



Education and Training Activities in Space technology and applications

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- Education and Training Activities
- Understanding ICG information center
- Views of ICG information center
- Future work

1 Education and Training Activities

In the year of 1968, United Nations (UN) held the first conference on the exploration and peaceful uses of outer space. In the year of 1971, United Nations Outer Space Council presented **Programme on Space Applications**.

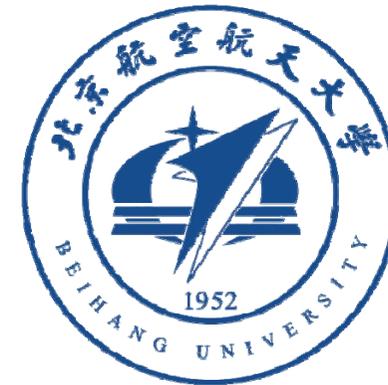
In the 1982 and 1999 respectively, at the second and third conference on the exploration and **peaceful uses** of outer space, UN expanded the task areas on space applications.

China has shown active avocations in response to the Program launched by UN and proposed to set up an Asia-Pacific Space Cooperation Organization(APSCO), developed education and training program in space technology applications from 2001.



A quick **GLANCE** at BUAA

SCHOOLS AND DEPARTMENTS	28
NATIONAL KEY DISCIPLINES (1st level)	8
NATIONAL LABORATORY	1
STATE KEY LABORATORIES	6
ACADEMICIANS OF CAS AND CAE	15
UNDERGRADUATE PROGRAMS	49
MASTER'S PROGRAMS	144
DOCTORAL PROGRAMS	49



Established in 1952, was the first aerospace engineering university in China.



In October, 2004, **Master degree program in Space Technology and Applications(MASTA)** was authorized by the Minister of Education, China, **which is the first and only one specialty program arranged its education curriculum according to the UNOOSA up to now in china.**

MASTA Program Outlook

Year	Directions	Number	Country	Sponsors	Partners
2006	RS and GIS	14 + 4	7+1	Space Agency, APSMCS	Space Agency
2008	RS and GIS	11	4	CSC	
2010	RS and GIS	11+1	5+1	CSC Special Program	ICG information center
2011	SACOM	16	9	CSC Special Program	ICG information center
2012	GNSS			CSC Special Program	

Education and Training



MASTA 2006 Closing Ceremony



MASTA 2008 Thesis Defense

Space Technology and Applications Education

Short training Courses held at Beihang Cooperated with APSCO

Year	Topic	Number	Country
2000	Satellites Technology	22	10
2002	Remote sensing Applications	31	18
2003	Space Technology and Remote sensing Applications	29	17
2009	Remote sensing Data Processing and Applications	42	8

Space Technology and Applications Education

Several Big Events



a) In Sep. 2006, Mr. Sergio Camacho, Director of Office for Outer Space Affairs visited Beihang University.



b) Ms. Alice Lee, Vice Director of Office for Outer Space Affairs attend the opening ceremony the MASTA2006

Space Technology and Applications Education

c) International Space University- Summer session

During 24, June and 24, August in 2007, Beihang University and China Aerospace Science and Technology Corporation held the summer session program for in Beijing. 117 students from 25 countries, and more than 150 experts and 49 foreign staff attend the program.



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Space Technology and Applications Education

4) United Nations/China/European Space Agency Training Course 2006

UNITED NATIONS/CHINA/ EUROPEAN SPACE AGENCY TRAINING COURSE ON THE USE AND APPLICATIONS OF GLOBAL NAVIGATION SATELLITE SYSTEMS

4 – 8 December 2006

Room 0323, ZhongGuanCun FOUNDER TOWER, No. 298,
Chengfu Road, Haidian District

Beijing, China

National Remote Sensing Centre of China and
GNSS Technology Training Cooperation Centre

GNSS System

Expert Advice - GNSS for All

September 1, 2007
By: [Sharafat Gadimova](#)
GPS World



ICG Participants, November 2006 (from left): Romana Kofler (UNOOSA), Ruth Neilan (IAG), Janusz Zielinski (COSPAR), Hans Haubold (UNOOSA), Guenter Stangl (EUREF), Gerd Rosenthal (EUPOS), Matt Higgins (FIG), Attila Matas (ITU), Milan Konecny (ICA), Deborah Kanarek (USA), Sergio Camacho (UNOOSA), ICG PARTICIPANTS (from left): Hank Skalski (USA), Sergey Rybkin (RF), Rafael Lucas Rodriguez (ESA), Ken Hodgkins (USA), Suresh Kibe (India), Xu Zhongsheng (China), Sergey Shestakov (RF), Elizabeth Klaffennboeck (IAIN), Ekaterina Andruschak (RF), David Turner (USA), Alice Wong (USA), Daniel Porras (UNOOSA), Mario Caporale (Italy), Sharafat Gadimova (UNOOSA), Clemens Rogi (USA), Sergey Revniviykh (RF), Vladimir Demiyarov (RF), Vitaly Lesnikov (RF), Shiro Yamakawa (Japan), and Vadim Stalinskiy (RF).



