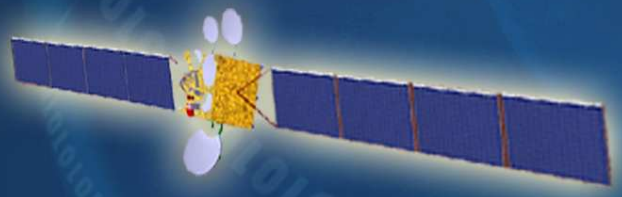
Public

Medium and Long Term Development Strategy of China's Civil Space Infrastructure (2015~2025)



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Development Principles

Overall Development of Service Applications	To thoroughly use domestic and foreign resources, firstly satisfy strategic and common requirements, reasonably satisfy guiding and specific requirements, promote business applications
Synchronous Development of Space and Ground System	To insist space and ground system development, to plan, develop, construct, use space system and ground system synchronously
Open Development Guided by Government	To insist nation's top strategy and overall management, use marketing configuration resources, actively promote commercialization and internationalization

2 Overall Framework and Development Objectives

2.1 Overall Framework

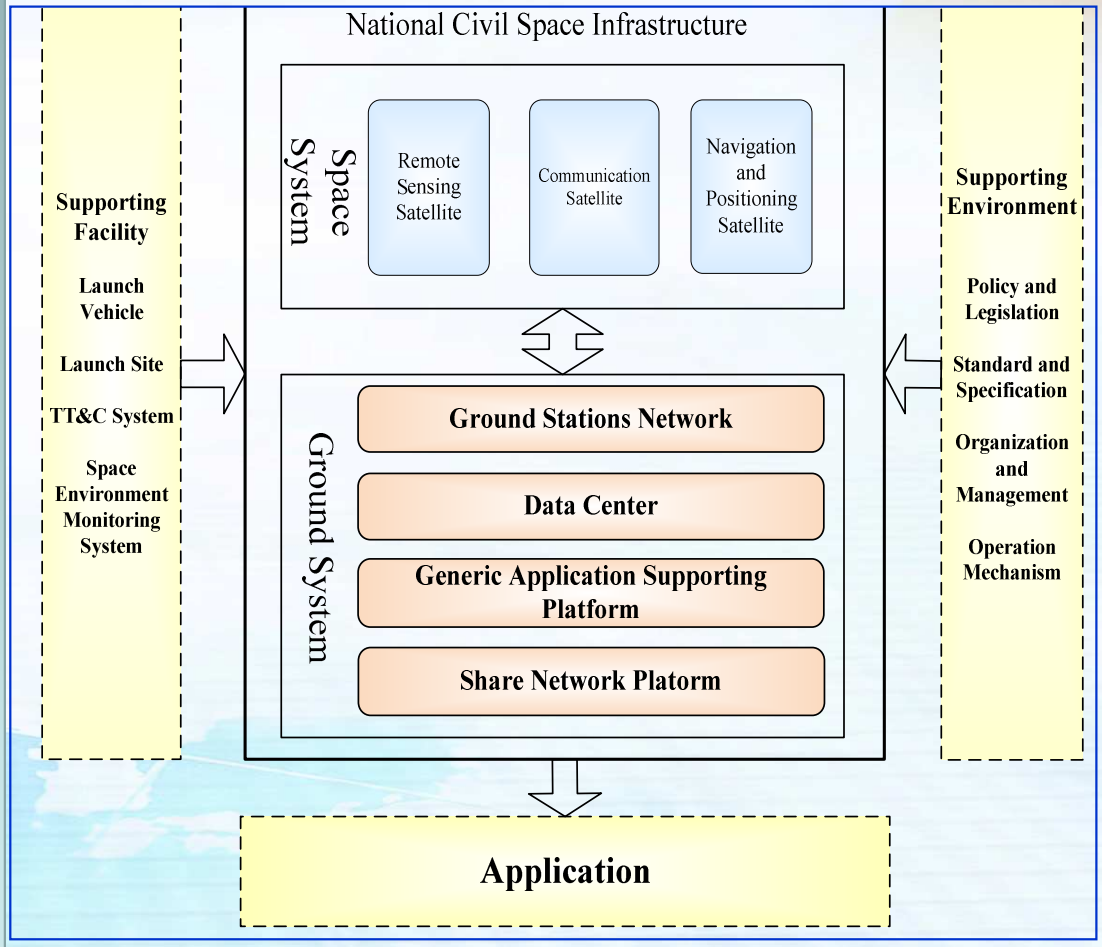
China's national civil space infrastructure consists of space system, ground system and related system.

