

The background of the slide is a photograph of the Earth as seen from space, showing the blue oceans and white clouds of the planet against the blackness of space. The text is overlaid on this image.

# **Proposal for the Regional Centre for Space Science & Technology Education in East Asia and the Pacific Under the UN Programme on Space Applications**

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Director, Space Applications Education Centre

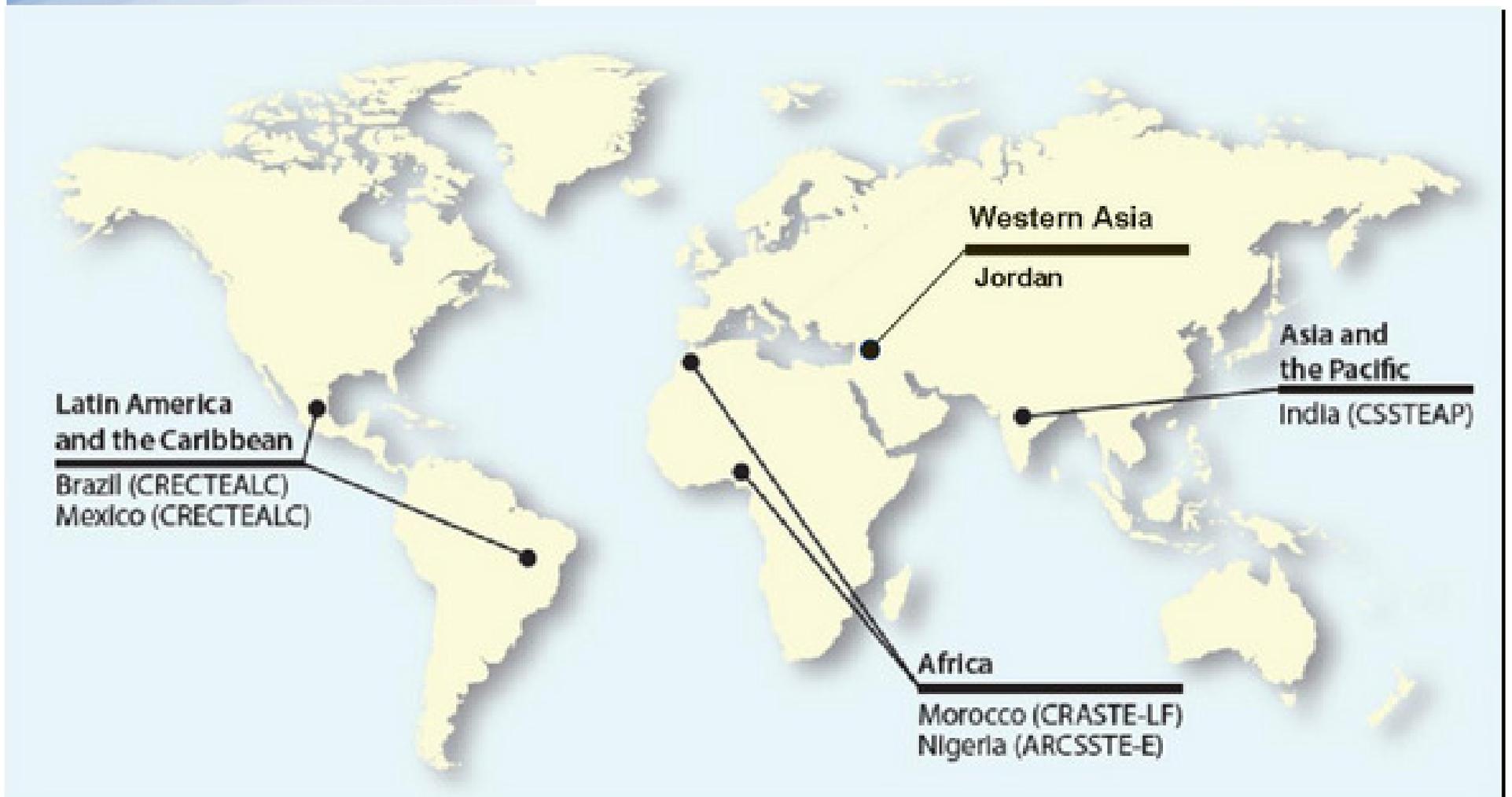
Beihang University, China

The fiftieth session of the Scientific and Technical Subcommittee of the  
Committee on the Peaceful Uses of Outer Space