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Capacity Building for Space Technology and Applications Education



**Data From FY2,FY3,
MODIS,EOS,SPOT4,etc
can be accepted in real
time.**

Beihang Remote Sensing Data Receiving Ground station

(Established in August,2010,located nearby the New Main Buliding)

Capacity Building for Space Technology and Applications Education



Space Technology and Applications Research and Teaching (START) Lab

(Established in April, 2011, located in the 5th FL International School)

20 Computers,
Equipped with the latest
ArcGIS 10 Software Package,
ENVI/IDL

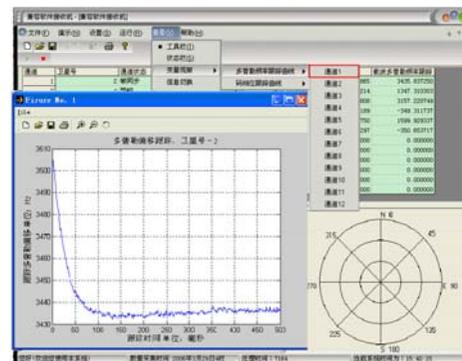
6 Screens can be connected
with related Computers in the
lab or Remote Computers or
Video Cameras through
Internet

Capacity Building for Space Technology and Applications Education

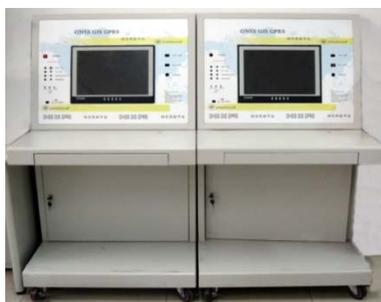


GNSS/GPS/GPRS/GIS Teaching Experiment Lab

(Established in 2009, located in New Main Building)



Capacity Building for Space Technology and Applications Education



RS

GIS

GNSS

"3S"

**Integrated,
network sharing**



Distant Education/Learning Model Classroom



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International Cooperation - UPS strategy At Beihang University

