SECOND GENERATION
406 MHz BEACON IMPLEMENTATION PLAN

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The sequence of activities and associated timeline provided in this document may not reflect the current or projected development among Cospas-Sarsat Participants of second-generation beacons and is currently under revision.

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History

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1. INTRODUCTION

1.1 Purpose of the Document

This plan addresses the development and deployment of second generation 406 MHz beacons into the Cospas-Sarsat System.

The plan describes high level tasks and activities expected to be undertaken by Cospas-Sarsat Participants and other stakeholders to ensure the effective development, production and introduction to the market of second generation 406 MHz beacons. The plan also provides tentative time lines for the various tasks required for second generation beacon implementation along with a brief description of the required inputs and expected outputs associated with each task.

This plan also describes the higher level tasks and activities needed to use the SGB signal to meet the ICAO GADSS requirements for an ELT(DT).

1.2 Background

The International Cospas-Sarsat System has been successfully operating since 1982 and has achieved world-wide recognition as a provider of satellite distress alerts to search and rescue (SAR) authorities. The carriage of Cospas-Sarsat 406 MHz distress beacons, whether mandated by Administrations [1]or as a result of voluntary use by individuals at risk, is becoming increasingly popular.

The LEOSAR and GEOSAR systems comprise the current operational Space Segment. Cospas-Sarsat is developing a new satellite alerting capability, the MEOSAR system, which is expected to replace the LEOSAR system. The MEOSAR system is planned to begin operating in the 2012 - 2015 time frame and become fully operational during the second half of the decade. The MEOSAR system will be backward compatible and will accommodate the operation of first-generation Cospas Sarsat beacons as specified in document C/S T.001. The MEOSAR system is also expected to provide enhanced performance for all 406 MHz beacons currently in operation, to include global, near instantaneous alerting and locating capabilities and greater resilience to beacon-to-satellite obstructions. Detailed information on MEOSAR system development is available in the document C/S R.012 “Cospas-Sarsat 406 MHz MEOSAR Implementation Plan”.

[1] On board aircraft and ships is mandated by Administrations in accordance with the recommendations of the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO). Their use on board fishing vessels, pleasure craft and general aviation aircraft is also a requirement in numerous countries.

The MEOSAR system uses a time/frequency measurement to compute the position of a distress beacon. It also allows for a return link to the beacon. Preliminary analyses have indicated that a new generation of 406 MHz beacon designed to operate in a MEOSAR environment could further enhance the performance of the Cospas-Sarsat system in the future.

1.3 Goals

The deployment of second generation 406 MHz beacons requires that a number of tasks and activities be accomplished and coordinated among various Cospas-Sarsat stakeholders. The second generation 406 MHz beacon implementation plan allows the Cospas-Sarsat Programme to:

a) plan for updated beacon standards to reflect the agreed second generation beacon operational requirements described in Cospas-Sarsat document C/S G.008;

b) outline of activities needed to successfully complete the implementation of a second generation of distress beacons; and

c) provide a time line for second generation beacon implementation.

The second generation 406 MHz beacon implementation plan is managed by the Cospas Sarsat Council which will coordinate its implementation with other stakeholders involved in the development of future 406 MHz distress beacons.

- END OF SECTION 1 -

2. ASSUMPTIONS AND CONSTRAINTS

2.1 Assumptions

First generation beacon specifications documented in C/S T.001 were derived from technical characteristics optimized for the LEOSAR system. This system uses frequency shift measurements of 406 MHz transmissions during periodic passage of satellite payloads at low elevation angles for independent location determination.

Second generation beacon specifications will be developed assuming operation with the Cospas-Sarsat GEOSAR and MEOSAR systems comprised only of Search and Rescue Repeaters (SARR) instruments and with all signal and data processing performed by ground receiving stations called Local User Terminals or LUTs. A MEOSAR FOC System will be available to provide the alerting and locating functions on a global basis. Independent position determination will be established based on trilateration using the time and frequency of arrival (TOA and FOA) measurements of the signals received from distress beacons. The methodology involves the processing by MEOLUTs of signals received from multiple payloads distributed around the beacon at various elevation angles. The determination of the optimal characteristics required from second generation beacon to operate within this new environment will need to consider possible trade-off between the expected performances of the various segment of the system.

