International Satellite System for Search and Rescue
Système international de satellites pour les recherches et le sauvetage
Международная Спутниковая Система Поиска и Спасания

CS22/072/F420, F510, F540

Montréal, 4 August 2022

TO: All National/Territorial Administrations, and Cospas-Sarsat Beacon Manufacturers and Ground-Segment Equipment Manufacturers

SUBJECT: **Warning** Against Coding of 406-MHz Distress Beacons (e.g., EPIRBs) with a Country Code (Maritime Identification Digits or MID) in the Forms "98M" or "974".

This is an urgent safety-of-life matter.

As a result of recent developments, the International Cospas-Sarsat Programme has become aware of maritime Emergency Position-Indicating Radio Beacons (EPIRBs) being coded pursuant to Recommendation ITU-R M.585 using as the beacon "country code" the form "98M", where "M" is the first digit of an MID (Maritime Identification Digits) assigned to an Administration, or using the form "974". **No 406-MHz EPIRB should be coded in these ways**. A distress message from a beacon so coded will be processed on receipt by Cospas-Sarsat as "invalid" and either discarded or subjected to exception handling. The "country code" of all 406-MHz beacons must be a valid MID assigned by the International Telecommunication Union (ITU) to an Administration, in the numerical range from 200 to 780. No exceptions.

The problem arises for some currently available beacons ("first-generation" beacons based on document C/S T.001, "Specification for Cospas-Sarsat 406 MHz Distress Beacons") that have an identification coded as a vessel Maritime Mobile Service Identity (MMSI). (The problem does not exist for EPIRB identities coded serially or with a radio call sign, when a valid "country code" is used.) An MMSI is composed of a three-digit MID (assigned by the ITU to the flag state) followed by a six-digit vessel identity. In a "first-generation" (document C/S T.001) EPIRB using an MMSI identity, the MID portion of the MMSI is coded as the "country code" of the beacon and must always be a valid MID in the range 200 to 780. However, Recommendation ITU-R M.585 provides an exception case (in Annex 1, Section 5) for craft associated with a parent ship, where the three-digit MID portion of an MMSI is replaced with the numerals "98" followed by the first digit of the valid MID. When coded into a beacon, this results in a beacon "country code" that is processed as invalid by Cospas-Sarsat. Cospas-Sarsat believes that there may be a few hundred craft associated with a parent ship that may be improperly coded in this way, primarily craft newly equipped with EPIRBs to meet requirements of the recent Polar Code introduced by the International Maritime Organization (IMO).

Recommendation ITU-R M.585 also provides an exception case (Annex 2, Section 2, Paragraph 3) where a combined function EPIRB-AIS (Automatic Identification System) device should be assigned "974" as the first three digits of an MMSI-like identity. The use of "974" is intended only for the identity message of the AIS transmitter and **not** for the 406-MHz EPIRB transmitter. Cospas-Sarsat is uncertain of how many EPIRB-AIS devices may have their EPIRB identity improperly coded with a "974" country code.

The Cospas-Sarsat Programme is working with the IMO and the ITU to develop a suitable solution to the issue including, as may be appropriate, new specific guidance to be incorporated in Recommendation ITU-R M.585 for programming of EPIRBs under the circumstances described in the Recommendation.

Pending a suitable resolution for the coding issues discovered that relate to Recommendation ITU-R M.585, your Administration is urged to ensure that all beacons (specifically EPIRBs in the current context) are programmed using a valid protocol, as described in Annex A, "Beacon Coding", of document C/S T.001.[1] For an EPIRB of a craft associated with a parent ship, if an MMSI is used as the beacon identity, the MMSI should be a valid MMSI (including valid MID) of the parent ship, or an MMSI (including a valid MID in the range 200 to 780) specifically assigned to the craft. For EPIRBs of a craft associated with a parent ship with an identity coded as the MMSI of the parent ship, there is a separate programming field that provides for separate numerical values to distinguish different EPIRBs aboard the parent ship and various associated craft.[2]

