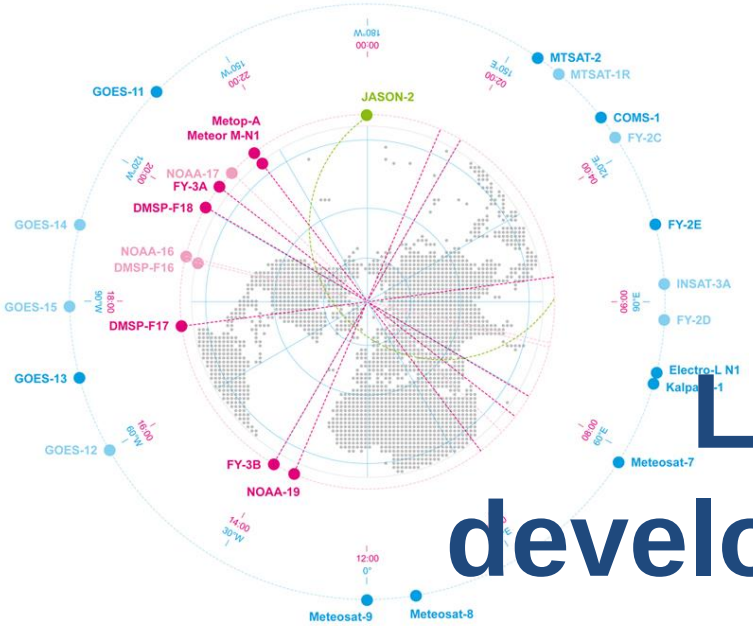

Latest status and developments at IMD since CGMS-45

CGMS-46, Plenary session, agenda item IMD-ISRO-WP-01
Presenter: S K Peshin

Report Prepared By: S K Peshin, Virendra Singh, A.K.Mitra

Coordination Group for Meteorological Satellites

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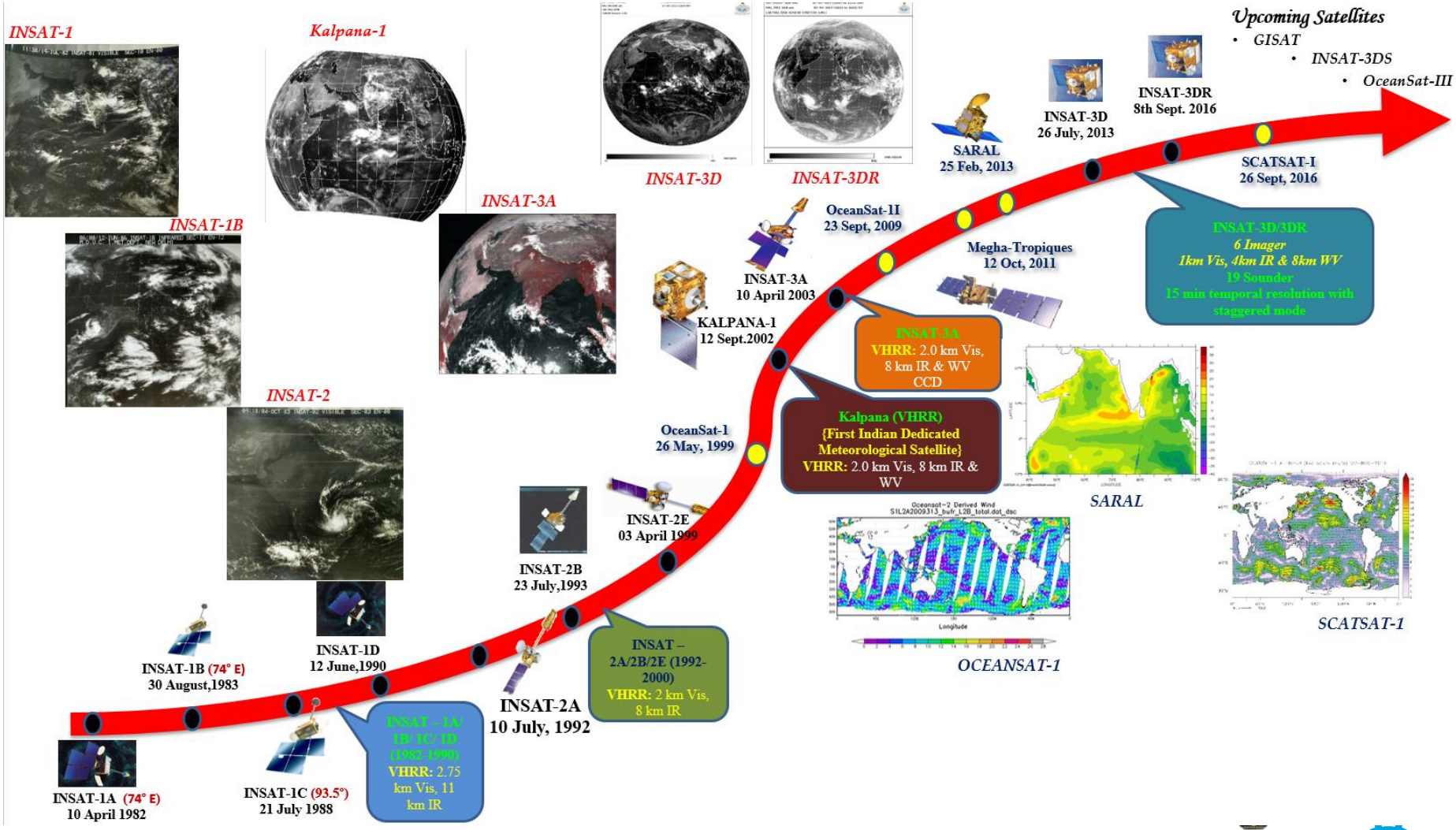
Overview - Planning of Indian satellite systems



Coordination Group for Meteorological Satellites

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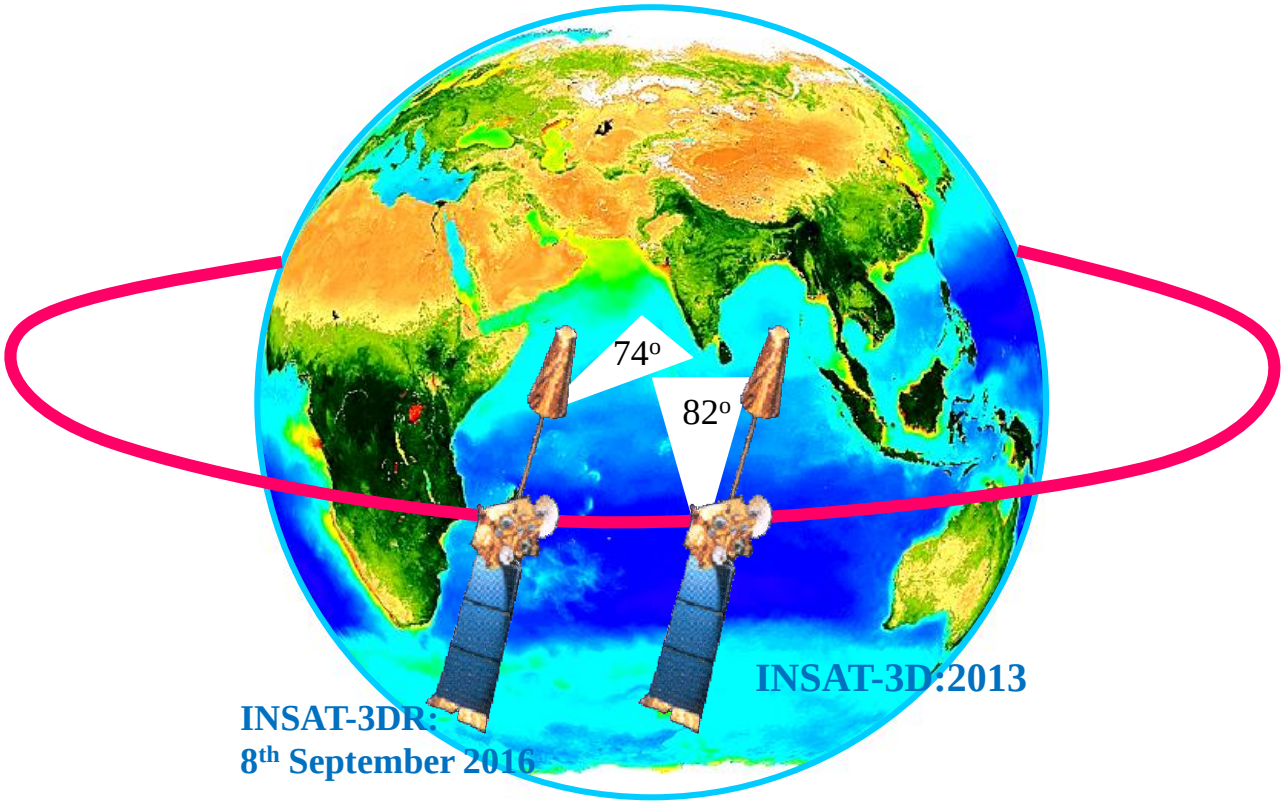
Overview - Planning of Indian satellite systems

Satellite	Sensor	1980-1990	1990-2000	2000-2010	2010-2020
INSAT-1A (1982)	VHRR (VIS,TIR)	OLR, CMV, Rain, Cloud Image			
INSAT-1B (1983)	VHRR (VIS,TIR)	OLR, CMV, Rain, Cloud Image			
INSAT-1C (1988)	VHRR (VIS,TIR)	OLR, CMV, Rain, Cloud Image			
INSAT-1D (1990)	VHRR (VIS,TIR)		OLR, CMV, Rain, Cloud Image		
INSAT-2A (1992)	VHRR (VIS,TIR)		OLR, CMV, Rain, Cloud Image		
INSAT-2B (1993)	VHRR (VIS,TIR)		OLR, CMV, Rain, Cloud Image		
INSAT-2E (1999)	VHRR (VIS,WV,TIR) CCD (VIS,NIR,SWIR		OLR, AMV, UTH, Rain, Cloud Image		
Kalpana-1 (2002)	VHRR (VIS,WV,TIR)		OLR, AMV, UTH, Rain, Cloud Image		
INSAT-3A (2003)	VHRR (VIS,WV,TIR) CCD (VIS,NIR,SWIR		OLR, AMV, UTH, Rain, Cloud Image		
INSAT-3D (2013)	Imager (VIS, SWIR, MIR, WV, TIR1, TIR2) Sounder (18 IR + VIS)			OLR, AMV, UTH, Rain, Cloud Image Temperature, humidity profiles, Ozone	
INSAT-3DR (2016)	Similar to INSAT-3D			OLR, AMV, UTH, Rain, Cloud Image Temperature, humidity profiles, Ozone	
INSAT-3DS (2022)	Similar to INSAT-3D				OLR, AMV, UTH, Rain, Cloud Image Temperature, humidity profiles, Ozone

Current Indian Geostationary Meteorological Satellites



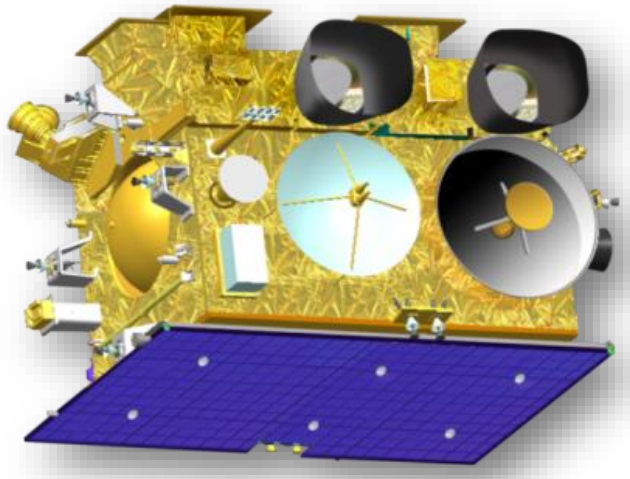
Current Indian Geo stationary Meteorological satellites

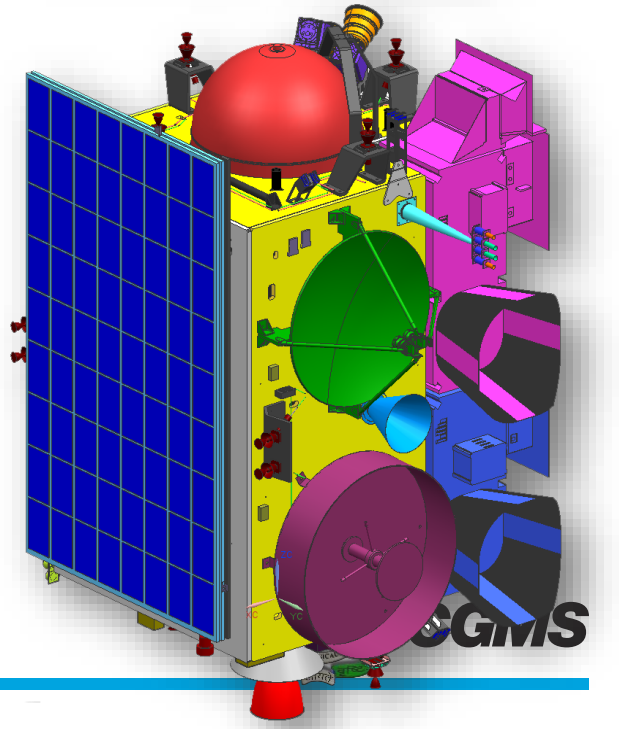
At present the following three INSAT satellites are in operation

INSAT-3D is a India's advanced weather satellite and was launched in the early hours of July 26, 2013 from Kourou, French Guiana, and has successfully been placed in Geosynchronous orbit. It is a dedicated meteorological satellite and carries four payloads: Imager (Six Channels),Sounder (Nineteen Channels),Data Relay Transponder(DRT) &Satellite Aided Search and Rescue (SAS & R)

INSAT-3DR is a India's advanced dedicated meteorological satellite and was launched on 8th September, 2016 which carries four payloads: Imager (Six Channels),Sounder (Nineteen Channels),Data Relay Transponder(DRT) &Satellite Aided Search and Rescue (SAS & R).