Space system is composed of three sorts of application satellite systems, including remote sensing, communication and broadcasting, navigation and positioning.

Ground system is composed of ground stations network, data center, generic application supporting platform and share network platform.

Related system is composed of supporting facility and supporting environment.

Application includes industry, regional, enterprise application and public services.



2.2 Development Objectives

To establish major framework of national civil space infrastructure, operational satellite development pattern, service mechanism and national data policy

To establish three systems including satellite remote sensing, satellite communication, satellite navigation and positioning; To establish national civil space infrastructure system providing continuous and stable operation services; To complete data share service mechanism, provide standard regulation system, establish commercialization development pattern with the ability of international services

To establish an advanced, global and effective national civil space infrastructure system; To achieve internationally advanced level for business, marketing, industrial development; To gradually improve mechanism of innovation driving, requirement guiding, market configuration; To strongly support economy and society development, effectively participate in internationalization development

2015 or Beyond → **2016-2020** → **2021-2025**

3.1 Remote Sensing Satellite System

According to the development concept of multiple usage of one satellite, network of multiple satellites, coordination of multiple networks, based on the technological characteristics and user requirements characteristics of observation missions, land observation, ocean observation and atmosphere observation should be developed for focus, with the construction of remote sensing satellite system composed of seven constellations and three sorts of specific satellites. Remote sensing satellite stations network, data center, share network platform and generic application supporting platform should be constructed, global receiving and services ability of remote sensing satellite data can be developed.

3.1 Remote Sensing Satellite System -Space System

Land, ocean and atmosphere series satellites should be manufactured, gradually developing the comprehensive and effective global observation capability with a reasonable configuration of high, medium and low resolution, as well as an optimal portfolio of multiple observation methods.

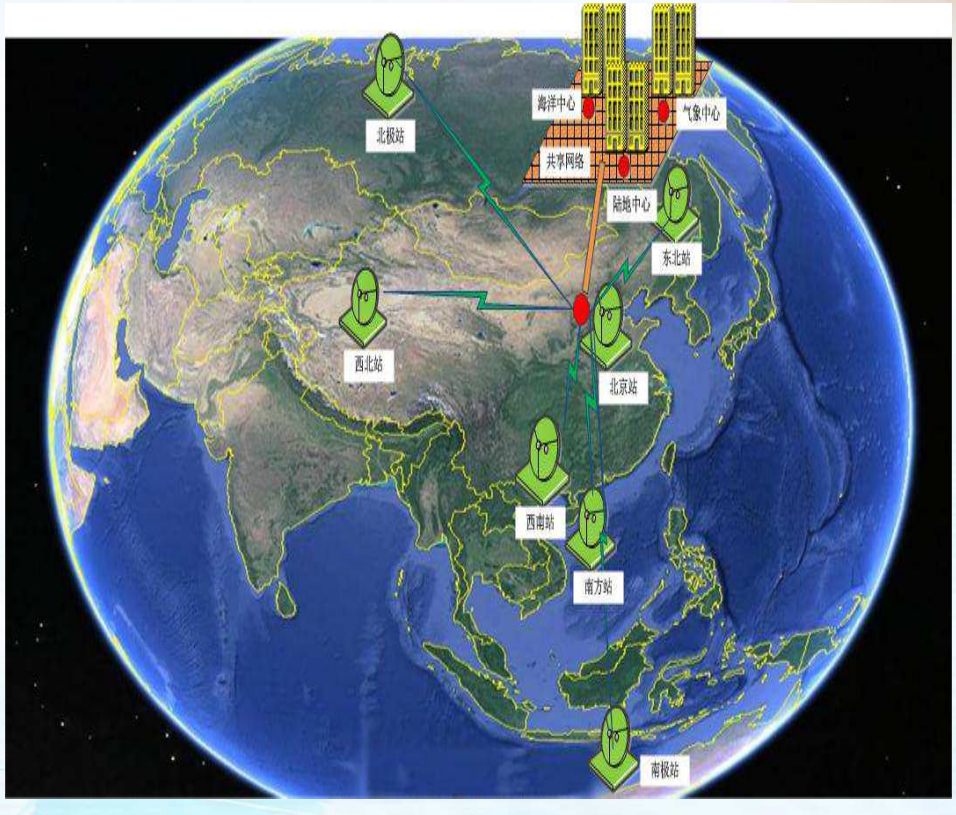
1 **Land Observation**: construction of three observation constellations of high resolution optical, medium resolution optical and SAR, as well as development of earth physical field satellite.

