RESOURCESAT-2

.. continuing Global Services in Earth Observation

Indian Space Research Organisation

Presentation at

54th Session of the UN-COPUOS

Vienna

June 01-10, 2011

Indian Earth Observation (EO) Satellite Series

- RESOURCESAT - for Land and Water Resources studies
- RISAT (Radar Imaging Satellite) - All Weather imaging - for Agriculture, Disaster reduction, ..
- CARTOSAT - for Mapping applications
- OCEANSAT - Ocean (including coastal), and atmospheric .
- CLIMATSAT/ Technology Development - Science, Climate studies, related..

RESOURCESAT-2

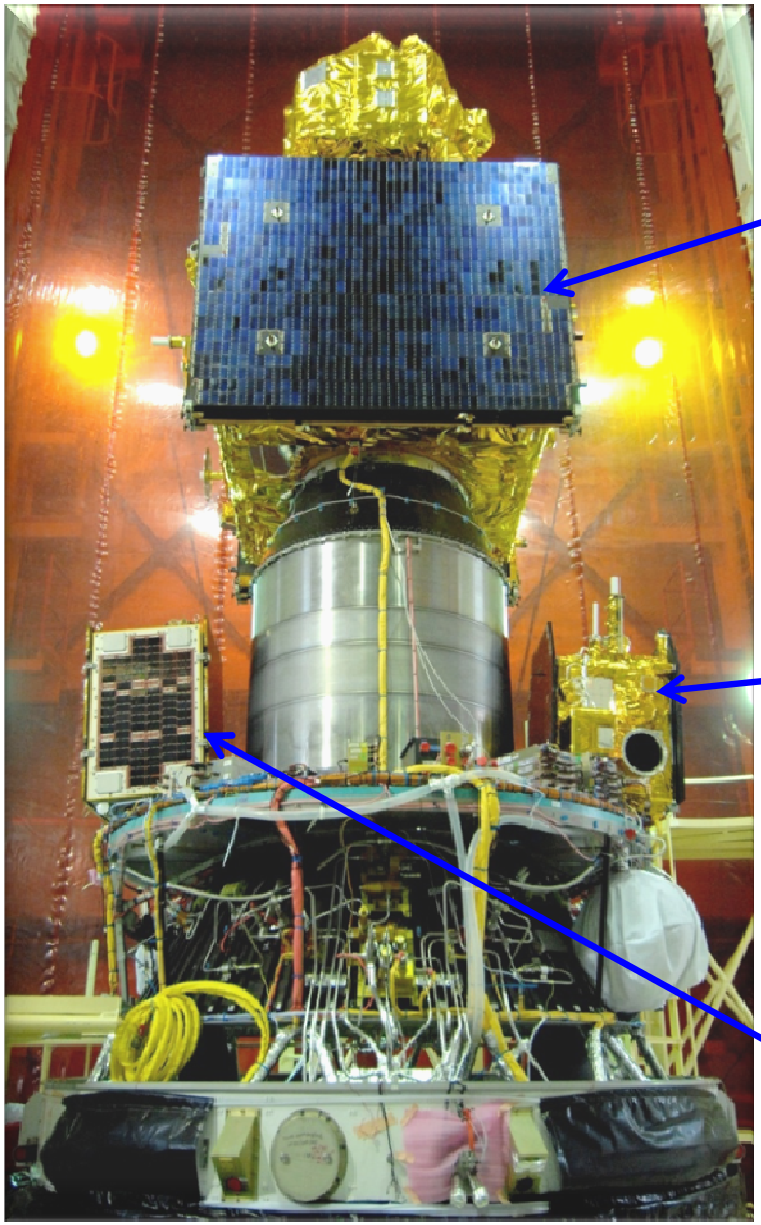
- Launched on April 20, 2011 on-board PSLV-C16, with two co-passenger satellites - YOUTHSAT and X-SAT
- Belongs to India's 'workhorse' EO Satellite series
- Provides continuity in EO data services, on operational basis, for land and water resources studies at macro, regional and micro levels
- Has enhanced multi-spectral and spatial coverage as compared with RESOURSESAT-1
- Supports applications in the areas of Agriculture, Forestry, Water Resources, Disaster Management Support, …

PSLV-C16/ RESOURCESAT-2 Mission

Lift-off: April 20, 2011 [10.12 Hrs IST]

RESOURCESAT-2 Satellite

on board PSLV-C16, along with two co-passenger satellites



RESOURCESAT-2

- Three Indian payloads : (i) Advanced Wide Field Sensor (AWiFS); (ii) Linear Imaging Self Scanner (LISS)-3; and (iv) LISS-4
- One Canadian payload: COMDEV