Vienna, February 19, 2013

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- **Introduction**
  - **C**urrent Space Education at Beihang University
  - **O**utline of the Proposed New Regional Centre
  - **C**ommitment
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# Introduction



Regional Centres for Space Science and Technology Education  
(Affiliated to the United Nations)

# Introduction

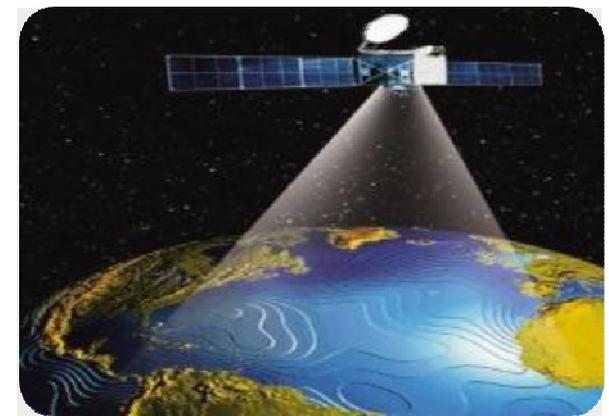
- Great development and wide use of space technology
- Growing demands on space education from developing countries.
- China's contribution to the UN programme on space applications



Weather Forecast



Disaster Management



Satellite Navigation

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# 北京航空航天大学

BEIHANG UNIVERSITY

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>Faculty &amp; Staff</b>	3,799



# Current Space Education at Beihang University



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

# Current Space Education at Beihang University



Inside the Centre



Seminar Room



Distant Learning Room



Computer Room

# Current Space Education at Beihang University

## 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**

# Current Space Education at Beihang University

Regular degree program — International participants graduated

Discipline	Master	Ph.D	Total	Countries
Materials Science and Engineering	29	18	47	6
Navigation, Guidance and Control	32	13	45	9
Flight Vehicle Design	65	21	86	16
Solid Mechanics	11	1	12	6
Aerospace Propulsion Theory and Engineering	36	12	48	10
Manufacture Engineering of Aerospace Vehicle	10	6	16	5
Mechatronic Engineering	18	6	24	10
Mechanical Manufacture and Automation	10	2	12	4
Computer Science and Technology	32	31	63	16
Precision Instrument and Machinery	13	10	23	5
Space Technology Applications	36		36	7
Control Theory and Control Engineering	9	5	14	4
Fluid Mechanics	9	7	16	4
Communications and Information Systems	15	19	34	10

**TOTAL: 476**

# Current Space Education at Beihang University

## Training programs

<b>Year</b>	<b>Topic</b>	<b>Stu.</b>	<b>Country</b>	<b>Sponsor</b>
2000	Satellites Technology	22	10	AP-MCSTA
2002	Remote sensing Applications	31	18	AP-MCSTA
2003	Space Technology and Remote sensing Applications	29	17	AP-MCSTA
2007	International Space University Summer Session	117	25	ISU/CASC
2009	Remote sensing Data Processing and Applications	42	8	APSCO
2011	1 <sup>st</sup> International Summer School on Aerospace Science Technology	90	17	BEIHANG
2012	2 <sup>nd</sup> International Summer School on Aerospace Science Technology	120	18	BEIHANG
2012	1 <sup>st</sup> BeiDou/GNSS International Summer school on GNSS Frontier Technology	67	2	CPGPS /CSNO
2012	Demonstration of Remote Sensing Data Usage for Earthquake Monitoring and Evaluation	17	9	APSCO and NDRCC

# Current Space Education at Beihang University

## Training programs



# Current Space Education at Beihang University

## Master program on Space Technology Applications (MASTA)

In 2004, Beihang was authorized by Chinese Ministry of Education to develop a new program, *Master Program on Space Technology Applications (MASTA)*, by introducing the *Education Curricula of Centres for Space Science and Technology Education* issued by the Office for Outer Space Affairs of the United Nations.

