Update of BDS/GNSS International Education and Capacity Building in UN Regional Center in China (RCSSTEAP)

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Beihang University, Beijing, China

United Nations/Mongolia Workshop on the Applications of Global Navigation Satellite Systems
Ulaanbaatar, Mongolia, 25 – 29 October 2021
Regional Centre for Space Science and Technology Education
in Asia and the Pacific (China) (Affiliated to the United Nations)

The Establishment of RCSSTEAP: November 17, 2014

Mission: Promoting the peaceful use of space technologies for the benefit of all humankind.

Vision: Openness, Innovation, Inclusiveness

Principle: Down to the Earth while Aiming High

2013.2
Application
Making a proposal at the 50th session of Scientific and Technical Subcommittee of UN COPUOS

2013.9
Passing Evaluation Mission by UNOOSA Expert Group (experts from Greece, India, Iran, Japan, Mexico, Pakistan)

2014.6
Attending the Director Meeting of UN-Regional Centres as an observer

2014.9
Organizing International Space Education Forum at the 65th International Astronautical Congress (IAC), Toronto

2014.11
The Inauguration Ceremony
The 1st Meeting of the Governing Board

2013.6
Approved by the Subcommittee of COPUOS at the 56th session of COPUOS

2014.3
Approved by the State Council of China

2014.7
Organizing a training course for Morocco (CRASTE-LF)

2014.10
Signing agreements with contracting parties

an education and training entity supported by UN-COPUOS
Education and Training Programmes 教育培训项目

- Global Navigation Satellite System (GNSS) 全球卫星导航系统
- Remote Sensing and Geographic Information System (RS&GIS) 遥感与地理信息系统
- Satellite Communications (SATCOM) 卫星通信
- Micro-satellite Technology 小卫星技术
- Space Law and Policy 空间法律与政策
- Space Science and Environment 空间科学与环境

- Training Programmes on Satellite Navigation Technology and Applications 卫星导航技术与应用短期培训
  - Training Programmes on Earth Observation Technologies for Earthquake Damage and Loss Assessment 遥感技术与应用短期培训
  - Training Programmes on Space Law and Policy 空间法律与政策短期培训
  - Micro-satellite Technology 小卫星技术短期培训

- Degree Programmes 学历项目
- Non-Degree Programmes 非学历项目
- Master's Programmes 硕士研究生项目
- Doctoral Programme 博士研究生项目
- Distance Education 远程教育

- Academic Activities and Technology Consultation 交流与咨询
- Summer School 暑期学校
- Short Training Programmes 短期培训项目
### International Education — GNSS Postgraduate Program

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
<th>Countries of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>20</td>
<td>Indonesia, Iran, Mongolia, Pakistan, Peru, Spain, Thailand</td>
</tr>
<tr>
<td>2013</td>
<td>15</td>
<td>Bangladesh, Indonesia, Iran, Mongolia, Pakistan, Peru, Thailand</td>
</tr>
<tr>
<td>2014</td>
<td>13</td>
<td>Bangladesh, Indonesia, Iran, Mongolia, Nigeria, Pakistan, Peru, Thailand</td>
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<tr>
<td>2015</td>
<td>11</td>
<td>Algeria, Bangladesh, Indonesia, Mozambique, Pakistan, Mongolia, Peru, Thailand</td>
</tr>
<tr>
<td>2016</td>
<td>16</td>
<td>Bangladesh, Bolivia, Brazil, Croatia, Indonesia, Iran, Nigeria, Peru, Thailand, Ukraine, Venezuela</td>
</tr>
<tr>
<td>2017</td>
<td>13</td>
<td>Bangladesh, Bolivia, Iran, Mongolia, Pakistan, Peru, Thailand, Turkey</td>
</tr>
<tr>
<td>2018</td>
<td>10</td>
<td>Ethiopia, Indonesia, Iran, Nigeria, Pakistan, Peru, Turkey</td>
</tr>
<tr>
<td>2019</td>
<td>15</td>
<td>Peru, Bolivia, Iran, Turkey, Mongolia, Myanmar, Nigeria, Pakistan, Togo, Egypt, Algeria</td>
</tr>
<tr>
<td>2020</td>
<td>11</td>
<td>Algeria, Bolivia, Brazil, Indonesia, Laos, Pakistan, Peru, Thailand, Turkey, Venezuela</td>
</tr>
<tr>
<td>2021</td>
<td>11</td>
<td>Algeria, Bolivia, Iran, Pakistan, Thailand, Turkey</td>
</tr>
</tbody>
</table>

