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# **Progress of the International Centre for GNSS Science Technology Education**

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# Outline

- **Background**
- **Major GNSS Education Activities in 2012-2013**
- **Facility and Capacity Building of the Centre**
- **Summary**

# 1 Background

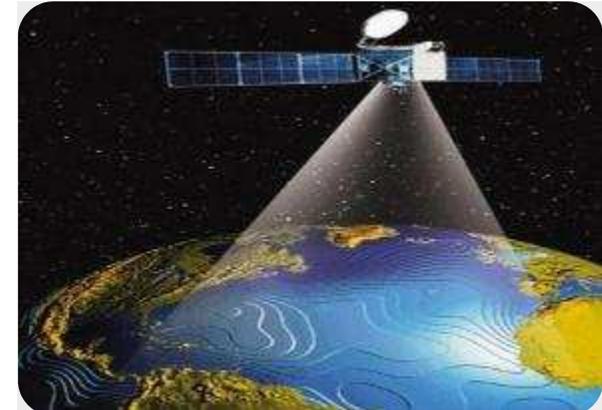
- Great achievements in space technology have been made in China.
- More countries in the world join the space club.



**“Shenzhou” 5**  
Spaceship



**“Chang ‘e”**  
Lunar Exploration



**“BeiDou”**  
Navigation Satellite



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# 1 Background

- Great development and wide use of GNSS technology
- Growing demands on GNSS education from developing countries.



Weather Forecast



Disaster Management



Transportation



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# 1 Background

The establishment of the International Centre for GNSS Science Technology and Education at **Beihang University**, China was proposed in the United Nations International Meeting on the Applications of GNSS on 12-16 December 2011 in Vienna.



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Beihang University, the first aerospace university in China, has been engaged in space international education since 2000 with the support of China National Space Administration (**CNSA**).

<b>Schools</b>	28
<b>State Key Laboratories</b>	7
<b>Undergraduate Programs</b>	57
<b>Master's Programs</b>	144
<b>Doctoral Programs</b>	49
<b>Students</b>	25,825
<b>Undergraduates</b>	13,704
<b>Graduates</b>	12,121
<b>Faculties &amp; Staffs</b>	3,799



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# Internationalization- "UPS"



北航晨兴音乐厅落成暨首演仪式  
“律动的音符”北航学生管乐团建团十周年专场音乐会



北航晨兴音乐厅落成暨首演仪式  
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# Internationalization- “UPS”



# Space Education

**On July 6th** (MASTA2009) ceremony was held at Beihang University.

**On August 2nd** campus, and FY-3, SPOT, applications.

**On August 6th** Scholarship for students from Southeast Asia.

**On April 30th** Bangladesh, 1000 students from Bangladesh.

**On July 10th** Mr. Wu Zhi provided on September in Beijing accomplish The 2009 Space Cooperation with Mongolia.

**On August 2nd** International Technology Week in Godimova, Ukraine. China Satellite Vice President the ceremony satellite navig Canada, Finland to give lecture program who institutions in Pacific region Summer School University in Professionals co-organized. (IAG), Beidou BDSstar Navig CHC Technol

**On September** Applications Mongolia, Part From November (ICG 7) was held GNSS education C Meeting.

**On August 2nd** China Satellite Navigation System inauguration.

**On November 7th 2012**, Dr. Mazlan Othman, Deputy Secretary-General of the United Nations Office at Vienna (UNOV) and Director of UNOOSA, visited Beihang University. She visited Beihang International Space Technology Application Education Center and the New Civil Aviation Navigation System Laboratory. Prof. Zhou Hong, Dean of International School, introduced the situations of space technology application education and training at Beihang University.

**On November 8th 2012**, Director of the African Regional Center for Space Science and Technology Education - in French Language (CRASTE-LF), and Director of "GLONASS/GNSS Forum" Association were invited to come to Beihang University, visited Beihang Space Technology Application Education Center and Beidou International Communication and Training Center.

**On November 20th 2012**, the evaluation session on the Chinese Government Scholarship special project for MASTA was held in Beihang University. Experts from Ministry of Education, APSCO, And China Great Wall Industry Corporation attended the meeting, and gave high evaluation to the project.