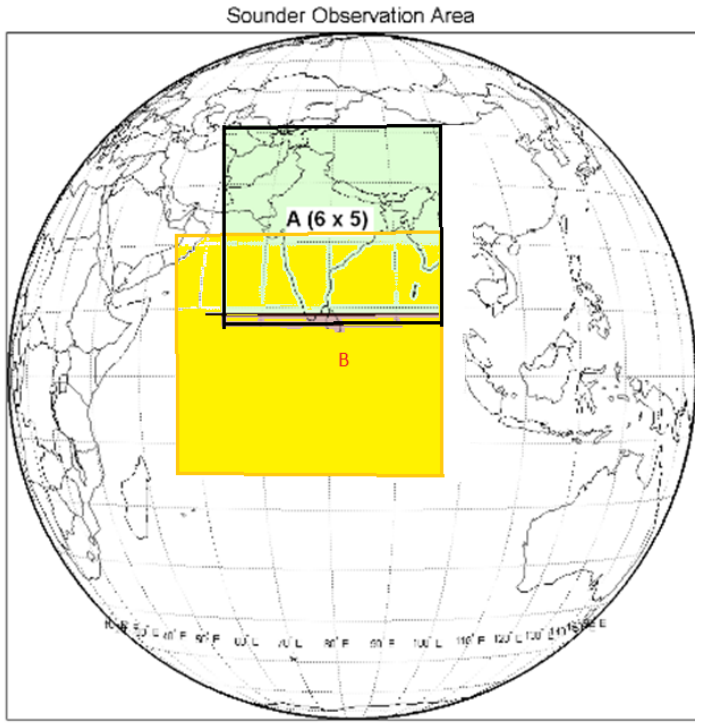
INSAT-3DR is being used in staggered mode with INSAT-3D in order to get effective temporal resolution of 15 minutes.





Operational scenario of INSAT-3D/3DR

INSAT Series	Temporal Resolution
3D -Imager (6 Channel)	½ hourly (xx00 & xx30 UTC)
3D -Sounder (19 Channel)	1 ½ hourly (two times region-B) and hourly (Three times Region-A)
3DR -Imager (6 Channel)	½ hourly (xx15 & xx45 UTC)
3DR -Sounder (19 Channel)	Hourly (Three times Region-A) and 1 ½ hourly (two times region-B)



Sector-A
0000UTC-INSAT-3D
0100UTC-INSAT-3D
0200UTC-INSAT-3D
0300UTC-INSAT-3DR
0400UTC-INSAT-3DR
0500UTC-INSAT-3DR

Sector-B
0000UTC-INSAT-3DR
0130UTC-INSAT-3DR
0300UTC-INSAT-3D
0430UTC-INSAT-3D

Then this cycle will be repeated on six hourly basis.

Modified scan strategy of INSAT-3D and INSAT-3DR sounder payload has been implemented with effect from 12.08.2017. INDIAN region sector data is now available on hourly basis and Ocean region data is available on one and half hourly basis.

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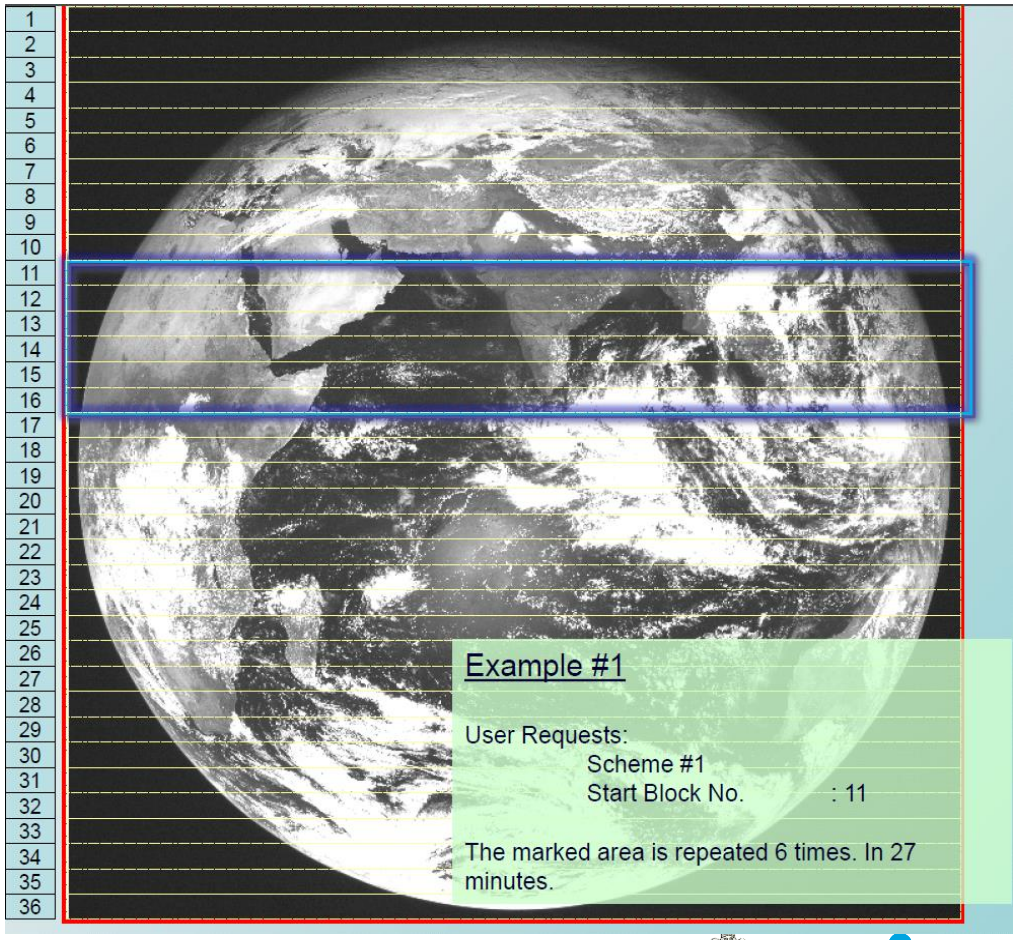
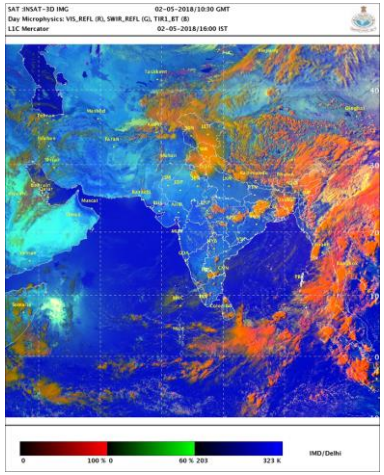
Rapid Scan Strategy of Imager of INSAT-3DR has been tested in operational scenario to be adopted during Cyclone/ specific weather event.

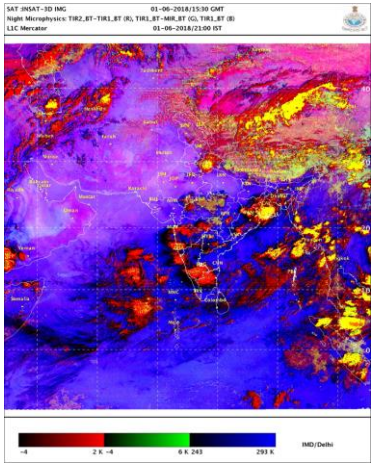
SOP has Been finalized and it will be activated on requirement basis

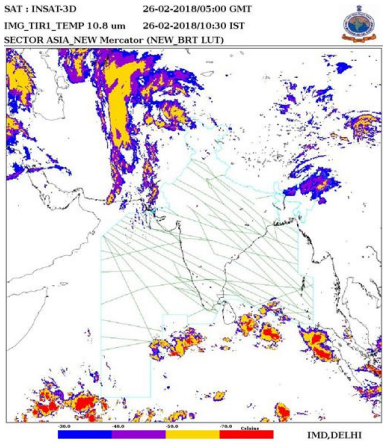
- Extent of coverage: 6 Blocks (3° coverage of 234 lines) each of 4 minute
- No. of repetitions: 6
- Time required: 27 minutes
- (6 blocks with 6 repetitions)

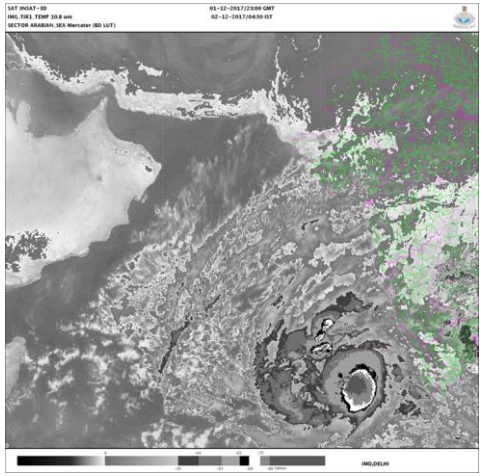


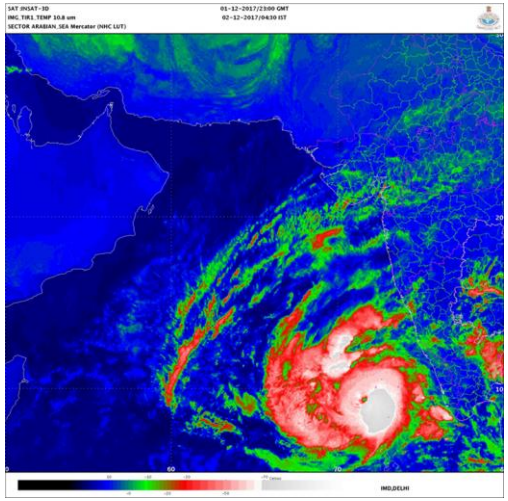
IMD generate the different types of spectral band, RGB, BD and NHC curve images at full globe & special sectors level to serve different stake holders for their specific use in aviation, tourism and power sectors

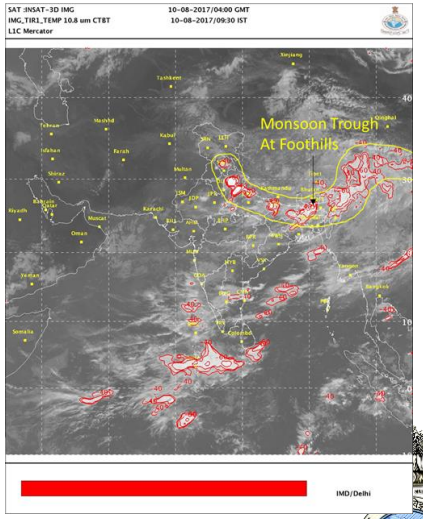












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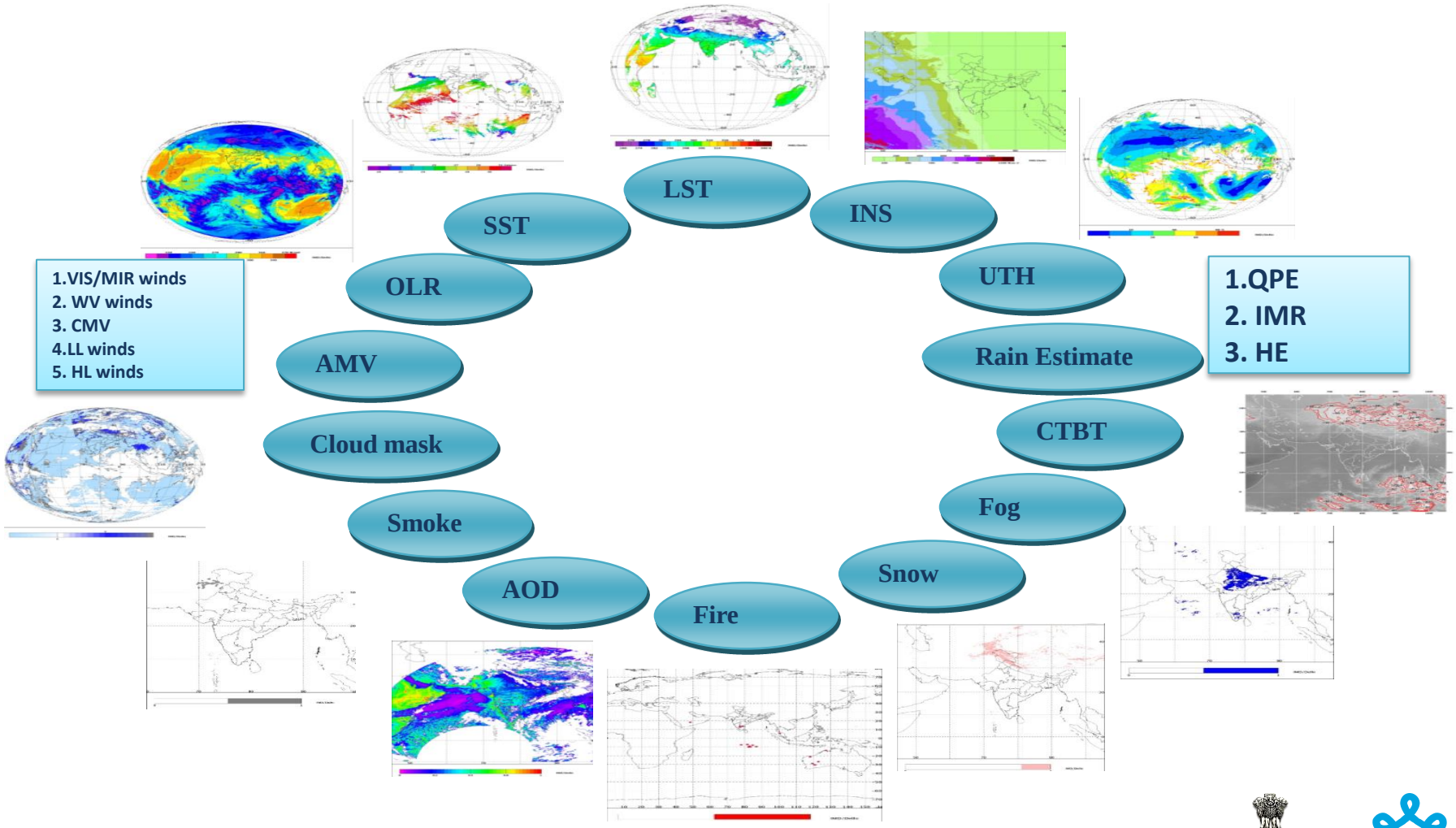
Geophysical parameters/products of INSAT-3D/3DR Imager



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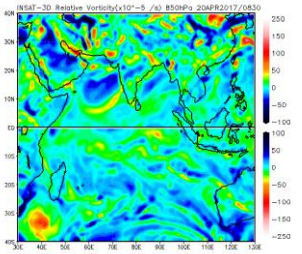
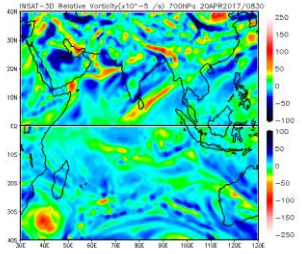
Wind Derived Products from INSAT-3D/3DR Imager Winds

