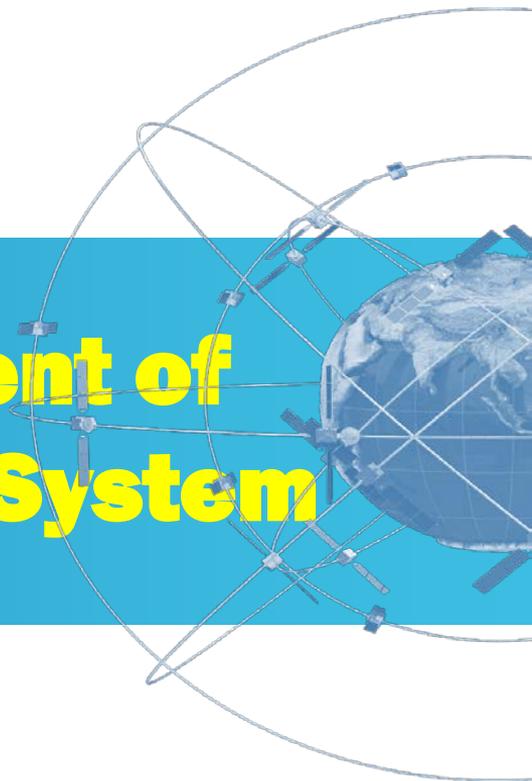




Construction and Development of BeiDou Navigation Satellite System



China Satellite Navigation Office

2018.06.22.Vienna



CONTENT

01

System Construction

02

Application Promotion

03

International Cooperation



CONTENT

01

System Construction

02

Application Promotion

03

International Cooperation



01- System Construction

I. BeiDou-2

**In operation
for FIVE and
a half years**

**No service
interruption
has occurred**

**Positioning
accuracy
10 → 6m**

Two BD-2 backup satellites will be launched in the next two years to ensure stable service performance.



01- System Construction

II. BeiDou-3



2017.11.5



2018.1.12



2018.2.12



2018.3.30

Four Groups Of Eight BeiDou-3 Satellites Were Successfully Launched within Half a Year.

The on-orbit testing of the networked satellites, system integration and performance evaluation are in progress. Preliminary results indicate that the satellites are in good state and the performance meets the requirements of the indicators.



01- System Construction

II. BeiDou-3

The overall performance of BeiDou-3 has been greatly enhanced. The adoption of **inter-satellite link, new-generation rubidium atomic clocks and passive hydrogen atomic clocks** with **E-15** day stability enables BeiDou-3 to provide new services like **global search and rescue**, and to broadcast high-quality navigation signals. .

Spatial Signal User's
Ranging Error Is
Expected To Reach

0.5m

Positioning
Accuracy

2.5m to 5m

Capacity of unique RDSS
service increased by

10 times

user transmission
power reduced to

1/10



01- System Construction

II. BeiDou-3

Chinese and English versions of interface control documents of space signals B1C, B2a, and B3I were officially released in December 2017 and February 2018 on www.BeiDou.gov.cn.

BeiDou Navigation Satellite System
Signal In Space
Interface Control Document
Open Service Signal B3I (Version 1.0)



China Satellite Navigation Office
February 2018

BeiDou Navigation Satellite System
Signal In Space
Interface Control Document
Open Service Signal B1C (Version 1.0)



China Satellite Navigation Office
December, 2017

BeiDou Navigation Satellite System
Signal In Space
Interface Control Document
Open Service Signal B2a (Version 1.0)



