CGMS-XXXI IND-WP-03

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Agenda Item:
Discussed in Plenary

FUTURE PLANS OF INSAT SATELLITES FOR METEOROLOGICAL APPLICATIONS

Future Plans of INSAT Satellites for Meteorological Applications

CGMS Members are invited to take note.

FUTURE PLANS OF INSAT SATELLITES FOR METEOROLOGICAL APPLICATIONS

INTRODUCTION

Under the INSAT –3 Programme, a new Geostationary Meteorological Satellite INSAT - 3D is being designed and developed in India. It will have an advanced imager with six channels and a Nineteen channel sounder for derivation of atmospheric temperature and moisture profiles. It will provide 1 km resolution imagery in Visible band and 4 km resolution in IR bands. This new satellite is scheduled for launch in middle of 2006 and will provide much improved capabilities to the users of meteorological data from satellites.

Appendix-B

INDIAN NATIONAL SATELLITE (INSAT) and METSAT

INSAT-3: Geostationary Satellite Series – FUTURE

Satellite	Launch Date	Met. Payload with Wavelength Bands	Major Applications
INSAT-3D	2006	1. Imager Bands : 0.52-0.75μm 1.55-1.70μm 3.80-4.00μm 10.2-11.2μm 11.5-12.5μm 2. Sounder Bands : 19 channels between 0.69-14.71μm	Monitoring of cyclones & Monsoon cloud motion vectors OLR Rainfall Estimation Meso scale features Flood / intense perpetration advisory snow estimation.

Table-1

SPECTRUM AND SENSITIVITY

(INSAT-3D SOUNDER WITH IR DETECTORS AT 100K)

Channel No.	Centre Wavelength (μm(cm^{-1})	Bandwidth μm (cm^{-1}	NEDT at 300 (typical) K
1.	14.71 (680)	0.281(13)	1.5
2.	14.37 (696)	0.268(13)	1
3.	14.06 (711)	0.256 (13)	0.5
4.	13.96 (733)	0.298 (16)	0.5
5.	13.37 (749)	0.286(16)	0.5
6.	12.66 (790)	0.481 (30)	0.3
7.	12.02(832)	0.723 (50)	0.15
8.	11.03 (907)	0.608 (50)	0.15
9.	9.71 (1030)	0.235 (25)	0.2
10.	7.43 (1345)	0.304 (55)	0.2
11.	7.02 (1425)	0.394 (80)	0.2
12.	6.51 (1535)	0.255 (60)	0.2
13.	4.57 (2188)	0.048 (23)	0.15
14.	4.52 (2210)	0.047 (23)	0.15
15.	4.45 (2245)	0.0456 (23)	0.15
16.	4.13 (2420)	0.0683 (40)	0.15
17.	3.98 (2513)	0.0663 (40)	0.15

18.	3.74 (2671)	0.140 (100)	0.15
19.	0.695 (14367) 0.05 (1000) (067-0.72)		0.1% albed

INSAT-3D Met Payloads

INSAT- 3D to Carry :

Six Channel Imager :

No.	Channel	Resolution
1.	0.52-0.72 μm	1 km
2.	1.55-1.70 μm	1km
3.	3.80- 4.00 μm	4 km
4.	650-7.00 μm	8 km
5.	10.2- 11.2 μm	4 km
6.	11.5-12.5 μm	4 km

Nineteen channel IR Sounder for INSAT –3D (10 km resolution)

1.	Short-Wave IR (3.74-4.57 μm)	Six Channels
2.	Mid-wave IR (6.51-9.71)	five Channels
3.	Long-wave IR (11.03-14.71 μm)	Seven Channel
4.	Visible (0.67-072 μm)	One Channel