2.2 Constraints

The current GEOSAR space segment is in operation and the planned MEOSAR space segment has already been designed. Specifications for second generation beacons will be constrained by the characteristics of these constellations and the design of their Search and Rescue instruments.

The GEOSAR and MEOSAR constellations will consist of various satellite systems which could introduce variations of performance levels due to system design differences. Minimum interface requirements have been established to minimise such variations and ensure full interoperability with commissioned space and ground segment equipment in the Cospas Sarsat System. These requirements are constraints to be taken into consideration in the cost and benefit trade offs for the development of second generation beacon specifications.

In order to maintain the relevance of 406 MHz beacons, second generation beacon specifications should allow for technology to be available at a reasonable cost to users.

Second generation beacons designed to meet new specifications may not be interoperable with the LEOSAR SARP processing. If second generation beacons are not interoperable with LEOSAR SARP instruments, the LEOSAR system will not provide the alerting and locating functions for these beacons on a global basis.

Modifications to beacon signal characteristics and coding protocols will require new processing software to be implemented in existing GEOLUTs to provide the alerting service. Additionally, MEOLUTs installed by Participants to support the MEOSAR system development may require upgrades to be compatible with second generation beacons. Furthermore, in regions where MEOLUT coverage will not be adequate prior to the MEOSAR FOC, existing LEOLUTs may also need to be upgraded to process second generation beacon signals relayed via LEOSAR satellite repeaters (SARR).

A MEOSAR FOC System will be necessary in order to provide the alerting and locating functions on a global basis.

Finally, software upgrades will also be implemented in Cospas-Sarsat Mission Control Centres (MCCs) to forward and distribute distress alerts originating from second generation beacons to Rescue Coordination Centres (RCCs) and SAR Points of Contact (SPOCs).

The time line of second generation beacon deployment activities will need to take in consideration all of these constraints.

- END OF SECTION 2 -

3. IMPLEMENTATION ACTIVITIES AND TIME LINE

This section establishes a timeline of the different phases, tasks and milestones that will lead to introduction of SGBs into the Cospas-Sarsat System. The timeline of each event is based upon reasonable assumptions of the work required, and a linear flow of each stage of development.

Figure 1 provides a list of high level tasks expected to be completed for the deployment of second generation beacons, along with a tentative time line for each tasks. The schedule also includes major Cospas-Sarsat meetings where relevant documents and progress reports will be reviewed.

The following sections provide a brief explanation of the activities required for the deployment of second generation beacons along with the inputs expected to trigger the activities and their expected output.

