Brief introduction for NRSCC

Shaoliqin NRSCC MOST

The Introduction of NRSCC

The Specialization Organization of the Ministry of Science and Technology of China (MOST)

Established in 1981

NRSCC :

- **To formulate the national policies and long-term plans for developing the remote sensing science and technology including geographical information system and space navigation technology**
- **To coordinate different departments in organizing and implementing the national key projects in order to promote remote sensing research and applications**

NRSCC (continue):

- To coordinate and develop international cooperation by organizing joint projects, seminars, and exchange visits
- To provide technical services in forms of training, data processing and consulting
- To act as China contact point responsible for liaison with some of the United Nations' bodies and international organizations

17 departments of NRSCC

- Department of research & development
  (Institute of Remote Sensing Applications, CAS)
- Department remote sensing satellite ground station
  (China Remote Sensing Satellite Ground Receiving Station, CAS)
- Department of geographical information system
  (National Key Lab of Resource & Environment Information System, CAS)
- Department of technical training
  (Institute of Remote Sensing & GIS, Peking University)

- Department of Wuhan Technical Training

  (School of Information Engineering, Wuhan University)
- Department of Information Service

  (Chinese Academy of Surveying and Mapping)
- Department of Land Resources

  (Aerial-Geophysics and Remote Sensing Center, MLS)
- Department of Natural Disaster Remote Sensing

  (Remote Sensing Technology Application Center, MWR)

- Department of Agricultural Applications

  (Center of Agriculture Remote Sensing Applications, MOA)
- Department of Meteorological Satellite Remote Sensing

  (National Meteorological Satellite Center, CMA)
- Department of Aerial Remote Sensing
- Department of Regional Remote Sensing (Beijing/Hunan/Fujian three local branches),
- Department of Global Change Research & Development

  (Beijing Normal University)

- Department of Forest Resource and Ecological Environment,

  (Research Institute of Forest Resource and Environment, CAF)
- Department of Natural and Cultural Heritage

  (joint Laboratery of Remote Sensing Archaeology)
- Department of Data Management and Industrial Development

  (21st century Aerospace Technology Co. Ltd)
- Department for Regional Remote Sensing Coordination
- Hong Kong Base of Research, Development & Training

  (Hong Chinese University)

These NRSCC operational departments form an extensive and open network that brings together China's strongest remote sensing work force that include more than 3,000 technical staff. One third of them are senior scientists and engineers.

NRSCC has formed broad and close relationship with more than 20 foreign agencies and international organizations. NRSCC actively takes part in the regional and global science and technology cooperation, and by doing so to makes its contribution to the development of remote sensing technology and applications on a global scale.

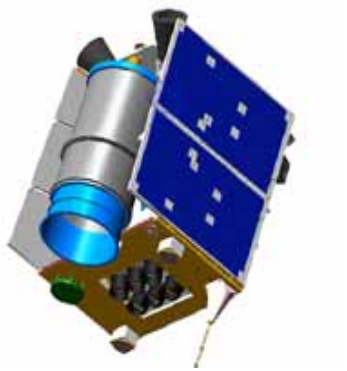
Institution Architecture of NRSCC (continue)

- **Consultative Committee**
- **Expert Committee**
- **Executive Office of NRSCC**

