

SUB-COMMITTEE ON NAVIGATION,  
COMMUNICATIONS AND SEARCH AND  
RESCUE  
5th session  
Agenda item 14

NCSR 5/14/4  
15 December 2017  
Original: ENGLISH

## DEVELOPMENTS IN GMDSS SATELLITE SERVICES

### Migration of the recognized GMDSS services from Inmarsat-3 to Inmarsat-4 satellites

Submitted by the International Mobile Satellite Organization (IMSO)

#### SUMMARY

*Executive summary:* This document contains information about the planned migration of the recognized mobile satellite services from the Inmarsat-3 satellite constellation to the Inmarsat-4 satellite constellation

*Strategic direction:* SD 6

*High-level action:*

*Output:* 6.2

*Action to be taken:* Paragraph 9

*Related documents:* NCSR 5/14, NCSR 5/14/5; resolution A.1001(25); MSC.1/Circ.1364/Rev.1 and GMDSS.1/Circ.21

#### Introduction

1 In accordance with the Public Services Agreement (PSA) signed between IMSO and Inmarsat, Inmarsat is required, through IMSO, to consult with the IMO in respect of any proposed change by Inmarsat in the specification of standards, services and systems that relates to the provision of recognized mobile satellite services in the Global Maritime Distress and Safety System (GMDSS).

2 This document contains information on the planned migration of the recognized mobile satellite services from the Inmarsat-3 satellite constellation to the Inmarsat-4 satellite constellation and invites IMO to make recommendations to Inmarsat as deemed appropriate.

#### Migration plan

3 Inmarsat has developed a plan to migrate the recognized GMDSS services, namely the Inmarsat-C and Fleet 77, from the primary Inmarsat-3 satellites, with the exception of I3-F5,

over to the Inmarsat-4 satellites, which will then become the primary satellites for the recognized GMDSS services. I3-F5 will remain to be a primary satellite for the time being given the operational performance of this satellite. The other Inmarsat-3 satellites will hold their geostationary orbital locations and provide spare satellite capacity as per the provisions of resolution A.1001(25) paragraph 3.6.

4 Inmarsat worked closely with Land Earth Station operators (LESOs), terminal manufacturers, Maritime Safety Information Providers (MSIPs) and other stakeholders during the extensive preparation of the migration plan in order to assess its technical and operational implications over the recognized GMDSS services. In this context:

- .1 some of the existing LESOs will be required to repoint their antennas to an Inmarsat-4 satellite according to the new arrangements in order to continue to operate and manage the Inmarsat-C and Fleet 77 traffic in their regions. Affected LESOs will be asked to provide relevant advice to their customers in advance to avoid disruptions in the services. Inmarsat offers technical assistance to the affected LESOs, on a one-to-one basis, if they require bespoke solutions for their situations;
- .2 the migration plan will be seamless to shipborne terminals in terms of capability to receive and transmit GMDSS communications. Shipborne terminals will not require any software/firmware upgrade during the migration plan. Only Data Network Identification updates for the new ocean regions may be necessary on shipborne terminals to support commercial services. Inmarsat will broadcast all-ships MSI messages over SafetyNET and SafetyNET II before each stage of the migration plan; and
- .3 registered users of the SafetyNET service (MSIPs and MRCCs) will be required to adhere to the new satellite coverage maps and use the correct ocean region C-codes and LESOs to get their MSI messages broadcast. Inmarsat has notified the Chairman of the International SafetyNET Coordinating Panel and invited him to advise the registered users and the LESOs to ensure system access and effective operation of the SafetyNET service. Alternatively, MSIPs and MRCCs can register with Inmarsat to use the new SafetyNET II service (see document NCSR 5/14/5) to broadcast their MSI messages, including distress relay messages directly through Inmarsat with no need for involving a LES or using the C-codes;
- .4 non GMDSS services such as LRIT, SSAS and VMS are being planned with the LESOs in order to minimize any impact on the service and/or end user. There will be no impact over the existing I-4 services such as FleetBroadband or any other commercial services.

5 Inmarsat has put in place arrangements to manage coordination and communication with all relevant parties, including LESOs, NAVAREA and METAREA Coordinators, MRCCs, during implementation of the migration plan. Inmarsat personnel will be ready at stand-by 24/7 during each stage of the plan to provide assistance, if needed.

