

# EO in Thailand

*Dr. Surachai RATANASERMPONG*



**Geo-Informatics and Space Technology Development Agency  
(Public Organization) GISTDA, Thailand**

# Contents



- **Introduction**
- **EOS Data Acquisition & Services**
- **THEOS Project**
- **Conclusion**

# Introduction



**Thailand has been involved in EOS since 1972**

**GISTDA the national space agency, is responsible for EO program including providing EO data, carrying out space application programs, providing/setting standards of national spatial data infrastructure, promoting public awareness and international cooperation**

# Earth Observation Satellite Data Acquisition & Services



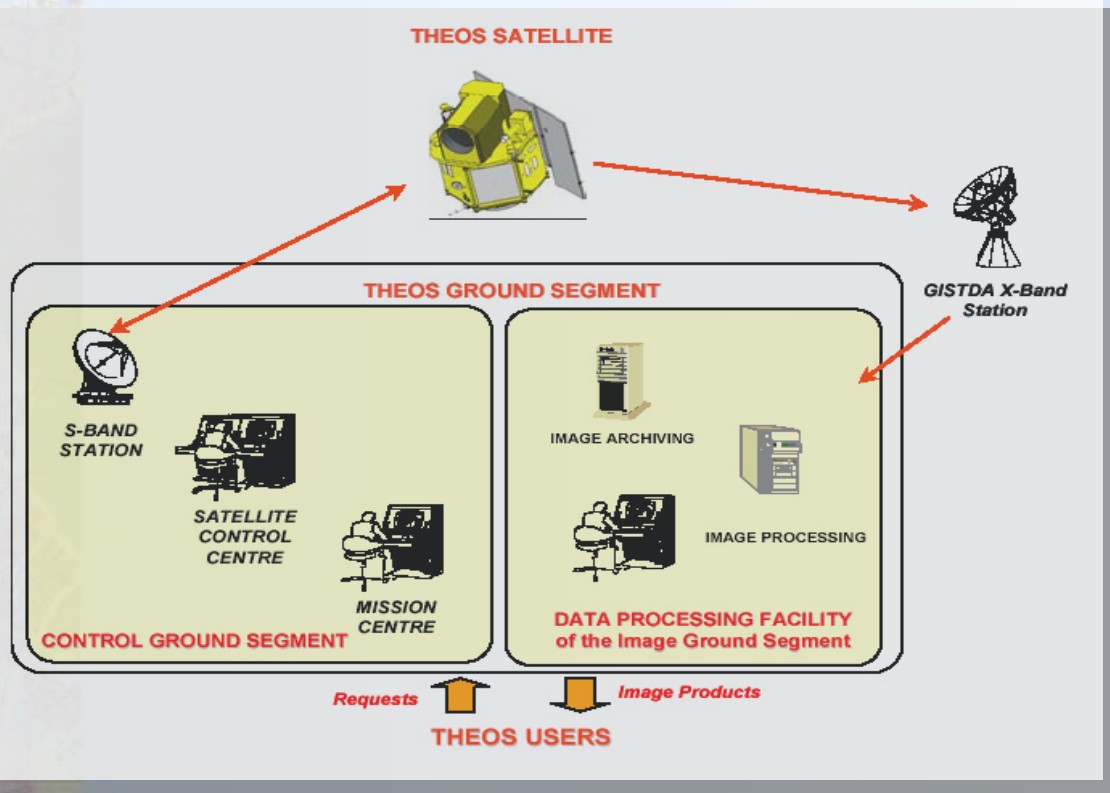
## Current Status of Ground Receiving Station

- **LANDSAT- 5**
- **RADARSAT 1 ( and 2 future)**
- **ALOS**
- **MODIS**
- **SPOT 2, 4 and 5**