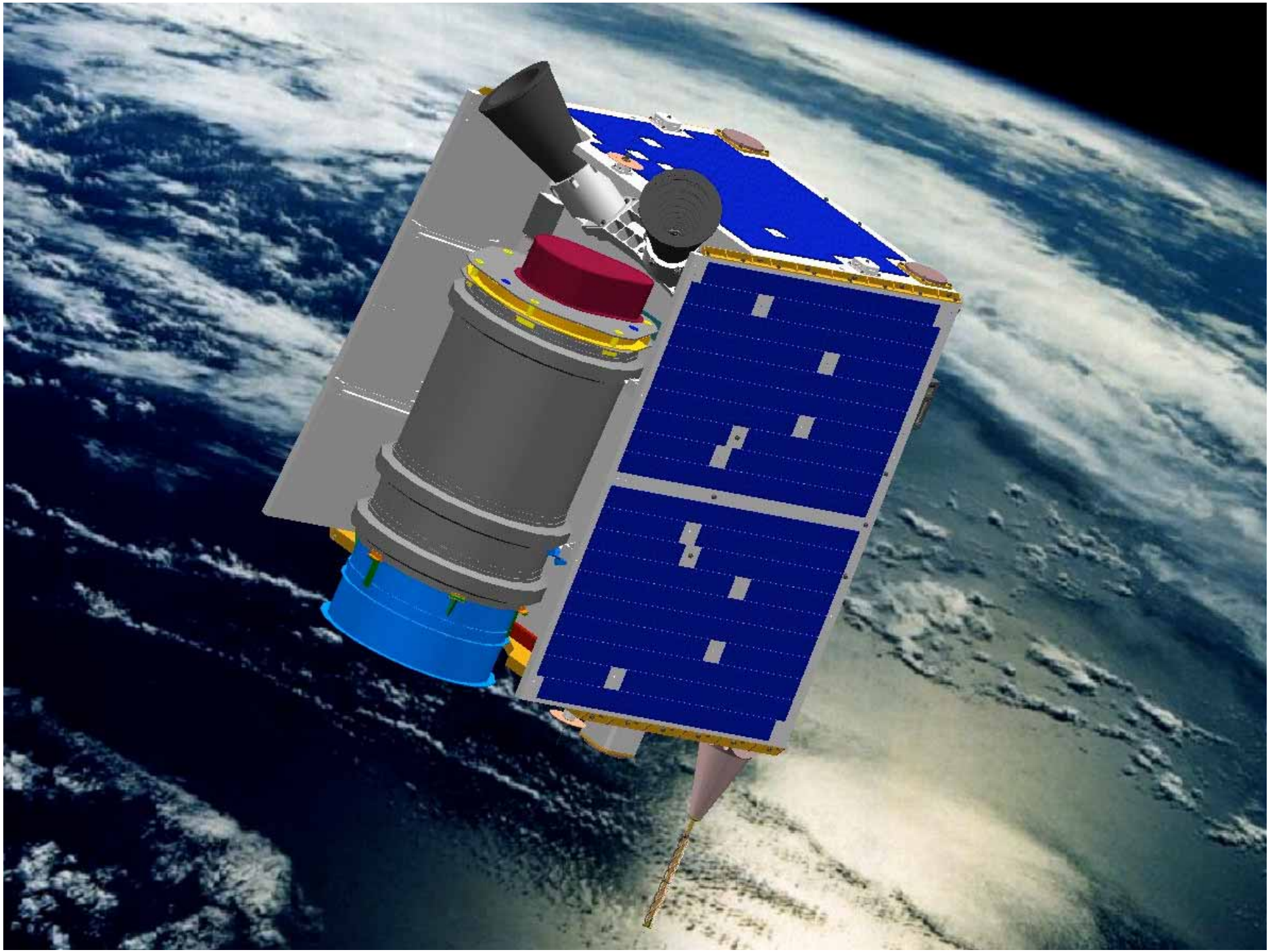
Main activities of NRSCC

- **Area:**

  Earth Observation and Navigation
- **Main Technology**
  - **RS**
  - **GIS**
  - **GNSS**
- **Applications of RS, GIS, GNSS**



