

REPORT ON SYSTEM STATUS AND OPERATIONS

Date of report: 31 March 2009
Origin: India
Time period: 1 January to 31 December 2008

I. SYSTEM STATUS AND DEVELOPMENT SCHEDULE

1.1 Space segment

INSAT-3A currently supports INSAT GEOSAR operations placed at 93.5 deg E. INSAT-3D expected to be launched during the end of 2009, and will serve as on-orbit spare for GEOSAR operations. The down link beam will be again a spot beam, which can be received in Indian region only, and not from outside India.

1.2 Ground segment

1.2.1 LUTs operational status

Operations at Bangalore, Lucknow & INSAT LUTs and at INMCC were normal during 2007.

- Bangalore LUT along with INMCC is situated in Spacecraft Control Centre (SCC) of ISTRAC in Bangalore, having fully automatic operations and has been monitored regularly by INMCC personnel. The LUT is about 300 meters away from INMCC in the same campus and connected to INMCC with highly reliable dedicated landline for data communication providing 100% availability.
- Lucknow LUT is remotely situated in ISTRAC ground station campus at Lucknow (about 2500 km north of Bangalore) and has been constantly monitored and maintained by the ground station personnel. The operations at the LUT are fully automatic with a provision to monitor the status from INMCC at Bangalore. It is connected to INMCC by a dedicated satellite link, which is highly reliable for data communications with 100% availability.
- Indian Geolut system is co-located with INMCC in ISTRAC campus at Bangalore and interfaced with INMCC through RS232 serial communication. The system is fully automatic and being monitored by INMCC personnel.

1.2.2 INMCC operational status

The INMCC is located in ISTRAC campus at Bangalore. The operations are fully automatic and monitored by the operations personnel. The MCC is manned on all working days during office hours (08:30 hrs to 17:00 hrs, local time). However

ISTRAC campus is manned 24 hours, and on requirements Shift Manager at ISTRAC coordinates with INMCC operations team and provides necessary support to external agencies. Presently, INMCC uses AFTN as prime mode for alert data communication. A dedicated leased 64 KBPS data line connects INMCC to immediate AFTN node at Bangalore International Airport situated about 40 Kms from INMCC. Implementation of FTP-VPN for alert data exchange with CMC and AUMCC is under process. INMCC has bilateral arrangement with AUMCC for exchange of alert data, especially for Geolut alerts.

1.2.3 Other Ground Segment sub-systems (orbitography network, time reference beacons, etc.)

NIL

1.2.4 Schedule of new Ground Segment equipment installation / commissioning

NIL

Results of System test per Annex J of C/S A.003

SYSTEM LEVEL TEST January 28-29, 2009
INMCC – LEOLUTS

Ref. No	MCC INMCC	LUT Bangalore	LUT Lucknow	Message Transmission
1	√	√	√	Suppressed
2	√	√	√	Suppressed
3	√	√	√	125
4	√	√	√	125
5	√	√	√	127
6	X-1	√	√	*Suppressed
7	√	√	√	122
8	√	√	√	123
9	√	√	√	127
10	√	√	√	Suppressed
11	√	√	√	122
12	√	√	√	122
13	X-2	?-1	?-1	
14	√	√	√	127
15	√	√	√	125
16	√	√	√	127
17	√	√	√	Suppressed
18	√	√	√	Suppressed
19	√	√	√	Suppressed
20	√	√	√	Suppressed
21	√	√	√	122
22	X-3	√	√	*Suppressed
23	√	√	√	125
24	√	√	√	125
25	√	√	√	125
26	√	√	√	125
27	√	√	√	125
28	√	√	√	125

X-1 No SIT message was sent.

X-2 No SIT message was sent.

X-3 No SIT message was sent.

?-1 No LEO Detection: Satellite-to-Beacon elevation $\leq 5^\circ$

Ref # 21:

For beacon ID “96EB02EE3487571F73683781000D6D” as stated in the document A03 on page J-8 (Table J.2: Expected LEOLUT and MCC Processing for System Level Test), INMCC did not send any message. The right ID is “96EB02EE092E03128C82B70D300F1D” which is stated in the document A03 on page J-6 (Table J.1: List of 406 MHz Test Messages to be Generated by Beacon Simulator to support System Level Test), for which INMCC sent the message No: 21235 on 01 Feb 2007 at 11:46 (ut). The system performed properly. However, the document shows contradiction and showing two different IDs.

1.3 Distress Beacons

1.3.1 Evaluation of 406 MHz beacon population:

Registered EPIRBs	1,542
Registered ELTs	1,488
Registered PLBs	2,055
US Registered	45
Registered SSAS beacons	Nil
Registered Tests	2

1.3.2 Evaluation of 121.5 MHz beacon population:

121.5/243 MHz ELTs/PLBs 2,000
(All expected to be phased out on 1 Feb. 2009)

1.3.3 Changes of regulatory status NIL

1.3.4 Updates of 406 MHz beacon populations forecast:

Year	2010	2015
ELTs	3,000	3,500
EPIRBs	2,000	3,000
PLBs	1,500	2,000

1.4 Status of Implementation of System Changes

Action Items of JC-22 are being studied and will be implemented as soon as possible.

