

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

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Regional Centre for Space Science and Technology Education in Asia and the Pacific
(China)

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)

联合国附属空间科技教育亚太区域中心(中国)



Algeria



Argentina



Bangladesh



Bolivia



Brazil



China



Indonesia



Pakistan



Peru



Venezuela

■ **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

Master's Programmes
Doctoral Programme
硕士/博士
研究生项目

Degree Programmes
学历项目

Distance Education
远程教育

Academic Activities and Technology Consultation
交流与咨询

Non-Degree Programmes
非学历项目

Short Training Programmes
短期培训项目

Summer School
暑期学校

- 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

International Education — GNSS Postgraduate Program

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

- 2012-2021, totally **135**



Capacity Building 能力建设



Micro-satellite Mission Control Center
小卫星地面指挥控制中心



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

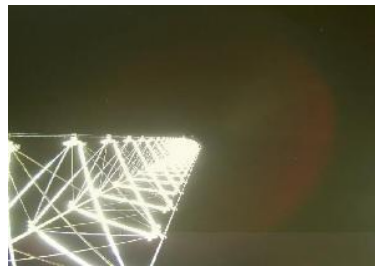


Smart Classroom
智慧教室

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.



APSCO Student Small Satellite
亚太-大学生小卫星项目



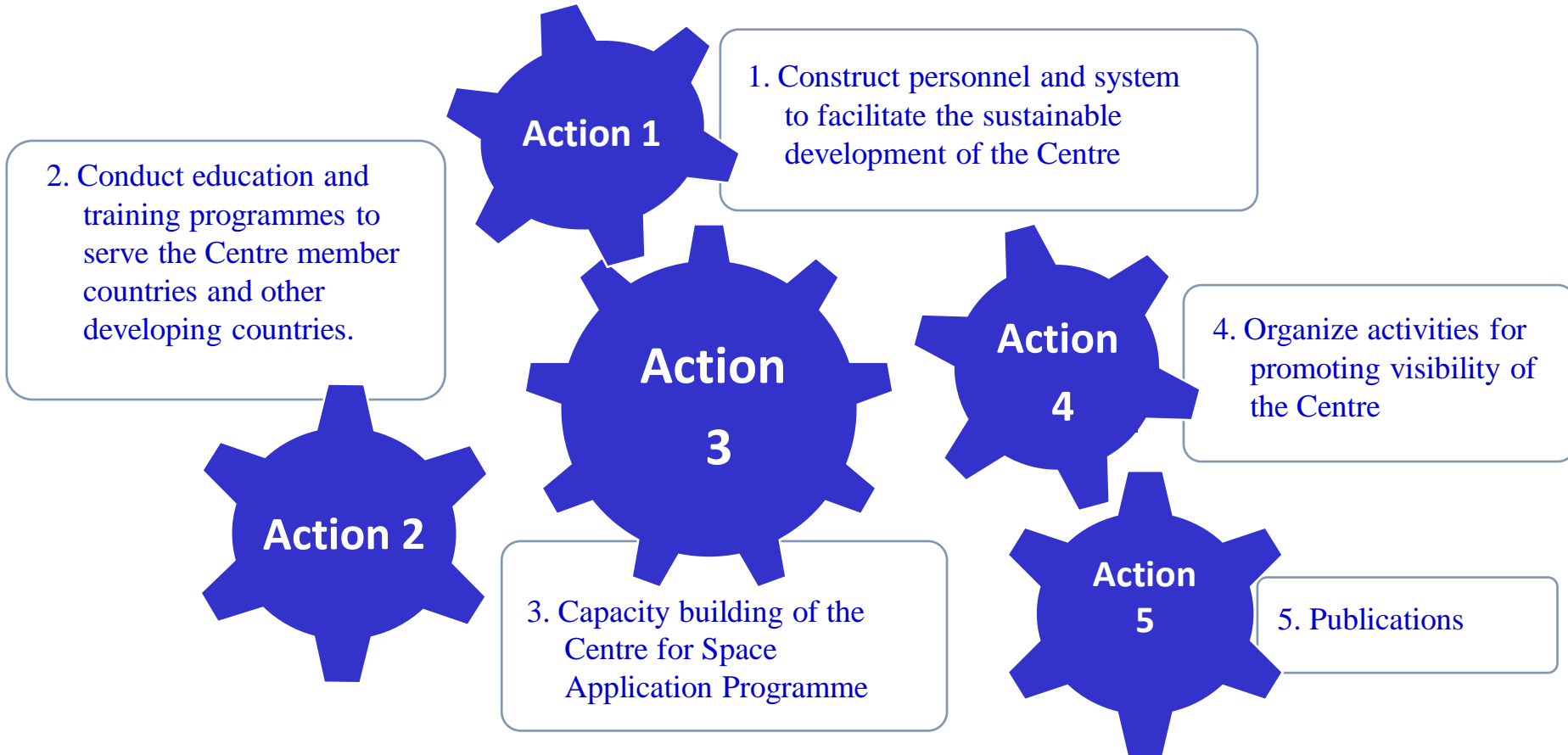
The full deployment of the coilable mast

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!**



work with APSCO member states

Annual Work Plan — 5 Actions



Action 1

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.