6 Inmarsat emphasizes the compelling need to initiate and complete the migration plan within 2018 in order to avoid any disruption to the provision of the services, particularly the recognized GMDSS service. It is therefore proposed to commence the migration process from March 2018 with a view to completion in the fourth quarter of 2018 in accordance with the illustrations provided in the annex. This timetable will enable coordination of each step with the relevant parties involved and ensure implementation of the plan with no or minimum interruption to the recognized GMDSS service.

7 IMSO will monitor the progress of the migration plan as part of its oversight activity and will receive regular updates from Inmarsat regarding any changes to the planned procedure and upon completion of each stage of the plan. All operational procedures, including contingency arrangements will be updated by Inmarsat for each stage of the migration. During implementation of the migration plan, Inmarsat will provide notifications to IMSO in advance of any planned service interruptions or as soon as possible after commencement of an unplanned interruption as per provisions of resolution A.1001(25).

8 The migration plan introduces substantial changes to the Inmarsat satellites' coverage areas and to their names and orbital locations. A new coverage map showing the new primary satellites for the Inmarsat-C and Fleet 77 services after completion of the migration plan is provided in the annex, stage 4. The migration plan will lead to consequential amendments to Amendments to the Revised International SafetyNET Manual (MSC.1/Circ.1364/Rev.1) and Master Plan of Shore-Based Facilities for the Global Maritime Distress and Safety System (GMDSS Master Plan) (GMDSS.1/Circ.21), both of which contain relevant figures and information about the Inmarsat satellites and services.

#### **Action requested of the Sub-Committee**

- 9 The Sub-Committee is invited to consider the information provided and:
- .1 agree with the proposed migration of Inmarsat C and Fleet 77 services from the primary Inmarsat-3 satellites, with the exception of I3-F5, over to the Inmarsat-4 satellites in 2018;
  - .2 provide recommendations to Inmarsat in respect to the migration plan, as appropriate;
  - .3 invite the IHO Document Review Working Group, the Joint IMO/ITU Experts Group on Maritime radiocommunication matters and the ICAO/IMO Joint Working Group on Harmonization of aeronautical and maritime search and rescue to develop consequential amendments to MSC.1/Circ.1364/Rev.1 (SafetyNET Manual) and GMDSS.1/Circ.21 (GMDSS Master Plan) and IAMSAR Manual, as appropriate, in respect to the new ocean region naming and coverage mapping for Inmarsat, for consideration by the next session of the Sub-Committee;
  - .4 invite the International SafetyNET Coordinating Panel to notify registered users of the SafetyNET Service about the migration plan; and
  - .5 request Member States to bring this information to the attention of the certified SafetyNET users, MSIPs and MRCC operators in their respective countries and encourage them to contact Inmarsat for further assistance.

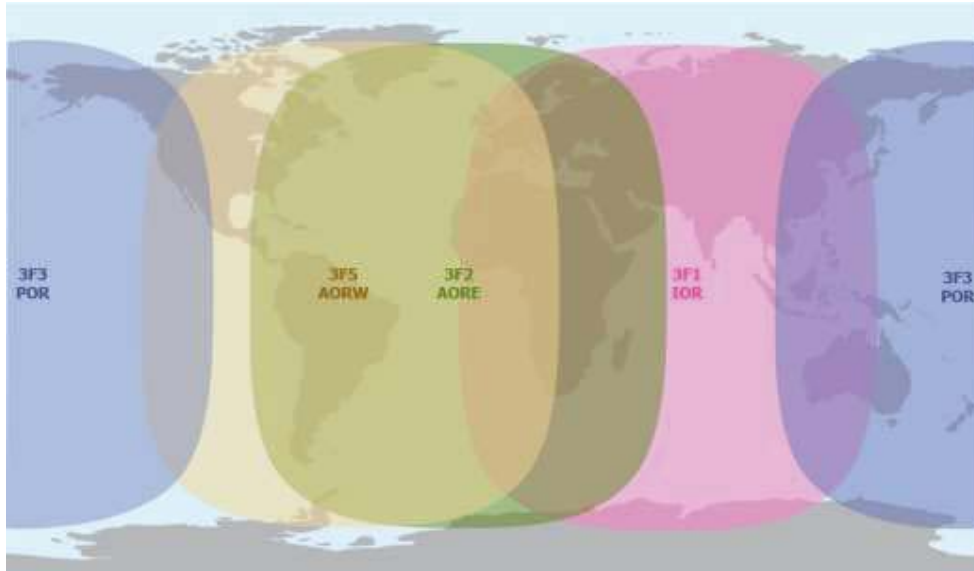
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**ANNEX**

