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DEVELOPMENTS IN GMDSS SATELLITE SERVICES

Analysis and assessment of the GMDSS performance of Inmarsat Global Limited

Submitted by the International Mobile Satellite Organization (IMSO)

SUMMARY

Executive summary:	This document contains the annual report by IMSO to IMO on Inmarsat's public service obligations for the provision of recognized mobile satellite communication services in the GMDSS, as overseen by IMSO
Strategic direction, if applicable:	6
Output:	6.2
Action to be taken:	Paragraph 66
Related documents:	NCSR 5/14; NCSR 5/14/4; resolutions A.707(17), A.801(19), A.814(19) and A.1001(25)

Introduction

1 This document contains the annual report to IMO by the International Mobile Satellite Organization (IMSO) on the performance of the current service provider Inmarsat Global Limited (Inmarsat), as the mobile-satellite communication system recognized to operate in the GMDSS. The report is prepared and submitted in accordance with the provision of section 2.5 of the annex to IMO Assembly resolution A.1001(25) on *Criteria for the provision of mobile satellite communication systems in the Global Maritime Distress and Safety System (GMDSS)*.

2 Inmarsat's public service obligations in respect to the GMDSS are established in articles 3(1) and 5 of the Convention on the International Mobile Satellite Organization and they are exercised through the Public Services Agreement (PSA) signed between IMSO and Inmarsat in 1999.

3 This report covers the period from 1 November 2017 to 30 September 2018. The period covered in this document ends one month earlier than last year due to the deadline of NCSR 6

documents. The previous report to IMO, covering the period 1 November 2016 to 31 October 2017, was made to the fifth session of the Sub-Committee in document NCSR 5/14.

Inmarsat communication systems for use in the GMDSS

4 Inmarsat offers a range of communication services to fulfil the functional requirements listed in resolution A.1001(25), in particular the maritime distress, urgency, safety and routine communications, including broadcast of maritime safety information (MSI) and Search and Rescue (SAR) information. The GMDSS compliant communication systems currently supported and provided by Inmarsat, are listed as follows:

.1 **Inmarsat C** is the base satellite communications system primarily used for distress alerting and reception of MSI, including shore-to-ship distress relay messages. It is a two-way store and forward system that can handle data and messages up to 32KB. Inmarsat C is also utilized for other IMO systems such as Ship Security Alerting System (SSAS) and Long-Range Identification and Tracking of ships (LRIT);

.2 **Inmarsat-F/77** provides two-way distress voice communication service for the GMDSS. It also supports urgency and safety priority communications in ship-to-shore and shore-to-ship direction; and

.3 **Fleet Safety**[1] is the latest addition to the recognized mobile satellite services provided by Inmarsat. MSC adopted resolution MSC.450(99) on *Statement of Recognition of Maritime Mobile Satellite Services provided by Inmarsat Global Ltd* in respect to the Fleet Safety service noting that the service is recognized in the area that is under the Inmarsat-4 Middle East and Asia (MEAS) region satellite. It is an Internet Protocol (IP) based service running on Inmarsat 4th generation satellites. The service supports distress and safety communications as wells as the broadcast of MSI and SAR information with the required priority levels.

Closure of Fleet-77 service

5 The Inmarsat-F77 service is scheduled to close by 1 December 2020 in accordance with the notification given to the Sub-Committee (NCSR 3/19/1).

6 Referring to the earlier practices for Inmarsat A and Inmarsat B, Inmarsat is going to run a similar public announcement campaign for closure of the Inmarsat-F77 service to inform all affected users in a timely manner.

Inmarsat mobile-satellite communication system

7 Inmarsat mobile-satellite communication system is composed of: a space segment to provide communication links with the earth; a ground segment to control and maintain the space segment and network; maritime mobile terminals to communicate with the users; and terrestrial networks to support connectivity with the land-based users.

[1] Note: Fleet Safety service is not yet available to ships to satisfy the GMDSS requirements as the type-approved process of the Maritime Safety Terminal (MST) continues.

Inmarsat space segment

8 A diagram illustrating Inmarsat's current constellation of I-3 and I-4 satellites is provided below in figure 1. Satellites in both constellations are located on the geostationary orbit – 35,786 kilometres above the Earth's equator and operate on the L-band frequencies (1.5/1.6 GHz) used by Inmarsat to provide GMDSS as well as non-GMDSS services.