Action 2

Action

3

3. Capacity building of the Centre for Space Application Programme

Action

4

4. Organize activities for promoting visibility of the Centre

Action

5

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. Gabrynowicz
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 NRSC



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 Fallin
Beihang University



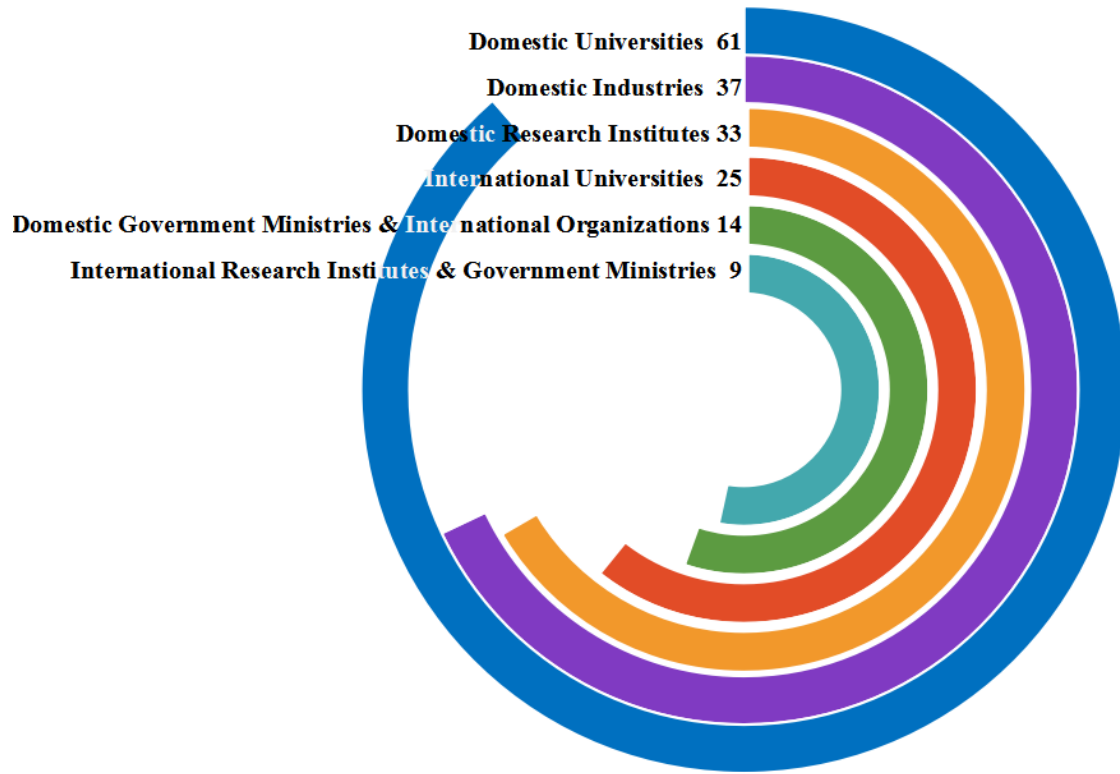
Mr. Jin Tian
Beihang University



Ms. Li Suju
National Disaster Reduction Center



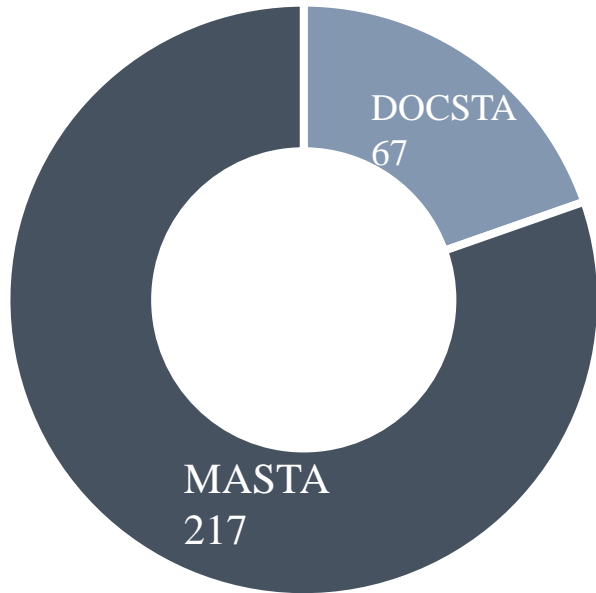
Mr. Zhao Yun
Hongkong University



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



ALI AMJAD
Pakistan

- 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.



PROMCHOT
DARUNEE
Thailand

- 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.



ARTITTHANG
PEERAWAT
Thailand

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

Participants' feedback



ENKH-AMGALAN
BALDANSAMBUU
Mongolia

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



SUMIYA ALTANGEREL
Mongolia

- 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.



FAHAD AYESHA KOSAR
Pakistan

- 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



中国航天

中国长城工业集团有限公司
Great Wall Industry Corporation

China Academy of
Launch Vehicle Technology

China Academy of
Space Technology

Shanghai Academy of
Spaceflight Technology



China Centre for
Resources Satellite
Data and Application

SuperMap



BeiDou Navigation
Satellite System

UniStrong
合众思壮

Beijing UniStrong
Co., Ltd.

