

Recognition of Iridium mobile satellite system as a GMDSS service provider

Submitted by IHB

SUMMARY

Executive Summary: This document provides details on a number of major concerns on the details provided relating to the recognition of the Iridium mobile satellite system as a GMDSS service provider, which are relevant to WWNWS-SC

Action to be taken: Paragraph 2.

Related documents: NCSR 1/12/2 dated 9 May 2014

1. See attached document.
2. The Sub-Committee is invited to note the information provided and take action as appropriate.

SUB-COMMITTEE ON NAVIGATION,
COMMUNICATIONS AND SEARCH AND
RESCUE
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**DEVELOPMENTS IN MARITIME RADIOCOMMUNICATION SYSTEMS
AND TECHNOLOGY**

**Comments on document NCSR 1/12 – Recognition of Iridium mobile satellite system
as a GMDSS service provider**

Submitted by the United Kingdom

SUMMARY

Executive summary: This submission comments on document NCSR 1/12 outlining a number of major concerns on the details provided relating to the recognition of the Iridium mobile satellite system as a GMDSS service provider

Strategic direction: 5.2

High-level action: 5.2.5

Planned output: 5.2.5.3

Action to be taken: Paragraph 26

Related documents: MSC-MEPC.1/Circ.4/Rev.2; NCSR 1/12; resolution A.1001(25); resolution MSC.306(87) and MSC.1/Circ.1414

1 This document is submitted in accordance with paragraph 6.12.5 of MSC-MEPC.1/Circ.4/Rev.2 "*Guidelines on the organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies*" and comments on document NCSR 1/12 relating to the recognition of the Iridium mobile satellite system as a GMDSS service provider in accordance with the requirements of resolution A.1001(25) and MSC.1/Circ.1414.

Introduction

2 Having considered the submission in detail, the United Kingdom has a number of concerns and requests for clarifications which it looks forward to discussing at the Sub-Committee. Some of the United Kingdom's major concerns are outlined in this document.

Discussion

Restoration and spare satellites

3 Resolution A.1001(25) paragraph 3.6.1 states:

"Spare satellite capacity and arrangements prepared in advance should be provided to ensure that, in the event of a partial or total satellite failure, the recognized maritime distress and safety communication services in the area concerned can be restored to their normal availability, not more than one hour after failure occurs."

4 Iridium have stated¹:

"If a satellite should fail or become unusable, in most cases, we can reposition one of our in-orbit spare satellites to take over its functions. If there is an in-orbit spare located in the orbital plane of the failed satellite, such repositioning can often be accomplished within days, with minimal impact on our services. If there is no in-orbit spare located in the relevant orbital plane, redeploying an in-orbit spare into the affected plane will take at least one year."

and

"Our satellite network includes 66 in-orbit LEO satellites, in addition to four in-orbit spares."

5 In NCSR 1/12, it is noted that:

"The Iridium constellation consists of 66 low-earth-orbiting (LEO), cross-linked satellites operating as a fully meshed network and supported by multiple in-orbit spare."

6 It would therefore seem that Iridium only maintains in orbit spares in 4 of the 6 orbital planes which could delay service restoration by "at least one year".

Network availability

7 Resolution A.1001(25) paragraph 3.5.4 states:

"The complete mobile satellite communication network, including earth stations for the recognized services, is expected to achieve at least 99.9% availability (equivalent to a total of 8.8 hours down time per year)."

8 It is noted from the Iridium submission (section 3.1) that equipment is not yet available to be tested, and will not be available until at least 2015.

9 Furthermore, Rec. ITU-R M.828-1², which is used as the methodology of measurement for current GMDSS service providers, states:

"that the overall availability of communications circuits should be defined in terms of access availability and communications availability by using as a basis the availability of the components (see Note 1) comprising the access channel and the communication circuits as follows:

¹ Annual 10-K filing to the United States Securities and Exchange Commission for year ending December 31, 2013

² Recommendation ITU-R M.828-1 : Definition of availability of communication circuits in the mobile-satellite service (MSS)

- space station;
- feeder-link radio path and service-link radio path under line-of-sight conditions (see Note 2); and
- earth stations (land earth stations (LES), mobile earth stations (MES) and other related earth stations should be included)."

10 The availability numbers presented do not include the measurement of the earth station as these are not yet available. Any further decision should be delayed until such time that full availability numbers, including the earth station, can be submitted.

