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NOTE POINT "I"

Origine:	Secrétariat général du Conseil
Destinataire:	Comité des représentants permanents (1 ^{re} partie)
N° doc. préc.:	5097/1/22 REV 1
Objet:	Projet de soumission conjointe des États membres et de la Commission à la 105e session du Comité de la sécurité maritime de l'Organisation maritime internationale informant 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 – <i>Approbation</i>

I. INTRODUCTION

1. Le 6 janvier 2022, la Commission a transmis au Conseil un document informel contenant un projet de soumission à la 105^e session du Comité de la sécurité maritime (MSC 105) de l'Organisation maritime internationale (OMI), informant 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. Le délai pour transmettre la soumission au secrétariat de l'OMI est le 11 février 2022.
2. La soumission vise à présenter au MSC 105 les résultats préliminaires d'une démonstration du service de communication bidirectionnelle offert par le système Galileo. Elle informe également le MSC 105 des résultats d'une consultation avec des parties prenantes.
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.

II. TRAVAIL DES INSTANCES PREPARATOIRES DU CONSEIL

4. Le groupe "Transports maritimes" a examiné le projet de soumission lors de ses réunions du 14 et du 18 janvier 2022. À l'issue de cette dernière réunion, 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 MSC 105.
6. La question de savoir qui devrait transmettre le projet de soumission reste toutefois non résolue. La Commission considère que la soumission devrait être transmise par "la Commission européenne au nom de l'Union européenne", tandis que les États membres sont de l'avis qu'elle devrait être transmise au nom des États membres et de la Commission européenne.
7. Vu l'importance et l'urgence de la soumission, le groupe a décidé de suggérer qu'elle soit transmise au nom des États membres et de la Commission européenne, en prenant bonne note de la position de la Commission.

III. CONCLUSION

8. 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 11 février 2022 au plus tard.

MARITIME SAFETY COMMITTEE
105th session
Agenda item 19

MSC 105/INF.XX
xx February 2022
Original: ENGLISH

Pre-session public release:

ANY OTHER BUSINESS

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

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

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 details the results of the stakeholders' consultation.

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Output: TBC

Action to be taken: Paragraph 30-31

Related documents: NCSR 8/10/2, MSC 104/INF.4

Introduction

1 At the eighth session of the Sub-Committee on Navigation, Communications and Search and Rescue (NCSR 8) in 2021, the member States of the European Union and the European Commission presented a submission (NCSR 8/10/2), highlighting their 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.

3 At MSC 104 in 2021, the same co-sponsors presented an information paper (MSC 104/INF.4) describing the preliminary outcomes of the demonstration project with a specific focus on the stakeholders' consultation.

4 This paper presents the consolidated outcomes of the stakeholders' consultation as well as information on the progress on the prototyping and development of a demonstration carried out within the 'SERENITY' project.

5 The large stakeholders' consultation undertaken as part of the project to find solutions to tailor the service requirements to the benefit of the final users (SAR forces¹ and beacons users) has produced important results that are presented in this paper.

SERENITY project highlights

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

7 SERENITY aims at refining the requirements of the Two-Way Communication service (TWC) and performing a Service Demonstration with prototype of a Second Generation C/S beacon. The demonstration will be performed 'live' on the operational SAR/Galileo Return Link Service and will involve the full SAR operational chain.