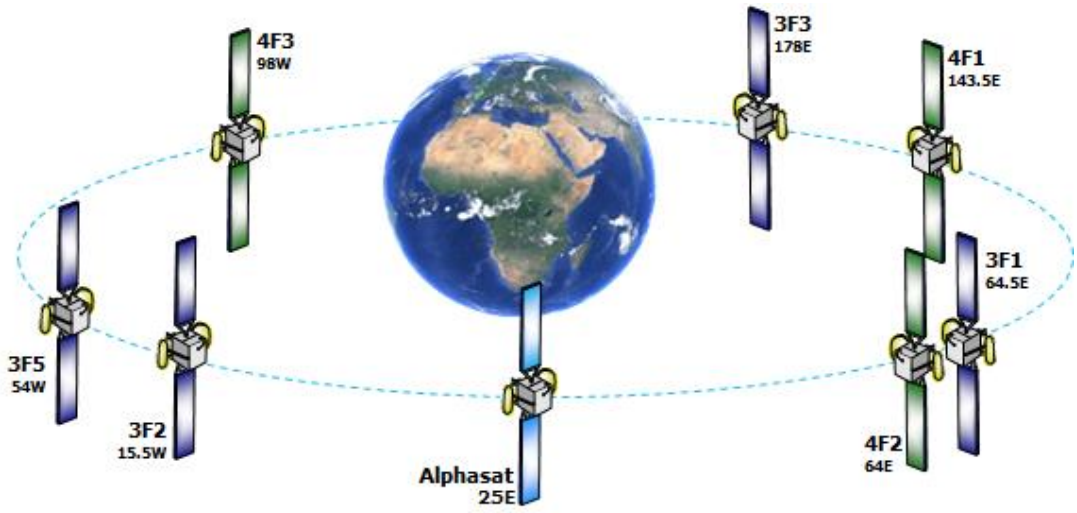

Figure 1: Inmarsat-3 and Inmarsat-4 satellite constellation

9 IMSO had advised the Sub-Committee at the previous session about the planned migration of the recognized mobile satellite services from the Inmarsat-3 satellite constellation to the Inmarsat-4 satellite constellation (NCSR 5/14/4 refers).

10 In this regard, Inmarsat utilized a combination of I-3 and I-4 satellites during the reporting period to provide the recognized mobile satellite services in accordance with the migration plan.

11 Prior to the commencement of the migration plan on 9 May 2018, the recognized GMDSS services provided by Inmarsat had been managed through four primary Inmarsat-3 (third generation, I-3) satellites located over four ocean regions as depicted below in table 1 and figure 2.

IOR Indian Ocean region	**AOR-E** Atlantic Ocean region East	**POR** Pacific Ocean region	**AOR-W** Atlantic Ocean region West
Inmarsat-3 F1 64.5°E	Inmarsat-3 F2 15.5°W	Inmarsat-3 F3 178°E	Inmarsat-3 F5 54°W

Table 1: Inmarsat-3 satellites

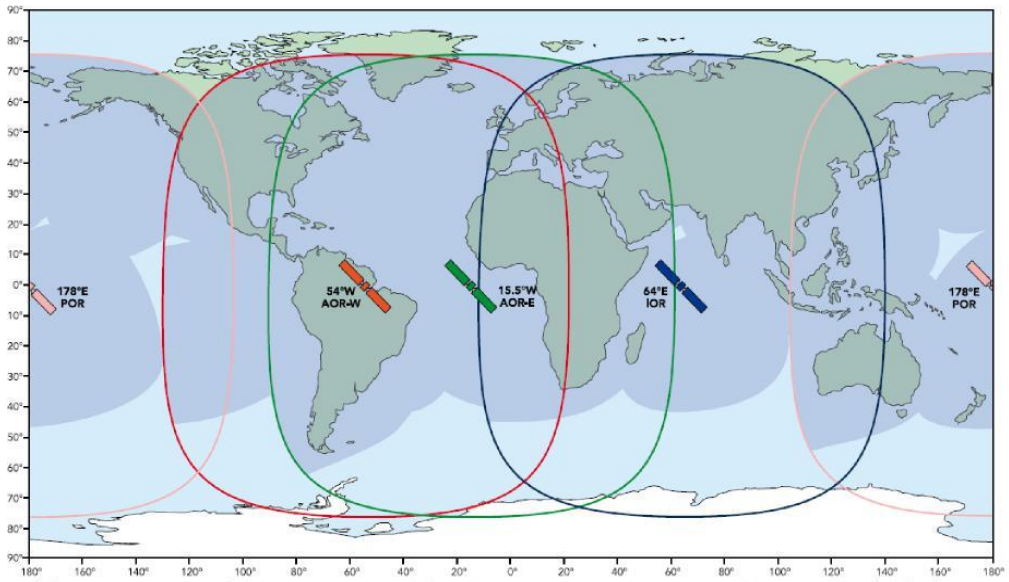

Figure 2: Inmarsat-3 satellites coverage map

12 Prior to the commencement of the Migration plan, the primary I-3 satellites had been supported by four I-4 satellites to ensure rapid restoration of essential GMDSS services in the unexpected event of a prime (I-3) satellite failure. The names and coverage map of the I-4 satellites, which will remain unchanged after completion of the Migration plan, are provided below in table 2 and figure 3, respectively.