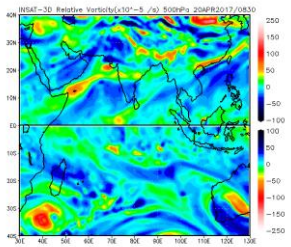
Vorticity



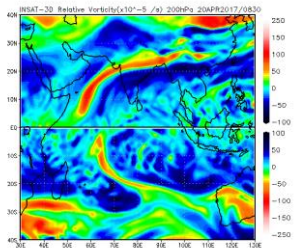
850 hPa



700 hPa

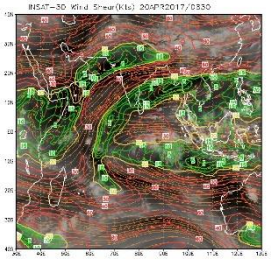


500 hPa

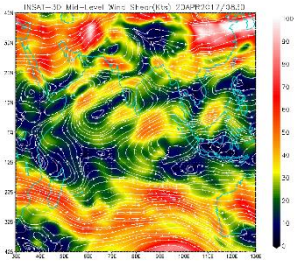


200 hPa

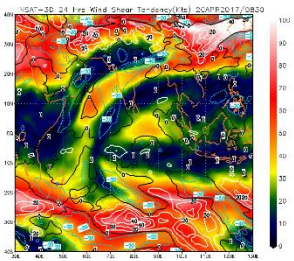
Wind Shear



Wind Shear

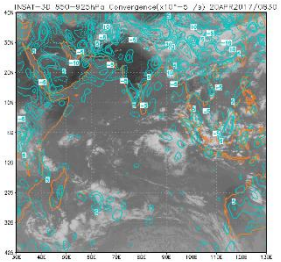


Mid Level Wind Shear

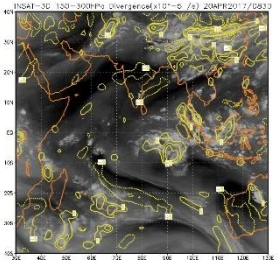


Wind Shear Tendency

Convergence & Divergence



Low Level Convergence



Upper level Divergence

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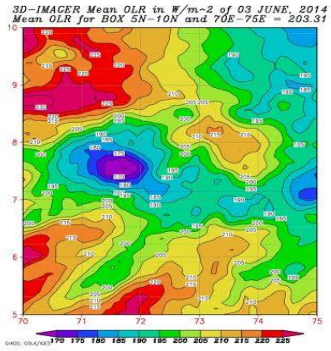
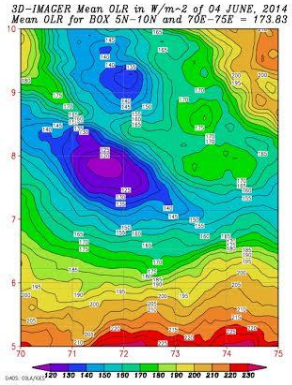
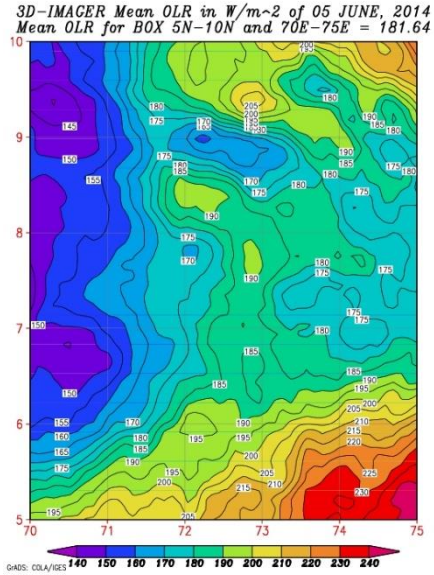
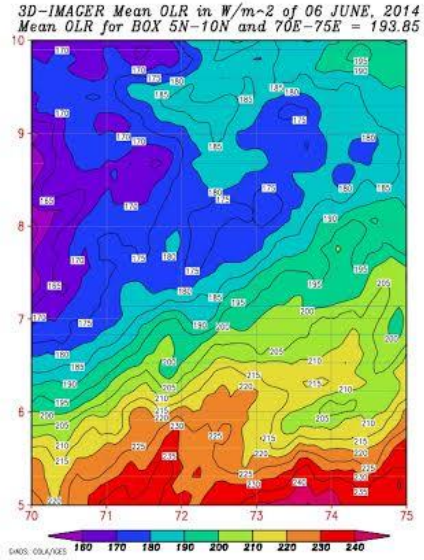
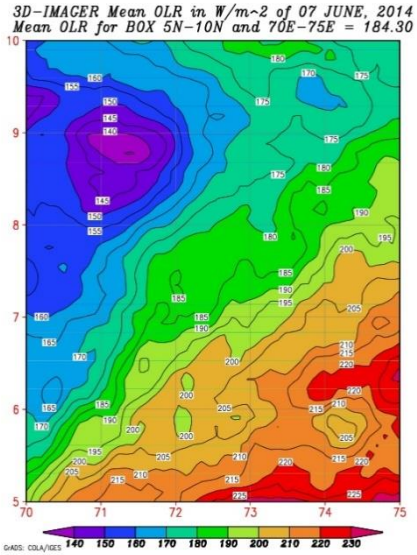
Monitoring of Monsoon onset through OLR value of INSAT-3D Imager in the box 5-10N & 70-75 E











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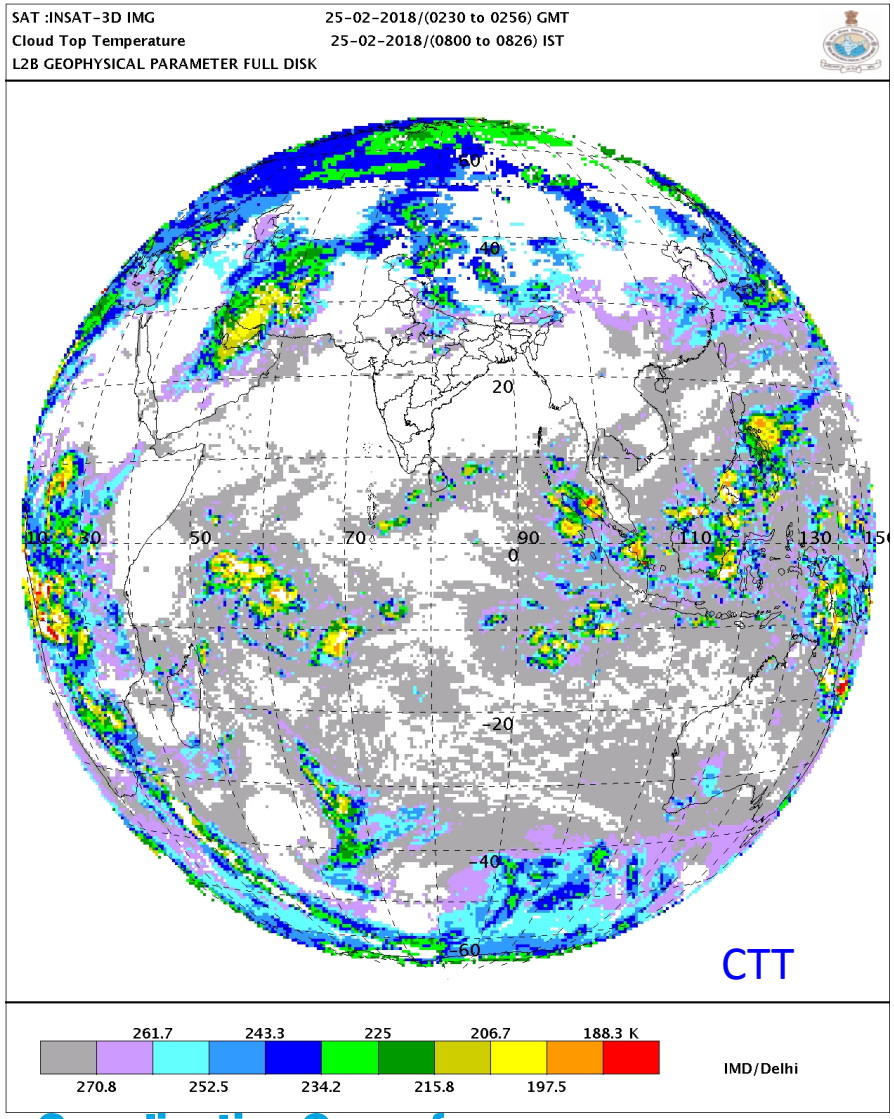
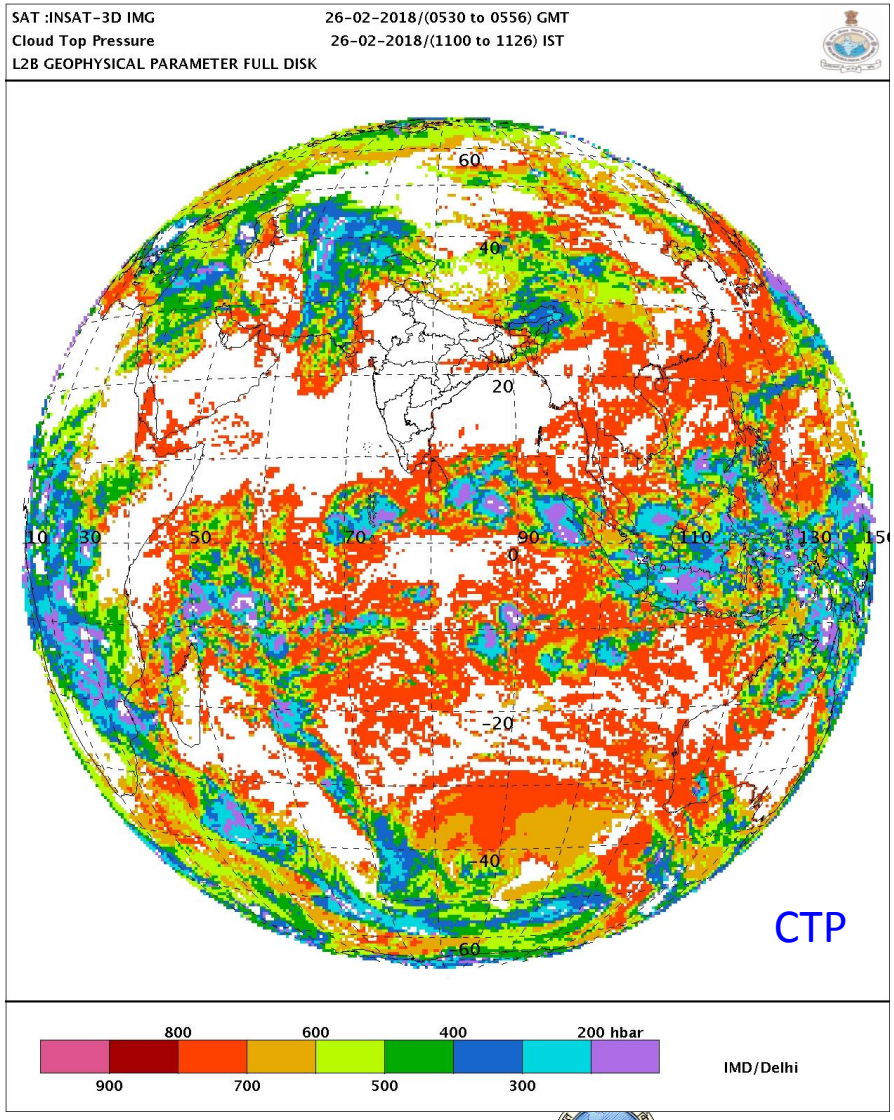
New Set of Products started during this year- Cloud fraction, clear Sky-BT, CTP, CTT from Imager





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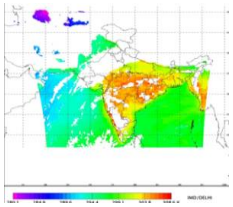
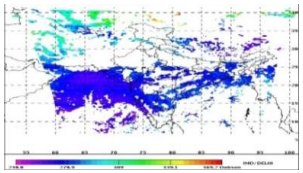
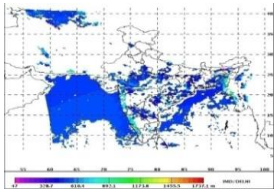
Geophysical parameters OF INSAT-3D/3DR Sounder



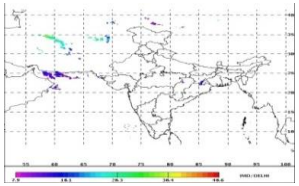
Temperature profile



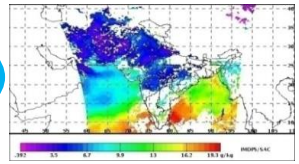
Total ozone



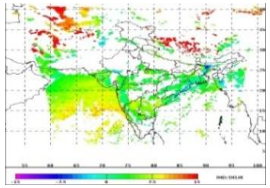
Geo potential height Profile



Dry microburst index

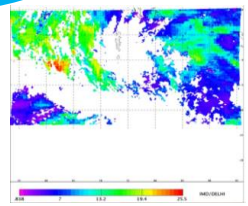


Humidity profile

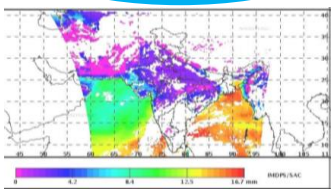


Lifted Index

Maximum vertical theta –e differential



Layer & perceptible water index (1000-900, 900-700, 700-300hpa)



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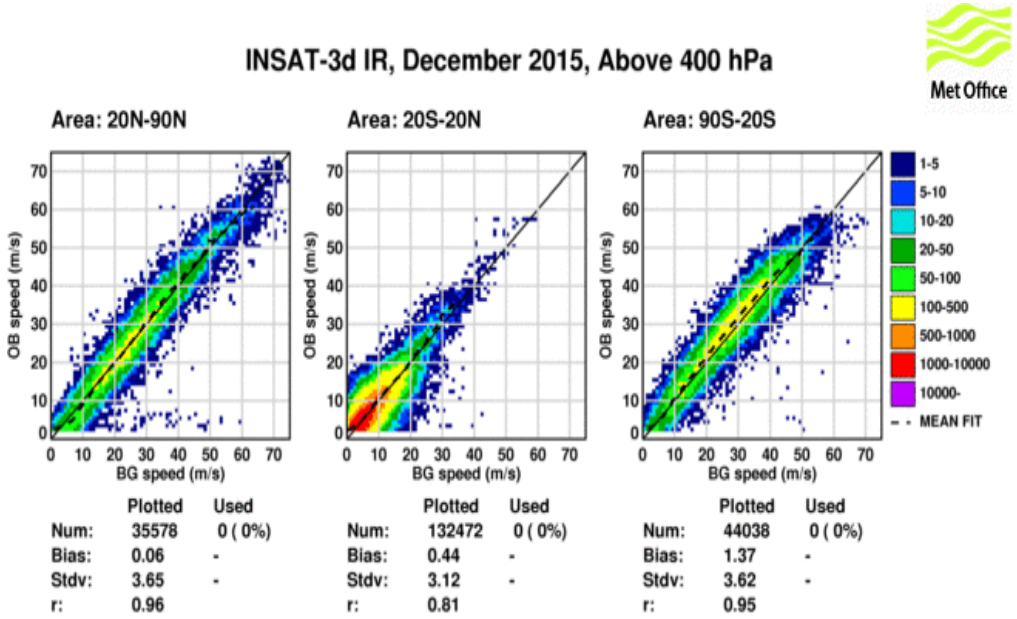
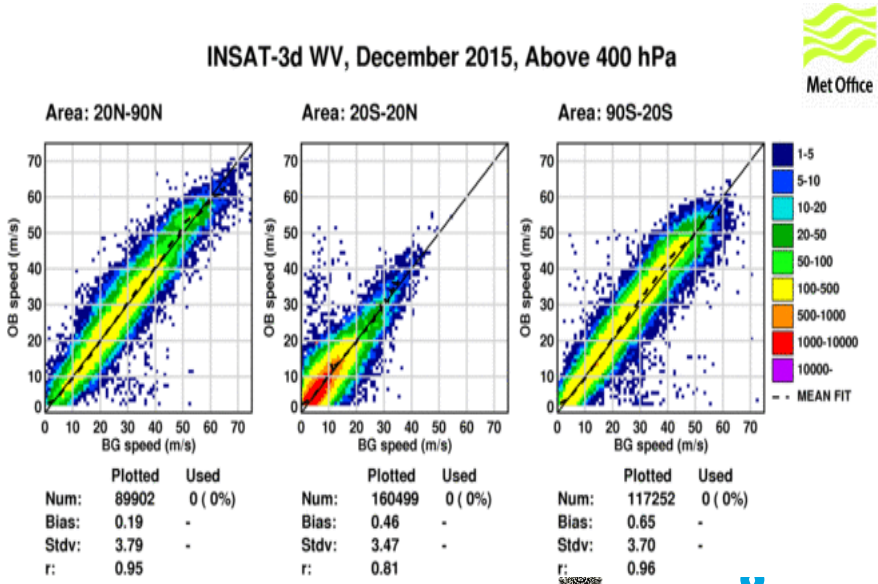
Present Status of INSAT-3D/3DR Radiances and Winds

INSAT-3D/3DR radiances (Imager/Sounder) are being assimilated to the IMD NWP models.