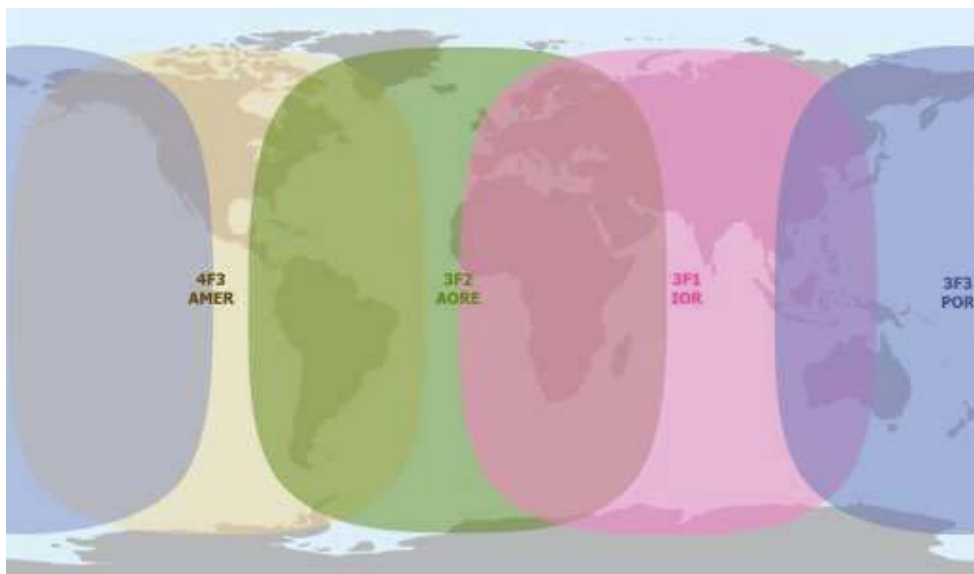
**Illustration of the Inmarsat-C and Fleet 77 Migration Plan**

**Present:** Four Ocean Regions covered by Inmarsat-3 satellites



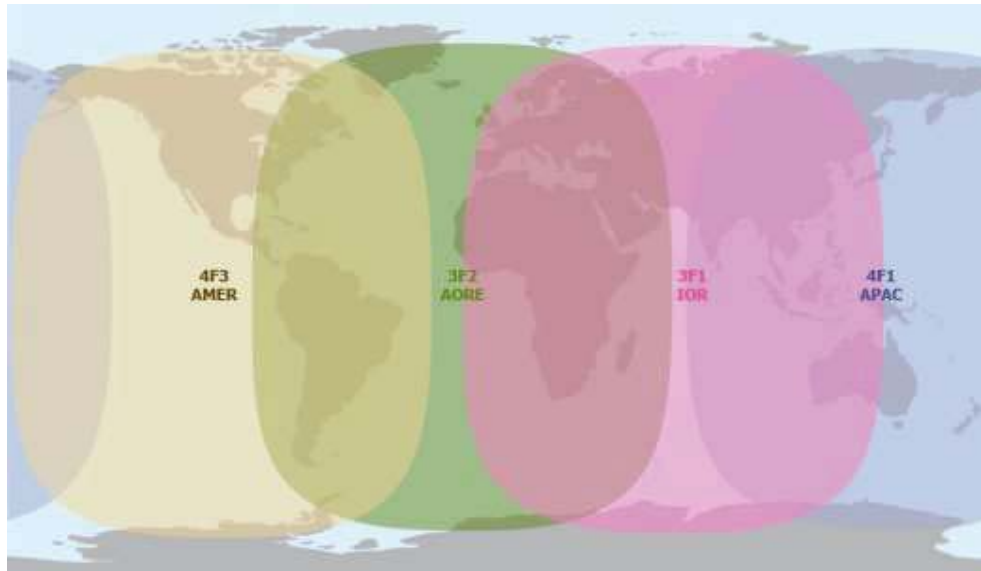
<b>Present</b>	<b>IOR</b>	<b>AORE</b>	<b>POR</b>	<b>AORW</b>
<b>Primary</b>	3F1	3F2	3F3	3F5