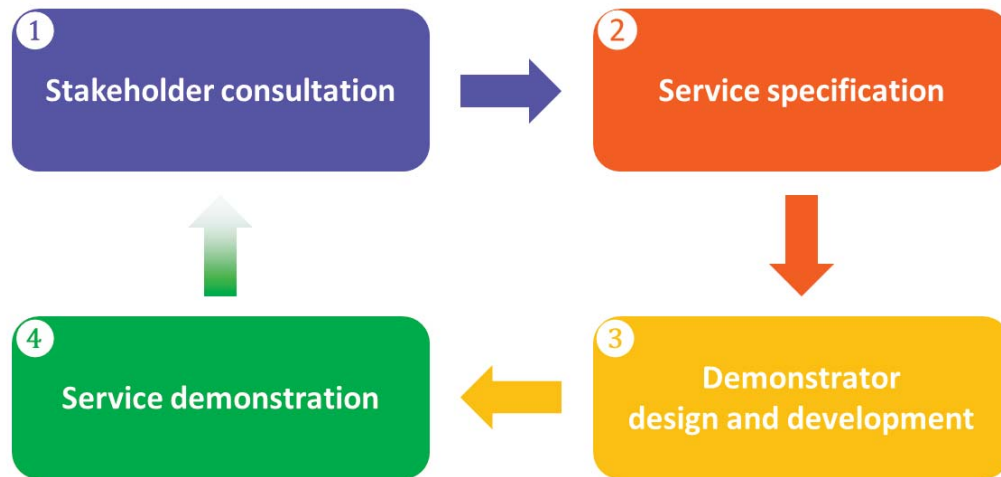
8 The TWC service is an evolution of the SAR/Galileo Return Link Service (operational since January 2020) allowing an activated C/S beacon to exchange information with the SAR forces to help both the person in distress situation and the operating SAR forces. The exchanged information are selected among a library of predefined questions and answers.

9 The project is structured in four successive stages:

1. Stakeholder consultation,
2. Service specification,
3. Demonstrator design and development,
4. Service demonstration.

10 The TWC service demonstration will close the first service definition loop by inviting SAR forces to prepare and execute the demonstration, and to provide feedbacks on the designed and demonstrated service.

¹ For the purposes of this stakeholders' consultation and the SERENITY project, the term 'SAR forces' is not limited to military forces but includes members of Rescue Coordination Centres, SAR Points Of Contacts and the Search and Rescue Units.

