United Nations/Austria World Space Forum

'Access to Space4All'

VIENNA INTERNATIONAL CENTRE (VIC), VIENNA, AUSTRIA, 18 - 22 NOVEMBER 2019

Co-organized by The United Nations Office for Outer Space Affairs (UNOOSA),
and
The Federal Ministry of the Republic of Austria Transport, Innovation and Technology (BMVIT)
Co-sponsored by t
he European Space Agency (ESA)
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Federal Ministry of the Republic of Austria for Europe, Integration and Foreign Affairs (BMEIA)
Austrian Research Promotion Agency (FFG)

EDUCATION AND SPACE TECHNOLOGY ENABLE ACCESS TO SPACE FOR ALL

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This presentation intends to show the importance of :

➢ The economical and social impact of space technologies for all nations on China example

➢ Education as a key driver for growth and development in all spheres of human endeavors, the work of the Belt&Road Education company is presented

- *What are space technologies and space science?*
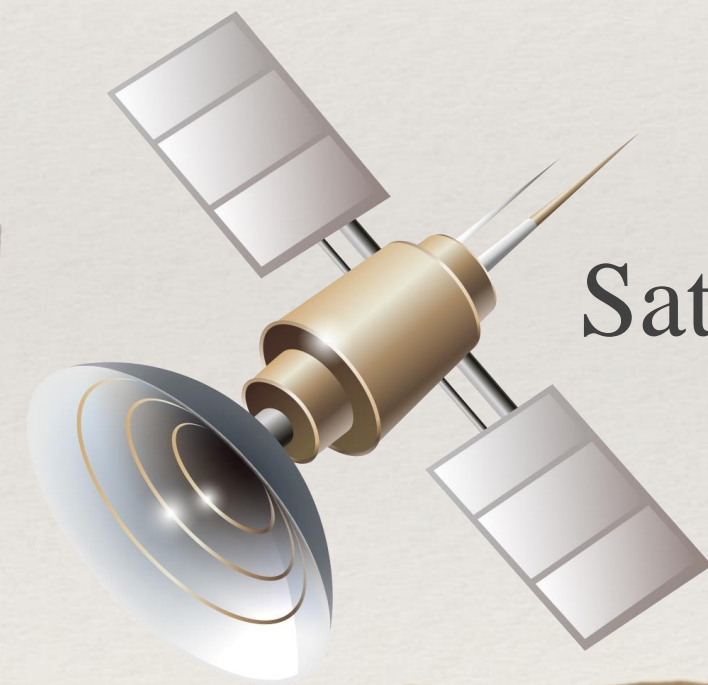- *What is the impact of space technologies?*

Defining the Space Technologies

- Space technology is the technology which places and utilizes assets in space, such as near-space aerobots, launcher rockets, lunar roving vehicles, Mars rovers, satellites, to name only a few.