II. SYSTEM OPERATIONS

2.1 Number of 406 MHz beacon activations reported to RCCs/SPOCs within the MCC service area

Alert Classifications	EPIRB	ELT	PLB	Sub-Total	Total
Distress alerts	4	1	0		5
False alerts					0
Unfiltered processing anomalies					
Operational false alerts (beacon activations)					
Beacon mishandling			0		
Beacon malfunction	0	0	0	0	
Mounting failure	0	0	0	0	
Environmental conditions	0	0	0	0	
Unknown			0		
Undetermined					178
Total	5	1	0		183

2.2 Number of validated 121.5 MHz beacon activations reported to RCCs/SPOCs within the MCC service area

Alert Classifications	EPIRB	ELT	PLB	Sub-Total	Total
Distress alerts	0	0	0		0
False alerts					0
Unfiltered processing anomalies					
Interference					
Operational false alerts (beacon activations)					
Beacon mishandling	0	0	0	0	
Beacon malfunction	0	0	0	0	
Mounting failure	0	0	0	0	
Environmental conditions	0	0	0	0	
Unknown	0	0	0	0	
Undetermined					737
Total					737

Number of validated 243 MHz beacon activations reported to RCCs/SPOCs within the MCC service area

Alert Classifications	EPIRB	ELT	PLB	Sub-Total	Total
Distress alerts	0	0	0		0
False alerts					0
Unfiltered processing anomalies					
Interference					
Operational false alerts (beacon activations)					
Beacon mishandling	0	0	0	0	
Beacon malfunction	0	0	0	0	
Mounting failure	0	0	0	0	
Environmental conditions	0	0	0	0	
Unknown	0	0	0	0	
Undetermined					1,189
Total					1,189

2.3 LUT/MCC availability

a. MCC System availability

 INMCC 99.53 %

b. LUT Data availability

 Bangalore LUT 98.84 %

 Lucknow LUT 91.75 %

 GEOLUT 100%

2.4 Report on significant events or anomalies during period of operation

Supported 6 potential distress incidents involving rescue of 26 human lives.

- I On 31st Jan 2008 based on INMCC distress alert received from ship close to Mauritius (The vessel M/V Morning Rose, MMSI No 645215000 and Beacon Id: D0A9974134D34D1) due to cyclone, which was drifting away. An alert message of the location 14.54 deg South 97.44 deg East was sent to Mauritius Coast Guard. Mauritius Coast Guard swung into action, saved precious lives of all **six crew members**. **INMCC was the first source of information about this alert**. Though the alert was detected outside INMCC service area, necessary data and coordination was supported by INMCC. This alert was not accounted in INMCC statistics.
- II On 20th March 2008 based on INMCC distress alert (from ‘Private Indian Aircraft’, Beacon Id: B46De000F3C010D) was detected due to impact landing at Udaipur Airport, in Rajasthan. An alert message at the location 24.16 deg North and 73.86 deg East was sent to RCC, Delhi. Feedback received through daily newspapers. **The ELT was not registered with INMCC**.
- III On 21st March, **INMCC detected US registered EPIRB in Srilankan Service area** (2DCC4465CA12944, USA). The vessel belonging to Srilankan Navy was lost. More details were not available.
- IV On 4th May 2008 based on INMCC distress alert from the Seychelles vessel (The vessel M/V AL_MANARA of Concoure Shipping services Seychelles, Beacon Id: 2AB8670700FFBFF) was detected. The vessel was drifting away. An alert message at the location 21.40 deg North and 72.19 deg East was sent to Coast guard Porbandar MRSC (PBR). Messages were also sent by FAX. Feedback received from MRSC (PBR) that **three crew members** were saved (Two Indians and One Ghana nationality). **INMCC was the only source of alert detection**.
- V On 13th June 2008 based on INMCC distress alert in Kulu-Manali, Himachel Pradesh (Beacon Id: 9D0E1D13A800001, EPIRB Used on Land) that one of the World Challenge expedition team member from UK slipped in high mountain terrain and died. An alert message at the location 32 deg 08 min North 77 deg 29 min East was sent to RCC Delhi. **INMCC provided first information for alerting the expedition organizers**. They did not have adequate communication facility except for short range. Used ground parties to reach the location. Sarsat information was prime source of alerting the distress.
- VI On 12 August 2008 based on INMCC distress alert from the Indian vessel (The vessel Skipper-III, Call Sign: ATVH and Beacon Id: B46A493886F94D1) that was over flooded with water at the location 16.45 deg North and 84.42 deg East. MRCC Chennai carried out SAR and all the **seventeen crew members** were rescued. The prime source of distress information was through Inmarsat.

2.5 Report on 121.5/406 MHz beacon anomalies Nil

2.6 False Alert Rate Not available

2.7 Report on educational and regulatory actions to reduce false alerts

INMCC has been able to create more awareness among users about the system and its capability in saving human lives by legitimate use of radio beacons. Familiarisation programmes for MRCC and RCC officers were organized at INMCC.

2.8 Report on MCC back-up procedure test results N/A

2.9 Efforts taken in preparation for the phase-out of 121.5 MHz satellite alerting.

Wide publicity was done about phasing out of 121.5 MHz satellite alerting to all user agencies through user seminars/interactions.

- End of Document JC-23/2/26 -