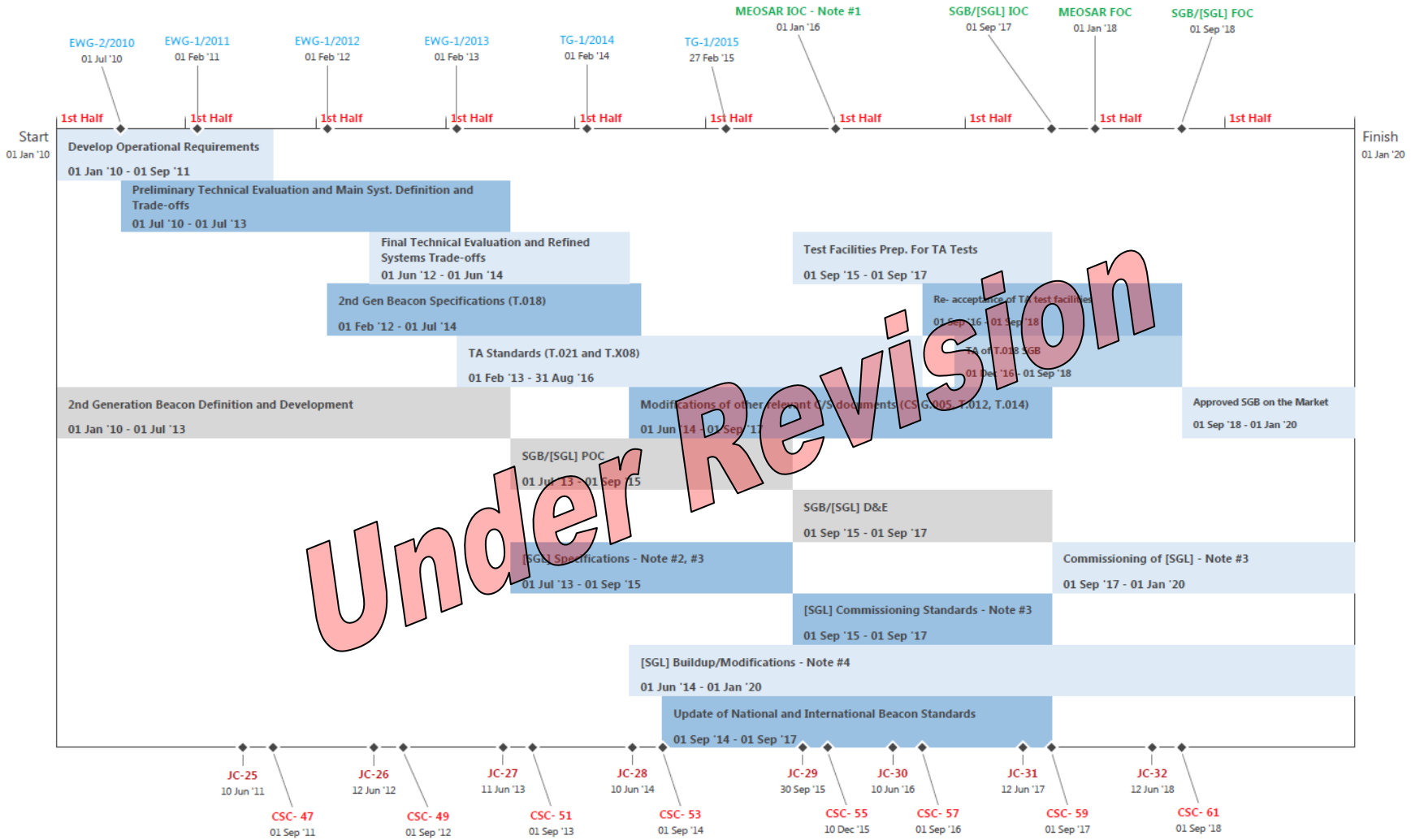

Figure 1: Second Generation Beacon Implementation Schedule

Figure 1 Notes:

#1 – The MEOSAR D&E phase is scheduled to occur between January 2013 and October 2015

#2 – Development of MEOLUT specifications for T.001 beacons will likely begin at JC-27. Consideration and preliminary development of [SGL] specifications can begin at this time as well.

#3 - [SGL] refers to Second Generation MEOLUTs and Second Generation GEOLUTs.

#4 – Modifications to MCCs will also be needed during this phase.

3.1 Second Generation Beacon Definition and Development Phase

During this phase Cospas-Sarsat will focus on determining operational requirements for second generation beacons and compatibility with existing Cospas-Sarsat System components. Systems analysis and design will then be performed to determine the optimal implementation method to meet these requirements. The required beacon characteristics will be documented in a new beacon specification (document C/S T.018). This document will be used by beacon manufacturers to develop new beacon models. These documents will continue to be developed and refined during the Proof of Concept phase. In parallel with this development, it is expected that other Cospas-Sarsat specifications will be updated, such as G.005 (Cospas-Sarsat Guidelines on 406 MHz Beacon Coding, Registration and Type Approval), T.012 (Cospas-Sarsat 406 MHz Frequency Management Plan), and T.014 (Cospas-Sarsat Frequency Requirements and Coordination Procedures).

3.1.1 Development of Operational Requirements

This task is the initial step for the development of relevant second generation beacon specifications and consists in the generation of minimum and objective operational requirements expected to be met by second generation beacons operating in the Cospas Sarsat MEOSAR System. The task involves the participation of various Cospas Sarsat stakeholders, in particular Search and Rescue (SAR) organizations which will use the information provided by the SGBs. The outcome of this activity is compiled in document C/S G.008 “Operational Requirements for Cospas-Sarsat 406 MHz beacons”.

This activity is completed when document C/S G.008 is approved by the Cospas Sarsat Council. However, the document may need to be reviewed and updated in the future, in particular once the technical evaluation of the requirements has been completed.

Although some operational requirements could be challenging to attain, especially during the initial phase of the MEOSAR system implementation programme, it is expected that these requirements will stimulate innovation and be achieved in the long-term.

3.1.1.1 Operational Requirements Matrix

The development of operational requirements has yielded a detailed list of beacon requirements. These requirements must be met by either the beacon, the Space Segment, the LUTs, the MCCs, or through a collaborative effort of any combination of the various segments. Every segment is involved in achieving the final system design which will meet all of the operational requirements. Additionally, the space segment (SARR repeater) is already specified so it is excluded from the matrix.