China Satellite Navigation Office
December, 2017



01- System Construction

II. BeiDou-3

2018

10 BeiDou-3 MEO satellites
1 GEO satellite

**2019
to
2020**

6 BeiDou-3 MEO satellites
3 BeiDou-3 IGSO satellites
2 BeiDou-3 GEO satellites

2020

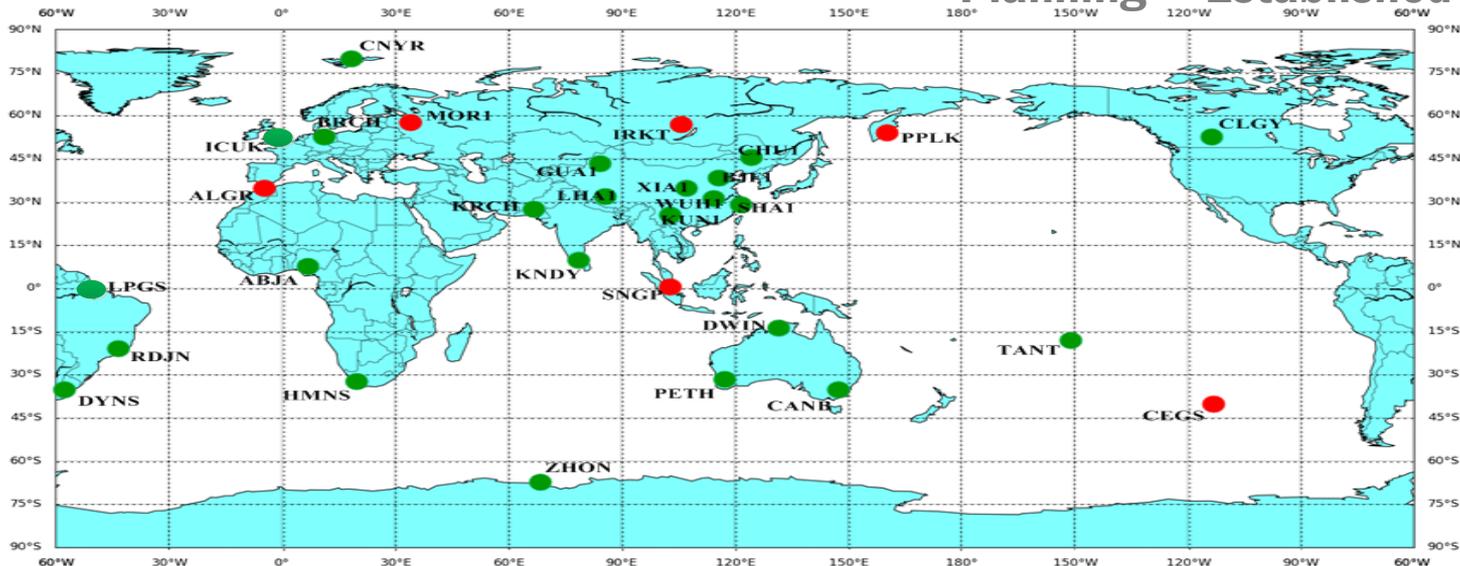
Global Service
Capabilities



01- System Construction

III. Global Continuous Monitoring and Evaluation System

● Planning ● Established



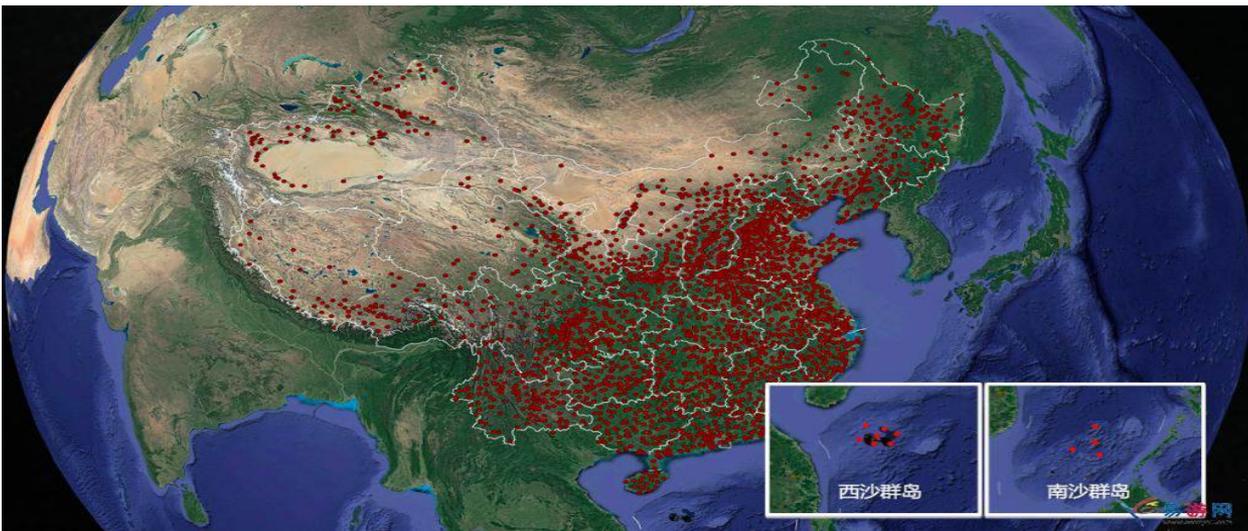
A basic system consisting of 24 stations and various types of centers has been established. The users are provided with raw data, basic products, and monitoring and evaluation information services through the Internet and smartphone terminals.