Beijing-1 Satellite



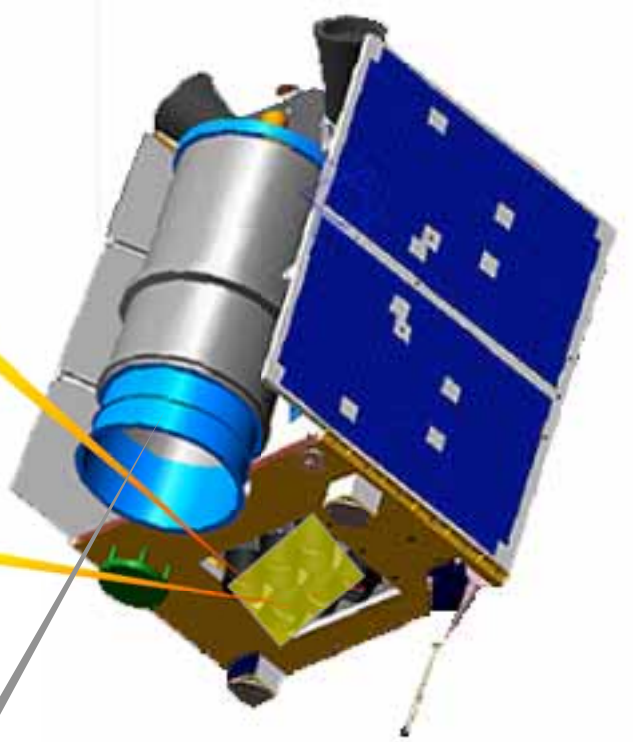
Successful Launch

- BEIJING-1 was launched successfully at 06:52 UTC on 27 Oct, 2005 on a Cosmos rocket from the Plesetsk Cosmodrome in Northern Russia and placed in a 686km sun-synchronous low Earth orbit.
- At 13:46UTC, Beijing-1 was successfully activated by the Beijing Control Groundstation and telemetry received during his first transit in range of the Beijing Landview Mapping Technology Co.,Ltd (BLMIT) in Beiji