For a more beneficial requirements matrix, only the primary subsystems that are involved with meeting the operational requirements will be listed. For instance, the LUT must properly decode all information in the beacon message content; however, the primary subsystems involved in meeting the operational requirements for beacon message content will be the beacon and the MCC.

3.1.2 Preliminary Technical Evaluation and Main System Definition and Trade-offs

This task is initiated once beacon operational requirements are available. The core of this task consists in the performance evaluation and feasibility review of possible second generation beacon designs. The activity includes system trade-offs between expected performances of MEOSAR system, the operational LEOSAR and GEOSAR systems and SGB beacons, to address specific operational requirements, and should allow Cospas-Sarsat Participants to make decisions on the definition of second generation beacon designs and message structure.

The completion of this task will finalise key signal design parameters and interoperability requirements of second generation beacons. It will also define message content and priority of information.

3.1.3 Final Technical Assessment and Refined System Trade-offs

During this phase, the main beacon characteristics will be defined so that the development of the specifications and type approval standards can be finalized. If the beacons specifications deviate from the operational requirements due to a technical or cost trade off these would be identified.

Recognizing that parallel approaches on beacon modulation scheme may be pursued (i.e., two different beacon designs) the comparison between approaches should be identified for evaluation by the Council. Other aspects of beacon design may be shared regardless of beacon modulation path taken. For example, beacon message content and homing requirements may be defined for both prospective paths.

At a minimum, the Final Technical Assessment phase should yield the beacon specifications (C/S T.018) necessary to meet or exceed the operational requirements defined in document C/S G.008 or identify how and why there is a deviation from those requirements.

3.1.4 Development of Second Generation Beacon Specification Document(C/S T.018)

This task is at the centre of the future second generation 406 MHz beacon development. This task will be done throughout the preliminary and final technical evaluation phases. The task consists of defining and creating second generation 406 MHz beacon specification document (C/S T.018). Since parallel beacon modulation schemes may be developed, two versions of the T.018 should be developed for each path to allow each approach to proceed independently.

The changes in second generation beacon design and the added capabilities of these beacons will necessitate changes in the Cospas-Sarsat Type Approval Standard of 406 MHz beacons and Local User Terminal and Mission Control Centre specifications. These documents will need to be updated in later phases of development after further testing and evaluation of the SGB specifications.

This task will be completed when the SGB specifications have been accepted by Council.

Note: [text to be added to address the C/S T.018 timeline]

3.1.5 Development of Second Generation Compatible LUT Specifications

The changes to the LUTs in order to process the SGBs require new versions of specifications and commissioning standards to be developed for LUTS. The development of Second Generation Beacon Compatible LUT ([SGL]) critical task will begin near the end of the SGB Definition and Development phase and modified based on the results of the Proof of Concept (POC) Phase. The task will consist of developing the specifications for the LUT segments that are to be fully capable of processing transmissions from the SGBs. These specifications, analysed with the SGB specifications, should enable the operational requirements of G.008 to be met.

Additionally, SGBs designed to T.018 specifications may not be interoperable with the LEOSAR SARP processing which may prevent these beacons from being located if coverage of [SGL]s is insufficient at that time.

In particular providing global coverage for SGBs may require that:

a) existing GEOLUTs be upgraded to process second generation beacon signals relayed via GEOSAR repeaters (SARR);

b) MEOLUTs be designed or upgraded to process second generation beacon design signals relayed via MEOSAR repeaters; and

c) LEOLUTs updated to make use of real time SARR data.

Modifications to operational LUTs should only begin after [SGL] specifications have been developed. Developmental LUTs capable of processing T.018 transmissions could be developed at any time to allow for testing of SGB. Depending on the SGB design, developmental LUTs that are going to be relied upon to provide global coverage for SGBs must be available for POC and D&E testing. For example if the SGB design relies on MEOLUT for global coverage then a developmental MEOLUT should be used in the evaluation. There is no need to have one of each type of developmental LUT (MEO, LEO, and GEO) in order to conduct testing.

Once Council has approved the [SGL] specifications they will be available for LUT manufacturers.