2 **Ocean Observation**: construction of ocean color and ocean dynamic satellite constellation, as well as ocean monitoring satellite.

3 **Atmosphere Observation**: construction of weather observation and climate observation satellite constellation, and atmosphere composition investigation satellite

3.1 Remote Sensing Satellite System-Ground System

According to the requirements of effective networking, cooperative operation, integrated services, using the existing resources of ground resources, to construct ground facilities such as remote sensing satellite receiving stations network, data center, generic application supporting platform, share network platform and so on.

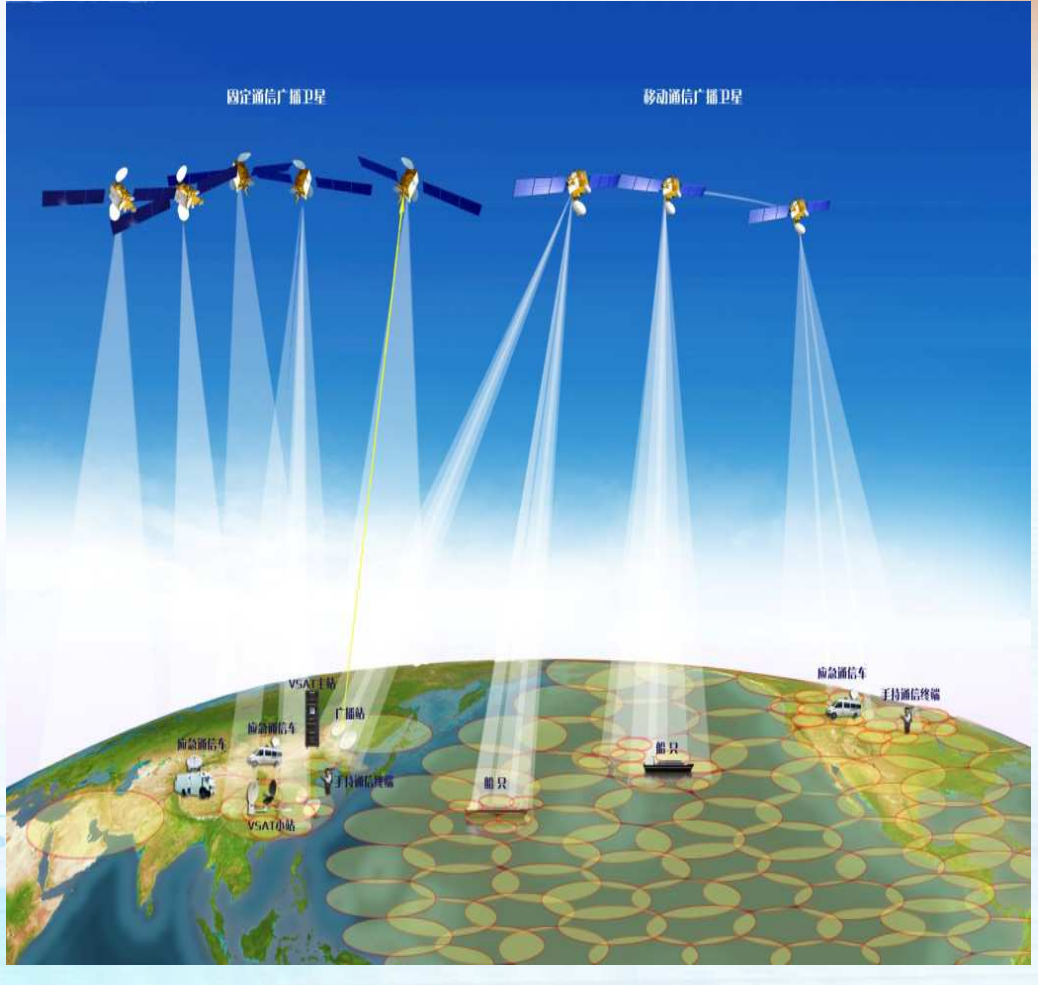


3.1 Remote Sensing Satellite System-Ground System

Receiving Stations Network	To coordinate all sorts of requirements, establish domestic and polar low earth orbit, polar orbit antenna, as well as receiving facility at sea, to realize coordination among multiple stations and integrative receiving for global data
Data Center	To upgrade existing land, ocean, weather satellite data center, support with each other, promote effective usage and share of satellite, data, calculating resource
Generic Application Supporting Platform	Including public supporting platform for calibration and verification field network, generic technology development
Share Network Platform	To connect three data centers and all levels of application systems, distribute satellite operation status and user observation requirements in time, effectively use all sorts of calculating and data resource, providing business services for users

3.2 Communication Satellite System