INSAT-3D/3DR derived Winds (CMV/WVW) are being assimilated to NCMRWF model.





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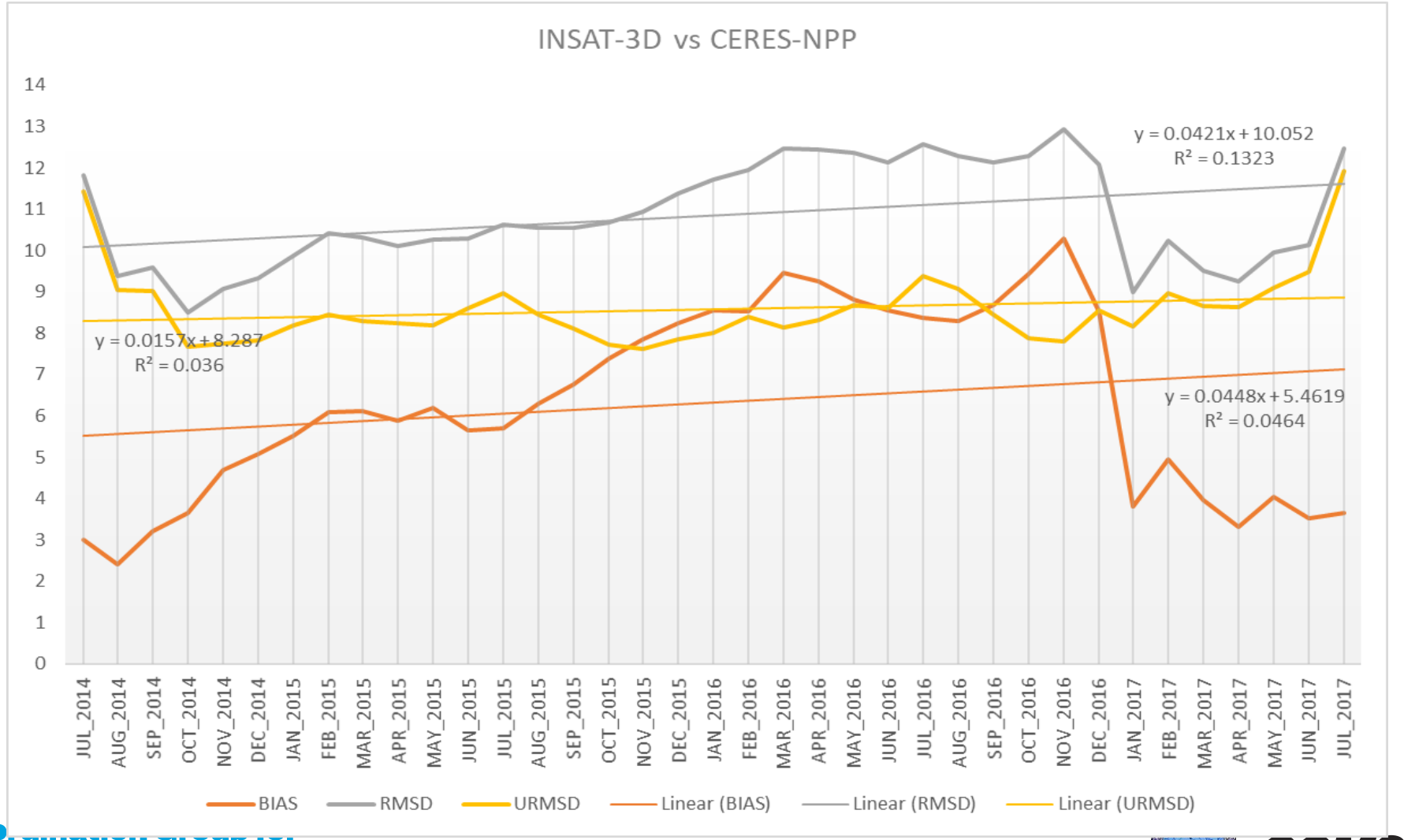
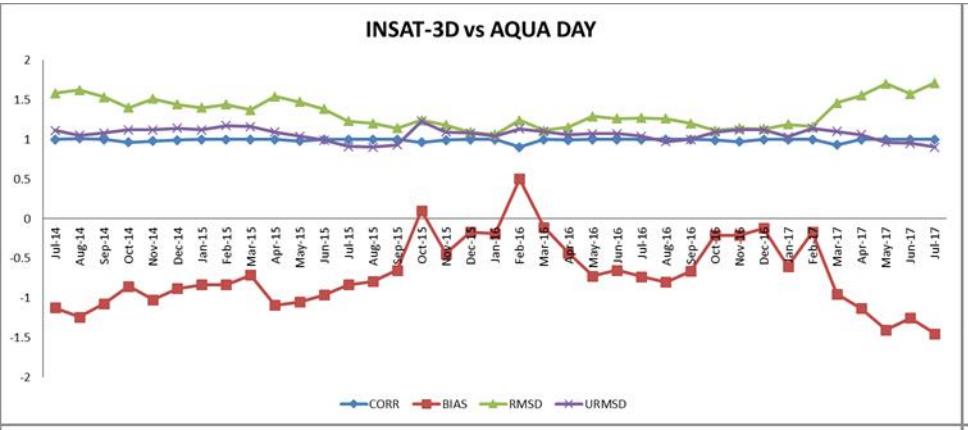
OLR Validation

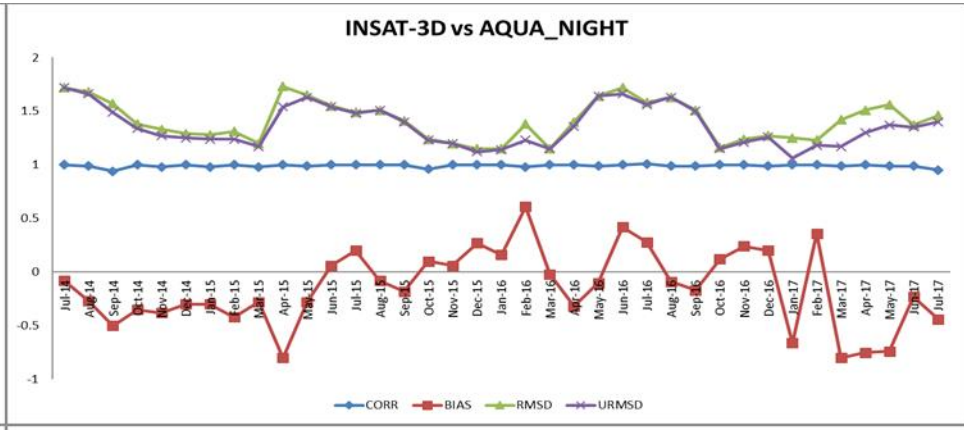
CORR	BIAS	RMSD	URMSD
0.97	6.31 W/m2	10.85 W/m2	8.58 W/m2