01- System Construction

IV. Augmentation System

Ground-Based Augmentation system



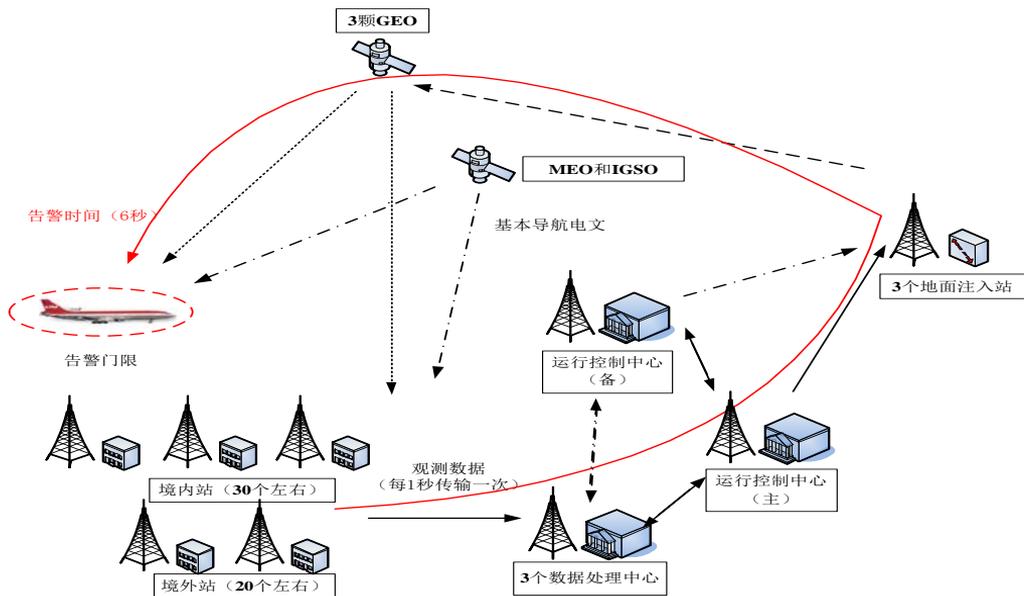
After the basic R&D work was finished, the system has entered the trial operation stage, providing users with wide-area real-time meter, decimeter-, centimeter- and post-processing millimeter-level positioning accuracy.