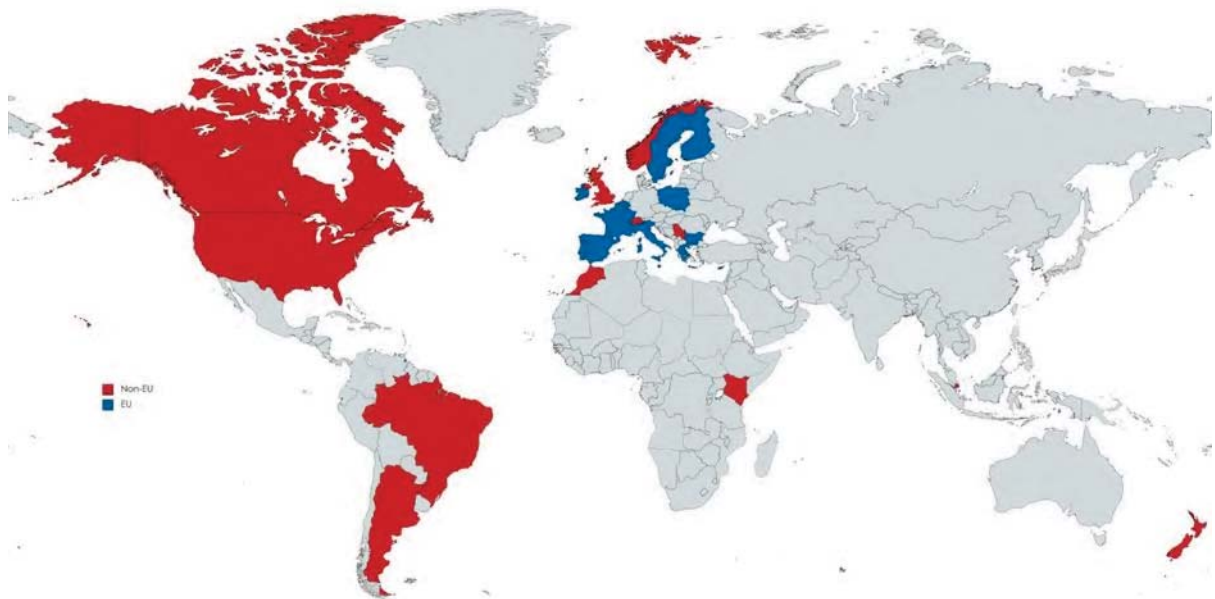


Stakeholder consultation and communication

11 The stakeholder consultation started on the 16th of March 2021. It is conducted using an online questionnaire widely shared in SAR community and through interviews and workshops with key stakeholders. Additional data is also collected through email exchanges. The questionnaire will be accessible online until the end of the project with the following link: <https://tinyurl.com/EU-TWC-User-consultation-2021>.

12 On the 15th of November 2021, more than 180 stakeholders had been consulted, composed of 70% of beacon users and 30% of member of SAR forces. 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.

13 The responding SAR forces operate in the following countries: France (EU), Bulgaria (EU), Poland (EU), Spain (EU), Cyprus (EU), Belgium (EU), Ireland (EU), Italy (EU), Greece (EU), Portugal (EU), Malta (EU), Finland (EU), Sweden (EU), Switzerland, Norway, Serbia, United Kingdom, Argentina, Morocco, Singapore, New Zealand, Brazil, Kenya, United States of America, Canada.



14 The TWC service has been presented to the scientific community in International Symposiums (ION GNSS+ in September 2021, European Navigation Conference in November 2021), to the European SAR units in the Galileo International SARMEET in September 2021, and to the French SRU teams in the French navy station of Lann-Bihoué in September 2021.

Main outcomes of the consultation

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

16 The responding SAR forces confirmed the importance to receive an initial set of answers corresponding to the initial SAR checklist. These answers should be made available as soon as possible and before SRU take-off:

- Nature of distress (including false alert confirmation);
- Number of person involved in distress;
- Need for medical assistance;

These answers might be collected 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.

17 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 channeled to the activated beacon using the Return Link Service. The stakeholders survey has preliminarily identified pre-defined questions with multiple-choice answers relevant to the maritime case (list is provided in the annex).

18 The responding SAR forces have pre-defined instructions “how-to-react” to be sent to the beacon in distress relevant to the maritime case that 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 the annex.

Service specification

19 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 when activated about the following key information needed before SRU take-off :
 - Nature of distress (including false alert confirmation);
 - Number of person involved in distress;
 - Need for medical assistance;
- Followed by specific questions depending on the situation, and up to 7 possible answers for each questions. The answers will be selectable via a Graphic User Interface of a screen that is under development in the project *Serenity* with the prototype of Second Generation Beacon.



Figure 2: Mechanical design of SGB TWC beacon prototype with display

20 Both SAR forces and beacon user respondents are interested in the TWC service used in a “1-way” direction from SAR forces to beacon users to send messages containing the following type of information:

- Confirmation that the SAR operations have been launched, and more generally about the SAR operation progress;
- *How-to-react* instructions;

21 The TWC service latency, compatible with SAR forces needs, has been specified as:

- 1-3 minutes for the beacon user to receive questions and “1-way” messages;
- 15 minutes for SAR forces to receive answers.

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.

22 Since the initial questions could be automatically triggered when the beacon is activated, the answers to initial questions may be made available to SPOC at the same time as the distress.