Vision: *Open, Cooperation and Demand Driven*

# Current Space Education at Beihang University

## Master program on Space Technology Applications (MASTA)

Year	Directions	Participants	Country
2006	RS and GIS	14	Bangladesh, Indonesia, Iran, Mongolia, Pakistan, Peru, Thailand
2008	RS and GIS	11	Indonesia, Mongolia, Pakistan, Thailand
2010	RS and GIS	11	Indonesia, Iran, Mongolia, Peru, Pakistan, Thailand
2011	SATCOM	14	Bangladesh, Indonesia, Iran, Mongolia, Laos, Pakistan, Peru, Thailand,
2012	GNSS	20	Indonesia, Iran, Mongolia, Pakistan, Peru, Spain, Thailand



# Current Space Education at Beihang University

Participating scholars — Global selection and recruitment



*(Partners )*



北京大学



中国科学院  
CHINESE ACADEMY OF SCIENCES



香港中文大學  
The Chinese University of Hong Kong



哈爾濱工業大學  
HARBIN INSTITUTE OF TECHNOLOGY



# Current Space Education at Beihang University

## Practice Base

In close cooperation with space industry and related agencies, the centre creates more opportunities for the participants to take part in space application projects to enhance their knowledge learnt from the courses.



- ⑩ *China Earthquake Administration*
- ⑩ *China Center for Resources Satellite Data and Application*
- ⑩ *.....*

# Current Space Education at Beihang University

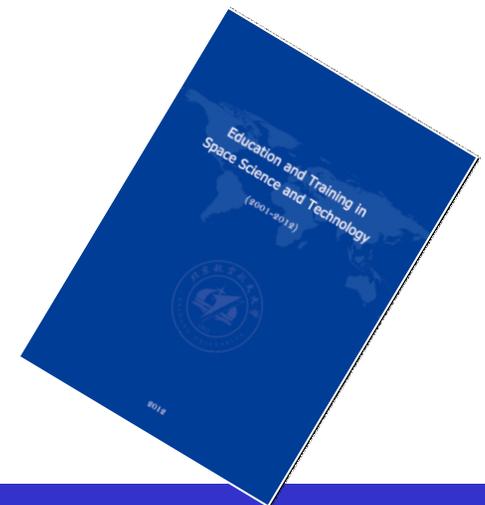
## International cooperation and exchange



International Committee on  
Global Navigation Satellite Systems



- Participated in the development of GNSS Curriculum which was released by the United Nations
- Actively involved in ICG Working Group C, Workshops
- Communicated with other regional centres
- Closely cooperated with APSCO
- .....



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- Introduction
  - Current Space Education at Beihang University
  - **Outline of the Proposed New Regional Centre**
  - **Commitment**
- 

# Outline of the Proposed New Regional Centre

## Goals of the centre

- To develop and spread the knowledge and skills about space science and technology;
- To enhance the exchanges and cooperation within the East Asia-Pacific Region;
- To promote the programme of space applications.

# Outline of the Proposed New Regional Centre

- **G**oal of the centre
- **M**ajor disciplines
- **P**rogram categories
- **D**egree program
- **P**articipating scholars
- **E**xperiment and practice
- **Q**uality assurance/assessment
- **T**arget audience
- **L**ogistics

# Outline of the Proposed New Regional Centre

## Major disciplines

### Ongoing

- Remote Sensing and Geographic Information Systems
- Satellite Communications
- **Global Navigation Satellite System (GNSS)**

### Forthcoming

- **Space Law**
- **Basic Space Science and Technology**

### To be launched

- Satellite Meteorology and Global Climate
- Space and Atmospheric Sciences

# Outline of the Proposed New Regional Centre

## Major disciplines

While continuing the existing disciplines at Beihang, such as *remote sensing and GIS, satellite communications*, special efforts will be made on *GNSS, space law, and basic space science and technology*.

The new regional centre would benefit the UN program by introducing new focused areas above.

