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NOTE POINT "I"

Origine:	Secrétariat général du Conseil
Destinataire:	Comité des représentants permanents (1re partie)
Objet:	Projet de soumission de l'Union à la 9e réunion du Sous-comité de la navigation, des communications et du sauvetage de l'Organisation maritime internationale sur la démonstration d'un service de communication bidirectionnelle assuré par les balises de détresse Cospas-Sarsat via le Service de liaison retour SAR/Galileo *- Approbation*

I. INTRODUCTION

1. Le 21 mars 2022, la Commission a transmis au Conseil un document de travail des services de la Commission contenant un projet de soumission à la 9e session du Sous-comité de la prévention de la navigation, des communications et du sauvetage (NCSR 9) de l'Organisation maritime internationale (OMI), concernant la démonstration d'un service de communication bidirectionnelle assuré par les balises de détresse Cospas-Sarsat via le Service de liaison retour SAR/Galileo. Le délai pour transmettre la soumission au secrétariat de l'OMI est le 15 avril 2022.

2. La soumission présente les résultats préliminaires de la démonstration d'un service de communication bidirectionnelle assuré par les balises de détresse Cospas-Sarsat via le Service de liaison retour SAR/Galileo. Il présente également pour discussion la liste préliminaire de questions et réponses prédéfinies émises à la suite de la consultation des parties prenantes.

II. TRAVAIL DES INSTANCES PREPARATOIRES DU CONSEIL

3. Ce service de communication bidirectionnelle est un moyen de mieux connaître la situation d'une personne en détresse et peut être utile pour organiser l'opération de sauvetage. Il offre à l'opérateur d'un centre de services de recherche et de sauvetage la possibilité d'envoyer des instructions ou de recueillir des renseignements sur la situation de détresse en cours en contactant directement l'utilisateur de la balise de détresse : par exemple, il peut donner des instructions pour faciliter le sauvetage, obtenir des renseignements sur le nombre de personnes à secourir et l'urgence de la situation, etc.

4. Le groupe "Transport maritime" a examiné le projet de soumission lors de ses réunions du 23 mars, du 1er avril et du 7 avril 2022. A l'issue de ces réunions, des modifications ont été apportées au texte afin d'obtenir un consensus; ces modifications figurent dans la version finale en annexe.

5. Le groupe a convenu que la présidence pourrait indiquer au secrétariat de l'OMI, lors de la transmission de la soumission, que celle-ci peut être rendue publique avant le NCSR 9.

III. CONCLUSION

6. Compte tenu de ce qui précède, le Comité des représentants permanents est invité à approuver le projet de soumission en vue de sa transmission par la présidence à l'OMI le 15 avril 2022 au plus tard.

SUB-COMMITTEE ON NAVIGATION, COMMUNICATIONS AND SEARCH AND RESCUE
9th session
Agenda item 13

NCSR 9/13/x
xx June 2022
Original: ENGLISH
Pre-session public release: ☒

DEVELOPMENT OF GLOBAL MARITIME SAR SERVICES, INCLUDING HARMONIZATION OF MARITIME AND AERONAUTICAL PROCEDURES

Two-way communication service demonstration for Cospas-Sarsat distress beacons using the SAR/Galileo Return Link Service

Submitted by Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the European Commission[1]

SUMMARY

Executive summary:	This document presents the preliminary results of the demonstration of a two-way communication service on Cospas-Sarsat distress beacons to be provided by the Galileo system by using the SAR Return link. It also presents for discussion the preliminary list of predefined questions and answers issued following the stakeholders consultation. The Sub-Committee is invited to take note of the suggestions to allow SAR forces to receive additional information on the distress situation.
Output:	TBC
Action to be taken:	Paragraph 26
Related documents:	NCSR 8/10/2, MSC 104/INF.4, MSC 105/INF.5

Introduction

1 At the eighth session of the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR 8) in 2021, the co-sponsors, the Member States of the European Union and the European Commission, presented a submission (NCSR 8/10/2), highlighting the plans to perform a demonstration of the two-way communication Service with the Galileo Return Link capability on the second generation of Cospas-Sarsat distress beacons.

2 Following that paper, action was taken to report at subsequent meetings the progress of the demonstration of the two-way communication service by the European Commission's Galileo SAR services.

[1] Reservation: the Commission.

3 The co-sponsors therefore presented further information papers at the MSC 104 and MSC 105 (MSC 104/INF.4, MSC 105/INF.5) describing the outcomes of the stakeholders consultation and the advantages that might be provided by the Two-Way Communication functionality to collect information from a distress area.

4 This paper presents to the Sub-Committee the concept developed after the stakeholders' survey, which is based on an initial set of questions, a Q&A session between the person in distress and the SAR forces[2] and instruction phases.

