SWITZERLAND

1.   REGULATIONS

- •   ELT: Emergency Locator Transmitter
- •   ELT(DT): Emergency Locator Transmitter for Distress Tracking,
- •   EPIRB: Emergency Position Indicating Radio-Beacon,
- •   FGB: First-Generation Beacon (technology based on documents C/S T.001 and C/S T.007)
- •   LADR: Location of an Aircraft in Distress Repository,
- •   MMSI: Maritime Mobile Service Identity,
- •   PLB: Personal Locator Beacon,
- •   RLS: Return Link Service,
- •   S/N: Serial Number of the device,
- •   SGB: Second-Generation Beacon (technology based on documents C/S T.018 and C/S T.021)
- •   TAC : Cospas-Sarsat Type-Approval Certificate number.

1.1   EPIRBs

Carriage of 406 MHz EPIRBs on commercial sea-going ships is mandatory and permitted on sea-going yachts and small boats. The user has to be licensed by the Swiss BAKOM and the beacon must be registered by the owner within the International Beacon Registration Database (IBRD) available at https://www.406registration.com/.

Beacons must be coded with the MMSI attributed by BAKOM.

1.2   ELTs

As of 1 January 2002, carriage of 406 MHz ELTs is mandatory for all Swiss registered aircraft engaged in commercial operations. The user has to be licensed by the Swiss BAKOM and the beacon must be registered in the national 406 MHz ELT database (all coding options according to Cospas-Sarsat documentation are approved).

Mandatory carriage of 406 MHz ELTs for all aircraft (except sailplanes, historic and homebuilt aircraft and balloons) introduced on 8 April 2012 in accordance with the ICAO Convention on International Civil Aviation, Annex 6, Part II.

1.3   PLBs

Switzerland is authorizing the use of PLBs on Swiss territory for all purposes.

PLBs must be registered by the owner within the IBRD at:
https://www.406registration.com/.

Note: PLBs used on small aircraft (according to EASA NCO/NCC) **must be coded** with an ELT Standard Location Protocol (*if GPS-equipped*) **or** ELT User Protocol (*if no GPS*).

1.3.1   National Beacon Regulations for Serial-Coded PLBs

Country / Territory	The country recognizes PLB activations as potentially indicating a distress situation:			Comments
	For Terrestrial Applications	In Maritime Environment	On Aircraft	
Switzerland	R	Y	Y	<u>Note</u>: Terrestrial alerts are relayed to Police. Appropriate SAR action cannot be guaranteed as no legislation and no formal responsibilities/procedures are available. A mobile telephone, emergency radio network access, emergency telephone or satellite telephone are more suitable for raising the alarm in an emergency for some circumstances.

Similar information is available in the new table on the Cospas-Sarsat website (www.cospas-sarsat.int) with the status indication in Colors (**Y** = green, allows / **N** = red, not allowed / **R**estrictions = amber (see comments) and with the note that the national beacon regulations can be found on the Cospas-Sarsat website in document C/S S.007).

2. BEACONS CODING METHODS

2.1 EPIRB Coding Methods

Country Code	USER PROTOCOLS				LOCATION PROTOCOLS								
	Maritime User		Serial User	Radio Call Sign	User Location			Standard Location		National Location	RLS (Return Link Service)		
	MMSI	Radio Call Sign	TAC & S/N	Radio Call Sign	MMSI	TAC & S/N	Radio Call Sign	MMSI	TAC & S/N	Serial Number Assigned by Competent Administration	National RLS Number	TAC & S/N	RLS MMSI
269	Y	N	N	N	Y	N	N	Y	N	N	N	N	Y

The following warning is provided to beacon manufacturers and beacon owners as general guidance:

WARNING:

Note regarding maritime protocols that use MMSI as the vessel identifier:

The international Cospas-Sarsat Programme has become aware of the existence of EPIRBs coded in accordance with ITU-R Recommendation M.585 but mistakenly using the "pseudo country codes" "**111", "970", "972", "974", or "979**" extracted from AIS identifiers instead of the actual appropriate country code (MID) allocated by Cospas-Sarsat and the ITU.

A distress message from a beacon coded in this way would be treated as "invalid" upon receipt by the Cospas-Sarsat System and would either be rejected or subjected to exception processing.

No 406-MHz EPIRB should be coded in this manner.

The Country Code for all 406 MHz beacons must be a valid three-digit number assigned by Cospas-Sarsat and the ITU to an Administration (MID), in the range between 200 and 780.

However, following the recent update of the Cospas-Sarsat Ground Segment, exceptions to the use of regular Country Codes assigned by Cospas-Sarsat and the ITU are possible in order to code 406 MHz EPIRBs on board crafts associated with a parent vessel using a "pseudo-country code" in the range "982" to "987" with one of the Maritime MMSI protocols (see ITU-R M585).