- 2012-2021, totally 135
Capacity Building 能力建设

Micro-satellite Mission Control Center
小卫星地面指控控制中心

Remote Sensing Ground Station
遥感卫星地面站

National Key Laboratory - CNS- ATM
CNS-ATM国家重点实验室

RS&GIS Laboratory
遥感与地理信息系统教学实验室

Smart Classroom
智慧教室
NEWS: At 18:51 on October 14, 2021, APSCO-Student Small Satellite-1 (APSCO-SSS-1) was successfully launched by piggy-backing a CZ-2D rocket from Taiyuan Satellite Launch Center in Shanxi, China.

At 6:17 on October 17, the images taken by space camera were transmitted to the ground station via S-digital transmitter, which marked the complete success of this satellite mission!

The full deployment of the coilable mast work with APSCO member states
**Annual Work Plan — 5 Actions**

1. Construct personnel and system to facilitate the sustainable development of the Centre

2. Conduct education and training programmes to serve the Centre member countries and other developing countries.

3. Capacity building of the Centre for Space Application Programme

4. Organize activities for promoting visibility of the Centre

5. Publications
1 Team Building

Professors/Experts

Ms. Mazlan Otgman
Former Director of UNOOSA

Mr. Sergio Camacho
Former Director of UNOOSA

Mr. Niklas Hedeman
Doctor UNOOSA

Mr. Shirish Ravan
UN-SPIDER Beijing Office

Mr. Christophe Macabiau
ENAC, France

Ms. Gabrynnowicz
Professor, U.S.A

Mr. Maarten Uijt de Haag
Ohio University, U.S.A.

Mr. Stephan
Hobe University of Cologne, Germany
1 Team Building

Professors/Experts

Mr. Yang Yuanxi
Academician of Chinese Academy of Sciences

Mr. Han Chunhao
Beijing Satellite Navigation Centre

Mr. Jing Guifei
Deputy Director of NRSCC

Mr. Wang Jinnian
China RSGeoinformatics Co., Ltd.

Mr. Zhuang Fengyuan
Beihang University

Mr. He Linshu
Beihang University

Mr. Yang Dongkai
Beihang University

Mr. Weng Jingnong
Beihang University

Mr. Wu Falin
Beihang University

Mr. Jin Tian
Beihang University

Ms. Li Suju
National Disaster Reduction Center

Mr. Zhao Yun
Hongkong University
Since 2015, the Centre has employed a total of more than **30** international experts and over **140** domestic experts to give lectures to the participants, which were taught in English.
2 Degree Programmes

Stringent review of application materials and online interviews

- Remote Sensing and Geographic Information System (RS&GIS)
- Satellite Communications
- Global Navigation Satellite Systems (GNSS)
- Micro-satellite Technology
- Space Law and Policy
- Space Science and Environment
Participants’ feedback

- Overall MASTA program is a very good program. It offer lots of learning either by its study program or through technical visits to various organization working in the field of Remote Sensing and GIS.

- The Space Technology Application Program on Global Navigation Satellite System (GNSS) course. It gathers the important knowledge in GNSS field and advances skill for GNSS application. Furthermore, I have opportunities to visit famous GNSS companies and the great experience to participate in the important conference in GNSS field.

- The staff and teacher who responsible to take care us are very good.
Participants’ feedback

- During the program, being involved in symposiums, conferences, seminars, workshops and other activities is useful for students and evaluation of MASTA and DOCSTA programs.

- High resolution stereo image, and its processing is very useful for my future. Therefore, I recommending stereo image processing, UAV, IMU technology's courses based on china's satellites products instead of space policy, laws course.