01- System Construction

IV. Augmentation System

Satellite-Based Augmentation System

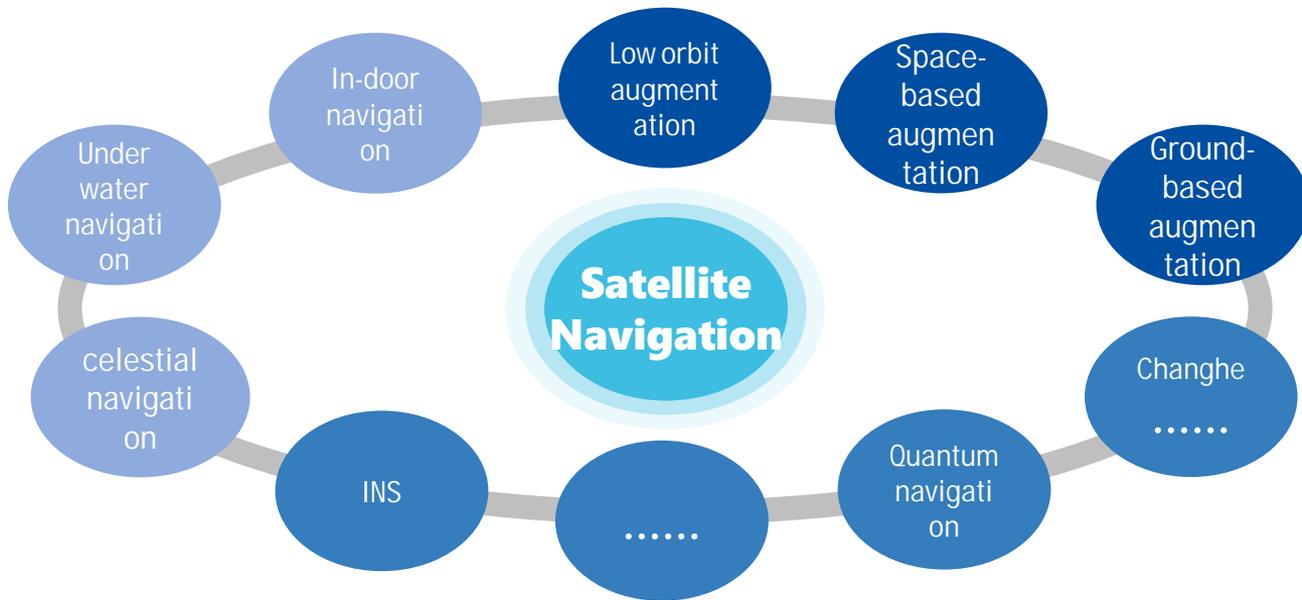


The BeiDou satellite-based augmentation system is constructed in accordance with international civil aviation standards. The current PRN number has been finalized and system testing and verification are under way.



01- System Construction

V. Future Development



Strive to Build a National Comprehensive PNT System by 2035



01- System Construction

VI. User Experience Evaluation

Herein, China Satellite Navigation System Management Office initiates the **BeiDou Global User Experience Evaluation Program**. The specific content and arrangement of the plan will be announced on the **BeiDou official website** in the near future. Global users and equipment providers **are welcome to actively participate in the program.**



CONTENT

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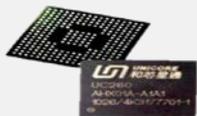
International Cooperation



02- Application Promotion

I. Basic Products

The BeiDou chip achieves large-scale application. The technology has entered a new era of 28 nanometers. The lowest price of single chip is less than RMB 6 and the overall performance has reached or even surpassed that of similar products in the world, realizing the upgrading from basic products to high-end industries.



多模多频基带芯片



BD2/GPS/GLONASS多
模兼容导航芯片



BD/GPS/MEMS 组
合导航模块



北斗/GPS模块



RTK高精度测向仪



车载导航仪



四系全频3D扼流圈天线



大型/小型 扼流圈天线



02- Application Promotion

I. Basic Products

By the end of April 2017, sales volume of the BeiDou navigation chip module has exceeded 65 million, and high-precision board cards and antennas have occupied 30% and 90% of the domestic market share, which have been exported to more than 80 countries and regions.





02- Application Promotion

II. Industry and Regional Application



BeiDou has been widely used in public security, transportation, fishing, power, forestry, disaster reduction, and other industries. It is serving the construction of smart cities and social governance.



02- Application Promotion

III. Popular Applications

Support Internet Development with satellite navigation technologies





02- Application Promotion

III. Popular Applications



Beijing

33,500 taxis and 21,000 buses are outfitted with BeiDou system to achieve full coverage of the Beidou.

1,500 logistic trucks and 19,000 delivery workers are using BeiDou terminals and bracelets to access the logistics cloud platform to achieve real-time scheduling.



