

SATELLITE SERVICES (INMARSAT AND COSPAS-SARSAT)

Analysis and assessment of the GMDSS performance of Inmarsat Global Ltd

Note by the International Mobile Satellite Organization (IMSO)

SUMMARY

<i>Executive Summary:</i>	This document provides analysis and assessment of the performance by Inmarsat Global Ltd of the company's obligations for the provision of maritime services within the GMDSS, as overseen by IMSO. The information covers the period from 01 November 2005 to 31 October 2006. It is assessed that, during this period, Inmarsat has continued to provide a sufficient quality of service to meet its obligations under the GMDSS.
<i>Action to be taken:</i>	Section 7
<i>Related documents:</i>	COMSAR 10/5/1, MSC 79/23, MSC/Circ.1171.

1 INTRODUCTION

1.1 This document is the formal report to IMO by the International Mobile Satellite Organization (IMSO) on the performance by Inmarsat Global Ltd (Inmarsat) of that company's public service obligations in respect to the GMDSS, as established in Article 3(a) of the Convention on the International Mobile Satellite Organization, and Clause 2.1.2 of the Public Services Agreement (PSA). This report covers the period from 01 November 2005 to 31 October 2006. The previous report to IMO was made to the Tenth Session of COMSAR in COMSAR 10/5/1.

2 STATUS OF THE INMARSAT NETWORK

2.1 The operational status of key elements of the space and ground segments of the relevant Inmarsat systems is summarized in the following table:

		AOR-E	POR	IOR	AOR-W
OPERATIONAL SATELLITES		INMARSAT-3 F2 15.5°W	INMARSAT-3 F3 178°E	INMARSAT-3 F1* 64.5°E	INMARSAT-4 F2 53°W
OCEAN REGION CODES	TEL TELEX	871** 581	872** 582	873** 583	874** 584

* Note: at the time of this report Inmarsat-3 F1 carries the existing and evolved services; co-located Inmarsat-4 F1 carries new services in the IOR.

** Note: Inmarsat also has a single network access code for telephony, 870, which applies to all four ocean regions.

2.2 The table shows three operational Inmarsat-3 satellites and one Inmarsat-4 satellite in the primary locations over four ocean regions. Inmarsat operates other satellites to provide non-GMDSS services and these satellites are configured to act as on-orbit spares for the rapid restoration of essential GMDSS services in the event of a prime satellite failure. Operational procedures are in place to ensure that full sparing capability is retained with this arrangement of the constellation and these procedures are exercised to prove their effectiveness.

2.3 The second Inmarsat-4 satellite (F2) was launched on 8 November 2005 and is currently employed carrying GMDSS and commercial services to the AOR-W. Inmarsat has announced its intention to launch the third Inmarsat-4 satellite in the fourth quarter of 2007.

3 PERFORMANCE OF THE INMARSAT NETWORK

3.1 Availability figures for each service / ocean region

3.1.1 The availability of all distress alerting and other GMDSS components within the Inmarsat system during the 12-month period from 01 November 2005 to 31 October 2006 is shown in the following table:

The definition of availability and methods of calculation are based on the approach adopted in section 3.5 of CCIR Report 918 (MOD F) "Availability of Communications Circuits in the Maritime Mobile Satellite Service", dated 15 December 1989.

	AOR-E	IOR	POR	AOR-W
SPACE SEGMENT	100.0000%	99.9996%	100.0000%	99.9949%
INMARSAT-A	100.0000%	99.9798%	100.0000%	99.9823%**
INMARSAT-B/F77	100.0000%	99.9994%	99.9994%	99.9991%
INMARSAT-C	100.0000%	99.9987%	100.0000%	99.9990%
INMARSAT-E*	100.0000%	100.0000%	100.0000%	99.9991%

* Note: The Inmarsat-E EPIRB service was closed on 1 December 2006 (MSC 79/23 paragraph 22.42 and MSC/Circ.1171).

** Note: Inmarsat-A services in the AOR-W were provided via the Inmarsat-2 F2 Pacific East satellite (98°W) from February 2006.

3.1.2 These figures represent an acceptably high level of availability for the core GMDSS services. From November 2005 to April 2006 there were no periods of downtime reported for any GMDSS serviced. The lowest availability achieved for Inmarsat C was in the IOR: the figure of 99.9987% represents a total of 7 minutes downtime for that service, of which the longest single period of non-availability was 7 minutes in June 2006 due to an antenna problem at the Network Control Station (NCS). Otherwise, Inmarsat C service was not available during the reporting period for a total of 5.5 minutes in the AOR-W. Inmarsat A services were not available in the IOR (via the IND-E satellite) for a total of 106 minutes (due to a satellite anomaly which required a shift to the contingency spare satellite), and the Pacific East satellite for a total of 93 minutes.