APAC Asia and Pacific	**EMEA** Europe, Middle East and Africa	**AMER** Americas	**MEAS** Middle East and Asia
Inmarsat-4 F1 143.5°E	Inmarsat-4 F4A 25°E	Inmarsat-4 F3 98°W	Inmarsat-4 F2 64°E

Table 2: Inmarsat-4 satellites

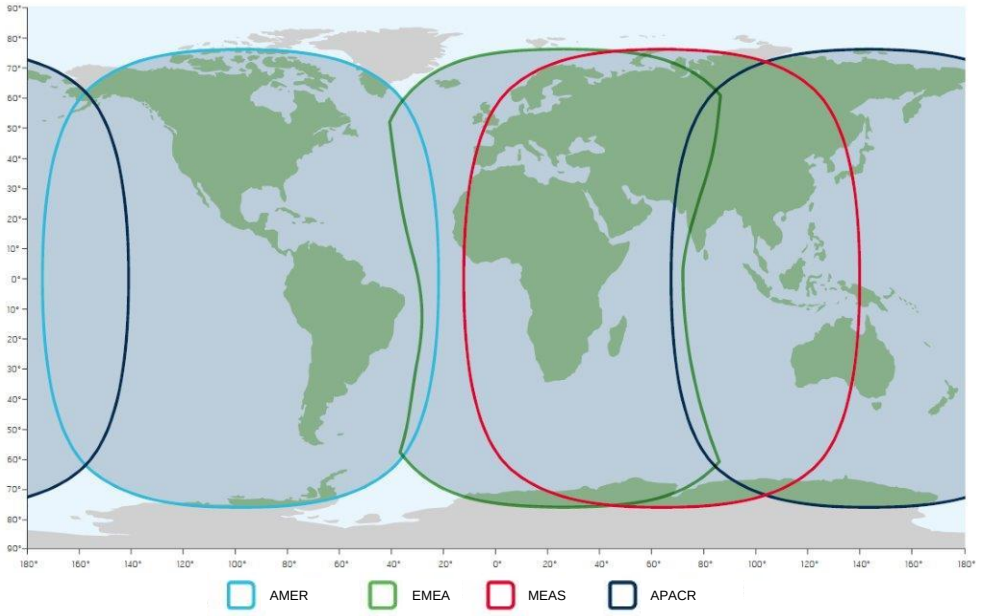

Figure 3: Inmarsat-4 satellites coverage map

13 Referring to resolution MSC.450(99) on the "Statement of Recognition of Maritime Mobile Satellite Services Provided by Inmarsat Global Ltd", the Fleet Safety service is currently recognized over the Middle East and Asia (MEAS) region only, where Inmarsat can provide the required spare satellite capacity, as illustrated below.

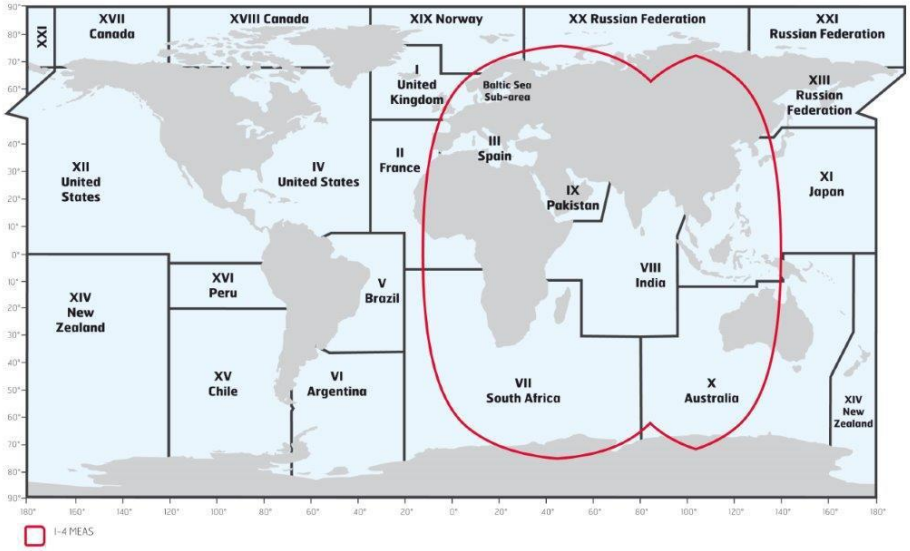

Figure 4: Inmarsat Fleet Safety service coverage map

Inmarsat ground segment

14 Inmarsat's ground segment comprises a network of Land Earth Stations (LESs), Network Coordination Stations (NCSs) and the Network Operations Centre (NOC).

