD (SAR login & password)
 - Beacon HEX ID decoders
 - Other SPOC contact details





Steps to take after receipt of an alert prior to launch of SAR forces



- Message title and file reference
 - First location / update / conflict / cancellation / etc.
- Type of beacon ⇔ Type of vessel/aircraft ⇔ Vessel/aircraft ID
- 4D position information (2D + alt + time stamp) and accuracy
- Other information from the registration database
 - ⇒ Confirmation from other sources (e.g., Mayday, AIS, radar, witness...)
 - ⇒ Contact owner & emergency POC for Real Distress or False Alert
 - ⇒ **SAR operation planification & execution, as necessary**



Steps to take after receipt of an NOCR

- Message title and file reference
 - First location / update / conflict / cancellation / etc.
- Type of beacon ↔ Type of vessel/aircraft ↔ Vessel/aircraft ID
- 4D position information (2D + alt + time stamp) and accuracy
- **Other information from the registration database**
 - ⇒ Confirmation from other sources (e.g., Mayday, AIS, radar, witness...)
 - ⇒ Contact owner & emergency POC for Real Distress or False Alert
 - ⇒ **Send information to RCC in charge of the location of the distress** (with the help of the MCC if needed)
 - ⇒ **Update information as necessary**
- * **Notification of Country of Registration (per MID)**

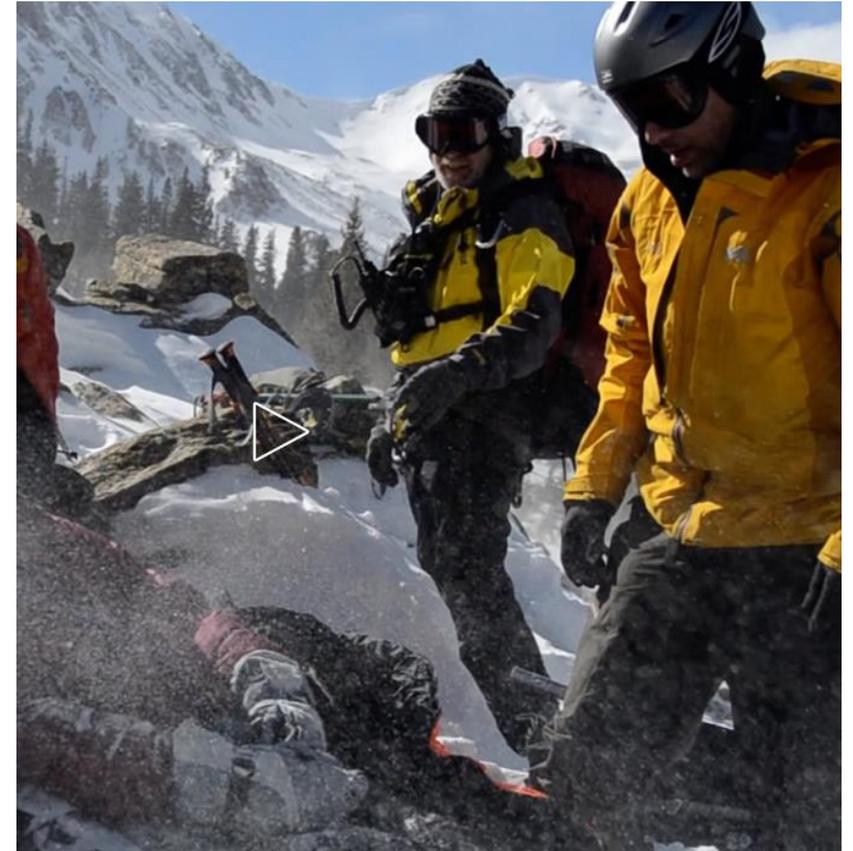




RCC Feedback to MCC

A need for improving the System

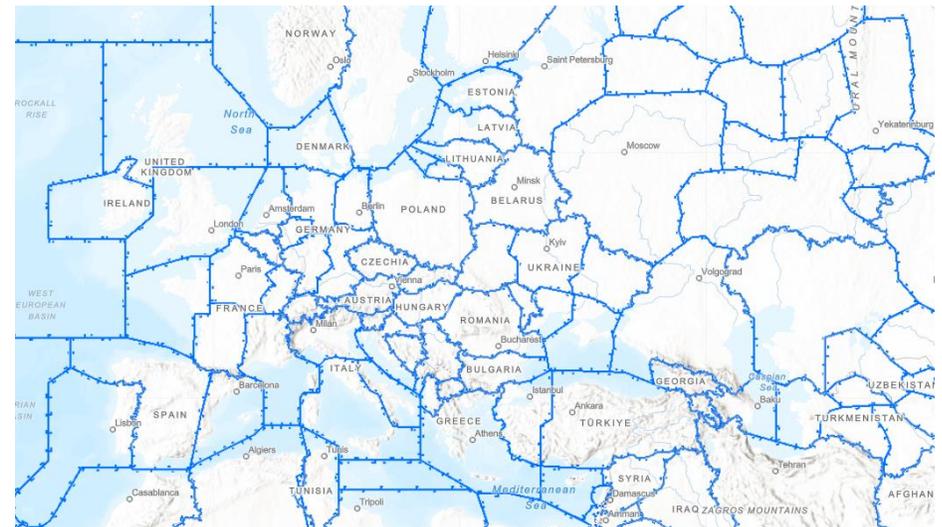
- Collecting data: (same as a SITREP)
 - 4D location (=> accuracy)
 - Beacon Hex ID (=> available data)
 - Registration (=> national policy)
 - Associated vessel/craft (appropriate association)
 - Short story (POB saved, trigger conditions, any issue?)
 - Source (only/first alert, supporting data, not used)
 - Source(s) of detection (LEO/GEO/MEO)
 - Remarks





Coordination with other countries (SAR agreements), benefits and operation of regional RCCs

- Cospas-Sarsat GEOSORT vs ICAO FIRs & IMO SRRs
- Buffer of 50km for data distribution
- Use of SAR assets (homing capabilities) should be included into bilateral/regional SAR agreements
- Assets on scene are inclined to overshoot their search patterns when beacon signal is detected
- Exchange of information from databases (see NOCR)





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Questions?