Alternatively, if consistent with flag state regulations, the EPIRB may be coded with a serial identity (rather than an MMSI identity), using a Serial Location Protocol or a Serial User Protocol, or may be coded with a radio call sign identity using either the Maritime User Protocol or the Radio Call Sign User Protocol, as provided in Annex A of document C/S T.001.[2] EPIRBs of an associated craft, particularly those coded with a serial identity, should be properly registered in a database, such as the ITU's MARS database, to enable the identity to be associated with the parent ship. (Field 32 of a ship-station entry in the MARS database is provided for one or more EPIRB identities – Hex IDs – to be entered.)

New, "second-generation" beacons expected to become available beginning in 2023 will have a message field for a complete nine-digit MMSI that is separate from the beacon's "country code" field. Those beacons also will have a separate field specifically to match the "974" AIS identity specified in Recommendation ITU-R M.585 for combined-function EPIRB-AIS devices. So the issues raised above for coding according to Recommendation ITU-R M.585 (using "98M"

[1] Coding guidance for EPIRBs that is consistent with that of Cospas-Sarsat also is provided by the IMO in its Resolution MSC.471(101), in the Annex at Part B, "Radio-Frequency Signals".

[2] When a Standard Location Protocol is used with an MMSI, a four-bit programming field (bits 61 to 64) provides for 16 separate numerical values (0 to 15) to distinguish different EPIRBs aboard the parent ship and various associated craft. A Standard Return Link Service (RLS) Location Protocol used with an MMSI allows a maximum of two EPIRBs to be separately distinguished using two combinations of the beacon-type field (bits 41 and 42). A Maritime User Protocol used with an MMSI (or a radio call sign) or a Radio Call Sign Protocol contains a six-bit modified-Baudot programming field (bits 76 to 81) that provides for 36 separate values (0 to 9 and A to Z) to distinguish different beacons. A separate field is not required for beacons coded with a serial identity since the serial number itself is unique when combined with the remaining elements of the identity.

and “974” in the appropriate fields, but not as the beacon “country code”) will not exist for such beacons that are based on document C/S T.018, “Specification for Second-Generation Cospas-Sarsat 406-MHz Distress Beacons”, noting that the “country code” used in a beacon still must be a valid MID.

Future, more comprehensive, resolution of the matters raised above may involve amendments to Recommendation ITU-R M.585 and/or adaptation of the Cospas-Sarsat System. Either of these will take some time and it is important that in the interim all EPIRBs (and other beacons) are coded with a valid MID as the beacon “country code”.

Further information can be found in the following documents, as may be available to those with access to the relevant websites:

Cospas-Sarsat

- JC-36/3/1 (Canada)
- JC-36/3/5 (RTCM)
- JC-36/3/9 (United States)
- JC-36/3/11 (France)
- JC-36/Report

International Maritime Organization

- NCSR 9/10/9 (France, Spain, United Kingdom, United States)
- NCSR 9/WP.7 (Draft Report of the Working Group on Search and Rescue and Other Technical Matters)
- NCSR 9/WP.1 (Draft Report to the Maritime Safety Committee)

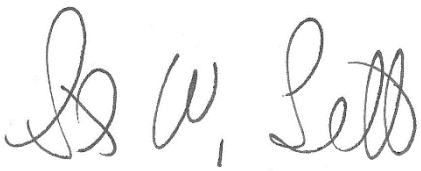
International Telecommunication Union

- 5B/608-E (IMO, Liaison Statement to ITU-R Working Party 5B)
- 5B/649-E (WP 5B Report and, at Annex 27, Liaison Statement to IMO and Cospas-Sarsat)

Please contact the Cospas-Sarsat Secretariat at mail@406.org if you have any questions or we can be of further assistance.

Please accept the assurances of my highest consideration.

Yours sincerely,



Steven Lett
Head of Secretariat

cc: International Maritime Organization
International Telecommunication Union