5 SAR forces have expressed the highest interest in the possibility to have a direct confirmation of a false alert from the beacon user. Due to the high level of false alerts of the Cospas-Sarsat system (~90%), this possibility has been identified as a real benefit.

6 The list of questions (initial set, Q&A session) with suggested answers and the list of instructions suggested for Maritime rescue are presented.

SERENITY project highlights

7 SERENITY is an 18-month project funded by the European Union, which started in January 2021, and is being carried out by Telespazio France, CNES, Thales Alenia Space France, Orolia and Pildo Labs.

8 SERENITY aims at refining the requirements of the Two-Way Communication service (TWC) and performing a Service Demonstration using the SAR/Galileo Return Link Service (operational since January 2020) with the development of a prototype of a Second Generation C/S beacon.

9 The TWC service demonstration will allow completing the service definition by inviting SAR forces to prepare and execute the demonstration, and to provide feedbacks on the designed and demonstrated service.

Stakeholder consultation

10 The Stakeholder consultation was launched in March 2021. It is conducted with online questionnaire, interviews and workshops widely shared in SAR community. The questionnaire is accessible until the end of the project at: https://tinyurl.com/EU-TWC-User-consultation-2021.

11 In February 2022, more than 180 stakeholders had been consulted, composed of 70% of beacon users and 30% of SAR forces members. The non-exhaustive list of activities of the respondents spans around: heads of RCC, RCC operators, SAR helicopter teams, SAR aircraft teams, paramedics, rescue swimmers, military pilots, skippers, trekkers, trailers, hikers, kayakers, skiers, mountaineers, leisure pilots, commercial pilots, commercial flight crews, merchant navy officers, airline flight test engineers, beacon manufacturers.

12 The responding SAR forces are for 73% from EU Member States and for 27% from non-EU countries.

[2] With the generic term of SAR forces (not strictly referring to military forces) the Serenity project indicates the members of Rescue Coordination Centres, SAR Points Of Contacts and the Search and Rescue Units which were interviewed or participated to the survey.

Main outcomes of the consultation

13 The responding SAR forces confirmed the importance to receive an initial set of answers to corresponding to the initial SAR checklist. The initial questions could be automatically triggered at beacon activation and the answers sent with the alert message (using rotating fields of SGB). These answers should be made available as soon as possible and before SRU take-off:

i. Nature of distress (including false alert confirmation);
ii. Number of person involved in distress;
iii. Need for medical assistance;

14 It would be appropriate to collect these answers after the activation of the beacon or, to a certain extent, pre-coded by the user before each use ("go fishing, 3 persons in the boat…). Such information might be embedded in the first Forward Links Alert Messages (FLAMs) sent by the beacon in distress following the activation of the alert.

15 The responding SAR forces confirmed that the possibility to exchange pre-defined questions and answers with the persons in distress via the alert beacon will greatly improve their operations. The questions will be sent to the activated beacon using the Return Link Service. A preliminary list of questions with multiple-choice answers relevant to the maritime case is provided in annex (list to be expanded).

16 The responding SAR forces considered that having a pre-defined instructions "*how-to-react*" to be sent to the beacon in distress relevant to the maritime case will greatly improve their operations. The pre-defined instructions "*how-to-react*" will be channeled to the activated beacon using the Return Link Service. A preliminary list is provided in annex (list to be expanded).

17 The project highlighted that the list of questions and instructions available at RCC side should be expanded to provide more flexibility to the rescue coordinators. A consolidated list will be produced at the end of the project to be the baseline for the first implementation of the service.

Service specification

18 The TWC service will allow the exchange of information between the SPOC and the beacon users through pre-defined questions and answers with the following features:

- 3 initial questions triggered automatically by the beacon at activation
- Specific questions selected by SAR forces in charge of the rescue (with up to 7 possible answers per question) on the RCC Graphic User Interface.
- The answers will be selectable via a Graphic User Interface on the Beacon.

Figure 2: Mechanical design of a SGB TWC beacon prototype

19 The TWC service shall allow sending "*1-way*" instructions '*how-to-react'* from SAR forces to beacon users.

20 The TWC service latency, compatible with SAR forces' needs, shall be:

- 1-3 minutes for the beacon user to receive questions and "*1-way*" messages;
- 15 minutes for SAR forces to receive answers (Cospas-Sarsat performances).

This proved to be in line with the average time between alert receptions by the SRU and take-off (between 15 and 30 minutes) as stated by the responding SAR forces.