Aiming at industrial and market application, focusing on commercialization, guaranteeing commonweal requirements, to develop fixed communication satellites and mobile communication satellites, synchronously construct ground facilities such as TT&C station, gateway station, uplink station, calibration field and so on, achieve services abilities of broadband communication, fixed communication, DTH, mobile communication, mobile multimedia broadcasting. To gradually construct global satellite communication and broadcasting system combining communication network covering worldwide main regions, provide services for Broadband China and Globalization strategy, promote international propagate ability.



3.2 Communication Satellite System-Space System

To construct three sorts of satellites including fixed communication, DTH and broadband communication, provide fixed communication and broadcasting services for the country, neighborhood and other regions.

Fixed Communication Satellite

- Focusing on the industrial requirements of telecommunication, broadcasting and TV, ocean, petroleum, based on the current satellites in-orbit, to rapidly develop fixed communication satellite system and maintain continuous improvement of fixed communication capability

DTH Satellite

- To develop DTH satellite system on the current basis for the purpose of DTH realization

Broadband Communication Satellite

- To develop broadband communication satellite system with broadcasting and digital distribution capability for two-way communication business such as remote education, telemedicine, rural and agriculture informatization, internationalization development and so on

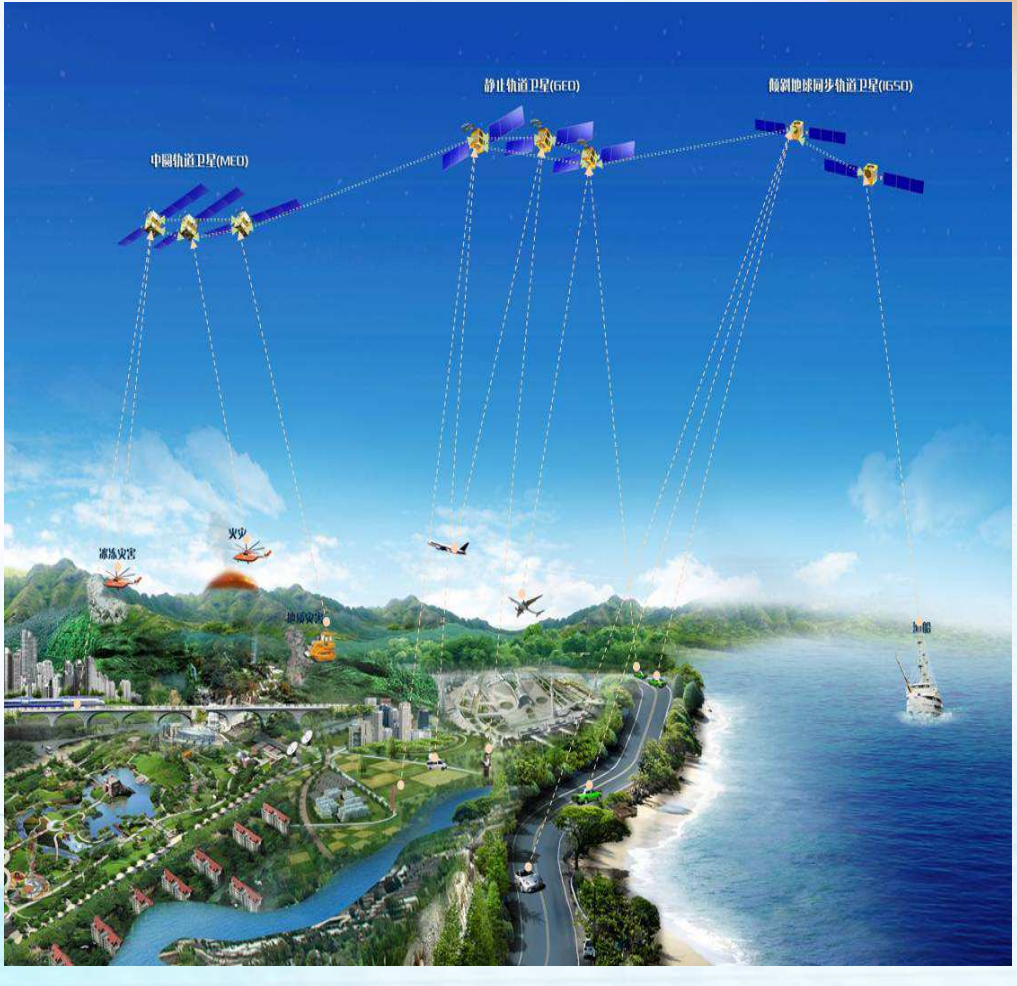
3.2 Communication Satellite System-Ground System