# Outline of the Proposed New Regional Centre

## GNSS



- BeiDou International Communication and Training Centre was established at Beihang in 2012
- GNSS education & application exhibition and iGMAS station sponsored by China Satellite Navigation Office (CSNO) are going to set up in 2013



# Outline of the Proposed New Regional Centre Education and training on GNSS in 2013



**MASTA Program  
on GNSS 2013**



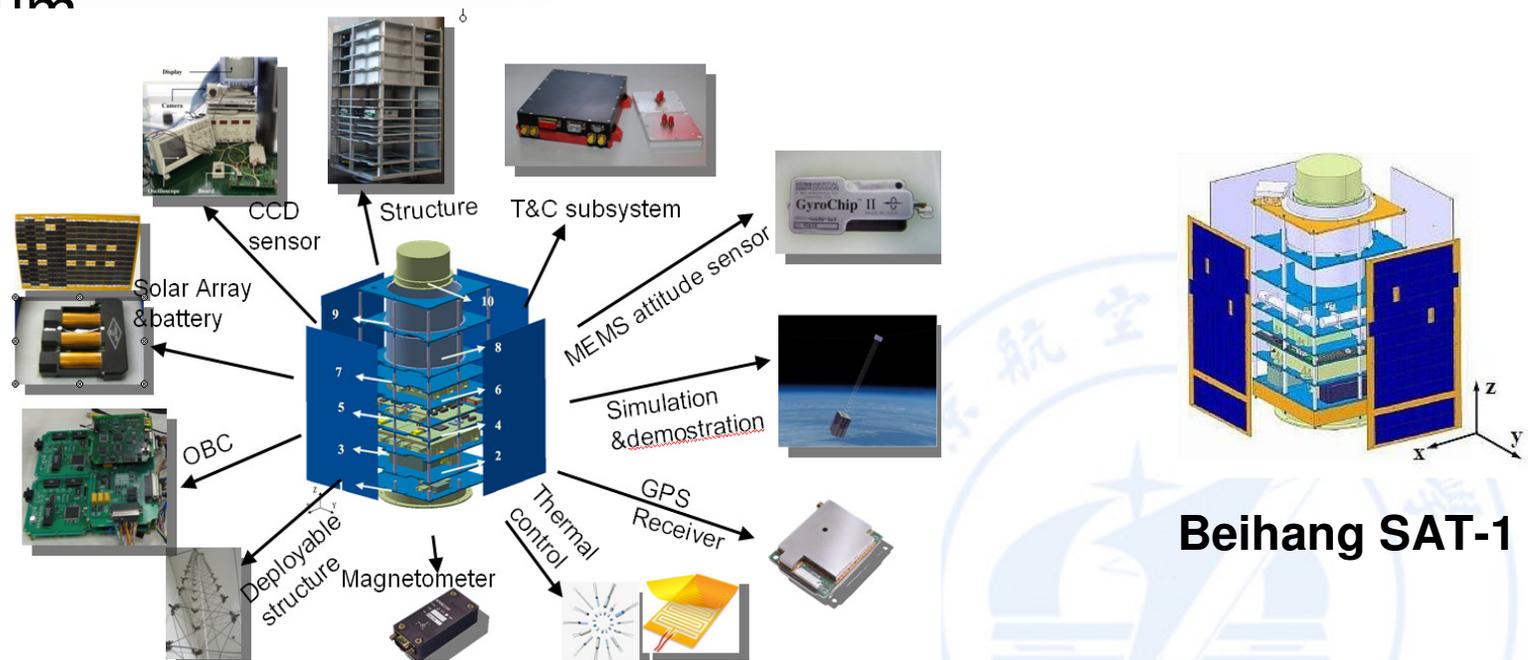
**2<sup>nd</sup> BeiDou/GNSS  
Summer school 2013**



# Outline of the Proposed New Regional Centre

## Basic Space Science and technology

Beihang is the member of Chinese University Micro Satellite Consortium



Pilot Project – Student Small Satellite

Beihang SAT-1 (35kg) to be launched in 2014

Beihang SAT-1 2U-CubeSat to be launched in 2015.

# Outline of the Proposed New Regional Centre

## Space law and policy

The first space law institute in China was founded in 2000, which has been active in the process of space legislation.