3.2 Proof of Concept Phase

The Proof of Concept (POC) phase will assess the basic capabilities of the SGBs and establish preliminary performance levels that can be expected. These results will be used to focus the scope and content of the SGB D&E phase. The results will also identify the necessary changes to current LUTs and help to guide the development of [SGL] specifications. Additionally, knowledge gained during the POC phase will guide development of the Type Approval Standards and Acceptance of Testing Facilities for SGBs,

Successful completion of the proof-of-concept phase will initiate the transition to the demonstration and evaluation phase.

3.2.1 Proof of Concept Testing

Prototype beacons and beacon simulators may be developed for the POC phase. The POC phase will confirm the capabilities of the SGBs through and MEOSAR space segment. During the SGB POC phase, the MEOSAR ground segment is anticipated to be in the latter D&E stages and preliminary stages of Early Operational Capability (EOC).

The primary ground stations to be used during the POC testing will likely be developmental LUTs or developmental LUTs updated in order to successfully capture and process the SGB signal. It is anticipated that LUT specifications will be developed during the POC phase. POC testing of the SGB will aid in the assessment of necessary LUT changes. Developmental LUTs may eventually be commissioned into the operational SGB/LUT system once the commissioning standards are approved. Interested Participants will develop an SGB POC test plan and share their test results with the Cospas-Sarsat Council.

POC testing will include at a minimum:

a) confirmation of the ability to reliably receive and process SGB signals through the space segment (i.e., confirmation of the performance of the link from the beacon to the satellite and the ground station);
b) assessment of the detection capability and independent location accuracy that may be achieved with the new SGBs in the existing Cospas-Sarsat System;
c) assessment of necessary changes to existing LUT segment in order to fully process and decode SGBs;
d) assessment of performance of SGBs by [SGL]s that have been upgraded or developmental LUTs designed to be fully compatible with SGBs.

Global availability of SGB capable LUTs is not envisioned during this phase. Cospas-Sarsat Participants with ground segment equipment capable of receiving and processing the SGB bursts should be invited to participate in the proof-of-concept trials. There will be no distribution of operational distress alert data to SAR services during the proof-of-concept phase.

The POC phase will be completed once the prototype SGBs and developmental [SGL]s have gone through described tests and proven an acceptable level of performance.

3.2.2 Modifications of other Relevant Cospas-Sarsat Documents

The development of SGB/[SGL] specifications will likely require changes to other Cospas Sarsat documents. The extent of the modifications will depend on the magnitude and nature of the changes between the current beacon and LUT specifications and SGB and [SGL] specifications. For example, change in beacon frequencies, duration of burst transmission or repetition periods would impact frequency channel capacity detailed in document C/S T.012 (Frequency Management Plan) and the link budget, frequency requirements and coordination procedures described in C/S T.014 (Cospas Sarsat Frequency Requirements and Coordination Procedure).

Changes in protocols would also require modifications to document C/S G.005 (Cospas-Sarsat Guideline on 406 MHz Beacon Coding, Registration and Type Approval).

It is anticipated that approval of modifications to the other documents would not be required for type approval of second generation beacons, but would be needed prior to the deployment of the second generation beacons. Amendments to these documents are expected to be made during the POC and D&E phase.

3.2.3 Development of SGB Type Approval Standards and Acceptance of Test Facilities

This task will begin during the POC phase and will continue throughout the D&E phase. The knowledge gained through POC and D&E testing will aid the development of the SGB Type Approval Standards (C/S T.021).

Test facilities that perform Cospas-Sarsat type approval will need to make modifications to testing hardware and software. Furthermore, the test facilities will need to demonstrate their ability to accurately gauge SGB performance. As such, modification of C/S T.008 (Cospas Sarsat Acceptance of 406 MHz Beacon Type Approval Test Facilities), or development of a new document (C/S T.X08) should commence in parallel with development of the new Type Approval Standards.

It is anticipated that the SGB TA standard (C/S T.021) and Acceptance of Beacon Test Facilities will be further developed during the SGB/[SGL] D&E phase.

3.3 Demonstration and Evaluation (D & E) Phase

3.3.1 Documentation Revisions and Finalizations

This task will involve revisions to the [SGL] specifications and commissioning standards. MCC documents will need to be modified, in particular, documents C/S A.001 (Data Distribution Plan), A.002 (Standard Interface Description), A.005 (MCC Performance Specification and Design Guidelines), and A.006 (MCC Commissioning Standard). Other Cospas-Sarsat documents may also need to be updated. Identification of the documents that must be revised or drafted should continue during the D&E phase. Before release of SGB beacons into the market place, all documents that are identified as requiring an update must be approved by the Cospas-Sarsat Council.