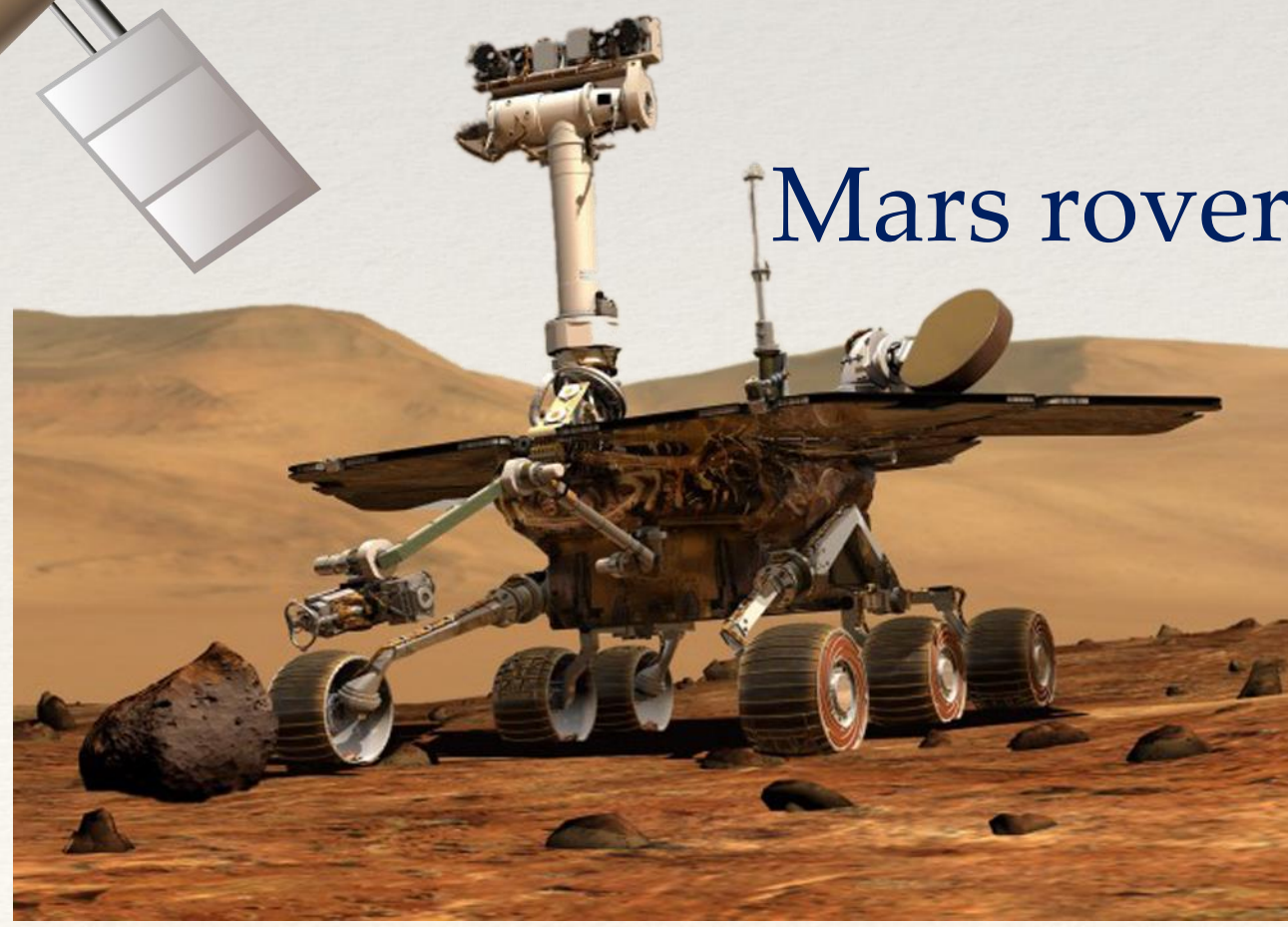- Nerveless, they are developed by *space science* or the aerospace industry
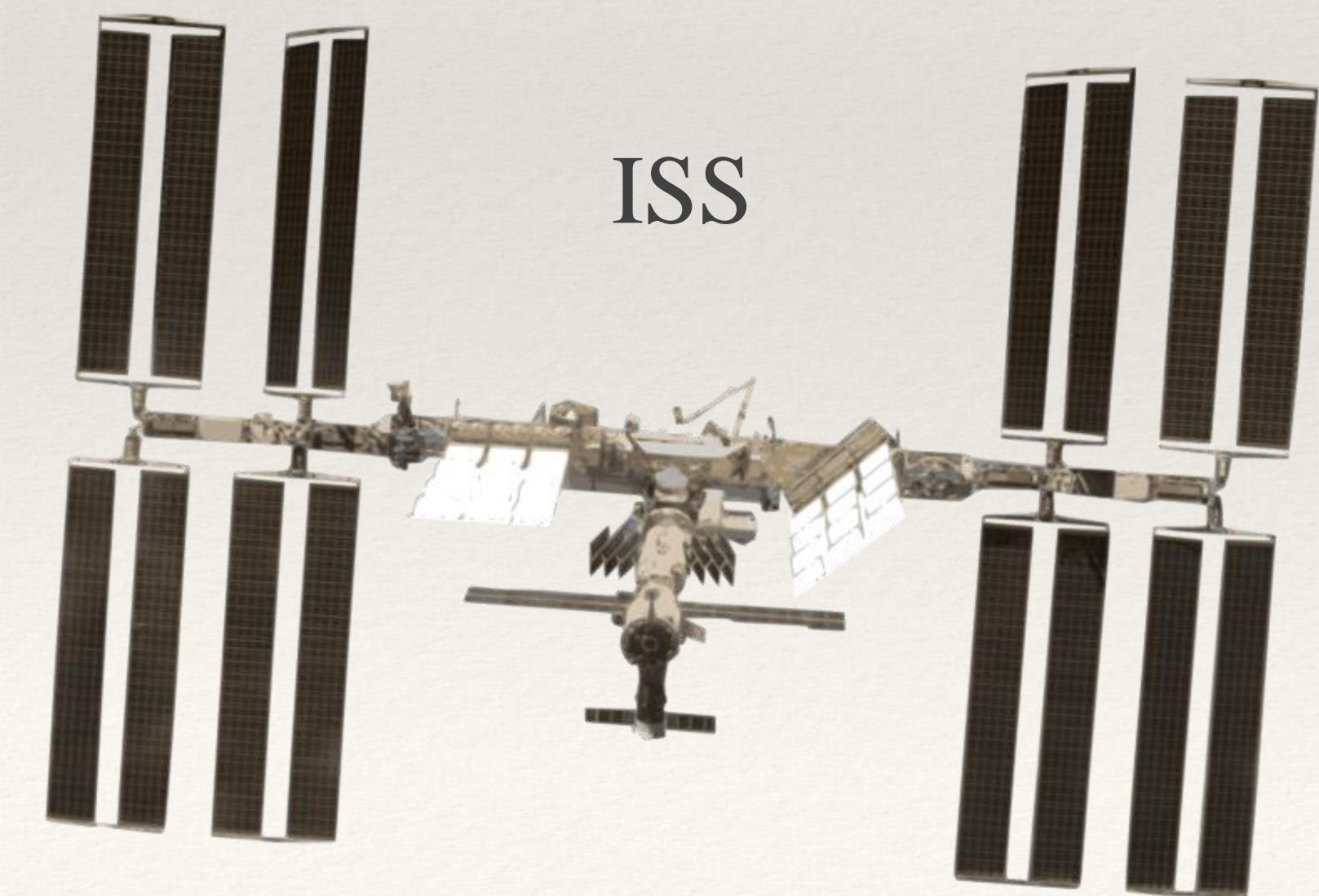
Launcher rockets

ISS

Satellite

Mars rover

What is space science?