**Stage 1:** Closure of AORW and transition to AMER (Q1 2018)



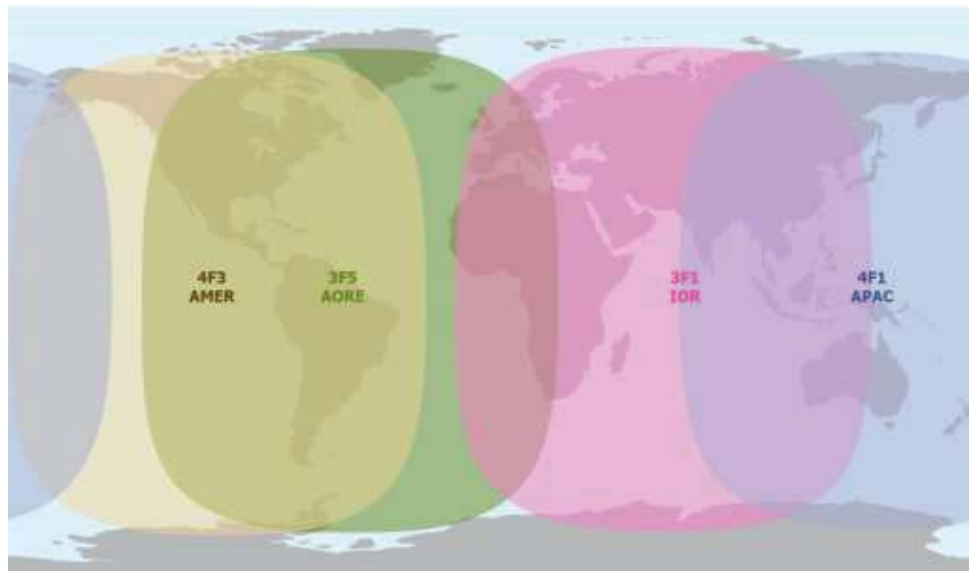
<b>Stage 1</b>	<b>IOR</b>	<b>AORE</b>	<b>POR</b>	<b>AMER</b>
<b>Primary</b>	3F1	3F2	3F3	4F3

**Stage 2: Closure of POR and transition to APAC (Q2 2018)**



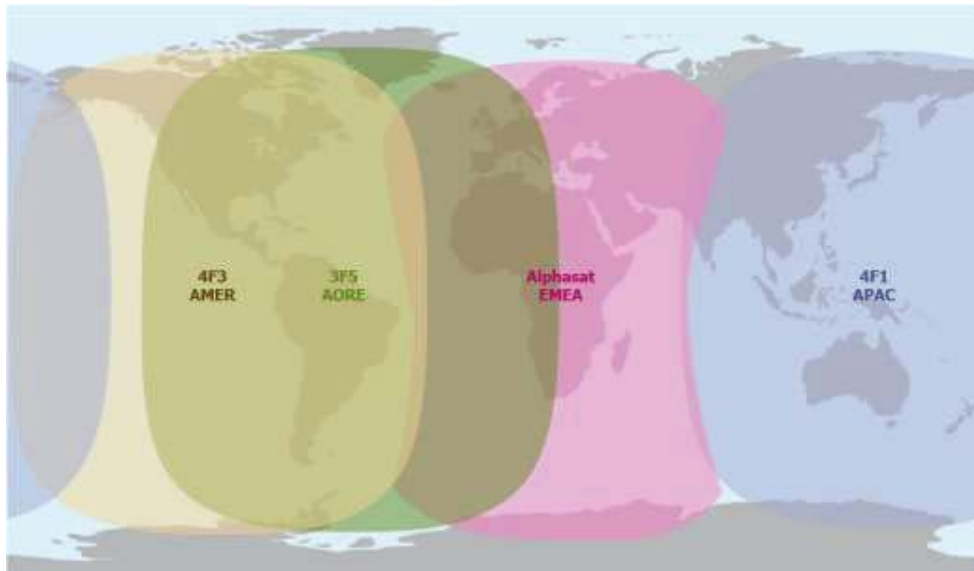
Stage 2	IOR	AORE	APAC	AMER
Primary	3F1	3F2	4F1	4F3

**Stage 3: Move of AORE from 15.5W to 54W (Q3 2018)**



Stage 3	IOR	AORE (54W)	APAC	AMER
Primary	3F1	3F5	4F1	4F3

**Stage 4:** Closure of IOR and transition to EMEA (Q4 2018)



Stage 4	EMEA	AORE	APAC	AMER
Primary	ALPH	3F5	4F1	4F3

**On completion:** Map shows GMDSS coverage with MEAS and contingency satellites