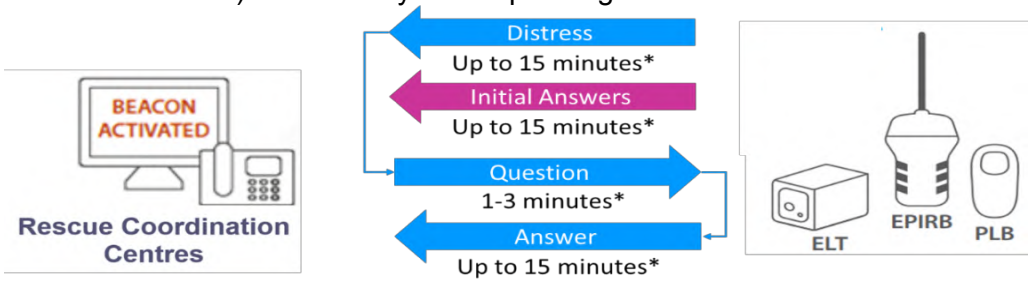

Figure 3:TWC service latency

21 The TWC service can be used in any language by setting up independently the SPOC and the beacon user interfaces. This will remove the language barrier to communicate TWC questions, answers and "1-way" messages. (common database for the service developed in several languages).

22 The TWC service would need to provide mechanisms to control the battery consumption.

Project forward plan for the TWC demonstration

23 The Project has developed a prototype of Personal Locator Beacon (PLB) for the demonstration but the requirements baseline could be tailored to all types of beacons (ELT, EPIRB).

24 The project is proceeding with the preparation of the Service 'live' demonstration to be held in September 2022 with the support of operational SAR forces. Since October 2021, a close coordination has been setup with the French MRCC Gris-Nez, allowing identifying a preliminary demonstration area fitting operational constraints and the potential support of the French MRCC Jobourg.

25 The demonstration will be designed to maximise the opportunity to get technical and operational feedbacks from the SAR community (workshops, interviews and more) in view of consolidation of the TWC service specification. The demonstration will be available on a pinned post @SARGalileo Twitter account.

Actions requested of the Sub-Committee

26 The Sub-Committee is invited to:

.1 note the interest of the TWC service for a direct confirmation of false alert with the beacon via the Return Link Service;

.2 note the interest expressed for a functionality to include preliminary information in the alert as described in paragraph 13 and to invite interested participants to investigate the potential implementation of this functionality;

.3 note the interest expressed for the Two-Way Communication Service with pre-defined questions and answers as described in paragraph 15 and to invite interested participants to investigate the potential implementation of this functionality;

.4 note the interest expressed for the Two Communication Service with pre-defined instructions "*how-to-react*" to be sent to the beacon in distress as described in paragraph 16 and to invite interested participants to investigate the potential benefits of the implementation of such functionality;

.5 ~~The Committee is invited to~~ confirm its interest in exploring further the suggestions in paragraphs ~~26 to 29~~ **1 to 4** in ~~a~~ technical working group **of Cospas-Sarsat** as appropriate.

Annex

Initial set of questions

1. Nature of distress; a. False Alert b. MOB c. Fire on board d. Flooding e. Injured people on board f. Engine/Mechanical damage	2. Number of persons involved in distress; a. 1-3 b. 4-10 c. >10	3. Need for medical assistance; a. Yes b. No

Q&A session: exchanges between SAR Forces and the person in distress (indicative list to be expanded / complemented)

1. Distress situation ? o Person in the water o Life raft o On-board o Grounded o Other	2. Person in the water ? o 1-3 o 4-10 o > 10	3. Length of the boat/craft ? o <5m o 5-10m o 10-20m o >20m
4. Color of the boat/craft ? o White o Grey o Black o Yellow/Orange o Red o Blue/Green o other	5. Is the boat dismasted? o Yes o No	6. Visible height of the mast? o No Mast o <5m o 5-15m o >15m
7. Visibility on scene ? o Dense fog o Thin fog o Cloudy o Clear sky	8. Do you have a boat tender ? o Yes o No	9. Survival equipment on-board? o First Aid Kit o Life raft o Life jacket o Flares o None
10. Drinking Water available? o Yes o No	11. Food available? o Yes o No	12. Age of the person in distress? o youngest age o oldest age o all ages
13. Weather on scene ? o Rough o Bad o Moderate o Good	14. Do you have defibrillator on-board ? o Yes o No	15. Do you hear/see the rescue ? o Yes o No

"How to react" instructions to be sent by SAR forces to the activated beacon vie the Return Link.

Switch on any light;	Go into the boat tender;
Switch on hand-held flare	Go in front of the boat;
Switch on smoke flare	Go at the rear of the boat.
Catch and keep the rope with your hand only;	Save battery power until xx:h
Signal your presence when hearing rescue;	Save battery power until zz:h
Switch on VHF on channel 16	Hold tight until complete rescue;
Switch on MOB AIS	