Based on current resources, according to the requirements of space system development, to synchronously construct ground facilities such as TT&C station, gateway station, uplink station, calibration field and so on, update or reconstruct all sorts of ground stations if necessary, take full use of satellite systems.

3.3 Navigation and Positioning System

Satellite navigation space system and ground system construction belongs to nation's science and technology major project of China's second generation satellite navigation system.

By 2020, Beidou global satellite navigation system of 35 satellites will be completed, with positioning accuracy of 10m, timing accuracy of 20ns.



4 Active Promotion on Major Applications

According to business requirements and specific application objectives, to use diverse constellations, different series of satellite and data resources, construct satellite comprehensive application system and realize continuous acquirement and application multiple resource information .

- Resource, Environment and Ecological Protection
- Disaster Mitigation and Emergency Response
- Society Management, Public Service and Safe Production
- New Urbanization and Regional Sustainable Development, Integration Across Areas
- Mass Information Consumption and Industrialization
- Global Observation and Earth System Science
- Internationalization Service and Application

5 Policies and Measures

Improve Space Law and Policies and Regulation

✓To enact China Space Law and Space Infrastructure Operating Policies;

✓Improve on study Satellite Products Standards, Promote Sharing and Efficiently Application.

5 Policies and Measures

Promotion on Diversification Investment and Industrialization Application

✓**To support private capital on satellite development and system construction and enhance the vitality of development;**

✓**To support enterprises to be engaged in value-added product, operation services and industrialization application, forming a good development pattern of mutual complement among basic public service, diverse professional service and mass consumption.**

5 Policies and Measures

Stronger Support by Finance and Tax Policy

- ✓ **On the basis of integration of current policy resources and full usage of current fund sources, to construct continuous and stable funding mechanism, support operation satellite system construction, scientific satellite development, generic technology development and major generic application supporting platform development, to support and guide major application paradigm of the industry and regions;**
- ✓ **To encourage innovation of finance support for financial organizations, enhance credit and loan support for space infrastructure development and application, improve and carry out innovative taxing policy.**

5 Policies and Measures

Focus on Innovation Driving

- ✓ **To establish and improve technology innovation system, support the construction of some key laboratories, engineering centers and other innovation platforms, improve the capabilities of original innovation, integrated innovation and re-innovation;**
- ✓ **To develop space and ground system's satellite technology and application pattern innovation, deploy generic technology development in advance according to national science and technology plan, strongly promote innovation development of core component, payload, application technology and so on, improve self-directed development, promote deeply combination of satellite and business application, carry out high-quality services;**
- ✓ **To establish and improve technology standard system of satellite development, terminal equipment, data product, information service and so on.**

5 Policies and Measures

Encourage of International ization Development

- ✓ **To study the specific measures of internationalization development, promote the utilization of domestic and foreign resources, domestic and foreign markets;**
- ✓ **To carry out international coordination, actively participate in related international organizations and the establishment important international regulations and standards. To extend international cooperation, carry out international cooperation on technology development, satellite development, system construction and data application;**
- ✓ **To encourage and support the construction of international cooperation comprehensive services, promote the export of satellite, data and services, improve internationalization capability and application benefits.**


Thank You