- MASTA & DOCSTA are very useful for us and such programs should be continued.
3 Short-term Training Programmes

The first Summer Camp of the APSCO Student Small Satellite Project, **Beijing**, August, 2017

GNSS and BeiDou System Deep Understanding Training, **Tunisia**, April, 2018

Training on Space Cooperation for Global Health, **China**, April, 2018

Short Training in Satellite Technology CRASTE-LF, **Morocco**, October, 2018

International Training Course on “Space-based technologies for disaster risk assessment” **China**, September, 2019

A series of lectures on Space Technology Applications **Online**, May-June, 2020
So far, the Centre has trained 284 MASTA&DOCSTA participants for 27 developing countries and organized more than 20 short training programmes with over 1000 participants from more than 70 countries.
4 Exchange and Cooperation
4 Exchange and Cooperation
International Cooperation

China-Brazil Cooperation on GNSS Agriculture Applications

June 17-18, 2019 in Brazil

MoU on GNSS Agriculture Applications Cooperation with the University of Sao Paulo,
June 17, 2019 in Sao Paulo

3rd Brazil-China High Level Dialogue on Science, Technology and Innovation,
June 18, 2019 in Brasilia
International Cooperation

Series of Lectures on Space Technology Applications
(by UN Regional Centres in China and Jordan, May 14-June 9 2020)

Totally 375 trainee from 21 countries (Algeria, Bahrain, China, Egypt, Ethiopia, India, Iraq, Jordan, Kazakhstan, Kuwait, Lebanon, Morocco, Nigeria, Oman, Russia, Saudi Arabia, South Africa, Sudan, Syria, Tunisia, United Arab Emirates,)
International Cooperation

Workshop on BDS/GNSS Technologies and Applications in Fighting COVID-2019
(by China-Arab BDS/GNSS center, July 6-7 2020)

Totally 135 trainee from 17 countries (Algeria, Bangladesh, Egypt, Israel, Iraq, Libya, Morocco, Nigeria, Pakistan, Palestine, Saudi Arabia, Tunisia, United Arab Emirates, Jordan and China)
International Cooperation

China-Croatia Education Cooperation

The course “GNSS Data Processing” by Prof. Renato from the University of Rijeka
April 15-20, 2019 at Beihang University

13th Annual Baska GNSS Conference
May 12-16, 2019 in Baska, Croatia
International Cooperation

The 6th meeting of China-Russia Cooperation Committee on Satellite Navigation
Aug. 28-29, 2019 in Kazan, Russia.


The 6th meeting of China-Russia Cooperation Committee on Satellite Navigation was held in Kazan, Russia, Aug. 28-29, 2019. The delegations consisting of 150 representatives from China and Russia, including universities, research institutes, and satellite navigation companies, attended the meeting.

The meeting aimed at promoting the development of satellite navigation in both countries and expanding cooperation in the field. The participants discussed various aspects of satellite navigation, including education, training, and technology development.

The protocol of the subgroup for education and training was signed to strengthen cooperation in satellite navigation education and training. The protocol includes joint education programs, exchange of students and faculty members, and joint research projects.

The protocol was signed by representatives from universities and research institutes from China and Russia, including the Chinese Academy of Sciences, Beijing Normal University, and the Russian Academy of Sciences.

The signing ceremony was attended by representatives from both countries, including Mr. (name) from the Chinese Academy of Sciences and Mr. (name) from the Russian Academy of Sciences.

The protocol of the subgroup for education and training is a significant step in strengthening the cooperation between China and Russia in the field of satellite navigation. The cooperation will contribute to the development of satellite navigation technology and the education of professionals in the field.
China-Uzbekistan Education Cooperation

Agreement of cooperation in research, education and training program with Tashkent University of Information Technologies

May 21-26, 2019 in Beijing, China

Nov. 3-8, 2019 in Tashkent, Uzbekistan
The 5th Anniversary
Down to the Earth while Aiming High

仰望星空、脚踏实地

Openness, Innovation, Inclusiveness

开放、创新、包容
It is easy to predict the future, if you invent it.
Thank you for your attention!

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