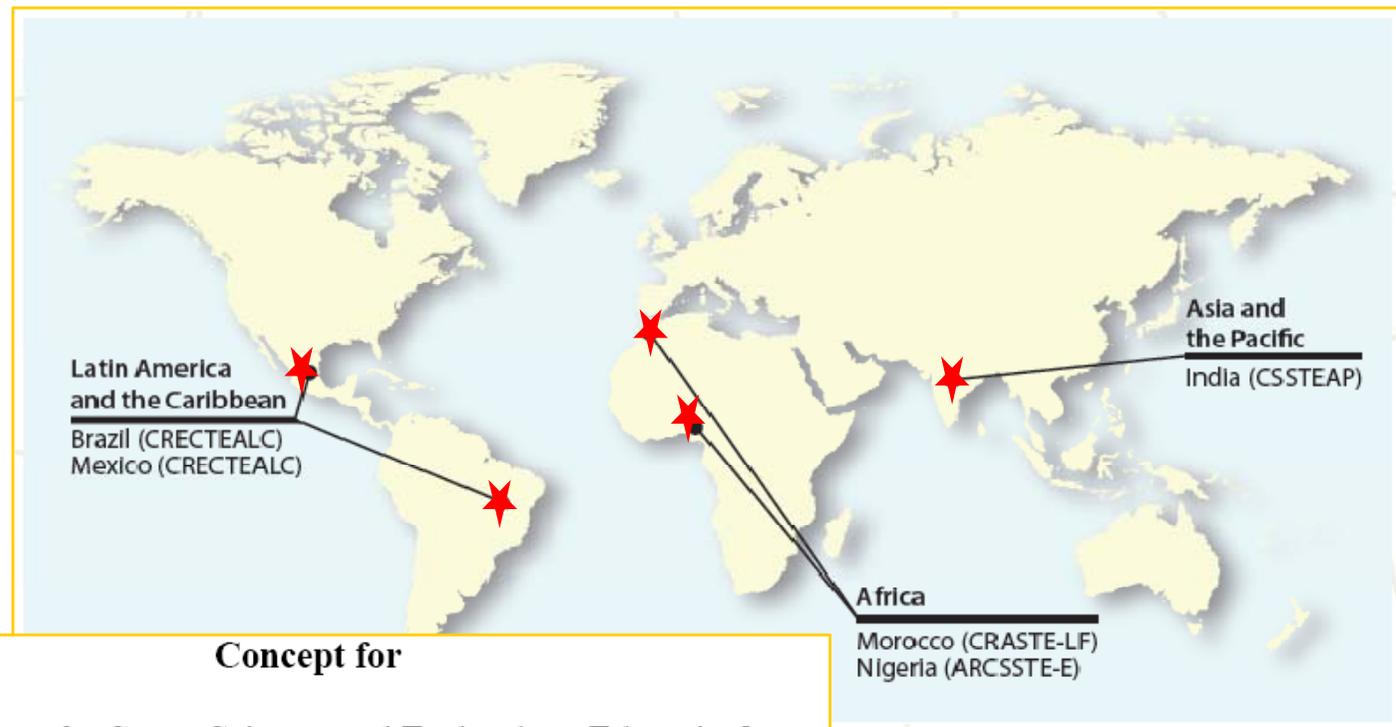
U University to **U**niversity

P Professors to **P**rofessors

S Students to **S**tudents

2 Understanding ICG information Centre

In 2008 of the Third Meeting of ICG 3, The ICG plenary agreed that the UN-affiliated Regional Centres for Space Science and Technology Education would be act as Information Centres for ICG.



Concept for

[Regional Centres for Space Science and Technology Education]

to become Information Centres
for the International Committee on Global Navigation Satellite Systems



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2 Understanding ICG information Centre

Action C1: Establish the ICG information portal drawing on contributions from Members, Associate Members and Observers of the Committee. This will include a calendar of GNSS-related events.

Action C2: Identify undergraduate and graduate courses on GNSS to be included on the ICG information portal.

Action C3: Consider the possibility of disseminating a list of relevant textbooks on GNSS in English and other languages through the ICG information portal. Consideration will also be given to developing a glossary of terms and definitions.

Action C4: Consider the use of the Regional Centres for Space Science and Technology Education, affiliated to the United Nations, to promote GNSS use and applications.

Action C5: Identify international conferences where Members, Associate Members and Observers will make presentations on the existence and work of the ICG. A list of such events will be maintained on the ICG information portal.

Action C6: Develop a proposal for further mechanisms to promote the applications of GNSS.“

New Action is suggested to add more education and training activities on GNSS in accompany with the development of technology and users demand.



3 Views of ICG Information Center

- Construction Mode
- Teaching Affairs
- Teaching and Practice base
- Students Manage and Service System

Construction mode (UGIU Mode) 建设模式

- UNOOSA Supervised

- Government / Agency Supported 政府支持



- Industry/ Institutions Participated 企业参与



APSCO
ASIA-PACIFIC SPACE COOPERATION ORGANIZATION



合众思壮
UniStrong



北斗星通
BDStar Navigation



- University located 学校依托



Implement:

Mutual benefits, 互利

All-win, 共赢

Sustainable Development 可持续



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Education Affairs

- Pursue to quality education with world class professors/instructors and characteristic curriculum/course
- Take full use of ICT technologies to establish a distance learning environment and facilitate teaching recourses sharing and reduce costs and benefit more people.

Education Affairs

Education and Training Programs

- (1) Master degree program on GNSS
- (2) Senior training program for management
- (3) Senior training program for professional
- (4) Fundamental program on GNSS
- (5) Practical program on GNSS
- (6) Distance learning classes on GNSS
- (7) Seminars on GNSS
- (8) Summer school on GNSS

With various level for beginner and advancer

Education Affairs

To Establish a Teaching and Practice Experience Lab
of GNSS at Beihang University sponsored by
industry

Let students learn and understand through
Practice and Practice with fun!