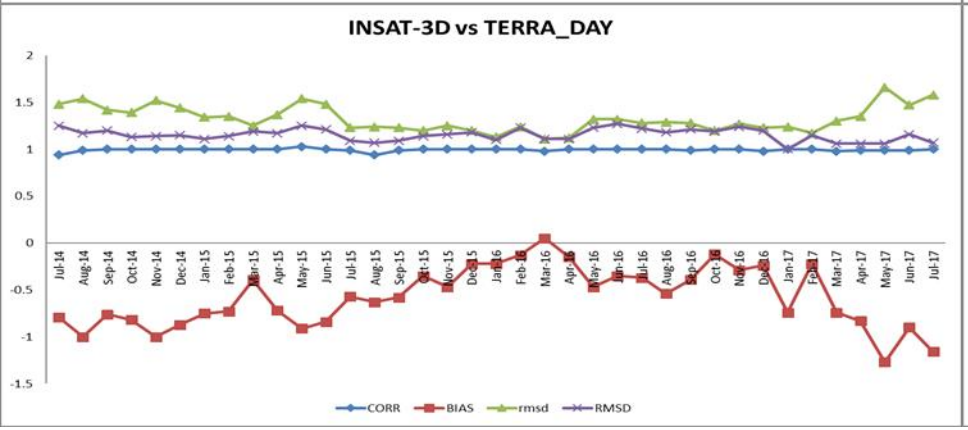


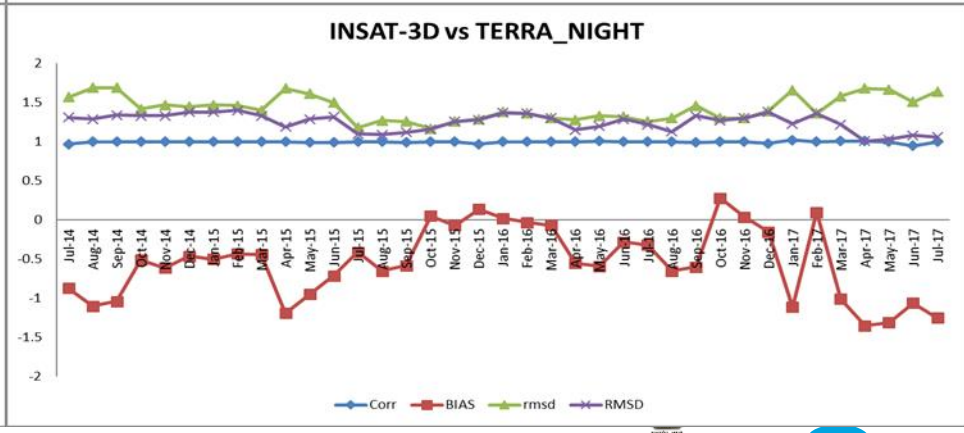
SST Daytime and Nighttime validation

	CORR	BIAS	RMSD	URMSD
DAY	0.99	-0.62 K	1.32 K	1.11 K
NIGHT	0.99	-0.29 K	1.42 K	1.33 K



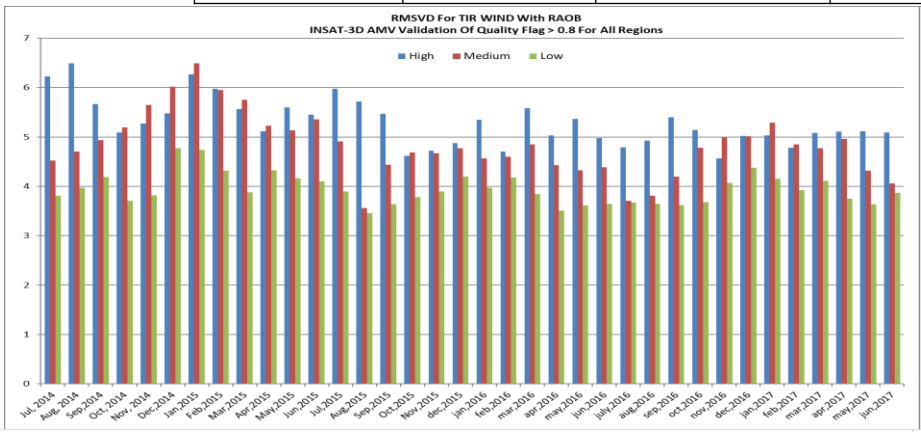


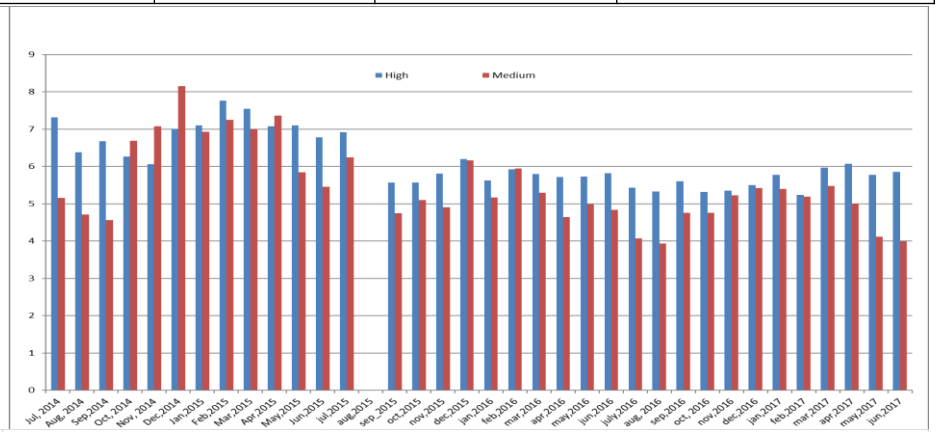


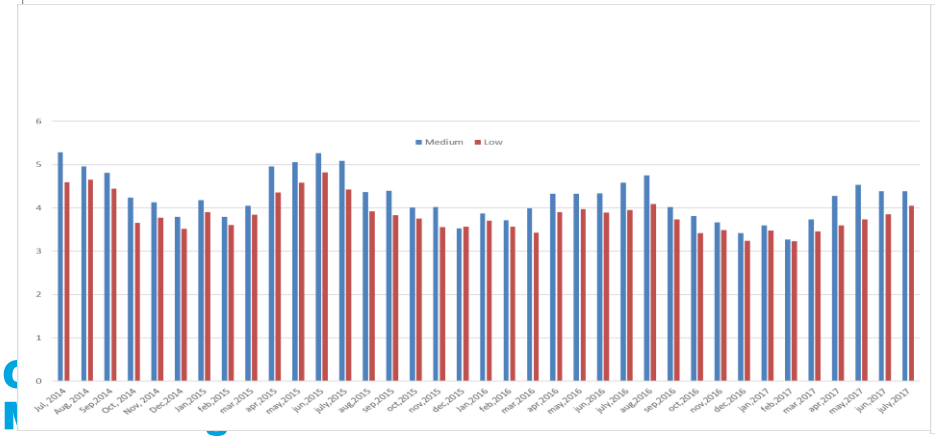


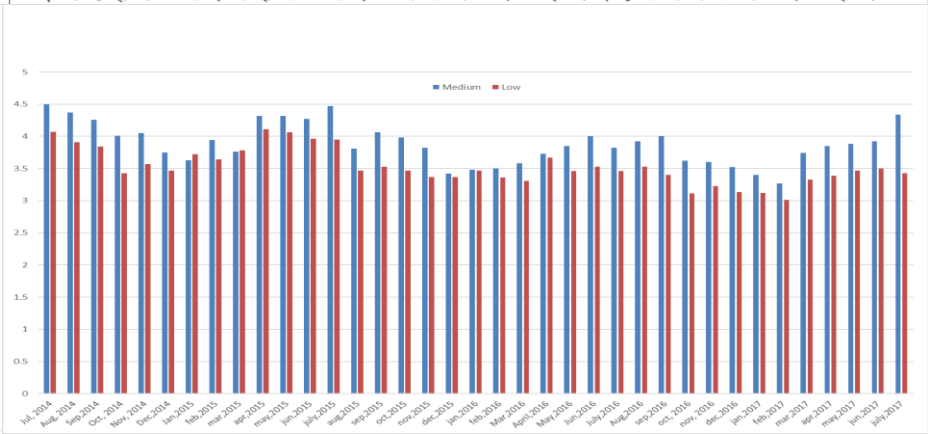
AMV-validation

WIND	RMSE (m/sec)			Bias (m/sec)		
	High	Medium	Low	High	Medium	Low
IR	5.30	4.83	3.94	-0.04	-1.01	-0.26
WVW	6.14	5.47	_	0.21	-0.60	_
MIRW	_	3.97	3.71	_	0.036	0.506
VISW	_	3.89	3.531	_	0.107	0.308

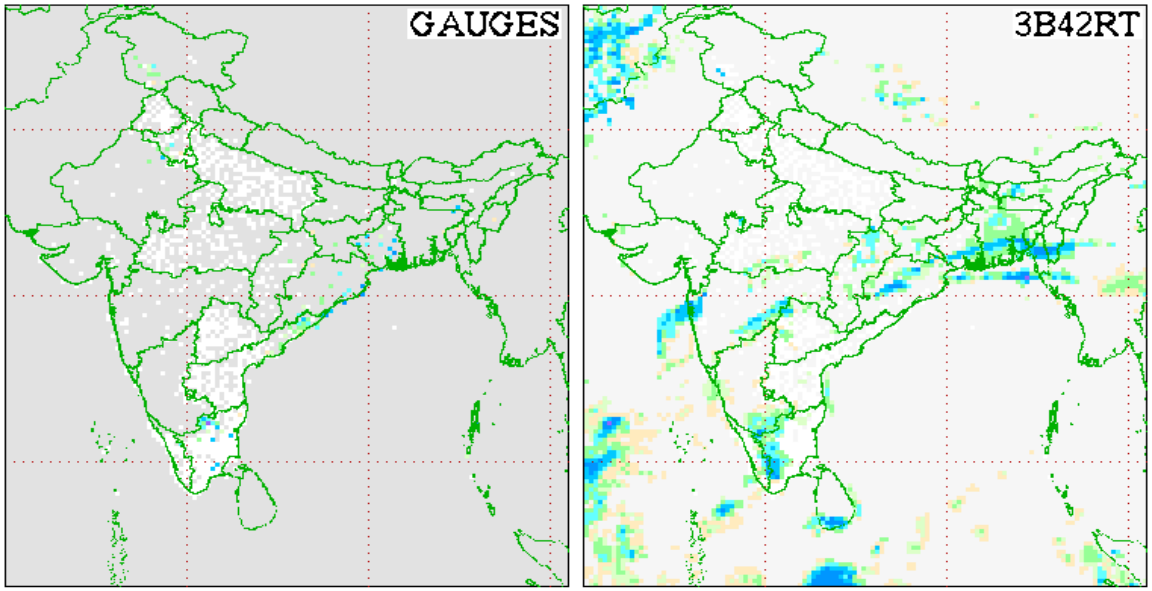


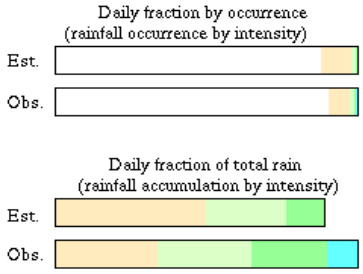






Development of IPWG inter-comparison site over India-in progress
Dr Chris Kidd and IMD team is working – it will be completed by the end of 2018





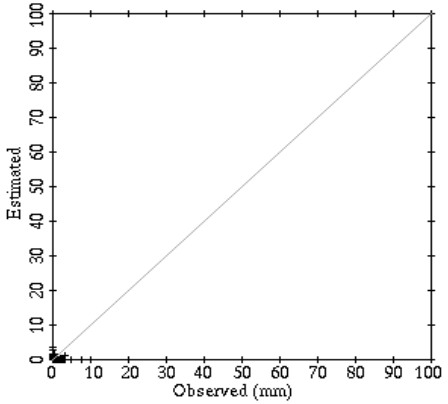
	Estimated zero	Estimated rain
Observed zero	792.	119.
Observed rain	86.	22.

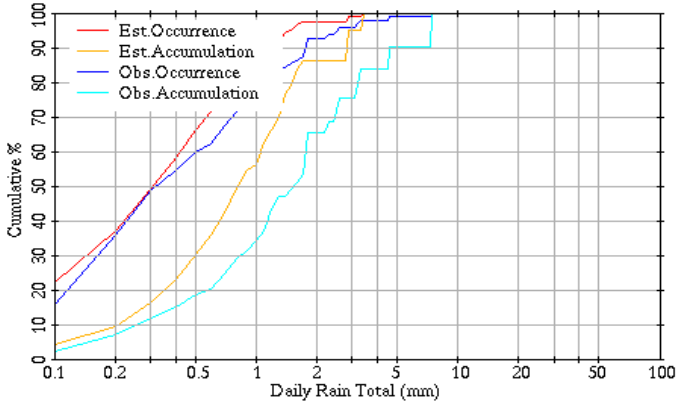
POD 0.204
FAR 0.844
HSS 0.040

	Estimated <1mm	Estimated >=1mm
Observed zero	822.	102.
Observed rain	75.	20.

POD 0.211
FAR 0.836
HSS 0.066

	Observed	Estimated
Number of points	1019.	1019.
Raining points	108.	141.
Raining points >1mm	92.	122.
Mean rain total	0.77	0.72
Conditional rain total	7.30	5.19
Maximum rain total	74.00	34.05





Bias	-0.05
Ratio	0.929
RMSE	4.7
Correlation	0.043
#samples	1019.

24h to 03Z
20180209

C.Kidd'18

Meteorological Satellites

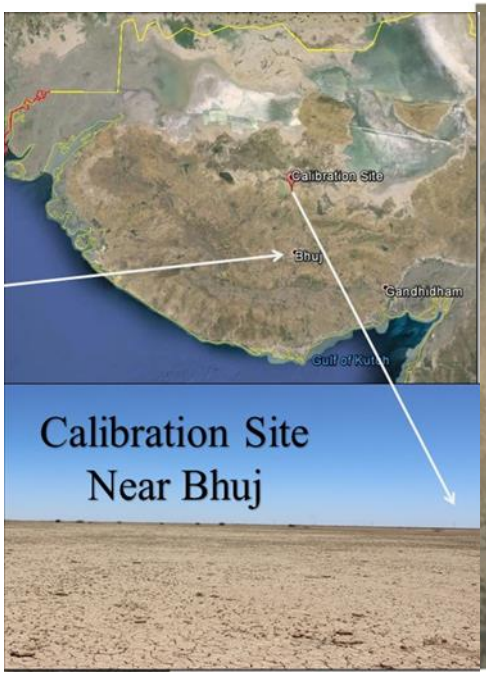
CGMS

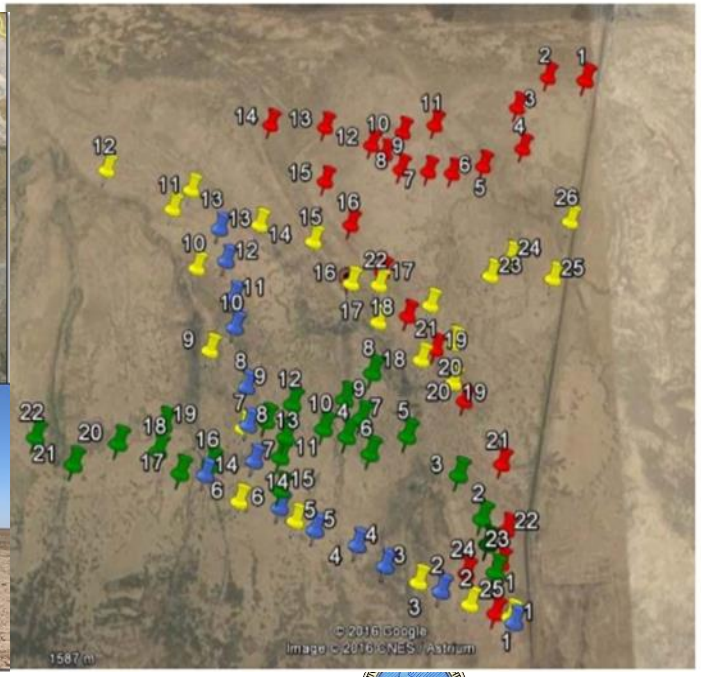
Calibration Activities at IMD

- Establishment of In-situ Calibration and Validation site for INSAT-3D/3DR satellite for Visible and SWIR sensors at (Site Selected-Bhuj, Gujarat)[IMD-ISRO], Three filed campaigned has been carried out so far.
- Sustained and Coordinated Processing of Environmental Satellite data for Climate Monitoring (SCOPE-CM) IOGEO Project for Kalpana-1/INSAT-3D[IMD-EUMetSat].
- Lunar/Moon Calibration of INSAT-3D/3DR

Name of Site = Khawda (40km away from Bhuj), Great Rann of Kutchh, Gujarat

Calibration Coefficients IR channels are being updated on daily basis by using GSICS corrections of last 30 days dynamically carried out by SAC Ahmedabad, in IMDPS system.



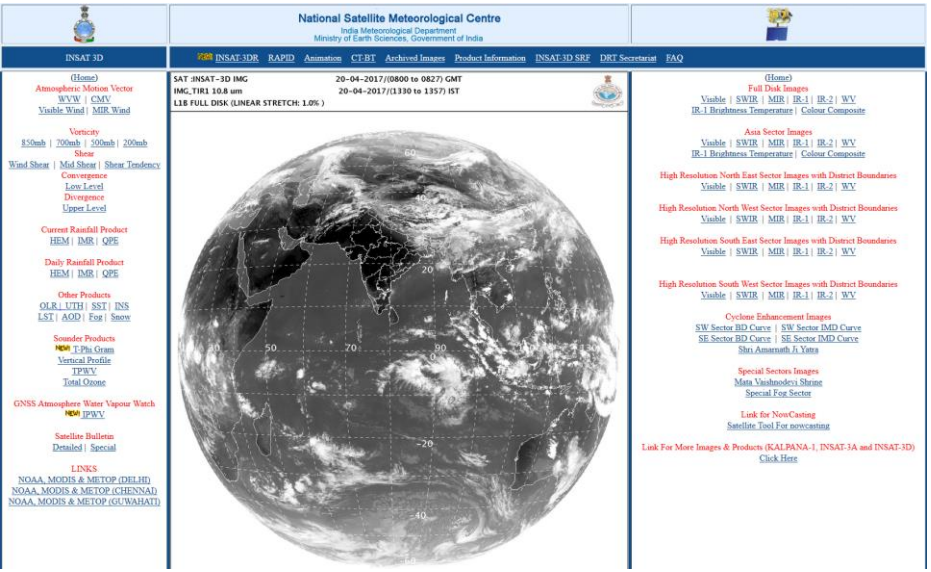


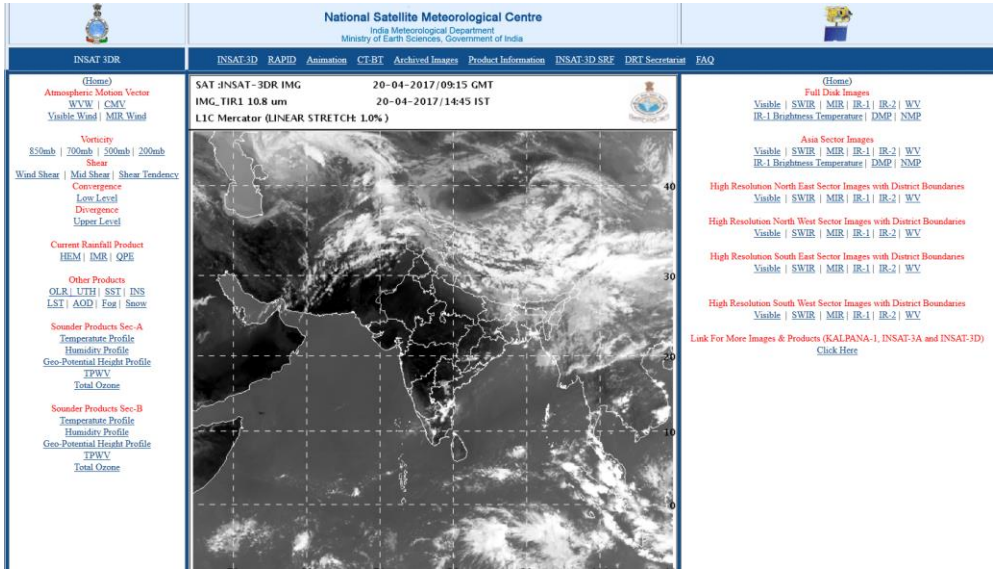
GTS dissemination

- RO Data of ROSA payload of Megha-Tropics are being disseminated via GTS in BUFR format since last week of September 2017.
- Scatsat-1 wind data is being disseminated on GTS since April 2018.
- INSAT-3D derived Winds (IR/WV/Vis) as in BUFR format is also being provided to UKMET Office through GTS
- IMD is also contributing to the WMO's RARS group by providing the direct broadcast of NOAA and Metop data from the Delhi and Chennai receiving stations.