15 Inmarsat LESs provide the essential interface between the space segment and the terrestrial networks using data, messaging, voice and IP services. At present, there are 52 Inmarsat B/F77 and 32 Inmarsat C LESs located at various sites worldwide. These figures include also virtual LESs (hosted services) and illustrate the total number of points of access to the Inmarsat network. The number of LESs for each system is sufficient to ensure robust operation and provide redundancy in the event of local LES failures. These LESs support distress priority traffic, follow-up distress communications for search and rescue purposes and Inmarsat C LESs are also used for the promulgation of MSI messages.

16 Inmarsat operates a NCS in each ocean region to monitor and control the Inmarsat C communications traffic in that region. Each NCS communicates with the LESs in its ocean region, the other NCSs and the NOC.

17 The Inmarsat NOC is located in London at the Inmarsat headquarters and functions around the clock to monitor and coordinate the activities of the NCSs and the LESs in each ocean region with an Operations Backup Centre (OBC) in the Burum, the Netherlands providing geographical redundancy.

18 According to resolution A.801(19) on the *Provision of radio services for the GMDSS*, each LES "should have a registered associated Rescue Coordination Centre (RCC) and have reliable communications by telephone, telex or other means". Table 3 below provides the list of Inmarsat C LESs as well as their operators, names, geographical locations and IDs together with names of the associated RCCs where ship-to-shore distress alerts and distress priority messages are automatically routed to.

Country	LES Name	Region	LES Operator	LES ID	Associated RCC
Netherlands	Burum	AOR-W	Inmarsat Solutions	002	MRCC Falmouth
		AOR-W		012	JRCC Den Helder
		AOR-E		102	MRCC Falmouth
		AOR-E		112	JRCC Den Helder
		POR		202	MRCC Falmouth
		POR		212	RCC Australia
		IOR		302	MRCC Falmouth
		IOR		312	RCC Australia
Norway	Eik	AOR-W	Comsat, Marlink	001	USCG Norfolk
		AOR-W		004	JRCC Stavanger
		AOR-E		101	USCG Norfolk
		AOR-E		104	JRCC Stavanger
		POR		201	USCG Alameda
		POR		204	JRCC Stavanger
		IOR		301	JRCC Stavanger
		IOR		304	JRCC Stavanger
Japan	Yamaguchi	AOR-W	KDDI	003	Opr. Centre, Tokyo
		AOR-E		103	Opr. Centre, Tokyo
		POR		203	Opr. Centre, Tokyo
		IOR		303	Opr. Centre, Tokyo
Italy	Fucino	AOR-E	Telecom Italia	105	CG Rome
		IOR		335	CG Rome
India	Pune	IOR	TATA	306	MRCC Mumbai
China	Beijing	POR	MCN	211	MRCC Beijing
		IOR		311	MRCC Beijing
Russian Federation	Nudol	POR	Marsat	217	MRCC Vladivostok
		IOR		317	MRCC Moscow
France	Assaguel	AOR-W	Marlink	021	CROSS Griz-Nez
		AOR-E		121	CROSS Griz-Nez
		POR		221	CROSS Griz-Nez
		IOR		321	CROSS Griz-Nez
Viet Nam	Hai Phong	IOR	Vishipel	330	MRCC Viet Nam

Note: Information on LES names are correct as at October 2018 based on the most up-to-date information available to Inmarsat.

Table 3: Inmarsat C Land Earth Stations and associated MRCCs

Maritime mobile terminal

19 According to the reports received from Inmarsat, more than 172,000 Inmarsat C, Mini-C and Inmarsat-F77 terminals were registered with Inmarsat at the end of September 2018. This includes around 83,000 Inmarsat C, 79,000 mini-C and 10,000 Inmarsat-F77 terminals.

20 The number of Inmarsat-F77 terminals in use has continue to decline since IMSO notified the Sub-Committee of Inmarsat's intention to close the Inmarsat-F77 service by 1 December 2020 (NCSR 3/19/1).

Terrestrial networks

21 Inmarsat's network is connected to RCCs, NAVAREA Coordinators and METAREA Issuing Services in order to facilitate distress priority traffic, follow-up distress communications and promulgation of MSI. The means of interconnection between Inmarsat network and RCCs or MSI providers varies from country to country and in some cases, include the use of dedicated lines or public switched telephone networks.