Beijing-1 Cameras

Multi-spectral camera

band(nm)	resolution	scan swath
620-530	32m	600 km
630-690		
760-900		

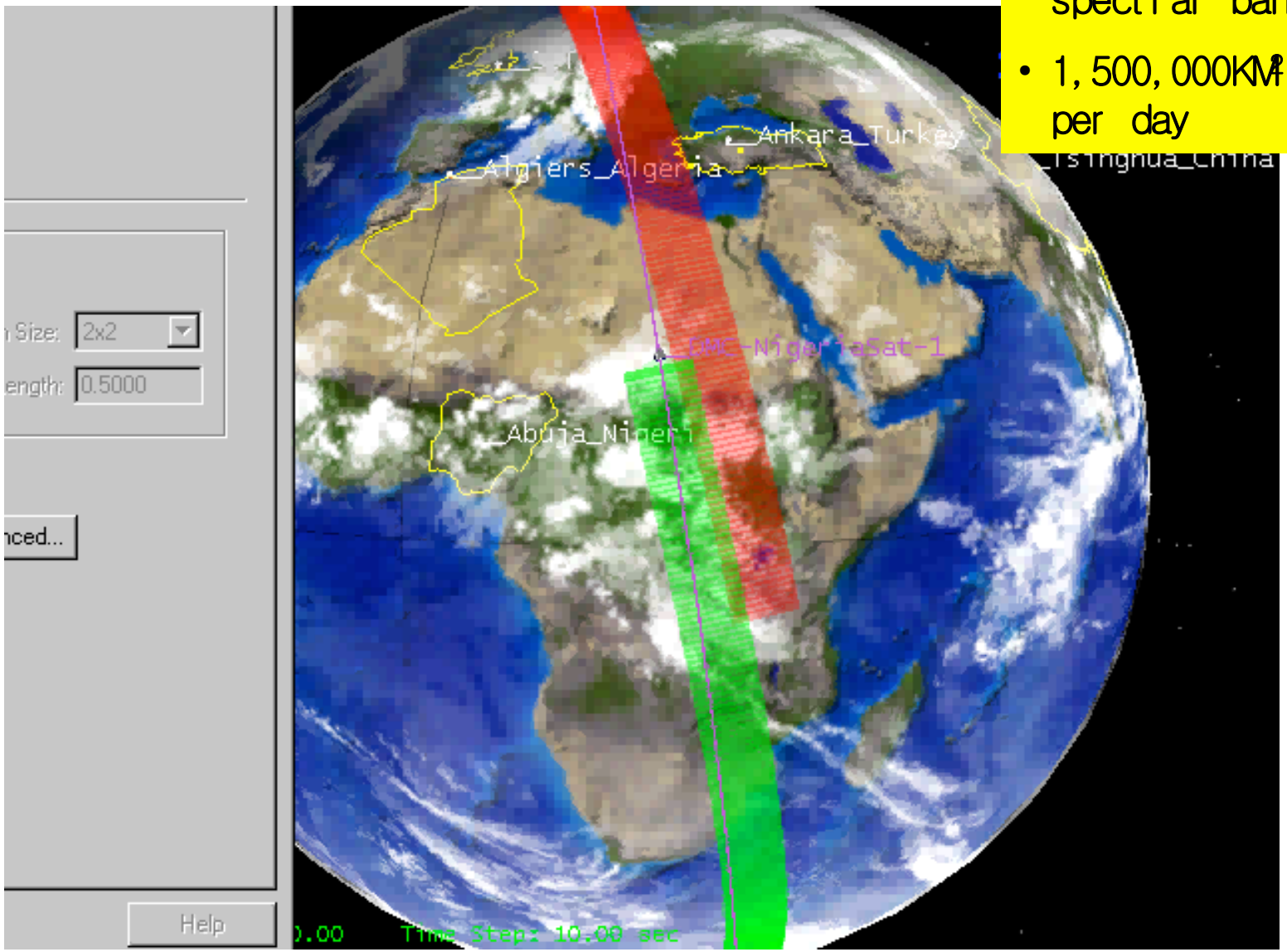


Panchromatic camera

band(nm)	resolution	scan swath
500-800	4m	24km

Beijing-1 Feature

- daily coverage for target area
- 600km swath width resolution 32mX 3 spectral bands
- 1,500,000KM² area overage per day