Dissemination through a dedicated IMD web site Updated every fifteen Minutes

http://satellite.imd.gov.in/insat.htm





Coordination Group for Meteorological Satellites

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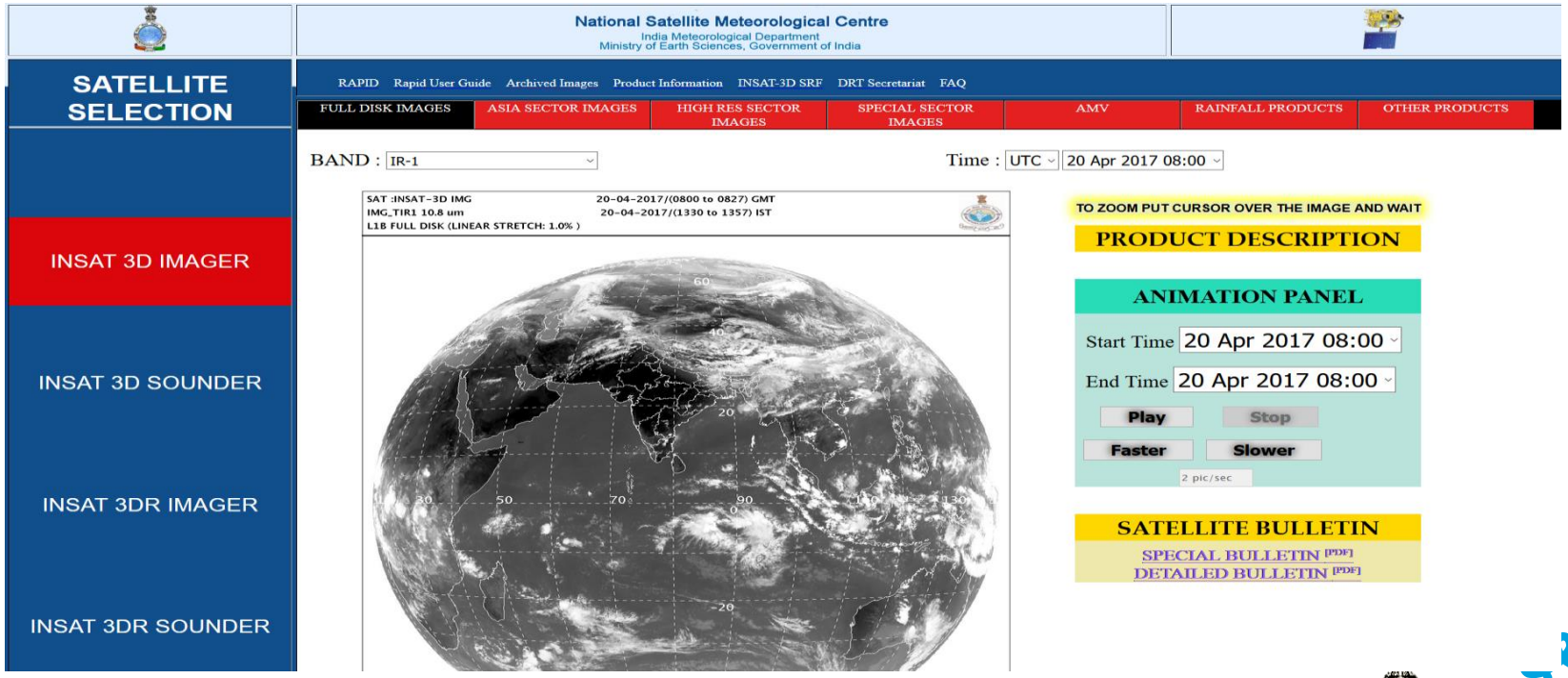
Dissemination through a dedicated IMD web site Updated every fifteen Minutes

http://satellite.imd.gov.in/insat_new.htm

- Provision to view last 48 channel images/products images through drop down menu.
- Product description of all Imageries and Products are made available on webpage.
- Provision for running Animation for all channel images/products images for last 48 scans along with date and time selection.

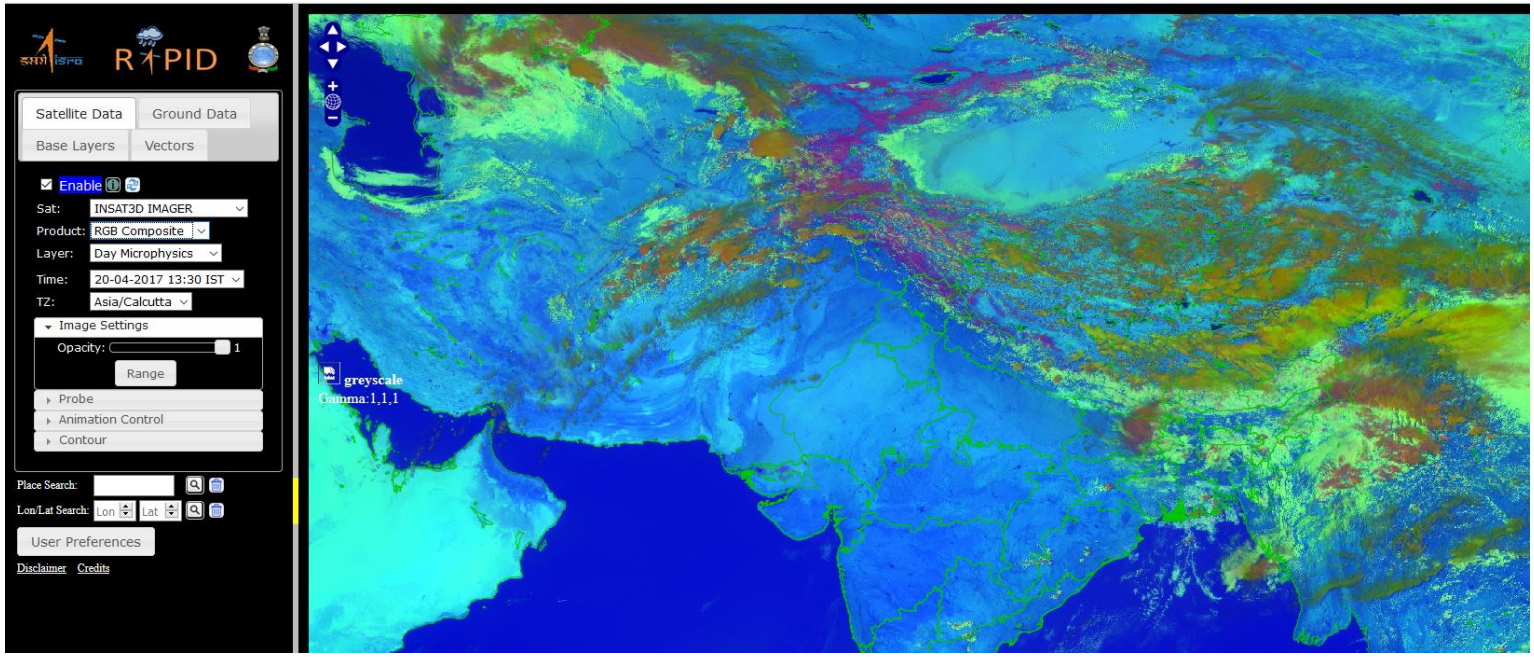


Online Archival of all channel images & products images are available of last six month

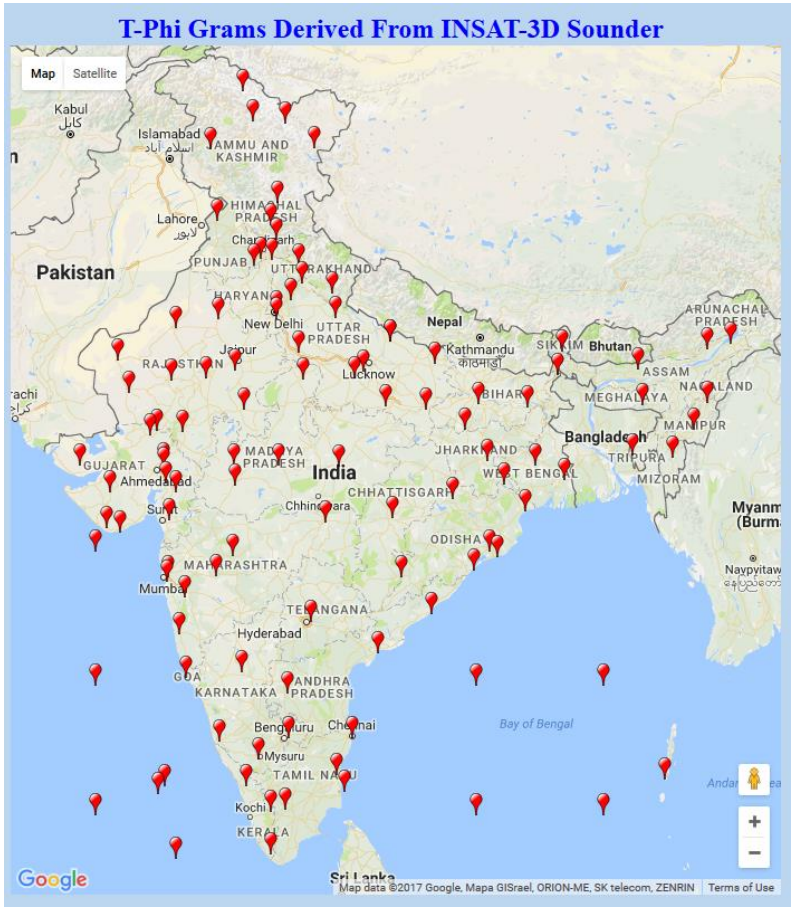
http://satellite.imd.gov.in/archive/

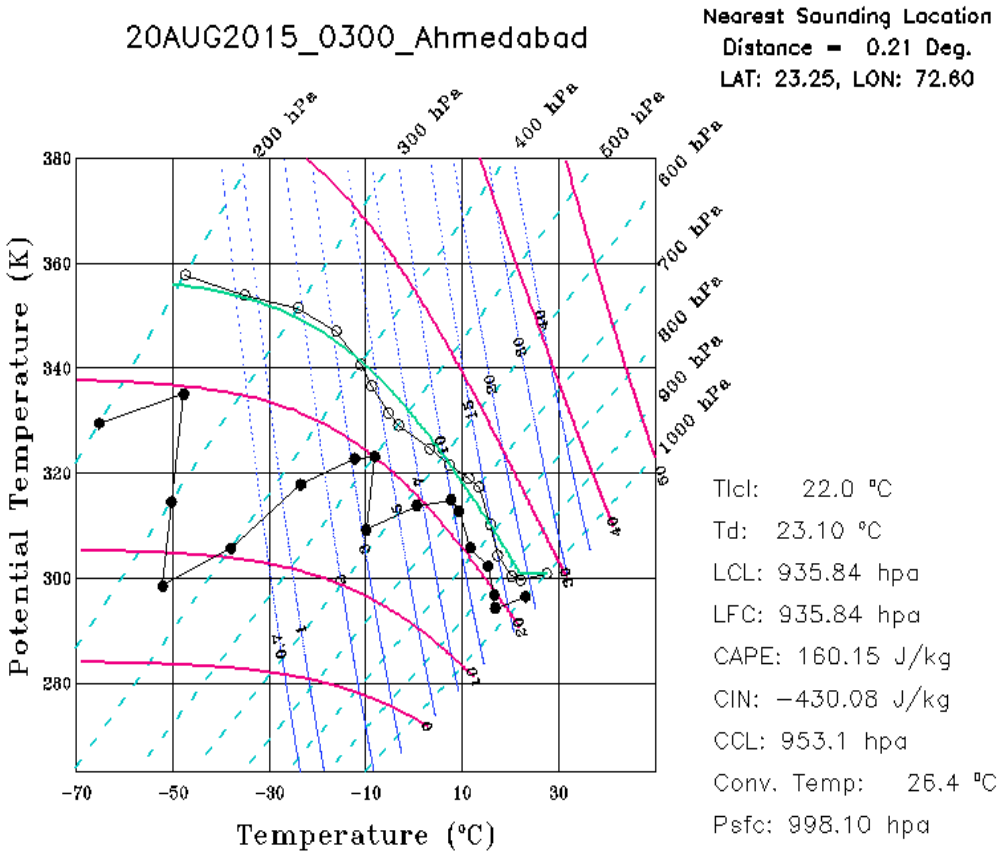
RAPID

RAPID (Real time Analysis of Products & Information Dissemination) :- It is a web based quick visualization and analysis tool for satellite data on a real time basis. This introduces Next Generation Weather Data Access & Advanced Visualization.
http://www.rapid.imd.gov.in
The user manual for the use of RAPID was prepared and document may be accessed http://satellite.imd.gov.in/desc/RAPID_User_Guide.pdf.



Provision of generation of T-phi gram for 105 locations.





Coordination Group for Meteorological Satellites

CGMS

Possible Areas for Cooperation

Requirement of Nowcasting Tools – Indian region specific nowcasting tool need to be provided using INSAT-3D/3DR and Microwave data of LEO Satellites.