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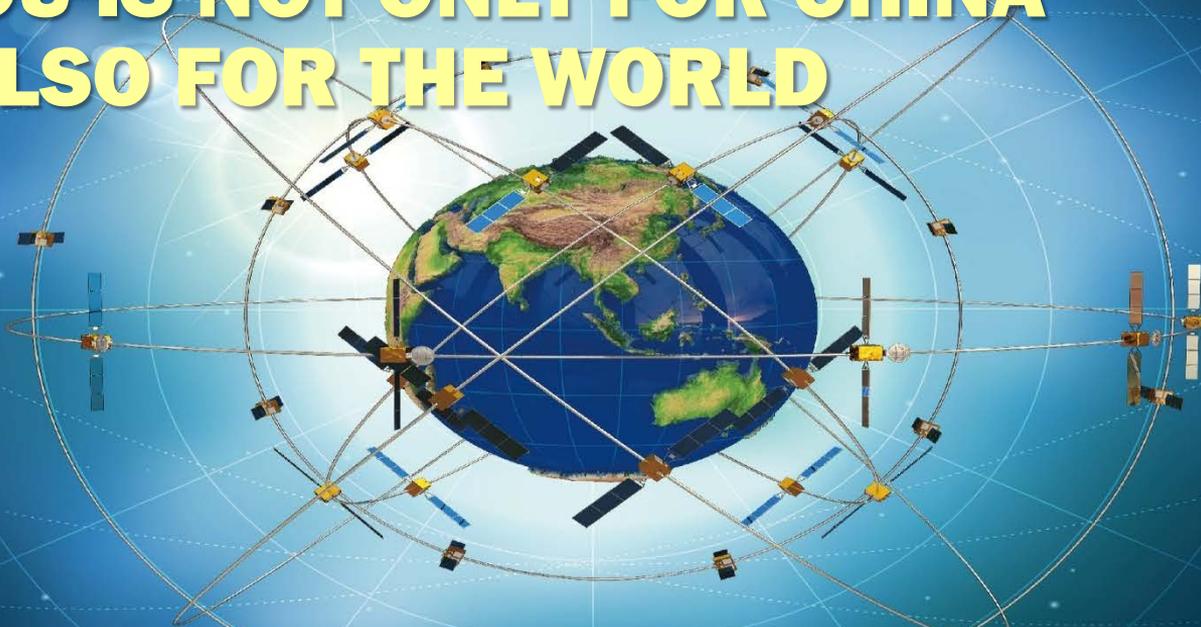
International Cooperation



03- Global Cooperation

We will continue to promote the international development of the BeiDou system, actively and practically develop international cooperation and exchanges, and promote the development of global satellite navigation so that the BeiDou system can better serve the world and benefit people.

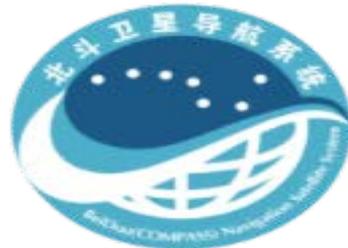
**BEIDOU IS NOT ONLY FOR CHINA
BUT ALSO FOR THE WORLD**





03- Global Cooperation

I. Bilateral Cooperation



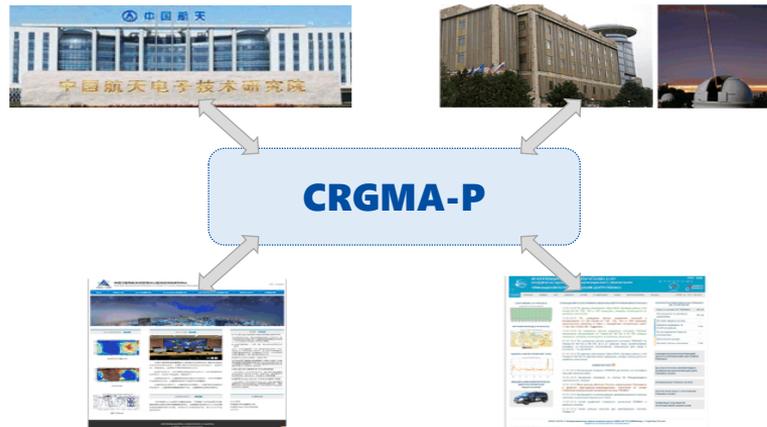
We will continue to conduct compatibility and interoperability coordination with various satellite navigation system providers, share resources, achieve win-win results for multiple systems, and provide global users with more efficient and reliable services .