3.3.2 Second Generation LUT Commissioning Standards

This task will use the knowledge gained during the POC and D&E testing of expected [SGL] performance to generate a commissioning standard. These commissioning standards will be used to certify that a LUT is capable of processing SGB transmissions and distributing appropriate alert data to an associated SGB capable MCC (SGM). A commissioned ground

segment with global coverage will be necessary to allow SGBs to be type approved and used operationally.

3.3.3 Second Generation Beacon and Second Generation LUT D&E Testing

In order to participate in D&E testing, Participants will need to upgrade existing LUTs or procure [SGL]s. Once at least one SGB capable LUT is available, and a D&E Plan has been coordinated with other participants, the D&E phase can commence. Participants will coordinate SGB D&E testing and share their results with Cospas-Sarsat. D&E participants shall consider the impact to the existing LEO/GEO/MEO systems by SGB D&E tests and ensure it is minimized. In case a LUT is involved in SGB D&E tests and is also used operationally (for MEOSAR or GEOSAR operations), priority shall be given to first generation beacon processing if possible.

The demonstration and evaluation phase will focus on characterising the technical and operational performance of SGBs within the existing operational system, evaluating the technical and operational performance of the SGBs by LUTs capable of processing SGB, evaluating the operational effectiveness and the benefits to SAR services, and provide a basis for the Cospas-Sarsat Council to decide on the operational use of SGBs. This assessment of SGB performance is required for national and international organizations (e.g., ICAO and IMO which mandate the use of beacons and accept distress alerting systems, ITU which regulates the use of the frequency bands, and Cospas-Sarsat Participants that provide and use the new alerting system) to accept SGBs as an alerting source.

Typical demonstration and evaluation periods in Cospas-Sarsat span a number of years. Demonstration and Evaluation of the SGB capable LUTs will likely involve modifications to existing, commissioned LUTs. Therefore, the D&E tests for SGBs are only anticipated to demonstrate the upgraded systems can properly process a SGB signal, and to evaluate the performance of these systems. As such, it is anticipated that the D&E phase will last a year. The transition to SGBs and a ground segment capable of receiving SGB transmissions will have to be done while maintaining full global C/S operational capability for first generation beacons.

During this phase SGB performance will be evaluated against SGB operational requirements and performance parameters, but it is expected that some operational requirements may not be technically feasible at the time of SGB D&E or FOC, such as a requirement for beacon registration verification. Operational data should be provided to the Cospas-Sarsat network for analysis; however, data should not be transmitted to SAR services.

SGB technical performance parameters to be evaluated include, but are not limited to:

- detection probability including processing threshold and system margin;
- message transfer time between activation of the beacon and availability of the first valid message;
- capacity of the system;
- location accuracy and location error prediction.

Operational performance parameters to be evaluated include, but are not limited to:

- location accuracy of operational beacons;
- potential time advantage of SGB alerts over first generation beacon alerts;
- direct and indirect benefits of the SGB

All Cospas-Sarsat Participants will be invited to participate in the SGB D&E. Successful completion of demonstration and evaluation activities should form the basis for a Council decision on the operational use of SGBs.

3.3.4 Test Facilities Prepare for SGB Type Approval Tests

This activity includes the work to be undertaken by 406 MHz beacon type approval test facilities to modify their equipment and test set-up in preparation for type approval testing of second generation beacons. Acceptance of test facilities using C/S T.X08 would require that test facilities successfully demonstrate that their equipment and procedures comply with the new Cospas-Sarsat type approval procedure (C/S T.021).

Test laboratories may initiate this activity while the beacon specification and type approval procedures are being developed (in particular for new tests required to address new features such as the return link capability), but this activity may not be completed by some test facilities for approximately six months after the approval of SGB TA Standards (T.021). This period is needed by facilities to upgrade hardware, software, personnel, processes, etc. to enable them to properly perform testing as defined by the SGB TA Standards (T.021). After the test facilities have made the proper preparations for SGB Type Approval testing, the Cospas-Sarsat Programme will ensure that the modifications made by the test facilities allow these facilities to undertake the new type approval procedures.