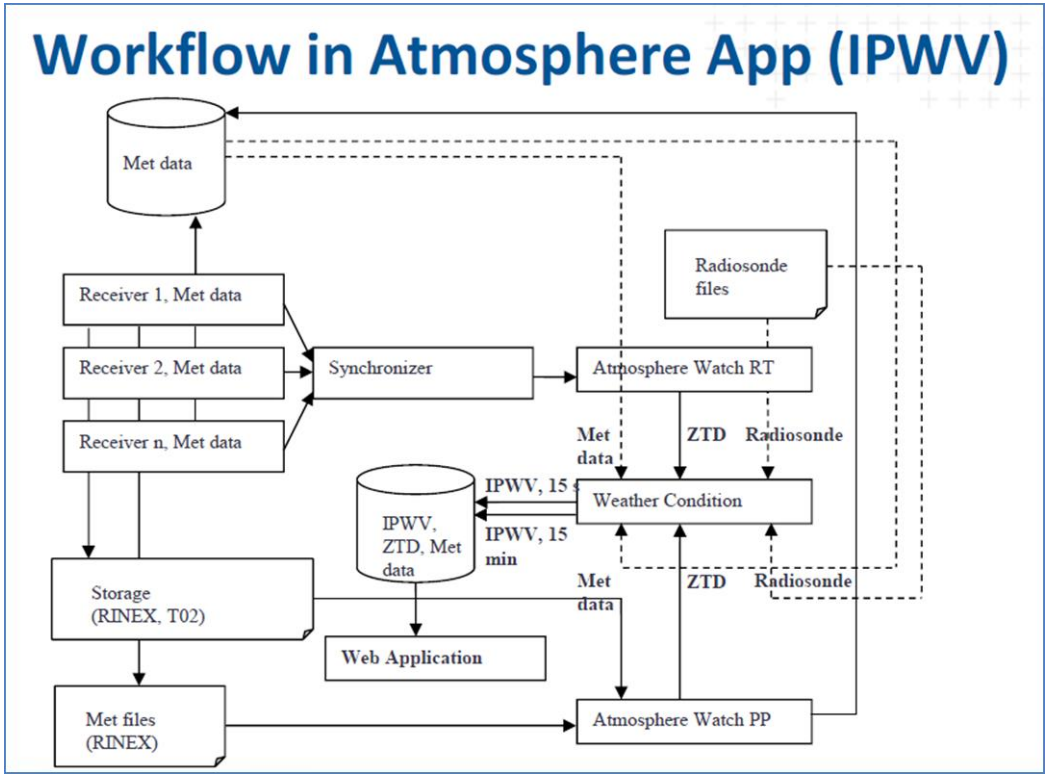
Basic Nowcasting:--- RGB Composite

Advanced Nowcasting/Forecasting:- Duststrom, FOG, Thunderstorms

Advanced Nowcasting:- Blended satellite global precipitation product (GEO+LEO)

IMD - GNSS Network – Present Status

25 GNSS + 5 GPS



Coordination Group for Meteorological Satellites

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Dissemination through a dedicated IMD web site Updated every fifteen Minutes

http://gnss.imd.gov.in/TrimblePivotWeb/

GNSS ATMOSPHERE WATER VAPOUR WATCH

SATELLITE METEOROLOGY DIVISION

IMD ATMOSPHERE WATCH

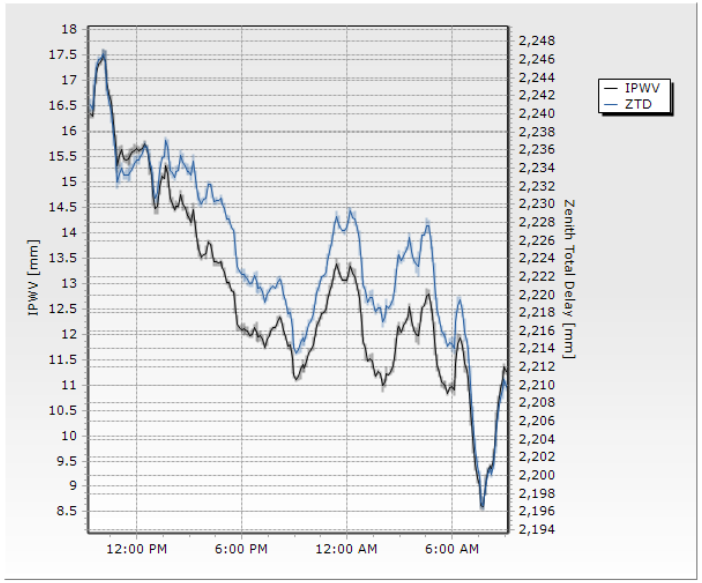
> Home > Atmospheric Conditions > Station Chart

- Home
  - Sensor Map
  - **Atmospheric Conditions**
    - IPWV Map
    - Station Chart
    - Condition Chart
    - IPWV Contour Map
    - IPWV Surface Map
    - IPWV Surface Map Animation
    - TEC Contour Map
    - TEC Surface Map
    - TEC Surface Map Animation
  - **Position Scatter Plot**
    - Position Scatter Plot
- Administrator Login

Station per Atmospheric Condition

ARGD | Timespan: Last 24 hours | Average Timespan: Raw | Display min and max values

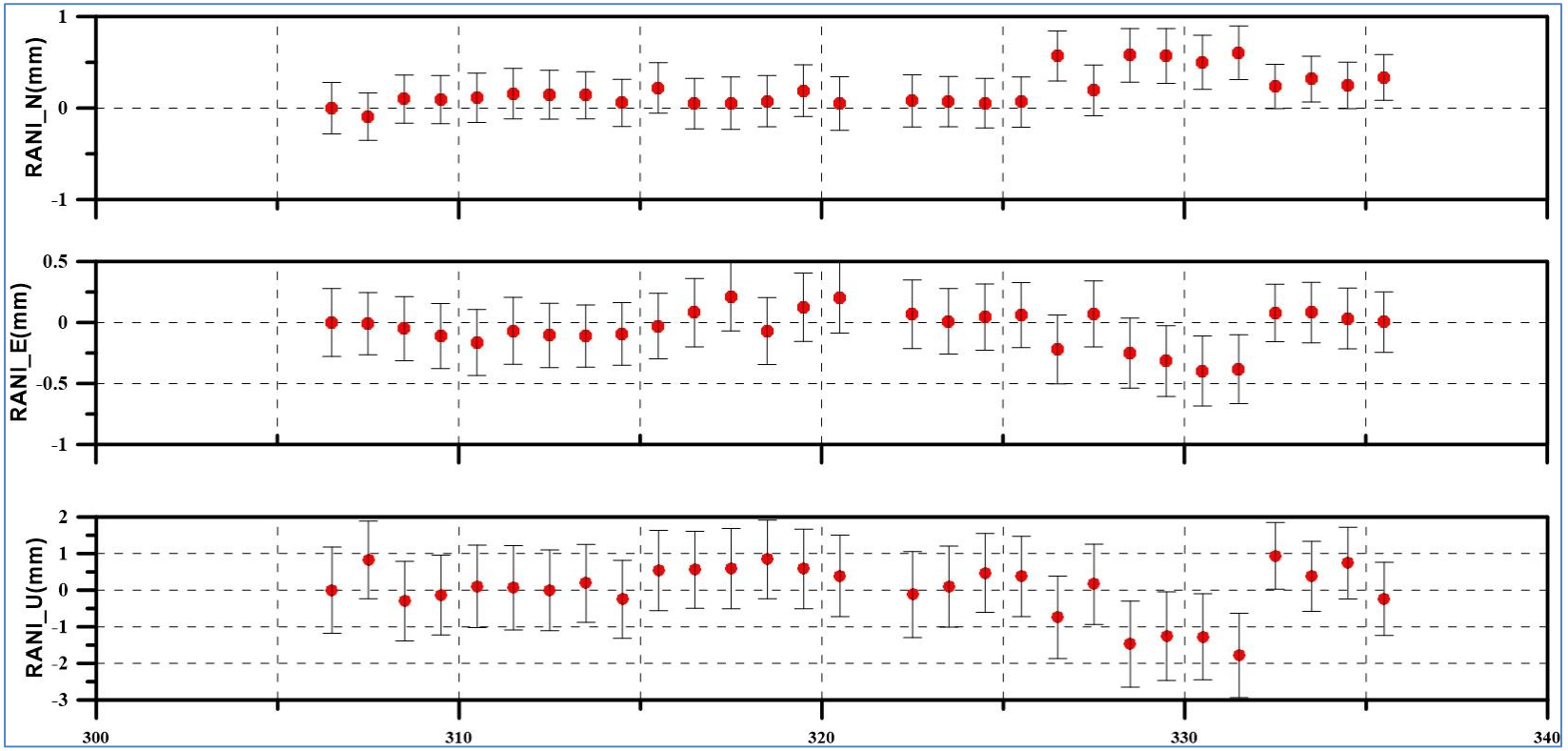
Auto Refresh: Disabled



IPWV
Zenith Total Delay
Temperature
Pressure
Humidity

CONTACT © INDIAN METEOROLOGICAL DEPARTMENT

GNSS Network data are also being used for variation of XYZ Coordinate with respect to IGS Reference Stations for seismological use



Satellite Bulletins issued by IMD

Special Winter bulletin

FDP Satellite Inputs 2nd Dec, 2016

Fog

North India

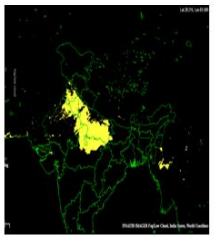
Onset: 13.30 UTC of 01.12.2016 at central UP

Maximum Extent: 0000 UTC spread over PunjabNE Rajasthan, Haryana, UP, north MP

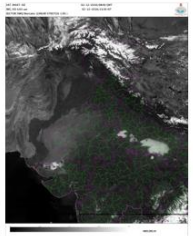
Dissipate: Still persisting over SE UP (0800 UTC of 2.12.2016)

Area at maximum extent: 388000 sq.km Approx.

Major Rail Tracks Affected:Bhatinda-Patiala- Panipath-Delhi-Mathura-Gwalior-Kanpur-Lucknow-Gorakhpur-Allahabad-Rewa.



Fog Product in RAPID 0000 UTC 02.12.2016

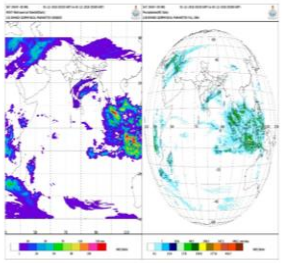


Visible Channel Image 0800 UTC 02.12.2016

Daily Rainfall over north India:

INSAT Multispectral rainfall Product: Upto10mm recorded over east J&K adjoining HP

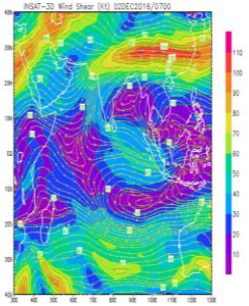
Hydro Estimator Product: No rainfall



INSAT Multispectral Rainfall Daily

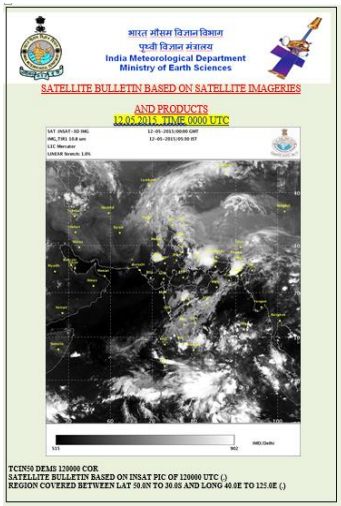
Hydro Estimator Daily

Interpretation of derived products: (based on INSAT-3Dproducts)



Wind shear overnorth India is ranging from 40-80kts.

Thunderstorm Bulletin

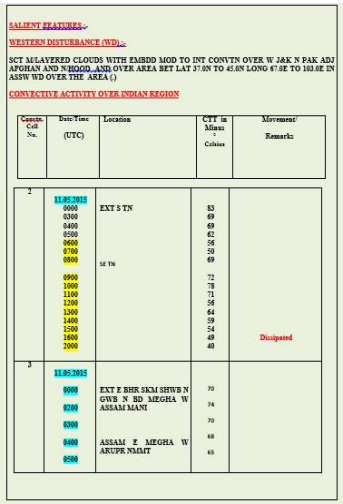


भारत मौसम विज्ञान विभाग
पृथ्वी विज्ञान मंत्रालय
India Meteorological Department
Ministry of Earth Sciences

SATELLITE BULLETIN BASED ON SATELLITE IMAGERIES

AND PRODUCTS
12.05.2015 ,TIME 0000 UTC

TCIN50 DEMS 120000 COR
SATELLITE BULLETIN BASED ON INSAT PIC OF 120000 UTC ()
REGION COVERED BETWEEN LAT 50.0N TO 30.0S AND LONG 40.0E TO 125.0E ()



SALIENT FEATURES:-

WESTERN DISTURBANCE (WD):-

SCT M/LAYERED CLOUDS WITH EMBDD MOD TO INT CONVTN OVER W J&K N PAK ADJ AFGHAN AND N'HOOD. AND OVER AREA BET LAT 37.0N TO 45.0N LONG 67.0E TO 103.0E IN ASSW WD OVER THE AREA ()

CONVECTIVE ACTIVITY OVER INDIAN REGION

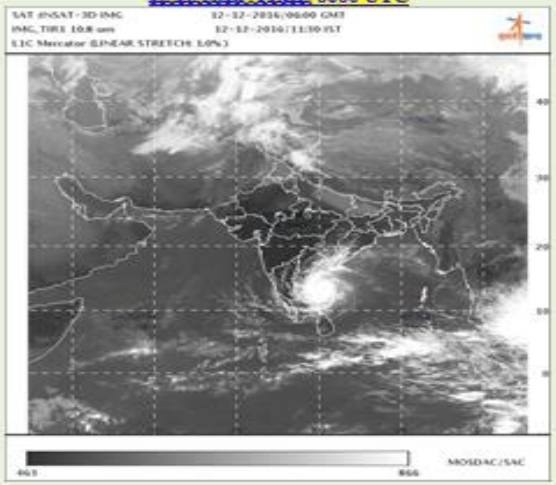
Constn. Cell No.	Date/Time (UTC)	Location	CTT in Minus ° Celsius	Movement/ Remarks
2	11.05.2015 0000	EXT S TN	83	
	0300		69	
	0400		69	
	0500		62	
	0600		56	
	0700		50	
	0800	SE TN	69	
	0900		72	
	1000		78	
	1100		71	
	1200		56	
	1300		64	
	1400		59	
	1500		54	
	1600		49	Dissipated
	2000		40	
3	11.05.2015 0000	EXT E BHR SKM SHWB N GWB N BD MEGHA W ASSAM MANI	70	
	0200		74	
	0300		70	
	0400	ASSAM E MEGHA W ARUPR NMMT	68	
	0500		65	
	0400	ARUPAR NMM	58	
	0700		60	
	0800	ARUPAR NE ASSAM	68	
	0900		58	
	1000	E ARUPAR ADJ ASSAM	67	
	1100		56	
	1200	EXT E ARUPAR	58	
	1300		50	ME DIR
	1400		63	
	1500		57	
	1600		57	
	1700		61	Dissipated
	2000		-	
5	11/05/15 0800	NW RAJ	61	Developing
	0900		67	
	1000	N RAJ	77	
	1100		71	
	1200	N &C RAJ	69	
	1300		57	NE ward Dir
	1400		56	
	1500		64	
	1600		65	Dissipating
	1700		59	
	2000		51	Dissipated
	2200		41	
	2300		-	
6	11/05/15 0800	SW ORS E&W ORS	59	Developing
	0900		66	
	1000		77	
	1100	E ORS ADJ BAY ADJ N COTL AP	75	
	1200		71	
	1300		65	
	1400		59	
	1500		56	
	1600		61	
	1700		62	Dissipated
	2000		-	

7	0900	NW TN	68	DEVELOPING
	1000		70	
	1100		72	
	1200		61	Dissipated
	2300		-	
8	1000	SIK	78	
	1100		80	
	1200	SIK ADJ NIK	81	
	1300		75	
	1400		76	Merged with Cell No 09
	1500		77	
	1700		-	
9	1000	W NIK	68	
	1100		78	
	1200		80	
	1300	NW NIK ADJ MRTWD	75	
	1400		76	
	1500		75	
	1600		73	
	1700	NIK ADJ M MAHA	62	
	2000		56	Dissipated
	2200		24	
	2300		-	
11	1400	VID ADJ NK MP WC CTSGH	62	DEVELOPING
	1500		66	
	1600		64	
	1700		53	Dissipated
	2000	VID ADJ TLNGN	46	
	2200		55	
	-		-	
12	1200	UTKRND NEPAL	63	DEVELOPING
	1400	UTKRND ADJ W UP NEPALADJ E UP	65	
	1500		66	
	1600		75	SE Ward Dir
	1700	SE UTKRND NW UP E UP W NEPAL	67	
	2000		77	
	2200		67	
	2300		68	
	12-05-2015 0000		61	
13	2000	EXT SE BHR ADJ GWB W SHWB SHWB ADJ GWB N BD	62	DEVELOPING
	2200		68	
	2300	SHWB ADJ GWB N BD E MEGHA	71	SE ward
	12-05-2015 0000		67	

Special Satellite Fix Bulletin for Cyclone

भारत मौसम विज्ञान विभाग
पृथ्वी विज्ञान मंत्रालय
India Meteorological Department
Ministry of Earth Sciences

SPL SATELLITE FIX BULLETIN BASED ON SATELLITE IMAGERIES AND PRODUCTS
12.12.2016 TIME 0600 UTC



TCIN50 DEMS 120600

A. TROPICAL DISTURBANCE (VARDAH)

B. 12/0600Z

C. 13.2N

D. 80.8E

E. INSAT 3D

F. T 4.0/4.0

G. VIS / IR

H. REMARKS..EYE PATTERN WITH EMBEDDED DISTANCE GRATER THAN 0.75 DEGREE (E 5, EYE ADJUSTMENT FOR RAGGED EYE = 1.0 B. F. = 0.5) YEILDING DT = 4.5 P.T. = 4.0 FT IS BASED ON PT.