22 For instance, some LESs provide email, or internet (direct) drop access to the SafetyNET service that allows registered MSI providers to send Enhanced Group Call (EGC) messages using email from any computer with access to the internet. Each user interface has its own access procedure and syntax command, which should be checked with the Inmarsat C LES operator or service provider.

23 In accordance with resolution A.801(19), the availability and robustness of the communication links between LESs and the associated RCCs, or other shore-based national agencies, are under responsibility of the Government(s) in whose territory the LES is located. Nevertheless, at least two LESs are located in each ocean region under Inmarsat's coverage area in order to provide a sufficient level of robustness as well as redundancy.

Availability

24 In accordance with section 3.5.2 of resolution A.1001(25), IMSO monitors the availability of Inmarsat's space segment, provision of spare satellite capacity and network control function, and reports to IMO on an annual basis. The network availability of a recognized mobile satellite communication system is expected to achieve at least 99.9% in a given year. In this context, the network availability of the Inmarsat C and F77 systems during the 12-month period from 1 November 2017 to 30 September 2018 is shown below.

	IOR	AOR-E	POR	AOR-W
Space Segment	99.98%	99.99%	99.99%	99.99%
Inmarsat C	99.96%	99.99%	99.99%	99.99%
Inmarsat-F77	100.00%	100.00%	99.99%	100.00%

The definition of availability and methods of calculation in the Maritime Mobile Satellite Service are given in ITU Recommendation ITU-R M.828-2 (03/06), which superseded ITU-R M. 828-1 of 1992-1994.

Table 4: Inmarsat C/F77 availability figures

25 On Thursday, 8 February 2018, all Inmarsat services, including the recognized mobile satellite services, were interrupted for 6 minutes 34 seconds over the AOR-W owing to a technical problem on the Inmarsat-3F5 satellite. All services were restored by an automatic procedure hence the Inmarsat NOC did not initiate the contingency procedure. Inmarsat notified IMSO about the incident and provided additional details regarding the satellite failure.

26 In addition to the above, two separate instances caused minor outages at three LES sites on 25 and 28 May 2018. GMDSS safety services were reportedly not affected in both cases as NCS stepped in and handled the distress alert traffic.

27 The figures in table 4 affirm that the core GMDSS systems operated by Inmarsat for distress alerting, SAR coordination, promulgation of MSI and general communications have achieved an availability equal to or above the 99.9% benchmark set out by resolution A.1001(25) during the reporting period.

Restoration of service and spare satellites

28 In accordance with section 3.6.1 of resolution A.1001(25), GMDSS service providers are required to provide spare satellite capacity and make arrangements to restore the recognized maritime distress and safety communications services to their normal availability not more than one hour after a partial or total satellite failure.

29 Inmarsat satisfies this requirement through its I-4 satellites constellation which ensures rapid restoration of essential GMDSS services in the unexpected event of a prime (I-3) satellite failure. Specific distribution of I-3 and I-4 satellites across the geostationary orbit provides sufficient level of overlap over the four ocean regions that are primarily covered by I-3 satellites.

30 Inmarsat made specific arrangements for the contingency procedures during implementation of the migration plan. For each step of the migration plan, the allocation of spare satellite(s) were reorganized so as to cover footprints of primary satellites.

Contingency exercises

31 In accordance with section 3.6.2 of resolution A.1001(25), IMSO and Inmarsat conduct contingency exercises to prove efficiency and effectiveness of the arrangements put in place by Inmarsat to restore the essential GMDSS services within one hour in case of a prime satellite failure. These exercises are performed according to the contingency changeover procedures prepared by Inmarsat for each of the primary I-3 satellites.

32 IMSO and Inmarsat have agreed, in principle, to perform one exercise for each I-3 satellite in a year. These exercises are usually performed at the NOC in London with active participation of staff from the Inmarsat Satellite Control Centre (SCC), NOC, company management as well as operators from the relevant LESs. IMSO and Inmarsat have also agreed to conduct at least one exercise at Inmarsat's OBC, at Burum in the Netherlands, in order to test the operational capacity and communication links there as well as to familiarize the NOC staff with the arrangements available at OBC.

33 IMSO actively participates in the planning, execution and review of all satellite contingency exercises and works with Inmarsat to broaden the scope of these events. During this reporting period, two contingency exercises were successfully carried out for AOR-E and IOR regions on 27 March and 18 July 2018, respectively, in addition to two real life migration procedures and two rehearsals, which mimic the contingency procedures.

34 Following each exercise, Inmarsat submits a report to IMSO providing information on the outcome of the exercise, including lessons learned and areas identified for further improvement. Inmarsat keeps contingency changeover procedures under review and updates them based on the feedback received from OBS staff, LESs and IMSO. In addition to the regulatory nature, these exercises have proven to be an essential part of Inmarsat's ongoing training programme for the new and existing staff members stationed at London Headquarters, the backup facility and LESs.