### Core Courses:

- General public international law
- Comparative study on space law
- Space law
- Space policy
- Space project management

# Outline of the Proposed New Regional Centre

## Program categories

Category	Training mode
<i>Degree Program</i>	<i>Master Program, Ph.D Program</i>
<b>Non-Degree Program</b>	<b>short training, summer school, summer / winter camp, popular science lectures, visiting study (semester / year)</b>
<i>Tailor-made Program</i>	<i>customized courses according to the needs of users</i>

Distant learning facilities are available

# Outline of the Proposed New Regional Centre

## MATSA program:

**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: Research Project in Participant's Homeland (6-12 months)  
(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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# Outline of the Proposed New Regional Centre

## Participating scholars

The participating scholars will be globally recruited.

## Experiment and practice

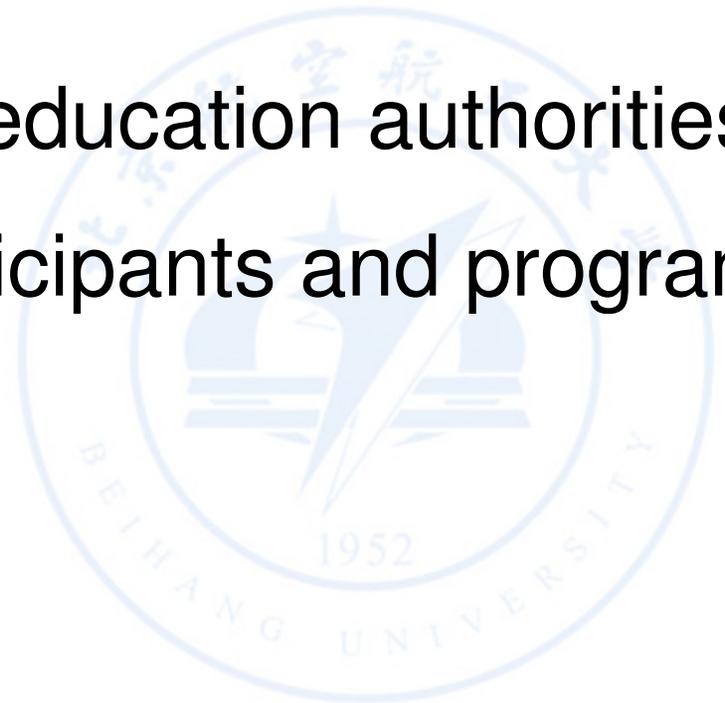
The centre would take advantages of the experimental facilities of Beihang University for teaching, and integrate various resources available in China to provide opportunities for practice.



# Outline of the Proposed New Regional Centre

## Quality assurance and assessment

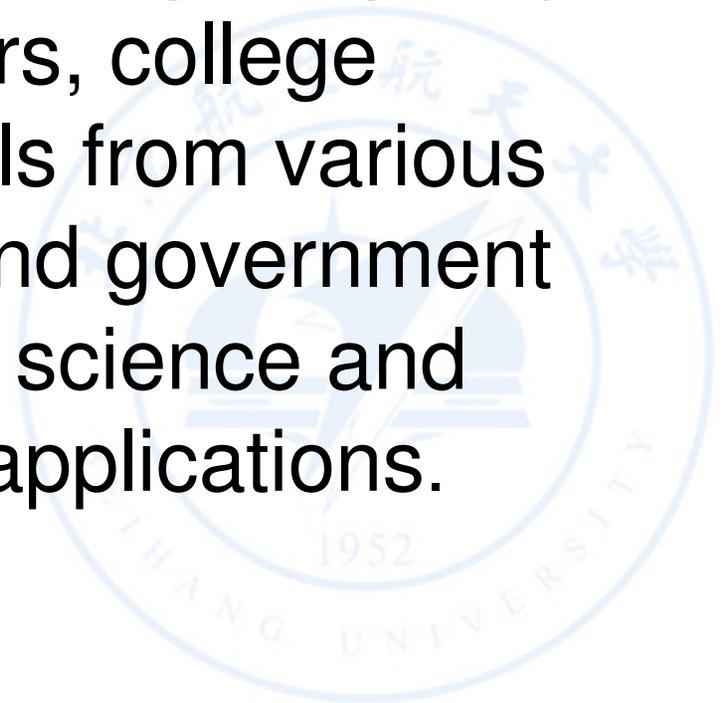
- Reviews by *the academic peer review committee*
- Evaluations by Chinese education authorities
- Assessment by the participants and program sponsors.