2.2 ELT Coding Methods

2.2.1 ELTs

(This subsection does not include FGB ELT(DT) coding methods.)

Country Code	USER PROTOCOLS				LOCATION PROTOCOLS								
	Serial User			Aviation User	User Location				Standard Location			Aviation User	RLS (Return Link Service)	
	TAC & S/N	Aircraft Operator Designator and Serial Number	Aircraft 24-bit Address	Aircraft Nationality and Registration Marking	TAC & S/N	Aircraft Operator Designator and Serial Number	Aircraft 24-bit Address	Aircraft Nationality and Registration Marking	TAC & S/N	Aircraft Operator Designator and Serial Number	Aircraft 24-bit Address	Serial Number Assigned by Competent Administration	National RLS Number	TAC & S/N
269	N	N	Y	Y	N	N	Y	Y	N	N	Y	N	N	Y

2.2.2 ELT(DT)s

a)   FGB ELT(DT)s

Country Code	LOCATION PROTOCOLS		
	ELT(DT) Location		
	TAC & Serial Number [1]	**Aircraft Operator Designator and Serial Number** [1]	**Aircraft 24-bit Address** [2]
269	N	N	Y

Notes:

(1)   This protocol does not provide an 'Aircraft Identification' as required by ICAO for populating the LADR.

(2)   This protocol provides an 'Aircraft Identification', and an 'Aircraft Operator Identity' only when the Aircraft Operator Designator (3LD) is included in the rotating PDF-2 field, as required by ICAO for populating the LADR. Default 3LD values should be "ZGA".

b)   SGB ELT(DT)s

Country Code	SGB CODING OPTIONS		
	SGB ELT(DT)		
	Aircraft Registration Markings [1] (Vessel ID #3)	**Aircraft 24-bit Address** [2] (Vessel ID #4)	**Aircraft Operator Designator and Serial Number** [3] **Vessel ID #5)**
269	N	Y	N

Notes:

(1)   This option does not provide an Aircraft Operator Designator (3LD) which is required by ICAO for populating the LADR.

(2)   This option provides an 'Aircraft Identification', and an 'Aircraft Operator Identity' only when the Aircraft Operator Designator (3LD) is also included, as required by ICAO for populating the LADR. Default 3LD values should be "ZGA".

(3)   This option does not provide an 'Aircraft Identification' which is required by ICAO for populating the LADR.

2.3   PLB Coding Methods

| Country Code | USER PROTOCOLS | LOCATION PROTOCOLS | | | | | |
| | Serial User | User Location | Standard Location | National Location | RLS (Return Link Service | | |
	TAC & S/N	TAC & S/N		Serial Number Assigned by Competent Administration	National RLS Number	TAC & S/N	RLS MMSI
269	Y	Y		N	N	Y	Y

Notes: PLBs which are used on aircraft in accordance to EASA NCO must be coded as ELT.

2.4   Return Link Serv ice (RLS) Protocols

On 10 January 2020, Switzerland notified the Cospas-Sarsat Programme of the implementation of proactive handling of RLS-protocol distress alert messages, and authorization for return-link-service-capable beacons to be coded with its national country code.

The Cospas-Sarsat Council declared effective 26 March 2021 the Return Link Service (RLS) at Full Operational Capability (FOC) within Cospas-Sarsat.

In March 2022, the Cospas-Sarsat Council decided to approve the operational use of RLS FGBs coded with MMSI.

3.   LIST OF BEACON MODELS TYPE APPROVED BY ADMINISTRATION

ELT's have to fulfill the requirements of TSO-C126 / JTSO-2C126. The relevant technical requirements are laid down in the documents DO-182 / DO-204 of the RTCA and ED.62 of the EUROCAE.

The Federal Office for Civil Aviation Switzerland accepts and validates approvals of ELTs, which have an approval from the relevant authority of the country of the manufacturer or which hold an approval issued by the JAA according JAR21 based on TSO or JTSO. All ELTs require Cospas-Sarsat type approval and need to transmit in the 406 MHz band.

4.   BEACON TESTING REGULATION

4.1   Introduction

The International Maritime Organization (IMO) has published guidelines on the annual testing and shore-based maintenance for Emergency Position-Indicating Radio Beacons (EPIRBs).

https://gmdsstesters.com/downloads/docs/IMO_Circ.1039.pdf

These guidelines and other international beacon regulations for EPIRBs **and** Emergency Locator Transmitters (ELTs) are applicable to Switzerland.

4.2   Summary

- All 406 MHz distress beacons can be tested at **any time using the self-test functions** (see Chapter 4.3 Beacon Self-test) without any notification to the Swiss Civil Aviation Authority (FOCA).

- Any test of a 406 MHz distress beacon in the **operational mode** requires **prior approval from** the **Swiss Civil Aviation Authority (FOCA)** and the requirements set out in sections 4.5 and 4.6 below must be satisfied.