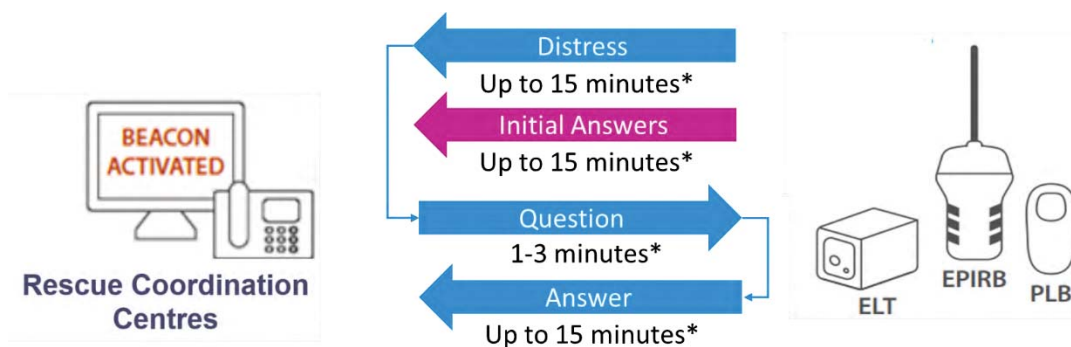


Figure 3: TWC service latency

23 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).

24 The TWC service provides mechanisms to control the battery consumption.

Project forward plan for the TWC demonstration

25 The TWC service specification has been finalised, including the requirements for the Second Generation Beacon and the SPOC user interface. The project is proceeding with stages 3. “Demonstrator design and development”, and 4. “Service demonstration”.

26 The Project will develop a prototype of Personal Locator Beacon (PLB) for the demonstration but the requirements baseline will be tailored to all types of beacons (ELT, EPIRB).

27 Contacts have been established with French MRCC for preparing and executing realistic ‘live’ demonstration event(s) in the second quarter of 2022. 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.

28 Since October 2021, a close coordination has been set up with the French MRCC Gris-Nez, allowing identifying a preliminary demonstration area fitting operational constraints and the potential support of the French MRCC Jobourg.

29 The live demonstration will be organised during April and will be available on a pinned post @SARGalileo Twitter account. SAR operational teams and interested stakeholders are invited follow and take part to the feedback sessions. An additional demonstration might be organised at a later stage.



Figure 4: TWC service demonstration area

Action requested of the Committee

30 The Committee is invited to note the information on the result of the stakeholders' consultation in paragraphs 15 to 18 above.

31 The Committee is invited to note the information on the live demonstration of the SAR Galileo Two Way Communication scheduled for April 2022 in paragraph 29 above.

Annex

Preliminary list of questions identified by the responding SAR forces relevant to the maritime domain (similar list is available for other domains).

Length of the boat? <ul style="list-style-type: none"> ▪ <5m ▪ 5-10m ▪ 10-20m ▪ >20m 	Height of the mast? <ul style="list-style-type: none"> ▪ No Mast ▪ <5m ▪ 5-15m ▪ >15m 	Is the boat dismasted? <ul style="list-style-type: none"> ▪ Yes ▪ No
Color of the boat? <ul style="list-style-type: none"> ▪ White ▪ Grey ▪ Black ▪ Yellow/Orange ▪ Red ▪ Blue/Green 	Weather on scene? <ul style="list-style-type: none"> ▪ Rough ▪ Bad ▪ Moderate ▪ Good 	Visibility on scene? <ul style="list-style-type: none"> ▪ Dense fog ▪ Thin fog ▪ Cloudy ▪ Clear sky
SAR situation? <ul style="list-style-type: none"> ▪ On-board ▪ Life raft ▪ Man overboard 	Communication means on-board? <ul style="list-style-type: none"> ▪ Mobile phone ▪ Satellite phone ▪ VHF/UHF ▪ None 	Survival equipment on-board? <ul style="list-style-type: none"> ▪ Life raft ▪ Life jacket ▪ Flares ▪ None
Do you have a boat tender? <ul style="list-style-type: none"> ▪ Yes ▪ No 	Do you hear/see the rescue? <ul style="list-style-type: none"> ▪ Yes ▪ No 	Do you have AED on-board? <ul style="list-style-type: none"> ▪ Yes ▪ No

Preliminary list of “*how to react*” instructions to be sent to the person in distress on the activated beacon via the Return Link Message.

- Hold tight until complete rescue;
- Switch on any light;
- Catch and keep the rope with your hand only;
- Signal your presence when hearing rescue;
- Go into the boat tender;
- Go in front of the boat;
- Go at the rear of the boat.