



Developing Conception of China National New Generation Earth Observation System Construction and Development

The Earth Observation System and Data Center , CNSA
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Outlines



- **Introduction**
- **The New Generation Earth Observation (EO) System**
- **International Cooperation and Suggestions**





■ Introduction



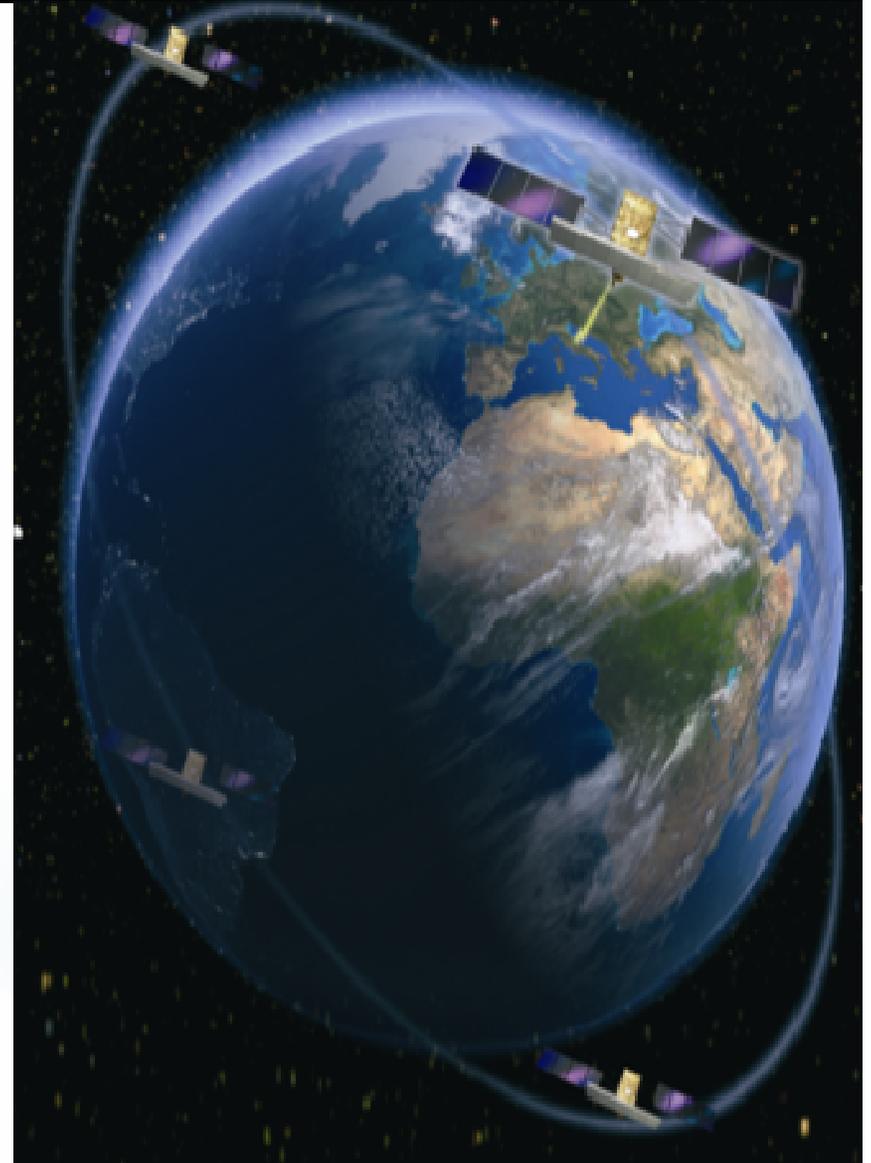


Introduction



Purpose of China's EO System

- Utilize outer space peacefully
- Enhance science and technology innovation capability
- Accelerate the development of economy and society
- Serve the sustainable development of humankind



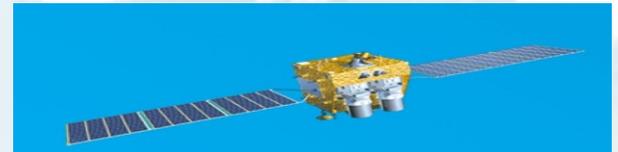
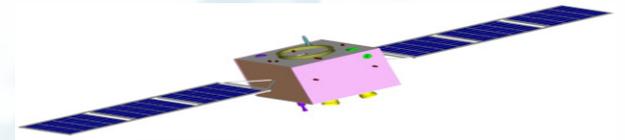
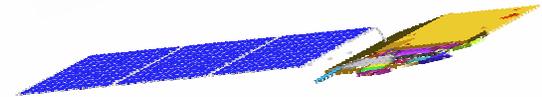


Introduction



Development Overview

- Meteorological satellite series (FY1/2/3/4)
- Resources satellite series (CBERS-01/02/03/04, ZY-1-02C/ZY-3)
- Oceanic satellite series (HY-1A/1B/HY-2)
- Disaster mitigation satellite constellation (HJ-1A/1B/HJ-2)
- **New Generation EO System (GC-1/2/3/4/5...)**





■ The New Generation EO System





The New Generation of EO System



System Composition

- Space-based System
- Airborne System
- Ground system
- Application System

Construction Period:

2010-2020





The New Generation of EO System



Space-based system



- Several satellites with various orbits and various spectrum ranging from visible to microwave;
- Spatial resolution greater than 1.2m; spectral resolution reaching nanometer level, and swath ranging from 10km to 100km, with attitude maneuvering capability.



