RCSSTEAP International Education and Capacity Building on BDS/GNSS

Dr. XIU Chundi
UN-RCSSTEAP (China)
Beihang University, Beijing, China

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RCSSTEAP-China

Regional Centre for Space Science and Technology Education in Asia and the Pacific (China) (affiliated to the United Nations), shortly named RCSSTEAP
RCSSTEAP was supported by Committee on the Peaceful Uses of Outer Space (UN-COPUOS), and hosted by Beihang University, China.

November 17, 2014

https://rcssteap.buaa.edu.cn
RCSSTEAP aims to be
— an education and training entity supported by UN-COPUOS.

• To promote the peaceful use of space technologies for the benefit of humanity.

• To sensitize the countries within the region about space science and technology activities by educating and creating awareness through training, workshops, short courses and outreaches.

• To facilitate the UN “Space Applications Programme” promoted by UN-COPUOS.

• To enhance the education and training level as well as application capacity of space science and technology in the Member States of the Centre through capacity building, information dissemination and training programs.
• Meetings of the Governing Board

1st meeting, Nov. 17, 2014, Beijing, China

2nd meeting, Nov. 28, 2015, Beijing, China

3rd meeting, Nov. 29, 2017, Beijing, China

4th meeting, Dec. 9, 2019, Beijing, China
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 Technology Application Programme

4. Organize activities for promoting visibility of the Centre

5. Publications
Master’s and Doctoral Programme on Space Technology Applications
(MASTA/DOCSTA 2006-2023)

- Satellite Communications (2008)
- Micro-satellite Technology (2014)
- Space Law and Policy (2016)
- Space Science and Environment (2020)
- Space Project Management (2023)
Totally 345 students, including 258 master and 87 doctoral students. 205 students have successfully graduated.
The students come from 27 different countries.
Degree Programme

• 2023 Enrollment
Degree Programme

- 2023 Professional Visits
On BDS/GNSS
Theoretical & Practice Courses

- **Wide coverage of students:** Sharing for domestic students among 7 universities in Beijing and for international students among 12 countries.
- **Application and practice:** 32 hours theory class for GNSS principle + 32 hours practical class for out-door test.
- **Real environment test:** Build the application environment of BDS/GNSS.
On BDS/GNSS

• Virtual Simulation Experiment

✓ To support four typical virtual simulation experiments
  ① BDS/GNSS satellite orbit design
  ② BDS/GNSS satellite signal design
  ③ BDS/GNSS satellite signal processing
  ④ BDS/GNSS satellite navigation application

✓ To improve the **visualization effect** of the existing satellite navigation experimental content.

✓ To combine the theoretical teaching with hardware experiments, thus to improve the **teaching effect**.
On BDS/GNSS

• Short-term Training

**China-South Africa Training Courses on Satellite Navigation and Remote Sensing Applications**
*(Nov, 17-21 2022, Pretoria-Beijing)*

<table>
<thead>
<tr>
<th>No.</th>
<th>Course Name</th>
<th>Hours</th>
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<tbody>
<tr>
<td>1</td>
<td>China’s BeiDou Navigation Satellite System</td>
<td>2</td>
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<td>2</td>
<td>Application of China’s Resource Satellite</td>
<td>3</td>
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<td>3</td>
<td>Application Cases of Resource Satellite in South Africa and Southern Africa</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Application of Satellite Navigation System in Southern Africa</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>Application of BeiDou Navigation Satellite System (I)</td>
<td>3</td>
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<tr>
<td>6</td>
<td>Application of Remote Sensing Satellite in Southern Africa: agriculture &amp; forestry; the human settlement thematic area</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>Application of BeiDou Navigation Satellite System (II)</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>Application of BeiDou Navigation Satellite System (III)</td>
<td>2.5</td>
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Totally 69 trainee from South Africa, Zambia, Mozambique, Zimbabwe, Namibia
• Educational Cooperation

**China-Russia Educational Cooperation**

- The 9th Meeting of Project Committee on China-Russia Satellite Navigation Strategic Cooperation (*October 13, 2023*)
  - China-Russia Education and Training Project
  - Joint monograph
  - Joint scientific papers
- International Conference on the Cooperation and Integration of Industry, Education, Research and Application (*November 10, 2022, Nanchang, China*)
On BDS/GNSS

• Educational Cooperation

*China-Africa Educational Cooperation Workshop* (August 9-14, 2023, Pretoria)

SANSA (South Africa National Space Agency)  
UP (University of Pretoria)  
CSIR (Council for Science and Industrial Research)
Capacity Building 04
Capacity Building

• Achievements

So far, the Centre has trained 345 MASTA&DOCSTA participants for 27 developing countries and organized more than 20 short training programmes with over 1200 participants from more than 70 countries.
Capacity Building

- Serial Textbooks

  ✓ English Courses for International Space Cooperation (*April 2023*)

  ✓ Innovative methods and practices for China-Russia satellite navigation talents cultivating (*2024*)
Capacity Building

- International Exchange

The 1st Youth Innovation Forum on Digital Earth (August 9-14, 2023, Beijing)

The 66th Session of COPUOS (June 4-10, 2023, Vienna)

The 74th International Astronautical Congress (IAC) (October 2-6, 2023, Baku)

Forum on Disaster Prevention, Reduction and Relief (October 11-12, 2023, Beijing)
Capacity Building

- **International Exchange** (*in Beihang University*)

  - **UN-SPIDER, April 17**
  - **University of Vanda, June 23**
  - **Union of Astronomy and Space Science, May 01**
  - **World University Presidents Forum, July 29**
  - **Association of African Universities, August 02**
Capacity Building

• International Exchange

Suggestions:
1. To promote the exchange between ARC
2. Workshop on space project management jointly hosted by UNOOSA and RCSSTEAP
3. High school level lectures for space activities
4. Courses & short-time training

Dris El Hadani
Deputy Director General of UNOOSA
(October 13, 2023)
Future Plan

I. Membership expansion (Egypt, Qatar, United Arab Emirates and South Africa have expressed their interests in joining)

II. Construction of RCSSTEAP Branch at Hangzhou International Campus of Beihang University

III. Preparations for the 10th anniversary of RCSSTEAP
Scholarships

Announcement

2024 Degree Programme will include GNSS, RS&GIS, Micro-satellite Technology, Space Law and Policy, Space Project Management. Scholarships are available for 40~50 students. Quota will be offered for our partners. The Announcement will be released in https://rcssteap.buaa.edu.cn

Major Procedures

- All applicants recommended by our member states or partners
- Material cooperation Review
- Online Interview
- Selected and approved by a expert team according to participants's overall performance

Online Application Time
Jan.1, - May 31, 2024
Scholarships

• All applicants recommended by our member states or partners

Materialcooperation

Review

• Online Interview

• Selected and approved by a expert team according to participants’s overall performance

Online Application Time:

Jan. 1, - May 31, 2024

Major Procedures

2024 Programs will include GNSS, RSGIS, etc. Scholarships are available for 40~50 students every year. Quota will be offered for our partners.

The Announcement will be released in http://rcssteap.buaa.edu.cn

Thank you

https://rcssteap.buaa.edu.cn