

**Agenda Item 2**

**REPORT ON SYSTEM STATUS AND OPERATIONS**

Date of report: 31 January 2006  
Origin: India  
Time period: 1 January to 31 December 2005

**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 by end of 2006, 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 2005.

- ⇒ 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 staff. 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 staff.

### 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 staff. The MCC is manned on all working days during office hours (09:00 hrs to 17:30 hrs, local time). However ISTRAC campus is manned 24 hours, and on requirements Shift Manager at ISTRAC coordinates with INMCC operations team and provide necessary support to external agencies. Presently, INMCC uses AFTN as prime mode for alert data communication. A dedicated leased data line connects INMCC to immediate AFTN node (Bangalore airport – about 25 Kms. from INMCC). Implementation of FTP for alert data exchange with CMC and AUMCC is operationalised. 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

Lucknow LUT up-gradation was completed during the year 2005. LUT Commissioning exercise completed during January 2006. Commissioning report will be submitted to JC-20 (June 2006).

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

**SYSTEM LEVEL TEST, March 15-16, 2006**  
**INMCC – LEOLUTS**

Ref. No	MCC INMCC	LUT Bangalore	LUT Lucknow	Message Transmission
1	√	√	√	Suppressed
2	√	√	√	Suppressed
3	√	√	√	125
4	√	√	√	125
5	√	√	√	122, 125
6	√	√	√	123
7	√	√	√	124
8	√	√	√	Suppressed
9	√	√	√	127
10	√	√	√	Suppressed
11	√	√	√	122
12	√	√	√	122
13	√	√	√	126
14	√	√	√	127
15	√	√	√	125
16	√	√	√	127
17	√	√	√	Suppressed
18	√	√	√	Suppressed
19	√	√	√	Suppressed
20	√	√	√	Suppressed
21	√	√	√	122
22	X-1	√	√	*Suppressed
23	√	√	√	125
24	√	√	√	125
25	√	√	√	125
26	√	√	√	125
27	√	√	√	127
28	√	√	√	122, 126

**Note:**

X-1 No SIT message was sent.

### 1.3 Distress Beacons

#### 1.3.1 Evaluation of 406 MHz beacon population: 3215

Registered EPIRBs	1495
Registered ELTs	657
Registered PLBs	1016
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	2000
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#### 1.3.3 Changes of regulatory status

NIL

#### 1.3.4 Updates of beacon populations forecast:

Year	2005		2010	2015
Frequency / Beacons	406 MHz	121.5 MHz	406 MHz	406 MHz
ELTs	700	Nil	3000	3500
EPIRBs	1500	Nil	2000	3000
PLBs	1000	2000	1500	2000

### 1.4 Status of Implementation of System Changes

Not reported

## 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	2	1	0		3
False alerts					18
Unfiltered processing anomalies					
Operational false alerts (beacon activations)					
Beacon mishandling	2	1	0	3	
Beacon malfunction	0	0	0	0	
Mounting failure	6	0	0	6	
Environmental conditions	0	0	0	0	
Unknown	5	4	0	9	
Undetermined					125
Total	15	6	0		146

### 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					2
Unfiltered processing anomalies					
Interference					
Operational false alerts (beacon activations)					
Beacon mishandling	1	0	0	1	
Beacon malfunction	0	0	0	0	
Mounting failure	0	0	0	0	
Environmental conditions	0	0	0	0	
Unknown	0	1	0	1	
Undetermined					437
Total	1	1	0		439

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

<b>Alert Classifications</b>	<b>EPIRB</b>	<b>ELT</b>	<b>PLB</b>	<b>Sub-Total</b>	<b>Total</b>
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					235
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>		<b>235</b>

2.4 LUT/MCC availability

a. MCC System availability

INMCC 99.795 %

b. LUT Data availability

Bangalore LUT 99.843 %

Lucknow LUT 99.843 %

GEOLUT 100%

AFTN 99.033 %

## 2.5 Report on significant events or anomalies during period of operation

### **Supported 3 potential distress incidents involving rescue of 26 human lives.**

- i) A Real distress alert on 406/121.5 MHz was supported at Vapi (Daman) on 19 January 2005, a private helicopter belonging to Hindustan Ink crashed. Both the crew members rescued.
- ii) A real distress involving Hong Kong vessel was supported on 18 May 2005. The ship was drifting and later abandoned by the crew. The first alert was through INMARSAT-C followed by Cospas-Sarsat EPIRB activation. 21 Crew members were rescued by nearby ship. The INMCC message was delayed due to non-availability of AFTN link. The INSAT system detected the alert first with 98 minutes time advantage compared to LEO system.
- iii) A real distress signal from Bombay High was detected on 27 July 2005 by the system and provided the alert as a secondary source of information.

## 2.6 False Alert Rate

Not reported

## 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 tiny radio beacons. Familiarisation programme for MRSC, MRCC and RCC officers was organized at ISTRAC.

- ◆ Organized one day training programme at INMCC (17 January 2005) for a team of 8 officers from MRSC, Coast Guard, Kochi.
- ◆ MRCC, Port Blair operations team (3 members) visited INMCC for training. Two day training program was organized during June 2005.
- ◆ One day training program was organized for Coast Guard Trainee officers from Cochin (8 August 2005).

## 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.