The New Generation of EO System



Airborne system



- Consists of air flight platform, airborne earth observation instrument and data processing system;
- Develops three types earth observation equipments, including Optical, LASERs and SAR;
- Spatial resolution greater than 0.1m, and spectrum resolution better 1nm.



The New Generation of EO System



Ground system



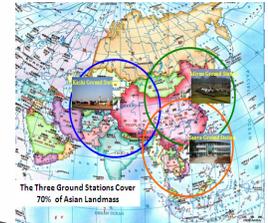
- Consists of three operational systems: data receiving, data process, data management and task scheduling system; and three kinds of supporting infrastructure: data receiving, calibration and public platform;
- Responsible for mission planning, data receiving and process, data distribution and massive data management;
- Available for data sharing and efficient operation.



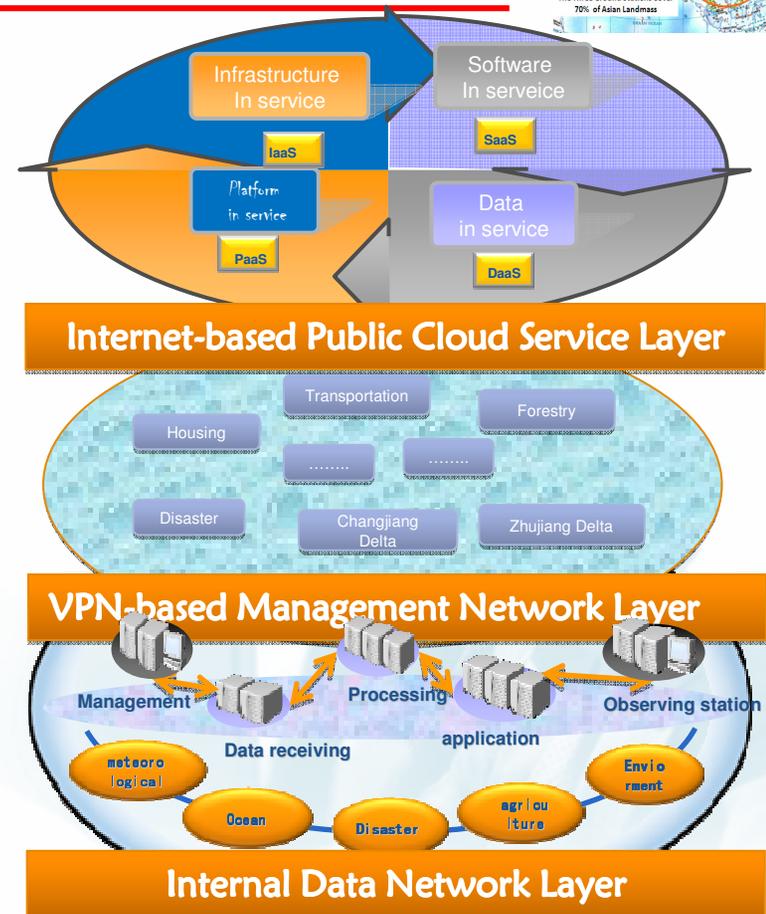
The New Generation of EO System



Ground system



- To build the national spatial data infrastructure to promote data sharing and reuse across multiple institutes and domains
- To facilitate public data service and data integration.
- To coordinate fast data transfer and production for emergency response.

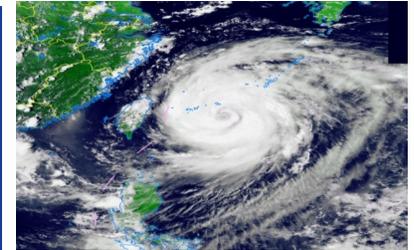
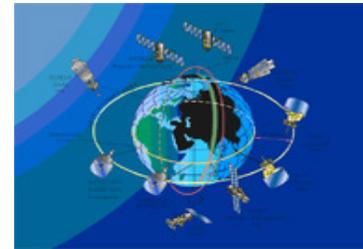




The New Generation of EO System



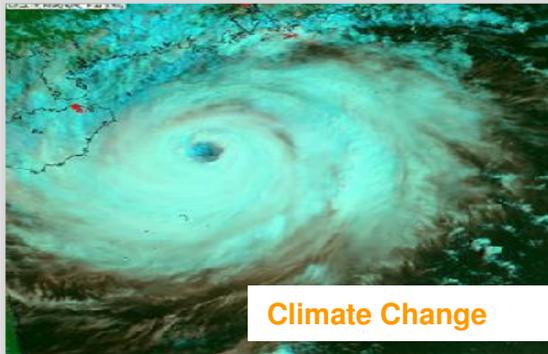
Application system



- Consists of application technology center subsystem and typical application subsystem;
- Responsible for transferring earth observation data into application information and knowledge, and providing application services;
- Establish a comprehensive application and service system with multi-source data to meet the domestic and international users' requirements.



