



**Number: OPS SN-2014/07**

**Issue: 5**

**03 December 2018**

## **Coding and registration of Seychelles 406 Mhz Emergency Locator Transmitters (ELTs)**

**This Safety Notice contains recommendations regarding operational safety.**

Recipients are asked to ensure that this Safety Notice is copied to all members of their staff who may have an interest in the information (including any 'in-house' or contracted maintenance organisations and relevant outside contractors).

**Applicability:** All Part CAT and Part NCC Operators

### **1 General**

- 1.1 EASA Part CAT Subpart IDE and Part NCC Subpart IDE requires that an operator ensures that all ELTs carried to satisfy the requirements operate in accordance with the relevant provisions of ICAO Annex 10, Volume III.
- 1.2 All ELTs shall be capable of transmitting on 406 MHz and shall be coded in accordance with ICAO Annex 10 and registered with the national agency responsible for initiating Search and Rescue or another nominated agency.
- 1.3 This Safety Notice has been produced to provide guidance on the options available when coding, and the method of registering, 406 MHz ELTs when installed in Seychelles registered aircraft.

### **2 ELT Registration**

- 2.1 Registration, in accordance with this Safety Notice, shall be with the Safety Regulation Division of the Authority at the contact below:

Technical Support Officer  
Technical Support Office  
Safety Regulation Division  
Seychelles Civil Aviation Authority  
P.O Box 181  
Mahe  
Seychelles  
Tel: (248) 4384271  
Fax: (248) 4384269  
Email: [sr@scaa.sc](mailto:sr@scaa.sc)

- 2.2 As soon as possible after delivery, purchasers should register all 406 MHz ELTs with the Technical Support Office, even if not fitted to an aircraft. Many beacons are inadvertently activated when in storage or transit, and these false alerts invariably result in Search and Rescue (SAR) action if the owner cannot be identified and questioned.

- 2.3 It is of extreme importance that robust 24-hour telephone contact numbers are provided when registering ELTs and that the Technical Support Office be informed subsequently if the owner and/or contact numbers are changed. Owner/operators shall ensure that they actively maintain a controlled registry of ELT registration details. The Technical Support Office shall survey ELT information periodically to ensure that the registered information held is still valid.
- 2.4 A copy of the form to be used when registering ELTs is shown at Annex A to this Safety Notice. The form should be completed electronically and emailed to the address provided at 2.1.
- 2.5 The registration form shall be completed and submitted to the Technical Support Office prior to arrangements being made to code the ELT.
- 2.6 The HEX identification/code is derived and provided by the Technical Support Office in collaboration with the Department of Telecommunication. Whilst vendors and manufactures may offer the service to derive the codes, it is essential that this process is undertaken through the Technical Support Office to ensure the correct protocols are utilised.
- 2.7 All ELTs registered shall also be tested following coding or on receipt by the owner/operator (see Section 6 below) to confirm the validity of the coding.

### **3 Coding, registration and testing protocols**

- 3.1 The Authority uses as primary technical standards and references, the following Cospas-Sarsat system documents:
  - (a) G.003 - Introduction to the Cospas-Sarsat System;
  - (b) G.005 - Guidelines on 406 MHz Beacon Coding, Registration and Type Approval; and
  - (c) S.007 - Handbook of Regulations on 406 MHz and 121.5 MHz Beacons.
- 3.2 The above documents are available to be downloaded from the Cospas-Sarsat web site at <http://www.cospas-sarsat.org>.
- 3.3 Personnel involved in the processing of ELT registration at the behest of owner/operator are encouraged to review the above documents to gain familiarity with the framework.

### **4 Beacon types**

- 4.1 All Aviation ELTs are required to hold a Cospas-Sarsat Type Approval Certificate (TAC) and corresponding TAC Number. This may be verified at: <http://www.cospas-sarsat.org/en/beacons/type-approved-models>
- 4.2 All Aviation ELTs should transmit on the channel of 406.028 MHz as the initial channel of 406.025 MHz has reached capacity. Cospas-Sarsat will notify further channels as the need arises in the future.
- 4.3 There are many survival beacons that are designed and utilised both in the maritime and aviation industry. In such cases, where beacons also meet the EPIRB specification they shall be coded in the aviation domain using an aviation ELT protocol. Similarly where PLBs are utilised as survival beacons in the aviation domain they shall be coded using an aviation ELT protocol.

## 5 Coding

5.1 Each message sent by a 406 MHz ELT must include the unique identification of the ELT. The complete ELT identification code includes protocol flag, protocol code, country code and identification data.