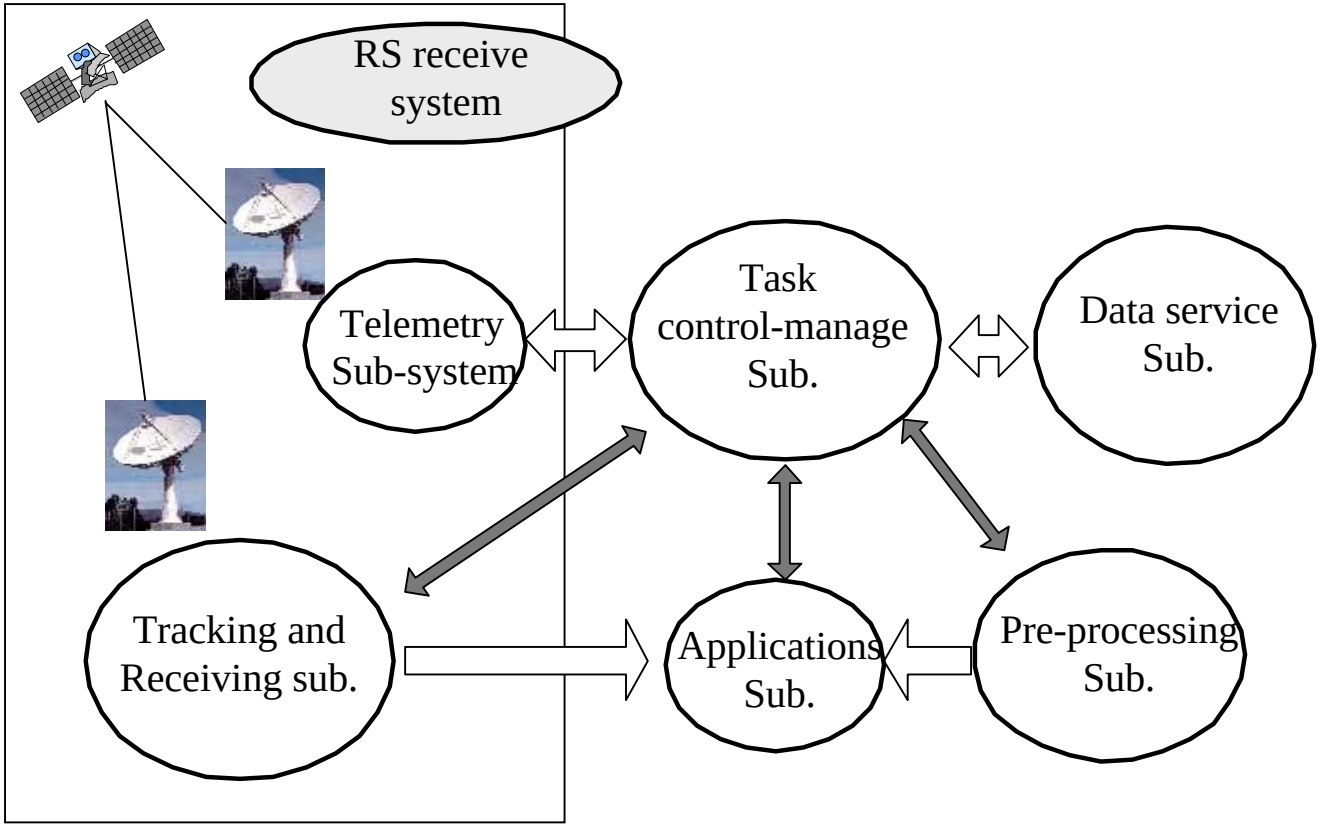
Beijing-1 Ground Station

- Local - Controlled Telemetry;
- Intensively-Integrated System;
- Automatic Working Mode;
- New-style X/Y Antenna System;
- Capability of Real-time Imaging Quick Look and Data Recording;
- High Performance Image Processing System;
- Meta Data Browsing and Data Distribution System.

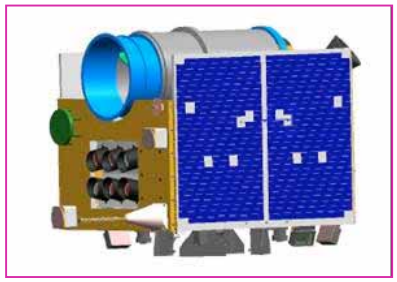
Image Processing System