Distress Priority Calls/Alerts through the Inmarsat systems

35 Inmarsat provides maritime distress and safety services, including distress alert/calls at no cost to the ships at sea in accordance with the provisions of resolution A.707(17) on *Charges for distress, urgency and safety messages through the Inmarsat system*.

36 Inmarsat uses the Distress Alert Quality Control System (DAQCS) to provide quantitative data on the number of Inmarsat C distress alerts and Inmarsat-F77 priority calls processed. According to this, all distress alerts and calls through the Inmarsat C/F77 systems during the period between 1 November 2017 and 30 September 2018 were handled correctly and delivered promptly to the associated MRCCs.

37 An Inmarsat C distress alert is a pre-formatted data packet transmitted from the shipborne terminal to the associated MRCC upon activation of a dedicated distress button on the shipborne terminal. Total number of ship-to-shore Inmarsat C distress alerts received during the aforementioned period is tabulated below.

	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
IOR	67	61	55	43	113	32	153	106	81	102	110
AOR-E	667	80	54	55	221	126	57	206	295	329	58
POR	22	50	21	25	20	33	73	24	27	39	38
AOR-W	35	43	40	47	61	21	89	7	16	37	14
Total	**791**	**234**	**170**	**170**	**415**	**212**	**372**	**343**	**419**	**507**	**220**

Table 5: Inmarsat C distress alerts received between 1 November 2017 and 30 September 2018

38 There was an unusual increase in the number of Inmarsat C Distress Alerts during November 2017, particularly in AOR-E region. Inmarsat advised that 508 of the 791 distress alerts were received from the same vessel equipped with a malfunctioning terminal.

39 The numbers of ship-to-shore Inmarsat F-77 priority voice calls in the same period was as follows:

	IOR	AOR-E	POR	AOR-W	Total (previous year)
Safety	29	7	3	0	35 (39)
Urgency	9	7	8	8	32 (47)
Distress	36	20	34	6	96 (101)

Table 6: Fleet-77 voice priority calls received between 1 November 2017 and 30 September 2018

False distress alerts

40 Resolution A.814(19) on *Guidelines for the avoidance of false distress alerts*, highlights the role and responsibility of Administrations to avoid and stop transmission of false distress alerts from ships under their registries. The resolution contains a guideline for Administrations in the annex which invites Administrations to consider establishing and using national enforcement measures to prosecute those who:

- inadvertently transmit a false distress alert without proper cancellation, or who fail to respond to a distress alert due to misuse or negligence;
- repeatedly transmit false distress alerts; and
- deliberately transmit false distress alerts.

41 Each distress alert transmitted on Inmarsat C system is considered real by Inmarsat, unless it is proven otherwise by the MRCC that receives it. Inmarsat monitors distress alert records daily for any suspected false alerts. When a suspected false distress alert is detected by the monitoring system or when notified by an MRCC of a suspected false distress alert, Inmarsat attempts to contact the ship concerned to find the underlying reasons of the false distress alerts and offers assistance if required. Unfortunately, not all the ships respond to these contacts and cooperate with Inmarsat at the expected level. Where ships respond to such calls, the reasons given for initiating false distress alerts invariably are attributed to human error, equipment test (use a real distress alerting service to test the terminal instead of built-in testing function) or malfunctioning equipment.

42 The IMSO Director General and a representative from Inmarsat had visited the maritime and fisheries administrations of Morocco in Rabat in May 2017 to offer assistance to the local authorities in respect to the false distress alerts received from Inmarsat C terminals installed on Moroccan fishing vessels. IMSO and Inmarsat, noting that false distress alerts are still being received from some Moroccan fishing vessels, continue to monitor the situation.

43 Inmarsat has not reported a new case of consistent and repeated false distress alerts within this reporting period.

Broadcasting Maritime Safety Information

44 Inmarsat manages and operates the SafetyNET service to facilitate the broadcast of MSI from registered information providers to ships at sea. SafetyNET receiving capability is part of the Inmarsat C and Mini-C shipborne equipment, which is one of the mandatory carriage requirements for ships engaged on voyages within the sea area A3 according to the provisions of chapter IV of the SOLAS Convention, 1974, as amended.

45 Certified SafetyNET users (NAVAREA Coordinators, METAREA Issuing Services and RCCs) submit their MSI messages, with the appropriate priority i.e. distress, urgency or safety, to LESs providing Inmarsat C services for further broadcast of their messages to the intended geographical area. The International SafetyNET Coordinating Panel, in cooperation with IHO and WMO, undertakes the coordination of times for scheduled transmissions.