11 The term "will result in a service impairment rather than a service outage as the maximum service outage duration for a satellite failure is approximately 6 minutes" (NCSR 1/12, annex 1, section 3.1) also requires clarification.

12 Recommendation ITU-R M.828-1 defines service unavailability as:

"A period of circuit interruption begins when one of the following conditions persists for a period of 10 consecutive seconds. Circuit unavailability begins at the beginning of this corrupted 10 s interval. The period of circuit interruption time terminates when the same condition ceases for a period of 10 consecutive seconds. Circuit availability resumes at the beginning of this non-interrupted 10 s interval:

- the communication circuit cannot be established;"

13 However, it is not clear what methodology of service availability measurement has been used; the non-measurement of service unavailability for periods of less than 6 minutes would favourably affect the measurement.

Shore-to-ship broadcasting of Maritime Safety Information³

14 In NCSR 1/12 Iridium Satellite proposes that for the dissemination and broadcast of Maritime Safety Information (MSI) they will:

"...permit maritime mobile terminals outside of a NAVAREA to receive a broadcast in the adjacent region if it is within 100nm of a NAVAREA boundary."

15 However, paragraph 3.2 of MSC.306(87)⁴ states:

"Means should be provided to enter the ship's position and current and planned NAVAREA/METAREA codes manually so that area group calls can be received. Means should also be provided to enter current and planned coastal warning service coverage areas and different classes of messages."

16 Evidence is required to show how Iridium will meet the requirement to broadcast information for the entire voyage rather than just the 100nm surrounding the NAVAREA in which ships are operating.

IMSO Public Service Agreement and the Provision of GMDSS Services

17 In paragraph 2.1.4 of the Reference public service agreement the service provider has the obligation to:

³ Resolution A.1001(25) paragraph 3.1.5

⁴ MSC.306(87) : *Revised Performance Standards for Enhanced Group Call (EGC) equipment*

"The Company may only discontinue provision of an approved GMDSS service with the prior written agreement of the Organization, following endorsement of the proposed discontinuation by IMO. The Organization shall normally require not less than five years notice of intention to terminate the provision of any recognized GMDSS service."

18 Iridium Satellites' annual 10K filing noted that Iridium Satellite is bound by de-orbiting obligations to the both the United States Government and other third party commercial organizations. The following statement has been made:

"Because more than four of our satellites currently have insufficient fuel to execute a 12-month de-orbit, the United States Government currently has the right to require us to de-orbit our constellation. In addition, the United States Government also has the right to require us to de-orbit any of our individual functioning satellites, including in-orbit spares that have been in orbit for more than seven years, unless the United States Government grants a postponement. All of our functioning satellites have been in orbit for more than seven years."

19 Clearly, the ability to fulfil the required minimum 5-year notice period must be satisfactorily demonstrated.

Additional Concerns

20 There is no detail in the proposal on integration of this system with those of other existing service providers as and when this would be necessary.

21 Any proposal has to be assessed on its ability to meet current GMDSS requirements, based on systems/equipment that are currently available for both assessment and use. Voice communication does not currently form part of the GMDSS requirement yet forms a central part of the proposal. The paper refers to systems under development, such as ship terminals. This is not considered as an acceptable position under which to assess a complete system.

22 An extensively developed recognized system for mariners exists in the international SafetyNET system. This does not appear to be supported by Iridium and it is unacceptable that this be the case.

23 NCSR 1/12 does not give a satisfactory explanation as to how manually initiated distress will automatically be routed, nor how this could be undertaken in the event that an automatic connection with an MRCC cannot be made. More information is required on how non-Iridium protocols for distress/urgency/safety will be dealt with.

24 There is a requirement for more detail on how the provider will ensure that distress communications from point of origin to point of action and return, including those originating in other service providers, will remain free of all monetary charge, as is the case at present. Although such provision is suggested, this seems only to be planned after authorization.

Conclusion

25 The United Kingdom believes that these clarifications, and a number of other additional concerns that the United Kingdom is willing to discuss at this session of the Sub-Committee, will need to be addressed before the proposal can be subject to any further detailed investigation. Until such time as these are addressed, the United Kingdom cannot agree that the proposal be passed to IMSO for detailed analysis.

Actions requested of the Sub-Committee

26 The Sub-Committee is requested to note the required clarifications and concerns above in its consideration of the proposal and postpone further consideration until such time as these are satisfactorily addressed.