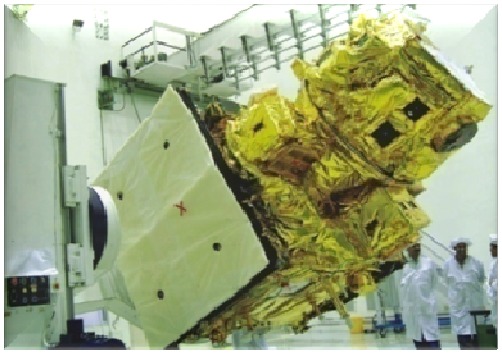
YOUTHSAT

- Joint Indo-Russian satellite
- Two Indian payloads: (i) Limb Viewing Hyperspectral Imager (LivHySI); and (ii) Radio Beacon for Ionosphere Tomography (RaBIT).
- One Russian payload: Solar Radiation Experiment (SOLRAD).

X-SAT

- Imaging satellite built by Nan yang Technological University (NTU), Singapore.

RESOURCESAT-2: Payloads



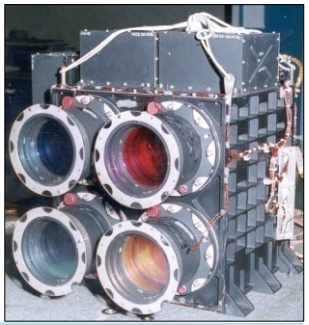
AWiFS

Swath: 740 km

Spectral Bands: 0.52-0.59; 0.62-0.68; 0.77-0.86; 1.55-1.70 um

Quantization: 12 bit (as against 7 in R-1)

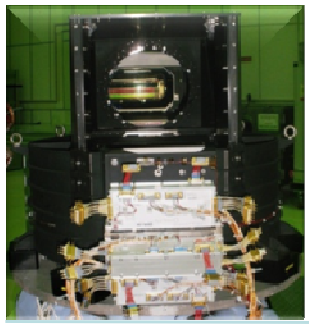
LISS-3



Swath: 140 km

Spectral Bands: 0.52-0.59; 0.62-0.68; 0.77-0.86; 1.55-1.70 um

Quantization: 10 bit (as against 7 in R-1)



LISS-4

Swath: 70 km

Spectral Bands: 0.52-0.59; 0.62-0.68; 0.77-0.86 um

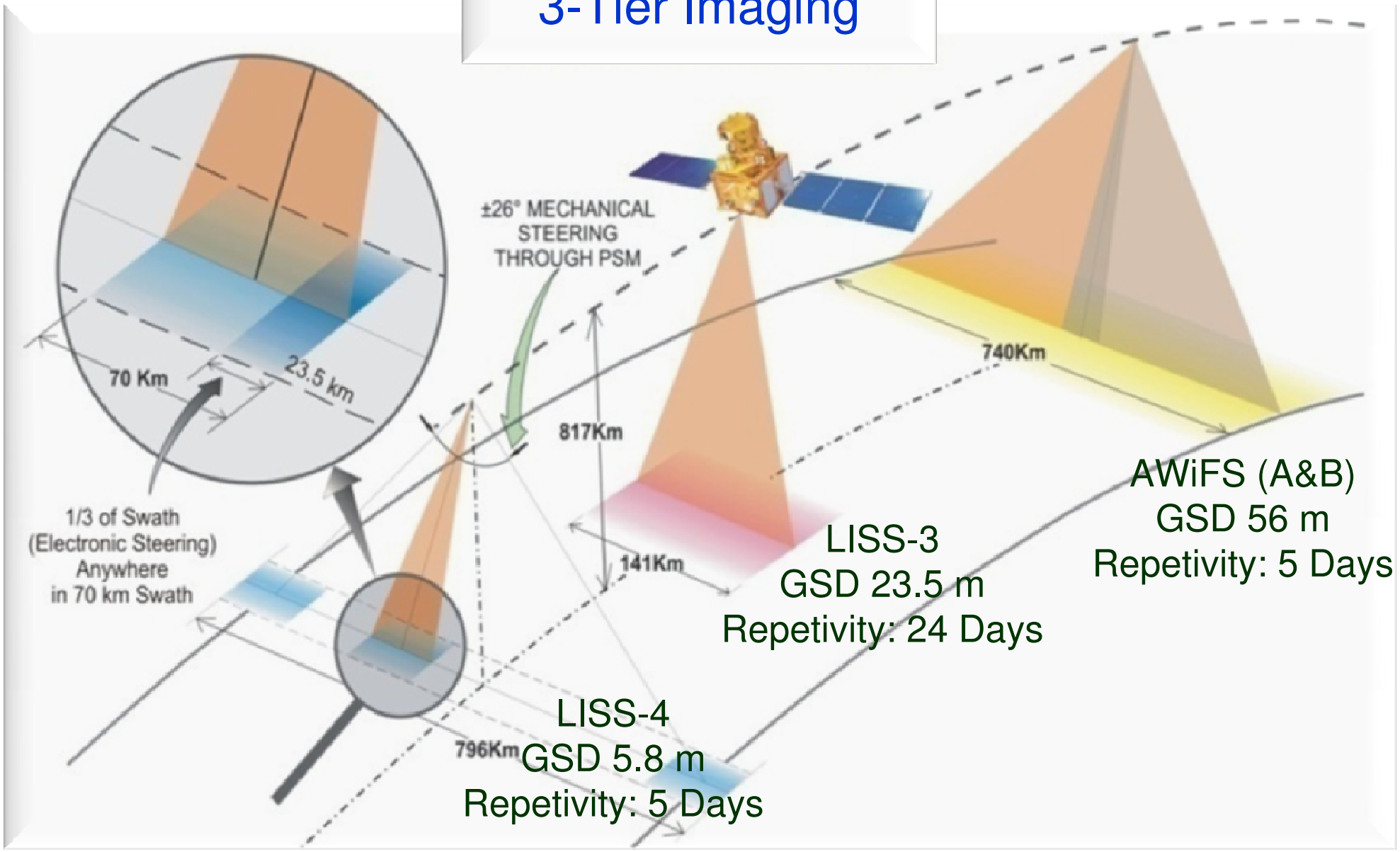
Quantization: 10 bit (as against 7 in R-1)