Students manage and service system

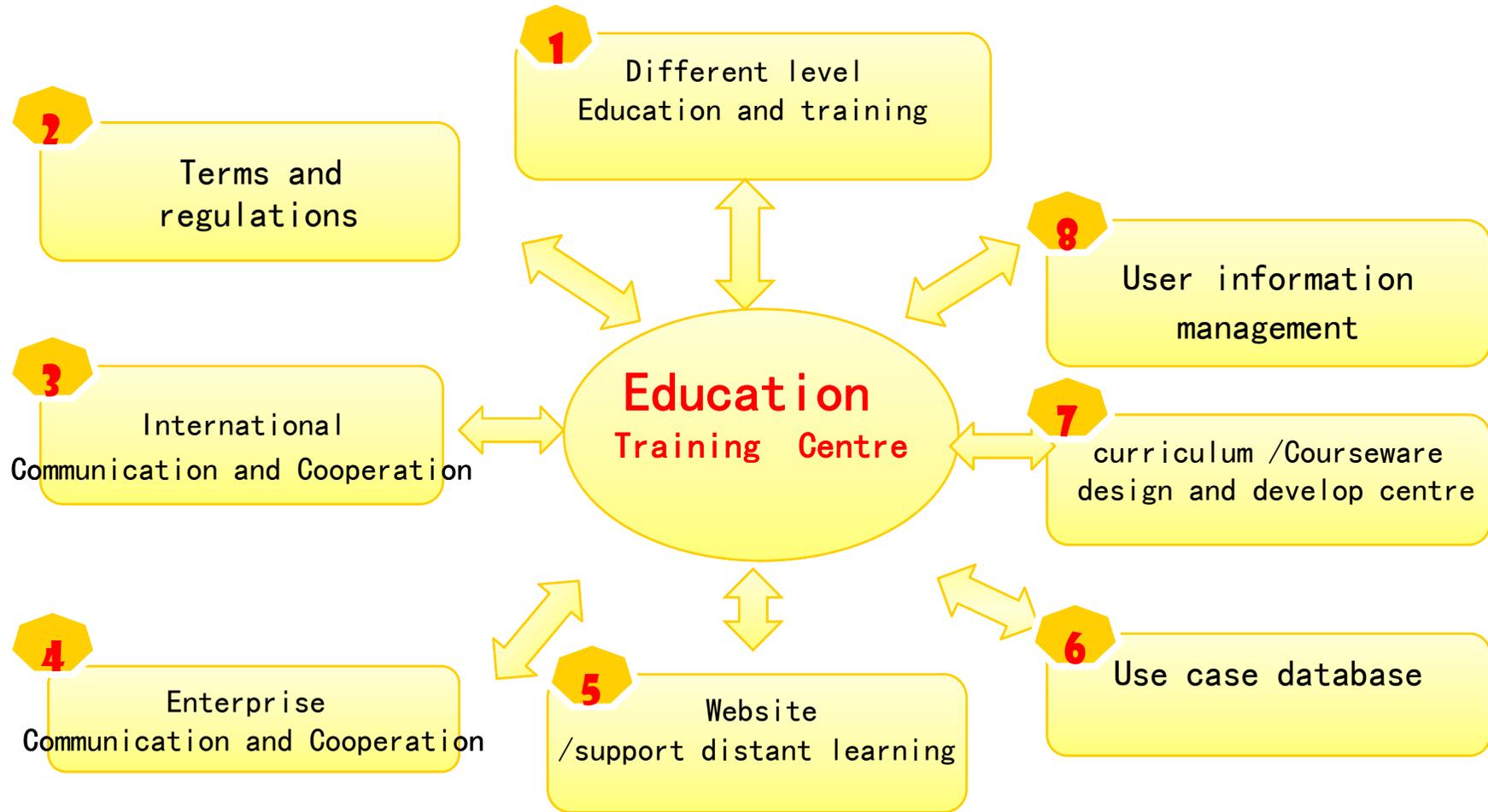
Establish students information manage system.

Collect user's feedback to all GNSS systems in each education program.

A student is a user of GNSS as well a tester.

*Students centered,
Quality education,
Brand Promotion!*

Space Science and Technology Education Centre at Beihang University



4 Future work

Master Degree Program on GNSS will be held in September 2012 at Beihang university.

COURSE	HOURS	CREDITS
Fundamental Courses		
Space segment and track spacecraft system overview	48	3
GNSS Timing spatial Reference System and maintainment	16	1
GNSS principle	32	2
Science and Techincal Course		
navigation signal Simulation and test Technologies	32	2
GNSS receiver principles and design	32	2
GNSS/INS intergration navigation principle and technologies	32	2
GNSS principle experiment	18	1
Application Courses		
GNSS new technologies and applications	12	1
GNSS vehicle navigation applications technologies	16	1
GNSS aviation navigation applications technologies	16	1
high precision positioning and its applications	10	
GNSS applications in timing	6	

4 Further work

With the develop of Beidou satellite system, we will continue to work on Education and Training activities of GNSS .

Enjoy GNSS

Better tomorrow



Campus map



Vision Hotel (4 Stars)

Located in Zhongguancun Science and Technology Park

Close to the Olympic Park, Two 4 stars Hotel in Walking distance

Facilities: Indoor swimming pool, Tennis court, Museum, Concert Hall, etc

Thanks For Your Attention!