# Outline of the Proposed New Regional Centre

## Target audience (Participants)

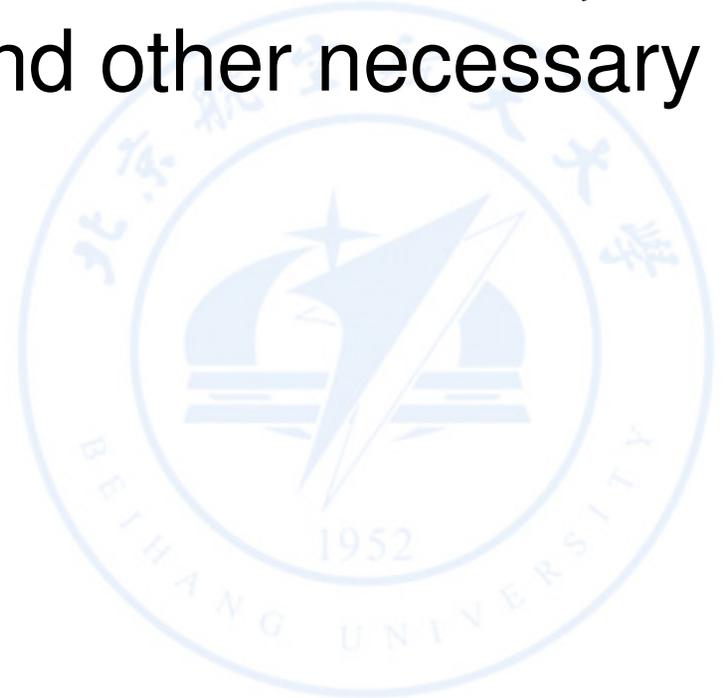
The prospective audience will include engineers, researchers, managers, policy maker, university educators, college students, and professionals from various institutions, enterprises, and government agencies related to space science and technology research and applications.



# Outline of the Proposed New Regional Centre

## Logistics

**Beihang University** (home institution) should provide teaching venues, accommodation, catering, administration, and other necessary facilities and service.



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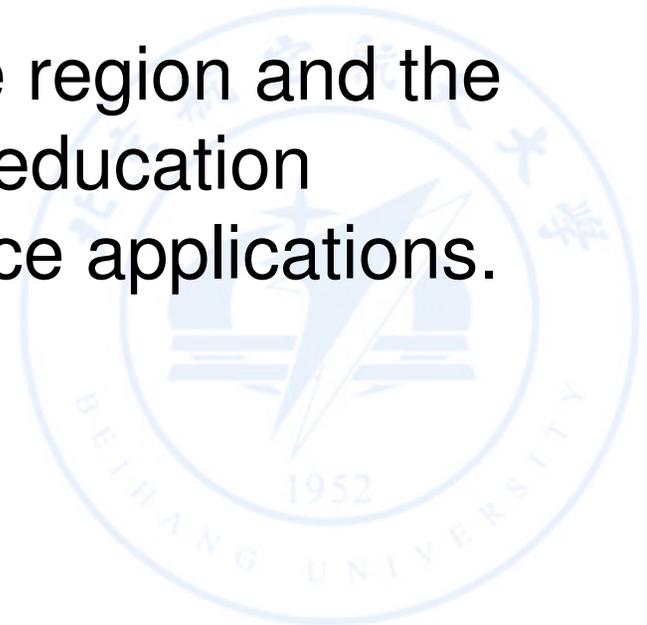


# Commitment

Supported by the Chinese government, Beihang University is full of confidence to set up a new Regional Centre for Space Science & Technology Education in East Asia-Pacific Region.

The new centre would benefit the region and the world at large by providing more education opportunities and enhancing space applications.

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**We welcome you to join us**

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