46 In accordance with resolution A.707(17) on *Charges for Distress, Urgency and Safety Messages Through the Inmarsat System,* there are no charges to the mariners for reception of SafetyNET messages. Inmarsat broadcasts SafetyNET messages with Distress or Urgency priority free-of-charge and messages with Safety priority at a lower than standard messaging rates.

47 The number of MSI messages broadcast through the Inmarsat C network fluctuates in the year based on various factors particularly the meteorological events and forecast. Table 7 below provides the number of MSI messages broadcast in this reporting period. On average, there were 35,183 messages per month including repeated messages.

	IOR	AOR-E	POR	AOR-W	Total
Nov'17	11,220	9,599	8,764	6,702	**36,285**
Dec'17	10,831	9,000	8,524	5,873	**34,228**
Jan'18	11,053	10,340	8,375	5,882	**35,650**
Feb'18	8,595	9,392	7,027	5,281	**30,295**
Mar'18	8,929	9,857	9,013	6,103	**33,902**
Apr'18	8,057	8,828	8,781	5,405	**31,071**
May'18	9,463	9,662	9,470	6,259	**34,854**
Jun'18	9,003	8,801	8,506	5,933	**32,243**
Jul'18	10,069	8,989	9,442	5,857	**34,357**
Aug'18	12,898	10,554	11,539	7,237	**42,228**
Sep'18	11,483	11,953	9,357	9,109	**41,902**

Table 7: EGC SafetyNET messages between 1 November 2017 and 30 September 2018

48 Referring to the information provided to the Sub-Committee at its last session (NCSR 5/14/5), Inmarsat has developed and launched its SafetyNET II service for use by all certified SafetyNET users with effect from 14 November 2017.

49 SafetyNET II runs in parallel to the existing SafetyNET service and does not require installation of new shipborne terminals. The new service is seamless to all seafarers.

50 With SafetyNET II, MSI providers and SAR services can create their messages using an interactive web-based interface and submit them directly to Inmarsat for simultaneous broadcasting over the Inmarsat C and FleetBroadband networks. The service offers some new features such as broadcasts scheduling, message cancellation and multiple text input methods.

51 SafetyNET II is available only to authorized, certified and registered MSI providers and RCC operators. Registration for SafetyNET II requires a "Certificate of Authorization to Participate in the International SafetyNET Service" issued by the International SafetyNET Coordinating Panel. Existing SafetyNET users can contact Inmarsat on maritime.safety@inmarsat.com to register for the SafetyNET II service.

Migration of GMDSS services from I-3 to I-4 generation satellites

52 Inmarsat is now in the process of migrating the recognized mobile satellite services (i.e. Inmarsat C and Fleet 77) from the primary I-3 satellites, with the exception of I3-F5, over to the I-4 satellites, which will then become the primary satellites for the recognized mobile satellite services for the GMDSS. 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.

53 The migration plan introduces substantial changes to the coverage areas of Inmarsat satellites, which will basically move in the westerly direction. A new coverage map showing the satellite footprints along with NAV/METAREAs after completion of the migration plan is provided below.