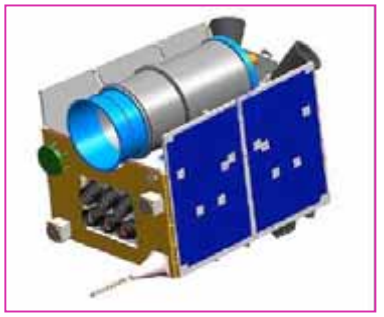
Receiving System

Beijing-1 Ground Station



Beijing-1 Specifications





- ✓ **Weight: around 166.4 kg**
- ✓ **Orbit Height (Altitude): 686 km**
- ✓ **Payloads: High resolution: 4 m X 24 km Panchromatic**

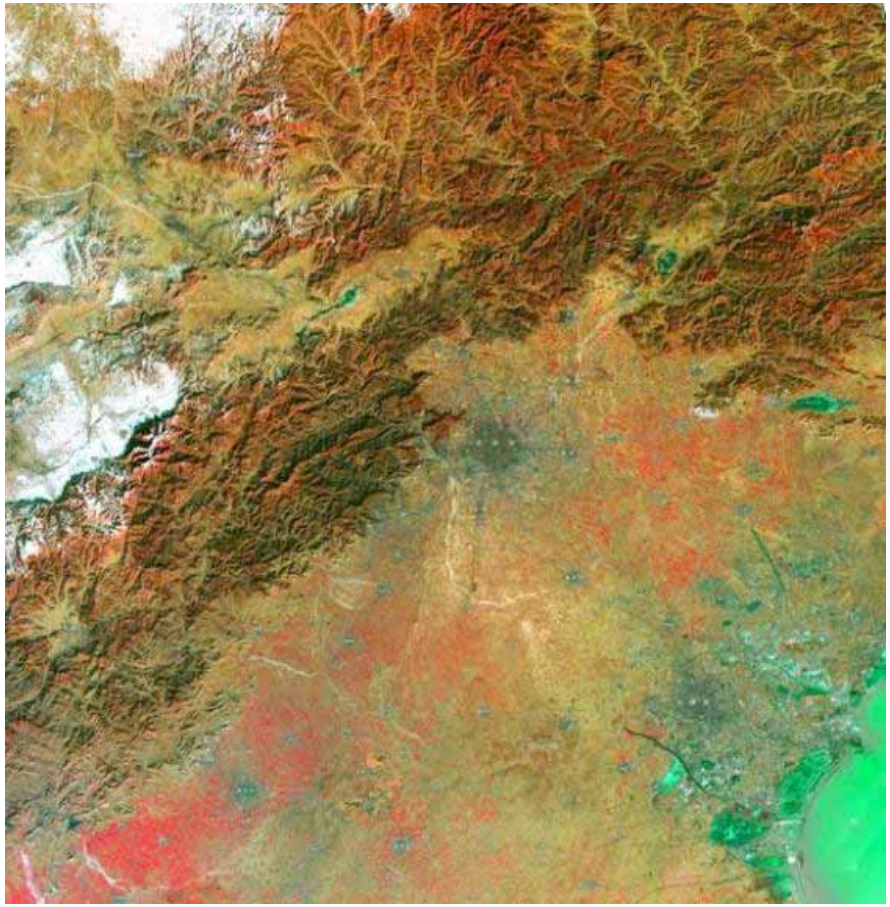
  Medium Resolution: 32 m X 600 km Multi-spectral
- ✓ **On-Board Storage (HDDR + SSDR): 22Gbytes+4Gbytes**
- ✓ **Data Downlink:**