AIS

A New Payload from COMDEV, Canada
for automatic identification of ships

RESOURCESAT-2

3-Tier Imaging



RESOURCESAT-2
Payload Operation modes/ capabilities

LISS-3 & AWiFS [same as R-1]

SSR with 200 Gb for 12 min recording of each payload for global coverage

LISS-4

Stereo Imaging capability with ± 26 deg across track steerability.

Payload can be operated in every orbit for 16 min duration

Mono mode	- same as R-1(Band-3)
23 Km Mx	- same as R-1
70 Km Mx	- Band-3 in real time; Band 2&4 as record/ dump

RESOURCESAT-2: LISS-3 - 1st Day Image

Dubai, Palm Islands and Environs

RESOURCESAT-2: LISS-4 Image

Part of Delhi, India

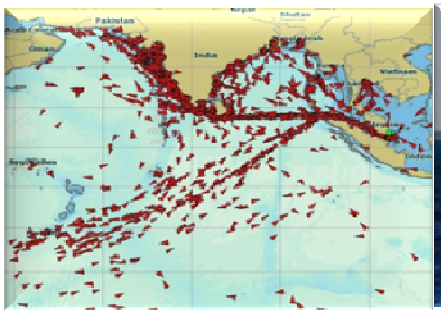
RESOURCESAT-2
Automatic identification System (AIS)

AIS is a shipboard broadcast system

Ships equipped with AIS transceivers: ~ 68,000

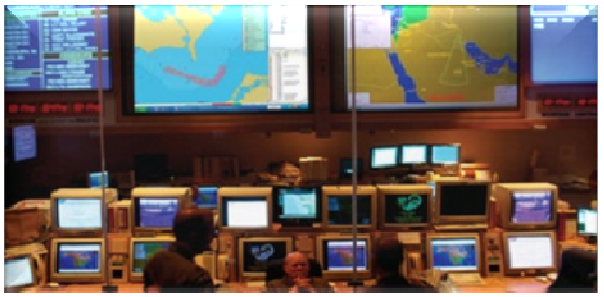
Originally designed for collision avoidance; but being considered for multiple applications

Environmental



Ship Identification/ Traffic monitoring

Search and Rescue



Coastal Security

RESOURCESAT-1
Data Reception outside India

Currently receiving Resourcesat-1 Data

USA	EOTec
Germany	Euromap
China	CEODE
Myanmar	Myanmar Economic Corporation
Australia	GeoScience Australia

Stations that were receiving Resourcesat-1 Data

UAE	Falcon
Russia [4 Stations: Magadan, Irkutsk, Moscow, Samara]	ScanEx
Iran	National Geographical Organisation (NGO)
Kazakhstan	National Centre for Space Research & Technologies
Algeria	National Institute for Cartography & Tele-detection (INCT)

RESOURCESAT-2

.. data reception outside India - on the anvil/ possibilities

USA	EOTec & SANBORN
Germany	Euromap
China	Centre for Earth Observation and Digital Earth (CEODE)
Myanmar	Myanmar Economic Corporation
Australia	GeoScience Australia
Iran	National Geographical Organization (NGO)
South Africa	Satellite Application Centre (SAC)
Algeria	National Institute for Cartography &Tele-detection (INCT)
Kazakhstan	National Centre for Space Research & Technologies
Russia	ScanEx & Sovozond

.. thank you