Brochure on Space Education in past 10 years



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## 2 Major GNSS Education Activities in 2012-2013

### Summer School on GNSS frontier technology 2012

It is recognized that there is a significant shortage of well-educated and highly-skilled professionals in GNSS and related fields in the Asia-Pacific region.

The objective of the one-week program is to provide a comprehensive overview on selected areas of GNSS theory, hardware, software and applications. The program is open to postgraduates, PhD students, and early career professionals



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## 2 Major GNSS Education Activities in 2012-2013

### 1) Summer School on GNSS frontier technology 2012

8 renowned experts were invited to give lectures on several selected topics, covering receiver design, ground-based and space-based augmentation, user precise positioning and integrity algorithms, and processing of multiple GNSS and multi-frequency data.

**Date:** 25-31 August, 2012

**Venue:** Beihang University

Participants : 60+



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## 2 Major GNSS Education Activities in 2012-2013

### 2) Master Degree Program on GNSS 2012

Duration: Sep,2012 – June,2014

Participants: 20

Country: Indonesia, Iran, Mongolia, Pakistan, Peru, Spain, Thailand

<http://unoosa.org/oosa/en/SAP/centres/index.html>



## 2 Major GNSS Education Activities in 2012-2013

### 2) Master Degree Program on GNSS 2012

**1<sup>st</sup> stage: Core Courses Study in China (9 months)  
(Leading to postgraduate certificate of Beihang )**

*Module I: 2 months for  
fundamental courses*

*Module II: 4 months for  
specialized courses*

**Module III: 3 months for pilot-project (practice)**

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**2<sup>nd</sup> stage: Advanced Research Project in Participant' s Homeland:  
12 month(Leading to Master degree of Engineering of China)**

*I. Advanced Project*

*II. Thesis Preparation and Defense*

**III. Graduation and Granting Master Degree in China**

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Degree will be offered by Beihang University.



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## 2 Major GNSS Education Activities in 2012-2013

### 2) Master Degree Program on GNSS 2012



Opening Ceremony

# 2 Major GNSS Education Activities in 2012-2013

## 2) Master Degree Program on GNSS 2012



## 2 Major GNSS Education Activities in 2012-2013

### 3) BeiDou International Exchange and Training Center

Inaugurated on August 24, 2012, Beihang University



## 2 Major GNSS Education Activities in 2012-2013

### 3) BeiDou International Exchange and Training Center

**Role:** it is one of the professional branches of CSNO, and is a nonprofit international educational institution.

**Tasks:** To organize the education and training projects in GNSS fields according to the plan and arrangement of CSNO; To develop various kinds of programs for long-term / short-term trainings and degree education and to train the talents in GNSS for all over the world; To establish a exchange and cooperation platform in GNSS .



# 2 Major GNSS Education Activities in 2012-2013

## 4) International Exchange and Cooperation



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# 2 Major GNSS Education Activities in 2012-2013

## 5) The Coming Program in 2013



MASTA Program on GNSS 2013



2<sup>nd</sup> BeiDou/GNSS Summer school 2013



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### 3 Facility and Capacity Building of the Centre