### **Satellite Data in Archive:**

**LANDSAT, SPOT, MOS, ERS, JERS, ADEOS, RADARSAT, IRS.**

# THEOS



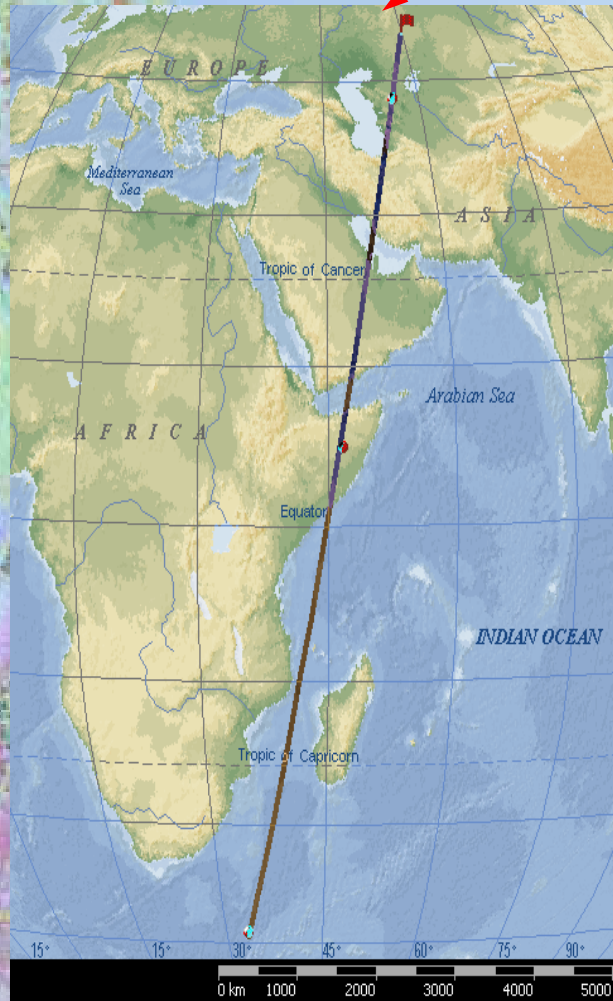
Control  
Ground Segment

Image  
Ground Segment

DNEPR Launch in  
Yasny, Russia

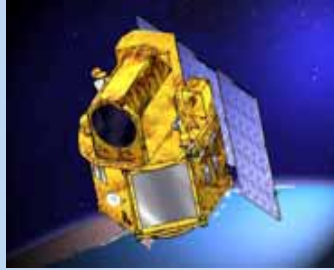
# THEOS Launch

Yasny  
Launch  
point



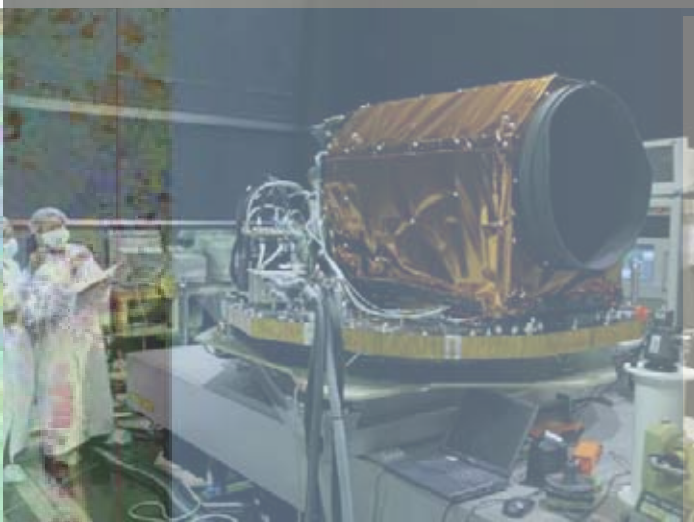
DNEPR Launch in  
Yasny, Russia

# THEOS

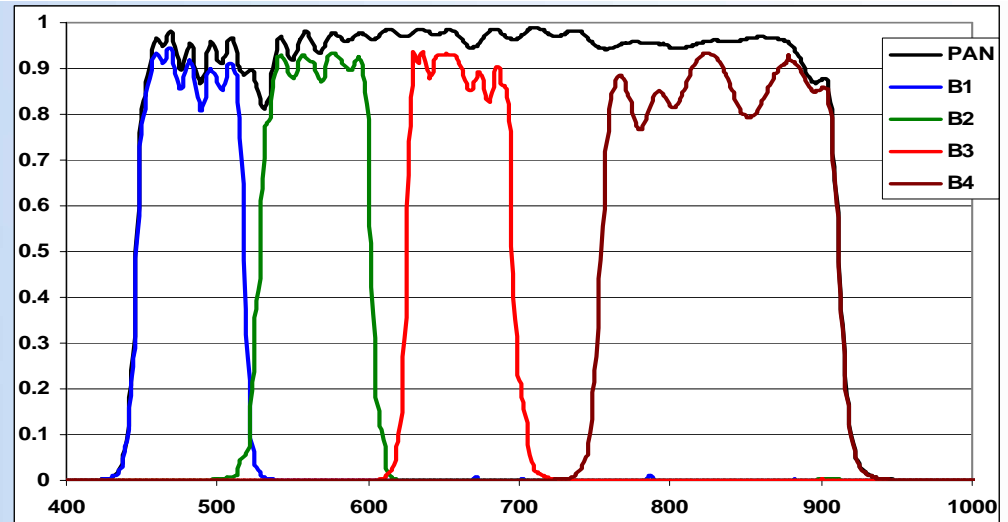


- **Mass: 750 kg.**
- **Orbit: Sun Synchronous**
- **Altitude: 822 km.**
- **Inclination: 98.7**
- **Repeat Cycle: 26 days**
- **Mean Local Time: 10.00 a.m.**
- **Payload:**
  - **Panchromatic telescope**
  - **Multi-spectral camera**
- **On-board Memory: 51Gb**
- **Mission Data: X-band Link**
- **TT&C: S-band Link**
- **Attitude Orbit Control and Orbit Determination:**
  - 3-axis stabilized, Star Tracker, Gyro, GPS, Magnetic Torque, Sun Sensor**
- **Design Life Time: 5 Years**
- **Launch Date: January 2008**

# THEOS Payload



	PAN	MS*
<b>Resolution</b>	2 m	15 m
<b>Spectral band</b>	P: 0.45-0.90 $\mu\text{m}$	Blue: 0.45-0.52 $\mu\text{m}$ Green: 0.53-0.60 $\mu\text{m}$ Red: 0.62 -0.69 $\mu\text{m}$ NIR: 0.77-0.90 $\mu\text{m}$
<b>Swath Width</b>	22 km	90 km
<b>Off-nadir viewing</b>	$\pm 30$ deg.	$\pm 30$ deg.