3.1.3 Apart from this, periods of service non-availability were generally few in number, of short duration and were not significant for GMDSS operations. Inmarsat B/F77 services were not subject to any period of downtime longer than 3 minutes duration.

3.2 Number of Land Earth Stations providing GMDSS Services

At present, 66 Inmarsat-A, 78 Inmarsat-B/M, 52 F77 and 49 Inmarsat-C land earth stations (LEs), located at various sites world-wide, provide the essential ground-based gateways for GMDSS related communications using basic telex, telephony and message transfer services. The figures include virtual as well as real LEs and illustrate the total number of points of access to the network. There are enough LEs in each system to ensure robust operation and provide alternatives in the event of local failure. These LEs also operate the Inmarsat space and ground segments for distress alerting, follow-up communications and promulgation of Maritime Safety Information (MSI).

3.3 Number of Ship Earth Stations

Inmarsat had over 120,000 registered GMDSS-capable mobile terminals at the end of November 2005, of which more than 78,000 are Inmarsat-C and mini-C terminals. In view of the competitive environment in which the company operates, it does not make public the breakdown of these totals between different market sectors.

3.4 Number of Distress Priority Calls / Alerts through the system

3.4.1 All distress alerts and calls through the Inmarsat system during the period were handled correctly and delivered promptly. Inmarsat uses the Distress Alert Quality Control System (DAQCS) to provide quantitative data on the number of distress priority calls, alerts and messages. The numbers of Inmarsat-C distress alerts received between 01 November 2005 and 31 October 2006 are as follows:

	AOR-E	AOR-W	IOR	POR	Total
Nov 05 – Oct 06	421	191	229	328	1169

4 ACTION TO REDUCE FALSE ALERTS

The total number of alerts in each Ocean Region is not significantly different from previous years. The totals include a number of instances when a terminal sent multiple alerts. For instance on one occasion in August 2006 a single vessel originated 20 alerts within a short period of time. Inmarsat contacts the vessels concerned with such multiple alerts and, where the alerts have been false, seeks to assist the vessel to improve its procedures to avoid such occurrences in future. However, many vessels do not respond to these contacts and no further action by Inmarsat is possible.

5 CLOSURE OF THE INMARSAT E SYSTEM

The programme for the closure of the Inmarsat E EPIRB service, which was approved by the Maritime Safety Committee at its seventy-ninth session and notified in MSC/Circ.1171, has progressed throughout 2006 under the supervision of IMSO. On 1 December 2006 there were still approximately 400 EPIRBs which could not be exchanged. These are EPIRBs for which the present owner either cannot be identified or does not respond to Inmarsat's invitation to exchange. It is expected that the final number unaccounted for will be in the region of 350.

All registered owners of Inmarsat E EPIRBs were written to by Inmarsat, directly and individually, in November 2005, February 2006 and August 2006. In addition to the direct-mailing programme, Inmarsat also conducted a wide media communication plan during 2006, designed to reach as many Inmarsat E users as possible.

Inmarsat transmitted broadcasts of the Inmarsat E closure information over Inmarsat A and Inmarsat C, every two weeks during the final six months before 1 December 2006. Hand-outs of the closure information were widely distributed at the Posidonia and at SMM exhibitions, in Greece and Germany respectively.

Information on the Inmarsat E closure programme was also carried on the Inmarsat website throughout 2006.

Inmarsat allowed an additional two weeks after 1 December, to accommodate late exchanges, and also kept the Inmarsat E system active until 31 December 2006.

IMSO believes that every reasonable effort has been made to contact every registered owner of an Inmarsat E EPIRB and that Inmarsat has met fully its obligations under the closure programme agreed by IMO.

6 CONCLUSIONS

6.1 Inmarsat Global Ltd's maritime business remains the largest single contributor to the company's revenues. This is clearly recognised by the company and reflected in the amount of effort given to the promotion and development of the maritime sector. At the same time, Inmarsat continues to provide maritime distress and safety services for the GMDSS at either no cost or a special rate.

6.2 In view of the foregoing review of the status and performance of the relevant Inmarsat systems, 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 fulfil the company's public service obligation as stated in paragraph 2.1.2 of the PSA.

7 **ACTIONS**

The Sub-Committee is invited to note:

.1 the information provided on the status and performance of the Inmarsat network (sections 2 and 3);

.2 the ongoing programme to reduce false distress alerts by contacting vessels which originate repeated false alerts (section 4);

.3 the outcome of the programme to replace all registered Inmarsat E EPIRBs and the final closure of the Inmarsat E system (section 5); and

.4 the contents of this report in general, and in particular the conclusion that Inmarsat Global Ltd has continued to provide a sufficient quality of service to meet its obligations under the GMDSS during the period covered by the report (paragraph 6.2).

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