  S band -- 8Mbps

  X band: Real time, compressed data, 40/20Mbps

Beijing-1 Specifications

- Lifetime: 5 years
- Working time per track: 15 minutes
- ±30°off-pointing capability
- New creative technology mechanism;
- Partial intellectual properties;
- Independent operation of GSS。



A Satellite Image of Beijing

Beijing-1 image (Hefei, China, 4m+32m)

Beijing-1（4m）image, Airport of Teheran, Iran

成像时间：2006年2月

- **International cooperation**

EO Summit I on July, 31 2003 in Washington, USA

对地观测高峰会-I•美国华盛顿
(2003.7.31)


CHINA
CANADA
EARTH

对地观测领域第二次部长级高峰会

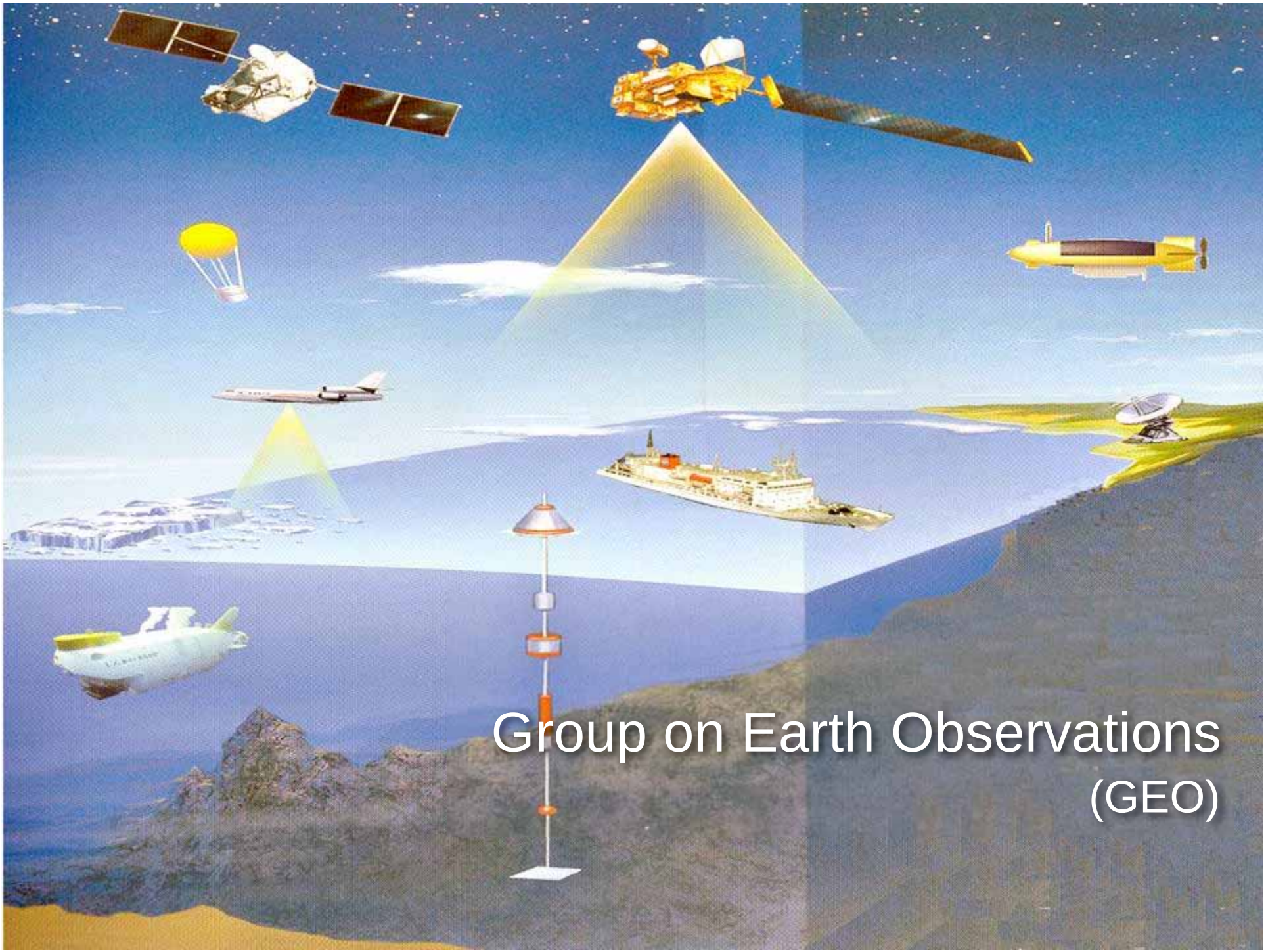
（日本东京， 4月25日）

对地观测领域第二次部长级高峰会

（日本东京， 4月25日）

徐部长与美国环境保护署主任交谈

徐部长宴请日本、欧盟、美国等官员


Group on Earth Observations
(GEO)

We emphasise that in the earth observation area, we have to strengthen global cooperation and coordination, therefore the establishment of GEO is a very important tendency,

We are also willing to support the creation of a comprehensive, coordinated, and sustained Earth observing system of systems（GEOSS）.

We hope that a join effort for GEO and the 10-year Implementation Plan will be conducted with every country and international organization.

CEOS 2004 in China

CEOS 18th Plenary together with CEOS 20 Years Anniversary in Beijing, China in Nov. 18 – 22, 2004

Galileo Cooperation with EU

- **Co-operation Agreement EU/CN - 30th October 2003**
- **The National Remote Sensing Centre of China (NRSCC) became a member of the Galileo Joint Undertaking (GJU) on the 9th October 2004.**
- **The Chinese side committed EUR 200 million to the Galileo Programme:**

  ..EUR 70 million in the development phase

  .. EUR 130 million for the deployment phase

Co-operation Agreement EU/CHINA - 30th October 2003

Chiba-Europe GNSS Technology Training and Cooperation Center

- 19 Sep. 2003

Cooperation between China and Europe on Galileo Navigation Satellite System

- The technical agreement between Galileo Joint Undertaking and National Remote Sensing Center of China was signed on Oct. 9, 2004

MOST－ESA Dragon project

1. Agricultural Monitoring in “Fujian Province”：
2. Rice Monitoring：
3. Forest Map of China：
4. Forest Fire Monitoring：
5. Techniques for Deriving Forest Information From POLInSAR Data
6. Terrain Measurement
7. Monitoring seismic activity
8. Landslide displacement monitoring
9. Flood Plain Disaster Rapid Mapping and Monitoring
10. Satellite Tools for Water Resources Assessment and Management at River Basin Scales
11. China Drought Monitoring
12. Coupling climate and ocean systems
13. Chemistry/Climate Change in the Atmosphere
14. Air Quality Monitoring and Forecasting
15. Ocean Environment, Climate
    (1)Oceanography
    (2)Ocean Color