03- Global Cooperation

I. Bilateral Cooperation

China-Russian Cooperation



China-Russian cooperation. In October 2017, China and Russia signed a joint statement on the compatibility and interoperability of the BeiDou and GLONASS systems, and opened the China-Russian GNSS Monitoring and Assessment Platform.



03- Global Cooperation

I. Bilateral Cooperation

China-US Cooperation



In November 2017, China and the United States signed a joint statement on the compatibility and interoperability of BeiDou and GPS signals.



03- Global Cooperation

II. Multilateral Cooperation



China actively participated in the ICG Conference, the SBAS IWG Meeting, the UN Global Satellite Navigation System Application Seminar and so on.



03- Global Cooperation

II. Multilateral Cooperation



**13th Meeting of the International Committee on
Global Navigation Satellite Systems**



- 2018/11 -



China will host the 13th. ICG meeting in Nov. 4th -9th 2018.



03- Global Cooperation

III. Serve the World



Build the cooperative mechanism with the ASEAN , Arab States and other countries and organization.



03- Global Cooperation

III. Serve the World

The second China-Arab States BDS Cooperation Forum will be held in **Tunis** in the first half of **2019**.



中国卫星导航系统
مجلس التعاون العربي الصيني لبيدو
مجلس التعاون العربي الصيني لبيدو

Declaration of Holding the Second Session of China-Arab States BDS Cooperation Forum in 2019 in Tunisia
10 April 2018, Tunis, Tunisia

The China-Arab States BDS Cooperation Forum is established within the framework of China-Arab States Cooperative Forum (CASF), as a multilateral platform to strengthen China-Arab States exchange and cooperation in the satellite navigation field, and to promote BDS/INSIS services benefiting the Arab States.

Jointly organized by Chinese Secretariat of China-Arab States Cooperation Forum, Secretariat of the League of Arab States, China Satellite Navigation Office and the Arab Information and Communication Technology Organization, the First China-Arab States BDS Cooperation Forum has been successfully held on 26 May 2017, in Shanghai, China. According to the Statement of the First China-Arab States BDS Cooperation Forum, the Chinese side and the Arab side agree to hold the second session of China-Arab States BDS Cooperation Forum in 2019 in one of the Arab States or a place to be decided by the League of Arab States.

Both sides noted the expression of interest by the Ministry of Higher Education and Scientific Research of Tunisia in holding the second session of China-Arab States BDS Cooperation Forum.

Consultations have been already engaged, the second session of China-Arab States BDS Cooperation Forum is scheduled to be held in Tunisia, in March or April, 2019, and will be jointly hosted by Chinese Secretariat of China-Arab States Cooperation Forum, Secretariat of the League of Arab States, China Satellite Navigation Office and the Arab Information and Communication Technology Organization according to the convention, and organized by the Ministry of Higher Education and Scientific Research of Tunisia.

Both sides agree to make joint efforts, to stipulate the above mentioned agreement into the CASCF Action Plan for 2018-2020, which is planned to be signed during the Eighth Ministerial Meeting of the CASCF.

Representative of the Chinese side: Chinese Secretariat of the Chinese side
Chinese General: Mr. RAN Chengyong
Representative of the Arab side: Arab Information and Communication Technology Organization
Secretary General: Mr. Mohamed Bassiouni

4/2018



Conclusion



BeiDou provides important information about positioning navigation, and timing to various industries in China, which greatly promoted social innovation and economic development. It is a link that delivers connectivity, awareness and intelligence to everything.

With the acceleration of a global system, BeiDou will provide more high-quality services to global users.

Hope you continuous concern and support to BeiDou. Thank you!

<http://www.beidou.gov.cn/>