3.3.5 Re-acceptance of Type Approval Test Facilities for SGB Type Approval Tests

After a test facility has made the proper modifications or additions to their testing equipment, tests will be required to demonstrate the test facility's ability to perform SGB testing. Successful completion of these tests will allow the Council to recommend the test facility be accepted for performing SGB TA testing.

Completion of this activity, by at least one of the test laboratories, allows formal Cospas Sarsat type approval testing to begin. However, if the ground segment cannot yet support SGB and SGB ELT(DT) encoded location positioning, then a Type Approval Certificate will be withheld, and placed in a "pending" status, until it is deemed appropriate to be issued by the Council.

It is anticipated that first Cospas-Sarsat type approval of second generation 406 MHz beacon could take place one year after the approval of the new TA standard (T.021) and Acceptance of TA Facilities (T.X08).

3.4 SGB Transition Phase

Production of SGBs will not be possible until the SGB specification and type approval standards have been approved. Furthermore, sale of SGBs cannot be permitted without global coverage from a space and ground segment capable of detecting and independently locating SGBs. An exception to the limitation of sales of SGB is an ELT(DT) SGB designed to meet ICAO GADSS requirements described in section 3.5.

To declare the start of the SGB transition phase the Cospas-Sarsat Council should:

a) approve specifications and commissioning requirements for LUTs and MCCs that process transmissions or associated information for SGBs; and
b) approve specifications and type approval standards for SGBs; and
c) declare at least one SGB capable MEOLUT and associated SGB MCC as commissioned; and
d) approve amended or new Cospas-Sarsat documentation as appropriate.

This transition phase shall be completed when:

- a global space segment will be available,
- a global network of LUTs compatible of Second Generation Beacons will be commissioned and ready for operations.

3.5 MEOSAR Global Coverage - Encoded Locations (To Accommodate SGB ELT(DTs))

Although the global SGB independent location capability may not be achieved at this time, ELT(DT)s with GNSS encoded location capabilities are planned to be available to address the Global Aeronautical Distress and Safety System (GADSS) requirements. ELT(DT)ELT(DT)ELT(DT)

This milestone will be met when there is global detection coverage for detection of SGBs. A ground segment capable of detecting, processing and relaying SGB signals will be commissioned at this point. Additionally, a space segment capable of providing MEOSAR global detection for SGB's will be available.

This transition phase shall be completed when:

- MEOSAR is at FOC,
- the ground segment is at SGB FOC.

3.6 SGB Full Operational Capability (FOC)

Full Operational Capability is a declaration by C/S that a system based on the use of SGBs is considered fully operational. This implies sufficient space and ground segment components have been commissioned in accordance with C/S requirements to provide global coverage for SGBs. At this point, beacons defined in T.018 and type approved according to T.021 can be marketed as an SGB, and used operationally. Beacons defined in T.001 and type approved according to T.007 will continue to be developed and used operationally, unless otherwise decided by the Cospas-Sarsat Council.

3.6.1 Type Approval of Second Generation Beacons

This task consists of the formal Cospas-Sarsat type approval of specific models of 406 MHz second generation beacons. The activity requires Council approval of all Cospas-Sarsat second generation beacon documents (C/S T.018, C/S T.021) and global coverage of commissioned [SGL]s and MCCs.

Completion of this task is a pre-requisite for the availability of second generation beacon on the market. Note that national Administrations would still need to authorize the use of these beacons in the Cospas-Sarsat System. This may require additional tests to demonstrate compliance with national or international standards.

3.6.2 Updates to National and International Standards

The deployment of second generation 406 MHz beacons requires that administrations approve updates to their current national and international standards to make reference to the new beacon specification. Given the numerous standards impacted by the process, it is unlikely that all standards will be modified simultaneously. However partial deployment of second generation beacons could be allowed as Administrations update their standards for specific types of beacons. It is expected that the revision of these standards will be initiated shortly after SGB specifications have been approved by Cospas-Sarsat Council and could be completed two years after the approval of the beacon specification.

- END OF SECTION 3 -

- END OF DOCUMENT -

Cospas-Sarsat Secretariat
1250 René-Lévesque Blvd. West, Suite 4215, Montreal (Quebec) H3B 4W8 Canada
Telephone: +1 514 500 7777 Fax: +1 514 500 7996
Email: mail@cospas-sarsat.int
Website: http://www.cospas-sarsat.int