#### ■ Beihang Space Application Education Center



**Beihang University  
Space Applications Education Centre  
was founded in 2004**

### 3 Facility and Capacity Building of the Centre



**Inside the Centre**



**Seminar Room**



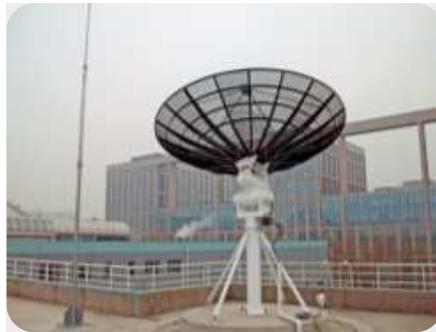
**Distant Learning Room**



**Computer Room**

# 3 Facility and Capacity Building of the Centre

Facilities for space technology applications education



**Remote Sensing (RS) Data Receiving Ground Station on campus**



**RS & Geographic Information System (GIS) Lab**



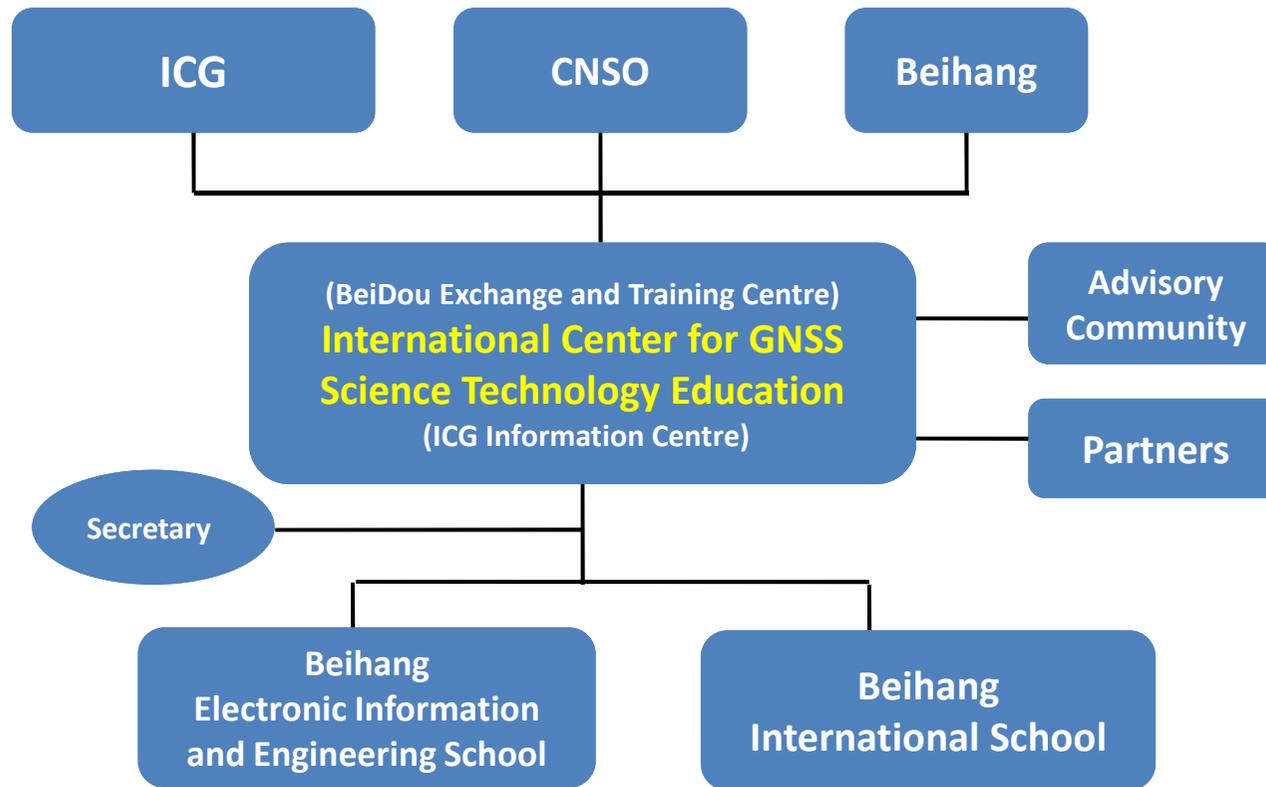
**Global Navigation Satellite System (GNSS) Lab**



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# 3 Facility and Capacity Building of the Centre

## Organization



### 3 Facility and Capacity Building of the Centre



BeiDou/GNSS Exhibition Corner at Aerospace Museum



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# 3 Facility and Capacity Building of the Centre



Xi'an Station

Satellite Monitoring Centre



GNSS Exhibition



GNSS Application Experience



Education and Training



Discussions

iGMAS Station



WuHan Observation Station



• BeiDou/GNSS Education and Application Demonstration System is going to set up in 2013



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# 3 Facility and Capacity Building of the Centre

•Sponsor



•Partners



中国航天



中国科学院  
CHINESE ACADEMY OF SCIENCES



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# Thanks for Your Attention!

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