5.2 The current available coding protocols that are acceptable to the Authority are:

List of Available Coding Options for User Protocols		
Application	Identification Data	Protocols
ELTs (Aviation)	Unique ELT Serial Number*	Serial User
	Aircraft Operator Designator and Serial Number**	Serial User
	Seychelles issued 24-bit Mode S Aircraft Address Code***	Serial User
	Aircraft Registration Marking	Aviation User

5.3 Those models of 406 MHz ELTs capable of transmitting position information obtained from a navigational device such as GPS or the aircraft navigation system require to be coded with one of the following Location Protocols:

List of Available Coding Options for Location Protocols			
Application	Identification Data	Location Data	Protocols
ELTs (Aviation)	Unique ELT Serial Number*	4 minute resolution	User Location
		4 second resolution	Standard Location
		15 minute resolution	Standard-Short Location
	Aircraft Operator Designator and Serial Number**	4 minute resolution	User Location
		4 second resolution	Standard Location
		15 minute resolution	Standard-Short Location
	Seychelles issued 24-bit Aircraft Address Code***	4 minute resolution	User Location
		4 second resolution	Standard Location
		15 minute resolution	Standard-Short Location
	Aircraft Registration Marking	4 minute resolution	User Location
	Serial Number Assigned by Administration*	4 second resolution	National Location
		2 minute resolution	National-Short Location

The above definitions are simplified. A full explanation of the coding options may be obtained from the document T.001 Specification for Cospas-Sarsat 406 MHz Distress Beacons - Annex A).

**Note 1:** (\*) Serial number means a unique number assigned by an administration or a beacon manufacturer. Assigned serial numbers must provide a unique beacon identification when used with the country code. Serial numbers assigned by a manufacturer must provide a unique beacon identification when used with the Cospas-Sarsat type approval certificate number assigned to that beacon model.

**Note 2:** (\*\*) unique serial number, as designated by the operator between 1-4096 or when using the Standard Location protocol between 1-511.

**Note 3:** (\*\*\*) 24-bit Address Codes are issued on request to individual civil aircraft for coding Mode S ATC Transponders and ELTs where required. These are available by contacting the Technical Support Officer.

5.4 At present the Country Code used for Seychelles Aviation ELTs must be 664.

5.5 The Authority's policy in regards to use of aviation protocols is as follows:

Application	Identification Data	Protocols
Commercial Air Transport Operators	Aircraft Operator Designator and Serial Number*	Serial User
General Aviation	Unique ELT Serial Number*	Serial User

5.6 The 24-bit Mode S Aircraft Address Code and Aircraft Registration Marking protocols are not generally utilised in view that they are aircraft specific and restrict interchange amongst a fleet of aircraft.

## 6 Testing

6.1 A 406 MHz ELT should be designed to perform a short self-test. The self-test transmission may consist of a short duration emission of a single burst. If the beacon transmits in the self-test mode, the signal must have a frame synchronisation pattern of 011010000 to ensure that the satellite or ground equipment will not process this test transmission. This eliminates the risk of a false alert being generated by the self-test burst.

6.2 Unless prior co-ordination has been accomplished in accordance with Cospas-Sarsat document C/S A.004 'Cospas-Sarsat System Exercising', no other test transmissions are permitted when using a beacon coded with an 'operational' protocol, as any such test could generate a false alert. In addition, self-test transmissions must be kept to a minimum as they interfere with 'real' 406 MHz distress alerts.

6.3 Arrangements for self-test shall be coordinated with the Technical Support Officer to ensure coordination with local and international agencies. The self-test result will also be sent through this office.

## 7 IBRD

7.1 The International Civil Aviation Organization (ICAO) require that administrations authorising the use of 406 MHz beacons make provisions for registering these beacons in a database register that is accessible by SAR services 24 hours a day.

7.2 The administrative and operational contact details for national 406 MHz beacon registers that have been reported to Cospas-Sarsat are published respectively in the following Cospas-Sarsat documents, which can be downloaded free of charge from the Cospas-Sarsat website at [www.cospas-sarsat.org](http://www.cospas-sarsat.org):

- "Handbook of Beacon Regulations" (C/S S.007);
- "Cospas-Sarsat Data Distribution Plan" (C/S A.001).

7.3 Cospas-Sarsat has implemented an International 406 MHz Beacon Registration Database (IBRD) to assist States that do not have their own 24 hour database. Seychelles uses the IBRD as a means to comply with the 24-hour database. The necessary registration and

---

amendment of aviation beacon details are undertaken by the Technical Support Office on behalf of the State.

- 7.4 Using the IBRD system, SAR organisations and other relevant agencies will have access to the owner/operator 24-hour contact information to be used in the event of an Alert.

## **8 Point of Contact**

- 8.1 A point of contact at the Safety Regulation Division for further information on ELT matters, for operators of Seychelles registered aircraft, is:

Technical Support Officer  
Technical Support Office  
Safety Regulation Division  
Seychelles Civil Aviation Authority  
P.O Box 181  
Mahe  
Seychelles  
Tel: (248) 4384271  
Fax: (248) 4384269  
Email: [sr@scaa.sc](mailto:sr@scaa.sc)

## **9. Queries**

- 9.1 Any queries as a result of this Safety Notice should be addressed to Head of Flight Operations and Flight Crew Licensing Inspectorate at the following e-mail address: [hfo@scaa.sc](mailto:hfo@scaa.sc)

## **10. Cancellation**

*OPS SN-2014/07 Issue 4*

Head Flight Operations and Flight Crew Licensing Inspectorate