I. ADDL POSITIONS NIL

TOO: 12/1250EF=
NNNN

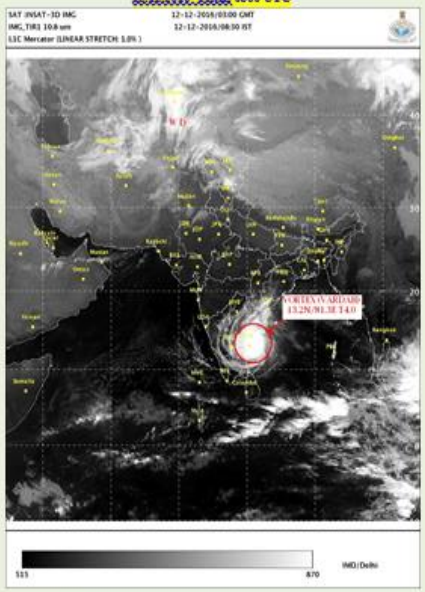
Coordination Group for Meteorological Satellites

CGMS

3 Hourly Satellite Bulletin

भारत मौसम विज्ञान विभाग
पृथ्वी विज्ञान मंत्रालय
India Meteorological Department
Ministry of Earth Sciences

SATELLITE BULLETIN BASED ON SATELLITE IMAGERIES AND PRODUCTS
12.12.2016 TIME 0300 UTC



TCIN50 DEMS 120300
SATELLITE BULLETIN BASED ON INSAT PIC OF 120300 UTC (.)
REGION COVERED BETWEEN LAT 50.0° N TO 30.0°S AND LONG 40.0°E TO 125.0°E (.)

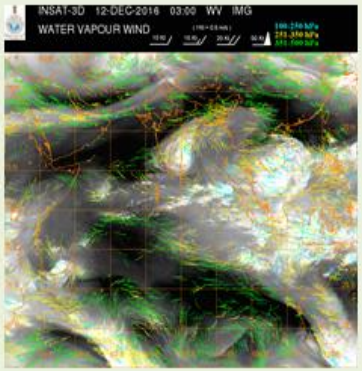
SALIENT FEATURES:-

VORTEX OVER BOB (VARDAH):-

VORTEX (VARDAH) OVER WC BAY ADJ SW BAY CENTRED NEAR 13.2N/81.3E (.) INTENSITY T4.0 (.) CDO PATTERN (.) MINIMUM CTT MINUS 89 DEG C (.) ASSTD BKN LOW/MED CLOUDS WITH EMBDD INT TO V INT CONVTN OVER BAY BET LAT 11.5N TO 15.0N WEST OF LONG 82.5E S COTL AP N COTL TN (.)

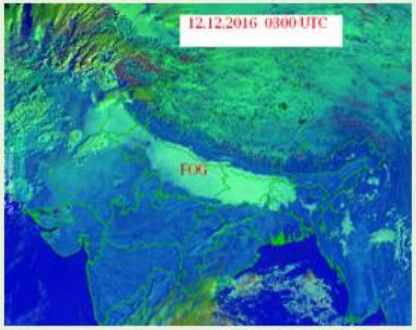
WESTERN DISTURBANCE (WD):-

SCT M/LAYERED CLOUDS OVER NE IRAN N AFGN N PAK, N J&K AND OVER AREA BET LAT 37.0N TO 50.0N LOG 65.0E TO 75.0E IN ASSW WD OVER THE AREA (.)



FOG:-

BKN FOG/LOW CLOUDS OVER PJB ADJ PAK EXT NW RAJ HARY EXT S UTRKND UP BHR ADJ JHRKND SHWB S NEPAL N BD(.)



CLOUDS DESCRIPTIONS WITHIN INDIA:-

NORTH:-

SCT LOW/MED CLOUDS OVER REST J&K N HP (.)

EAST:-

SCT LOW/MED CLOUDS WITH EMBDD ISOL WK CONVTN OVER S JHRKND SW ORS SE CHTGH (.) SCT LOW/MED CLOUDS OVER SKM ARUPR S GWB REST ORS AND REST CHTGH (.)

WEST:-

SCT LOW/MED CLOUDS OVER VID (.)

SOUTH:-

BKN LOW/MED CLOUDS WITH EMBDD ISOL MOD TO INT CONVTN OVER COTL AP N COTL TN (.) SCT LOW/MED CLOUDS WITH EMBDD ISOL WK TO MOD CONVTN OVER REST PARTS OF THE REGION EXCEPT SCT LOW/MED CLOUDS OVER KER (.)

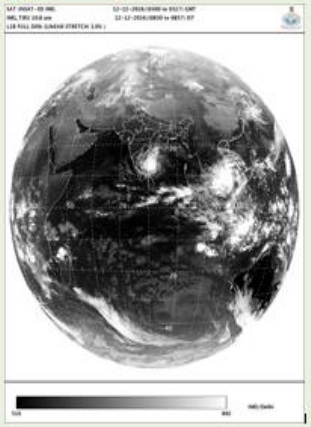
ARABIAN SEA:-

SCT LOW/MED CLOUDS WITH EMBDD WK TO MOD CONVTN OVER SE ARSEA OFF KER KRNTK COT (.)

BAY OF BENGAL & ANDAMAN SEA:-

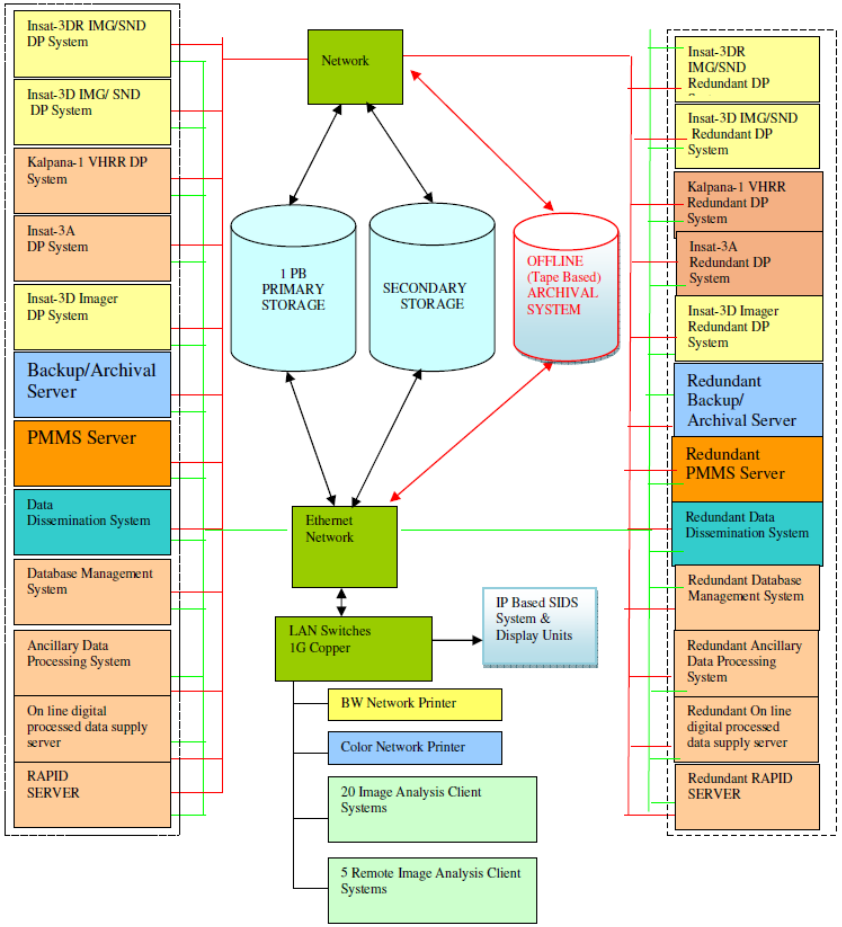
SCT LOW/MED CLOUDS WITH EMBDD ISOL MOD TO INT CONVTN OVER ANDAMAN SEA (.)

CLOUDS DESCRIPTION OUTSIDE INDIA :-



Multi-Mission Meteorological Data Receiving & Processing System (MMDRPS)

- IMD is in process to install **Multi-Mission Meteorological Data Receiving & Processing System (MMDRPS),** for reception, processing and dissemination of meteorological data of INSAT-3D/3DR/3DS and Kalpana-1.
- MMDRPS will have very high end processing system which will cut down the processing time from currently 15 minutes to 5 minutes.
- MMDRPS will have storage capacity of the order of 1PB which will facilitate online sharing of processed data for all Indian meteorological satellites to the registered users as per IMD data policy.



Coordination Group for Meteorological Satellites

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FUTURE GEO SATELLITES – GISAT-1

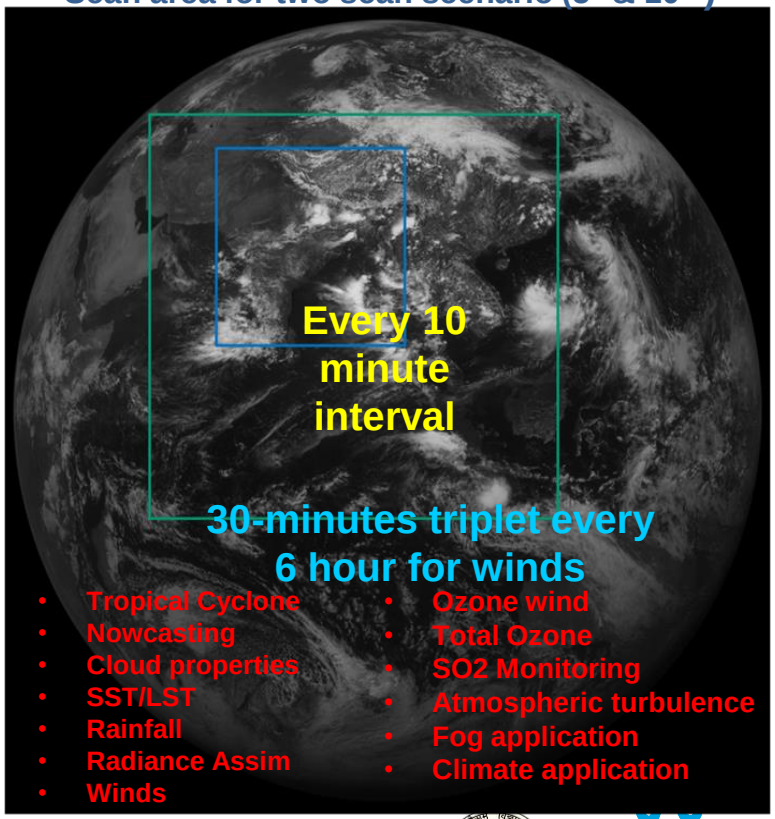
Launch Schedule: 2019, Geostationary orbit, 83E

MX-VNIR: Multispectral - Visible Near Infrared, HySI-VNIR: Hyperspectral Imager - Visible Near Infrared, HySI-SWIR: Hyperspectral Imager - Short Wave Infrared, MX-LWIR: Multispectral - Long Wave Infrared.

Band	Ch	SNR/N EdT	IFOV (m)	Range (μm)	Channels (μm)
MX-VNIR	4	> 200	50	0.45 - 0.875	B1: 0.45-0.52 B2: 0.52-0.59 B3: 0.62-0.68 B4: 0.77-0.86 B5N: 0.71-0.74 B6N: 0.845-0.875
HyS-VNIR	60	> 400	500	0.375 - 1.0	$\Delta\lambda < 10$ nm
HyS-SWIR	150	> 400	500	0.9 - 2.5	$\Delta\lambda < 10$ nm
MX-LWIR	6	NEdT < 0.15K	1500	7.0 – 13.5	CH1: 7.1-7.6 CH2: 8.3-8.7 CH3: 9.4-9.8 CH4: 10.3-11.3 CH5:11.5-12.5 CH6: 13.0-13.5

GISAT Scan scenario

Scan area for two scan scenario (5° & 10 °)



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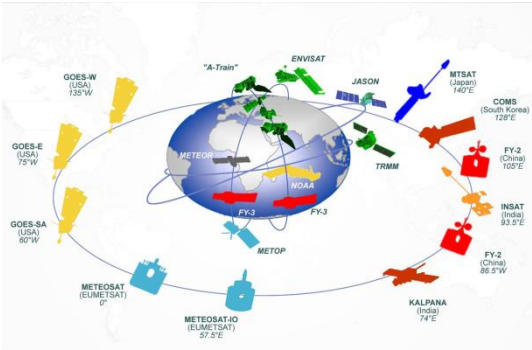
To be considered by CGMS:

- To ensure the availability of FY-4A satellite payloads data to IMD for Now-casting and assimilation in NWP models



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Thank You