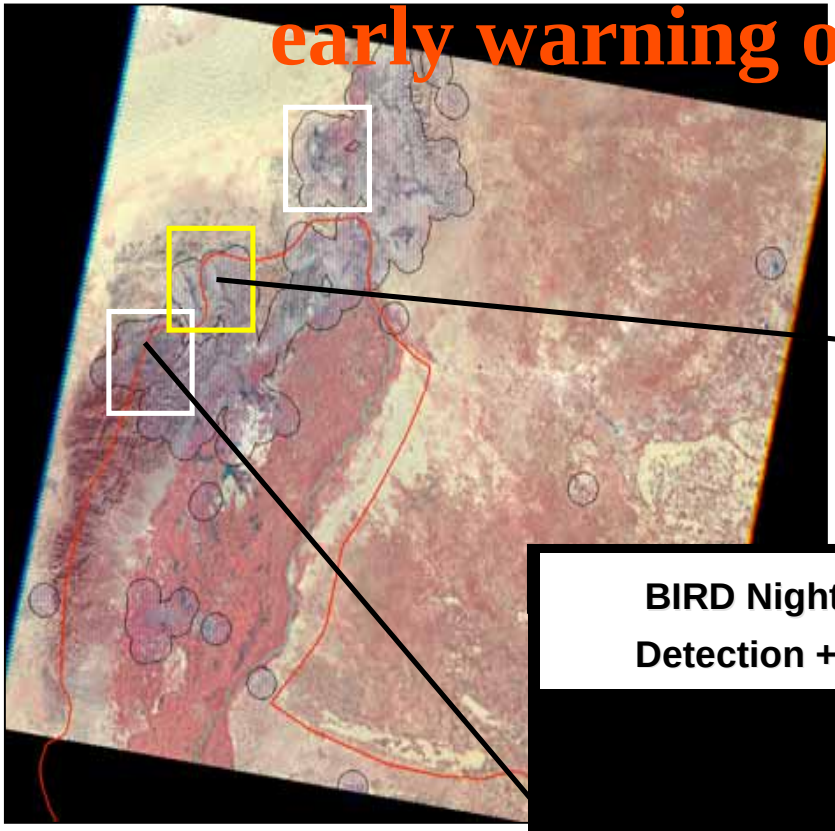
Dragon programme 2006 symposium Lijiang China


SINO-GERMAN
COAL FIRE
PROJECT

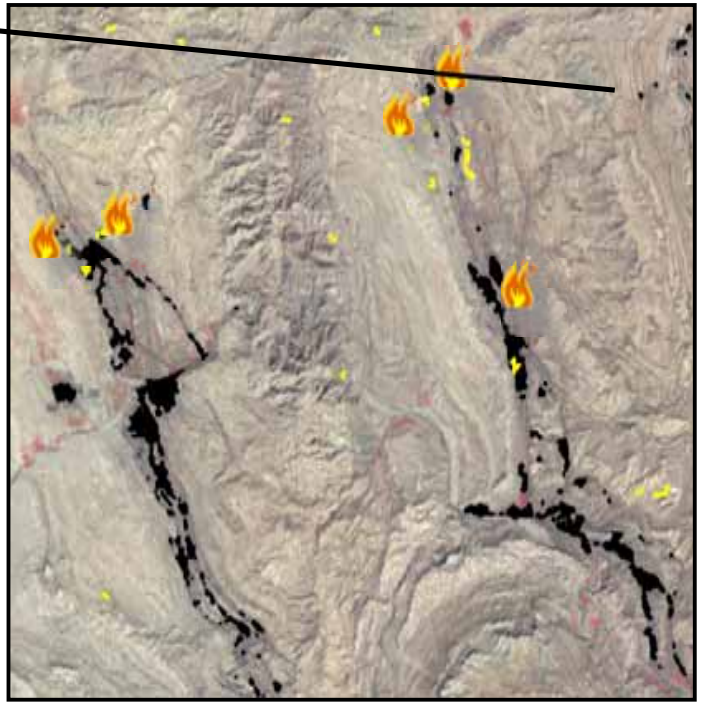
Coal fires in China

Nearly every coal field in North China, where 90% of China´s coal resources are concentrated, suffers from scattered, localized, or clustered coal fires

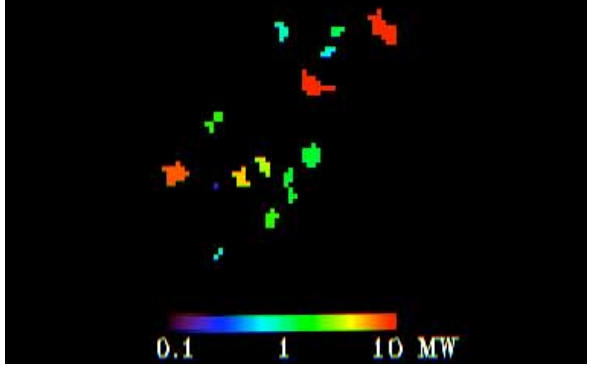
Application of Satellites for monitoring and early warning of coal fires in China



Detection of unknown coal fires Analylis and moniting Study of geometry and dynamics
⇒Protection of ressources and the environment



BIRD Night MIR/TIR
Detection + Analysis



DLR


Thank you!