4.3   Beacon Self-test

All Cospas-Sarsat type approved 406 MHz beacons include a self-test mode of operation. The content of the self-test message always provides the beacon 15 Hex ID, except for location protocol beacons when they are transmitting a self-test message encoded with a GNSS position. The transmission of a self-test GNSS position is optional.

The complete self-test transmission is limited to one burst and is activated by a separate switch position.

The manufacturers' instructions on the frequency of performing a self-test and transmission of a self-test GNSS position should be adhered to.

This will limit the likelihood of inadvertent activation and battery depletion.

4.4   Reasons why Operational Testing should be avoided

The self-test function should accommodate most beacon testing. However, there are some occasions when operational testing may be required. These occasions should be limited to the absolute minimum as they impact the Cospas-Sarsat System.

Other than performing a 406 MHz beacon self-test, other reasons for activating a beacon include:

- prototype beacon testing,

- new beacon models testing,

- search and rescue training exercises,

- Cospas-Sarsat Ground Segment equipment performance.

Beacons activated in the operational or live mode (not using the self-test function) impacts the Cospas-Sarsat Space and Ground Segments and Rescue Coordination Centers (RCCs) worldwide and may inhibit the processing of genuine distress beacon alerts, therefore delaying a response to a distress situation.

4.5   Operational Testing Requirements

All beacon types (ELTs, EPIRBs and PLBs) can be tested at **any time using the self-test function (see Chapter 4.3) without the need to notify** the Swiss Civil Aviation Authority (FOCA).

Operational testing of any beacon type, including ELTs and irrespective of the duration and location is only permitted with <u>prior approval</u> of the Swiss Civil Aviation Authority (FOCA).

Operational testing can be permitted under the following circumstances:

- beacon has to be coded with TEST protocol,

- 121.5/243 MHz homing signal is disabled, 10-day notice shall be provided to the Swiss Civil Aviation Authority (FOCA),

- responses are provided to the questions listed in **section 4.7, A to F**, including the Cospas-Sarsat type approval certificate number.

A beacon owner wishing to undertake an operational test of his/her 406 MHz beacon, without the modifications stated above, is normally prohibited as the tests are then dependent upon the Cospas-Sarsat Space and Ground Segments to provide the results of the detection.

4.6   Operational Testing by Manufacturers and Others

Operational testing of 406 MHz beacons can be performed in screened enclosures to eliminate the risk of false alerts and, **with the use of test equipment,** the beacons' performance can be assessed.

Manufacturers, suppliers and other beacon maintenance staff shall only undertake this type of testing.

There may be occasions when a compelling argument may be put forward by beacon manufacturers, suppliers and the like to allow operational testing of a 406 MHz beacon without a change to the beacon protocol or the disabling of the 121.5/243 MHz homing transmitter. Such exceptional requests will be considered on their merits and the following points should be noted:

- the test will be limited in duration (not more than 15 minutes),

- the objective of the test can be met with very limited beacon bursts being detected by the GEO system,

- the Swiss Civil Aviation Authority (FOCA) has given clearance for the 121.5/243 MHz transmission,

- the location of the test in latitude and longitude must be provided,

- the timing will be dependent upon mutual visibility between the beacon, the LEO and MEO satellite and LEOLUT and MEOLUT respectively,

- **provision of the information in section 4.7**, including the Cospas-Sarsat type approval certificate number,

- 10-day pre-notice to be provided.

4.7   Beacon Test Coordination Message

A message notifying of the test is required to be distributed to all MCCs worldwide.

The information listed below, A to F, shall be provided by the person requesting an operational test in written form **at least 10 days in advance** of the requested day of testing to the Swiss Civil Aviation Authority (FOCA):

Email elt@bazl.admin.ch

Mailing Address Swiss Civil Aviation Authority (FOCA), SIFS, CH-3003 Berne

A. TEST OBJECTIVE:

B. TEST DESCRIPTION:

C. COORDINATS OF LOCATION OF TEST:

D. DATE, TIME AND DURATION OF TEST:

E. BEACON ID & COSPAS-SARSAT TYPE APPROVAL CERTIFICATE NUMBER:

F. CONTACT DETAILS OF PERSON ON SIGHT IN CHARGE:

5.   BEACON REGISTRATION

ELTs must be registered within the Swiss national registry: elt@bazl.admin.ch
EPIRBs and PLBs must be registered by the owners themselves at: www.406registration.com.

6.   POINTS OF CONTACT FOR BEACON MATTERS (Coding, Registration and Type Approval)

Updated point of contact details for administrations are available at:
https://www.cospas-sarsat.int/en/contacts-pro/contacts-details-all.

7.   BEACON REGISTRATION FORMS

Online beacon registration forms for ELTs are available at www.bazl.admin.ch.
Online beacon registration for EPIRBs and PLBs within IBRD at www.406registration.com.

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