北斗星通
BDStar Navigation

Beijing BDStar
Navigation Co., Ltd.

ChinaRS 中科星图

ChinaRS Geoinformatics
Co., Ltd.



Beijing Aerospace TITAN
Technology Co., Ltd.



Twenty First Century
Aerospace Technology
Co., Ltd.



APSCO
Asia Pacific Space Cooperation Association



应急管理部国家减灾中心
National Disaster Reduction Center of China



UN-SPIDER
Beijing Office



International Centre on Space Technologies for
Natural and Cultural Heritage
under the auspices of UNESCO

Nssc

中国科学院国家空间科学中心
National Space Science Center, CAS



Space Debris Observation
and Data Application Center
China National Space Administration



National Satellite
Meteorological Center



Institute of Remote
Sensing and Digital Earth



National Astronomical
Observatories Chinese
Academy of Sciences

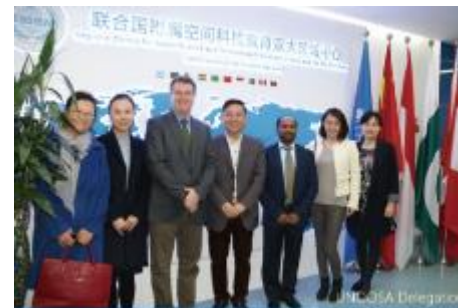


National Time
Service Center



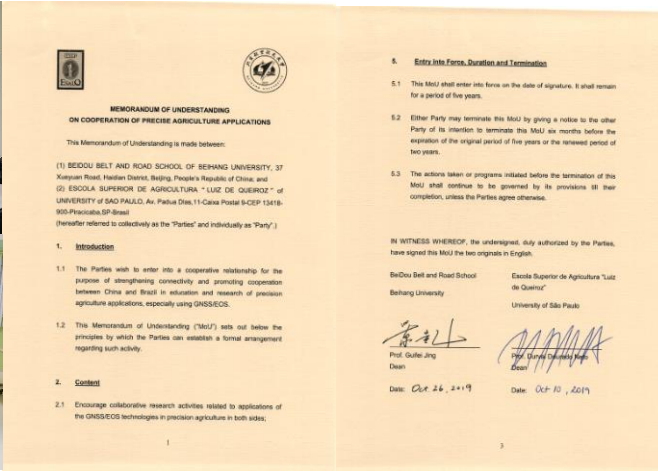
金坤科创
JIN KUN INNOVATION

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-19

(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.



Protocol of Subgroup for Education and training of China-Russia Satellite Navigation

The meeting of Subgroup for Education and training of China-Russia Satellite Navigation was held in Kazan on August 28th, 2019. The delegates representing China and Russia are from Beihang University, Beijing, China and MI GAK, Moscow, Russia. The delegates discussed in detail the work plan for education and training project of China-Russia satellite navigation field. Both Parties have agreed as follows:

1. Expand education cooperation partnership on satellite navigation. List of Universities from Russian side: MAU, Bauman, MI GAK, Russian Timiryazev State Agrarian University, Stavropol'skiy State Technological University (NSTU), Zhovto-Tsvetkovsk, Kazan, Kazan Federal University (Tatarstan).
2. Adjust the education cooperation content in the area of satellite navigation and to conduct the feasibility study on education and training cooperation project.
3. In April or May 2020, invite representatives from the Russian universities above to hold a subgroup meeting to discuss the feasibility study report, including cooperation content and work plan in details, during the 13th meeting of WSA in Moscow.
4. In 2020, invite Russian experts to Beihang University to hold a cooperation workshop on joint laboratory in the related field of satellite

navigation.

5. In September 2020, submit the feasibility study report to the 7th meeting of CRCCSN (in China) for consideration.

The group leaders of China-Russia Education and training subgroup:

China Party:  Liu Chenxi

Russia Party:  Krasovnikov Andrey

On 28th August 2019



Protocol of Subgroup for Education and Training of China-Russia Satellite Navigation

International Cooperation

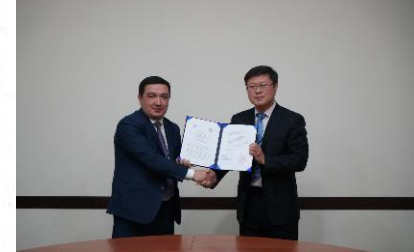
China-Uzbekistan Education Cooperation



May 21-26, 2019
in Beijing, China



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



Nov. 3-8, 2019
in Tashkent, Uzbekistan

International Cooperation

Alliance of Regional Centres



The 5th Anniversary



Regional Centre for Space Science and Technology Education in Asia and the Pacific (China)

联合国附属空间科技教育亚太区域中心(中国)



Algeria



Argentina



Bangladesh



Bolivia



Brazil



China



Indonesia



Pakistan



Peru



Venezuela



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.





Flying with the wings of art

Thank you for your attention!

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