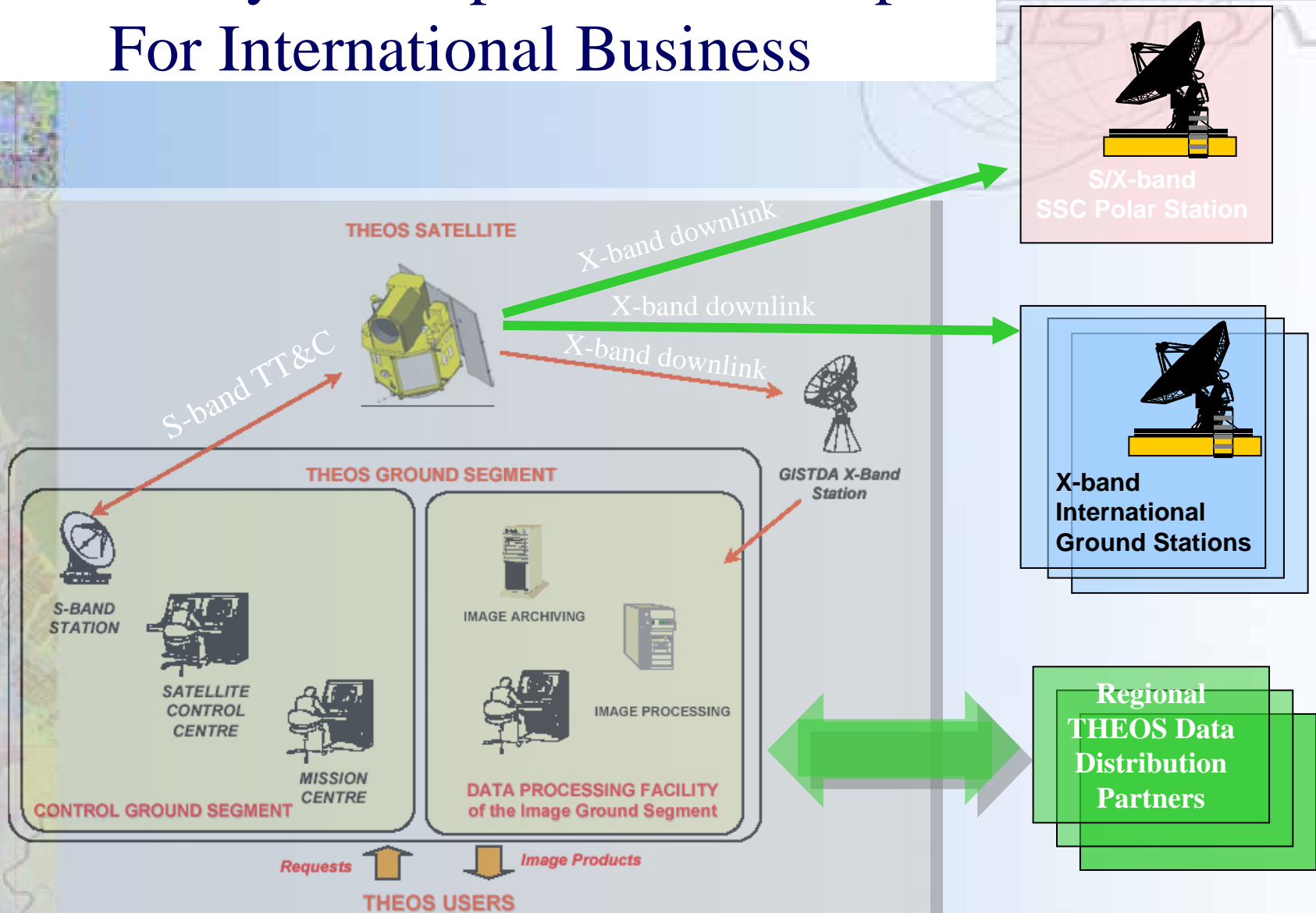
\* MS camera derived from SPOT HRS instrument

# THEOS Ground Segment: S-band Station in Thailand



Installation of S-band Station in Jan. 2007 and the Acceptance Test was completed on March 2, 2007 at Sri Racha site, Chonburi

# THEOS System Operation Concept For International Business





to serve the country and its region by contributing and sharing THEOS data at near real time of its acquisition particularly in the case of disaster management

**Daily**

**Flood Monitoring by  
MODIS**

**2 Nov. - 3 Dec. 2006**

# E-Flood Map (Electronic Flood Map) 38 provinces :

ArcReader

reports, pre- and post- satellite images, and flooded areas



# Conclusion

- **THEOS shall be beneficial not only to national , but also to international development for “geospatial society”**