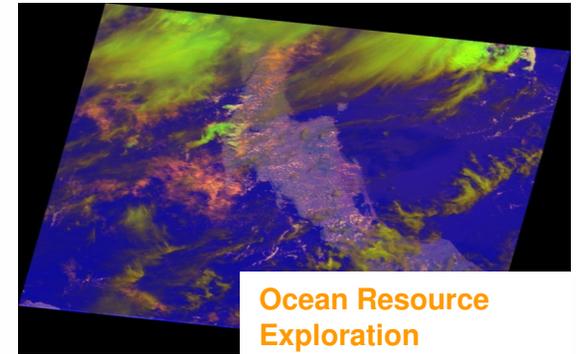
The New Generation of EO System



Climate Change



Disaster Monitoring



Ocean Resource Exploration



Mineral Survey

Application



Pollution Monitoring



Urban Fine Management



Environment Protection



The New Generation of EO System



Implementation plan

- The first GC satellite of new generation earth observation system are scheduled to be launched and put into service in 2013;
- By 2015, 4-6 GC series satellites will have been launched;
- By 2020, with supplement of numbers and types of GC satellites, a space-air-ground integrated earth observation system will have been completed.



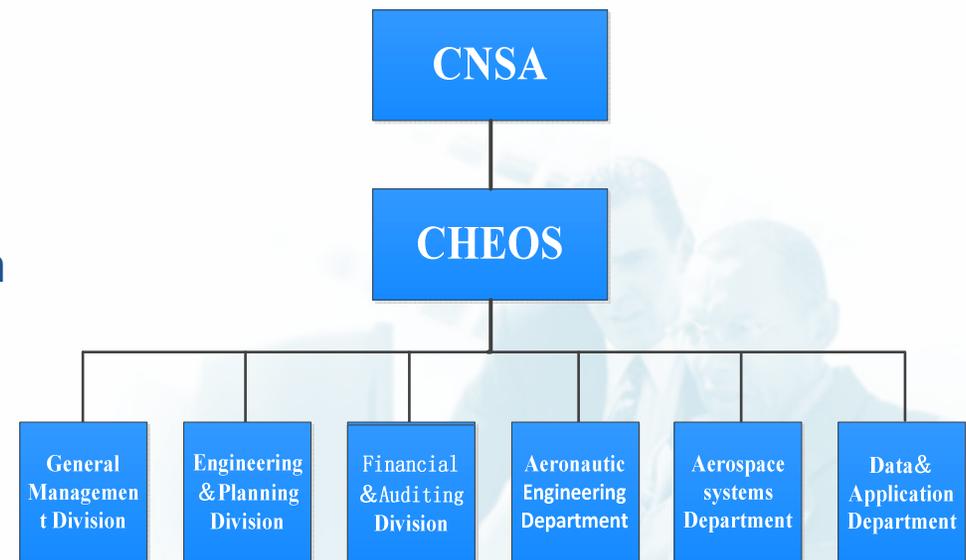
Related Organizations



Earth Observation System & Data Center, China National Space Administration(CHEOS)

Major Responsibilities:

- Establish development plan for new generation of Earth Observation System
- Manage the project implementation
- Organize related technology research and products-developing
- Draft data policy
- Carry out international cooperation





■ International Cooperation





International Cooperation



Principles of International Cooperation

The international cooperation in China's new generation Earth Observation System complies with the principles as described in the white paper of *China's Space Activities in 2011*. The following are given priority to:

- Reinforcing space cooperation with the developing countries, and veluing space cooperation with the developed countries
- Carrying out multi-level and multi-form international cooperation
- Conducting commercial cooperation actively and pragmatically



International Cooperation



International Cooperation

Multilateral Cooperation:

- UN-SPIDER
- CHARTER
- GEO

Bilateral Cooperation:

- ESA, Russia, Brazil, Thailand, South Africa, etc.





International Cooperation



International Cooperation

Earth Observation System & Data Center of CNSA is willing to cooperate with the governments and space agencies all over the world on the basis of to principle of peaceful utilization of outer space, and actively participate in the international space cooperation, and try our best to promote the development of space industry, thus contribute more to the scientific and technical progress and the lofty cause of human peace and development.





Thanks for your attention !