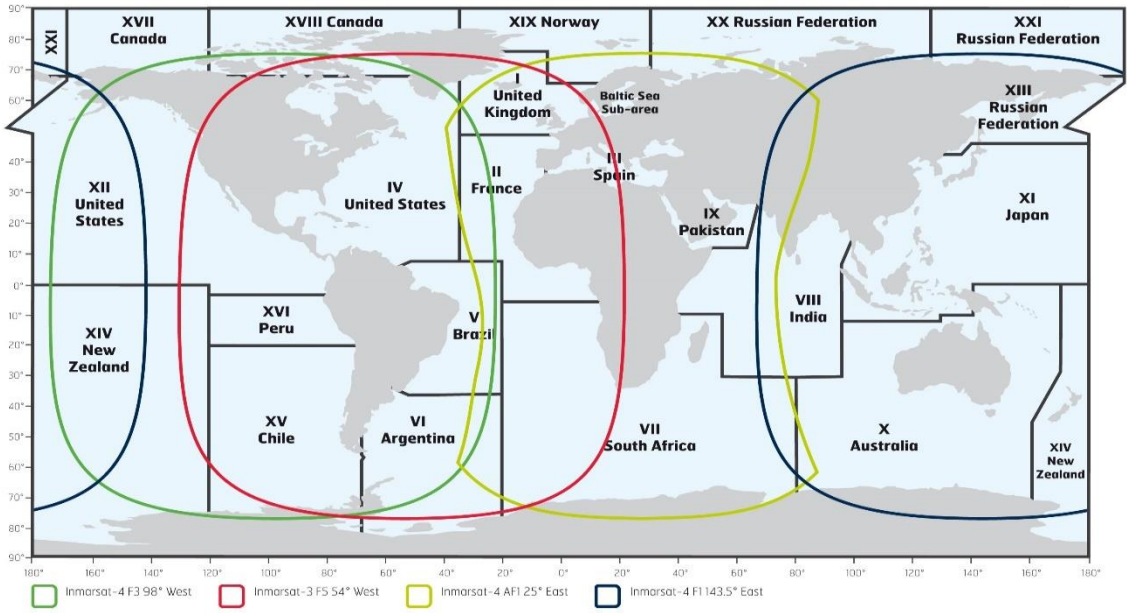

Figure 5: Ocean region footprints after migration

54 Inmarsat has put in place arrangements to manage coordination and communication with all relevant parties during implementation of the migration plan, including LESOs, NAVAREA and METAREA Coordinators, and Maritime Rescue Co-ordination Centres (MRCC). Inmarsat also sends out EGC messages to ships prior to execution of each migration stage for information and guidance.

55 Furthermore, IMSO communicated salient information to IMO in respect to the migration plan, which was circulated by IMO to all Member States, Intergovernmental organizations and Non-governmental organizations in consultative status with IMO on 9 May 2018 in Circular Letter No.3845. A copy of the same information was also provided by IMSO to the IHO Document Review Working Group for further distribution to national Hydrographic Offices and its inclusion in the "Notice to Mariners".

56 The migration process comprises four stages:

Stage 1: Closure of AORW and transition to AMER – completed on 9 May 2018

Stage 2: Closure of POR and transition to APAC – executed on 29 August 2018

Stage 3: Move of AORE from 15.5W to 54W (scheduled for 30 October 2018)

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

57 Inmarsat is to give six (6) weeks' notice to IMSO and all relevant parties before execution of each stage of the migration plan.

58 IMSO has been monitoring the implementation of the migration plan as part of its oversight activity and receives regular updates from Inmarsat upon completion of each stage of the plan. Inmarsat has agreed to provide IMSO with notifications in advance of any planned service interruptions or as soon as possible after commencement of an unplanned interruption during implementation of the migration plan.

Protection of L-band maritime satellite communications

59 IMSO had reported to NCSR 5 regarding the potential interference caused to Inmarsat terminals from Mobile/Fixed Communications Networks Supplemental Downlink (MFCN SDL) base stations deployed within Europe near to ports and waterways (NCSR 5/14 refers).

60 The Sub-Committee had recognized the importance of the issue and had instructed the Joint IMO/ITU Experts Group (IMO/ITU EG) to prepare the necessary liaison statements on the possible interferences with L-band maritime satellite communications and forward them directly to ITU-R WP 5B and The European Conference of Postal and Telecommunications Administrations (CEPT). On the same subject, MSC 99 noted that the issue was of great concern to the maritime industry and therefore encouraged maritime administrations to liaise closely with their national authorities attending meetings of ITU and regional bodies concerned with spectrum management, with the aim to address this safety critical issue.

61 Given the urgency of the matter and the timescales involved, IMSO developed and sent its own liaison statement, co-signed by IMO, earlier than the IMO/ITU EG to the ITU-R Working Parties (WPs) involved.

62 Subsequently, one of the ITU-R WP 4C responded to IMO and IMSO detailing its further work objectives in the matter. On this basis, IMSO advised EG 14 of a new development in that there were moves to propose the replacement of the current equipment fit of Inmarsat satellite terminals on ships and aircraft that could be subject to interference. Replacing equipment subject to international regulation on ships and aircraft is a lengthy and expensive operation, even if technically feasible (which has yet to be determined).

63 Noting the previous instruction from NCSR 5 and the new information from IMSO, EG 14 has developed a liaison statement to the ITU-R and CEPT fora involved, setting out well the severe adverse implications to the maritime community.

64 IMSO underlines the urgent need for further action to support the maritime community in countering proposals to force unnecessary replacement of the currently installed satellite terminal equipment operating in the frequency band 1518-15589 MHz.

Conclusion

65 In view of the information provided in this document, it is IMSO's overall assessment that, during the period covered by this report, Inmarsat Global Ltd has continued to provide fully operational maritime mobile satellite distress and safety communication services for the GMDSS and fulfilled the company's public service obligation as stated in the PSA.

Action requested of the Sub-Committee

66 The Sub-Committee is invited to consider the information provided in this document, in general, and in particular:

.1 the conclusion of IMSO's overall assessment (paragraph 65); and

.2 the concerns over potential interference caused to Inmarsat terminals by SDL base stations (paragraphs 59 to 64).