➢ Astronomy – "Looking out there"

➢ Robotic and human exploration – "Getting out there"

➢ Satellite applications and Earth Observation – "Looking back here"

How space technologies benefit life on the Earth

Space Technologies

Earth Applications

Spacecraft, Satellites,
Space stations
Near-space aerobics
Launcher rockets
Lunar roving vehicles
Mars rovers
etc.

Forests
Future of food
Climate change
Humanitarian action
Digital economy and society
(e-ducation, commerce, business)
Fourth industrial revolution
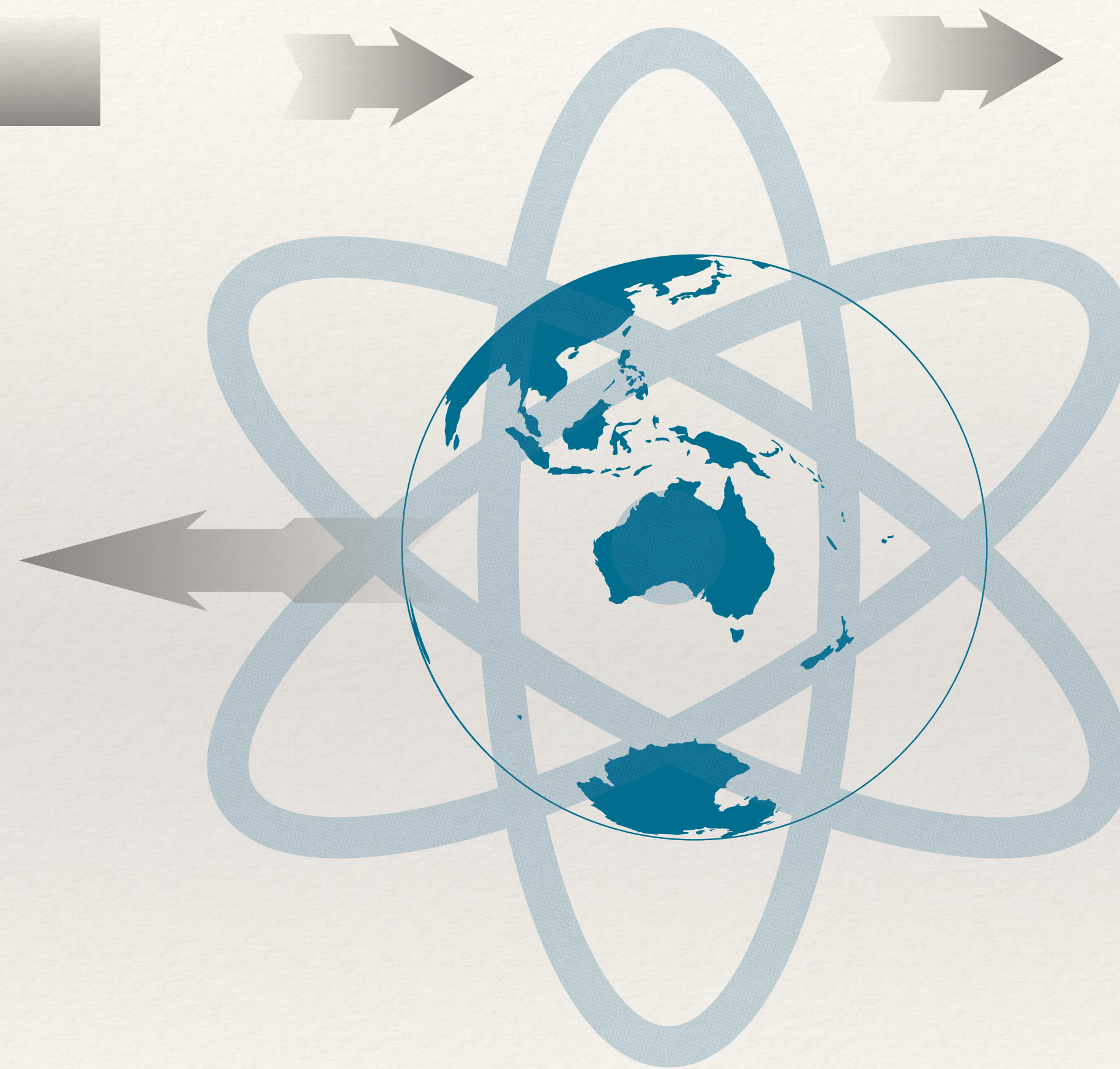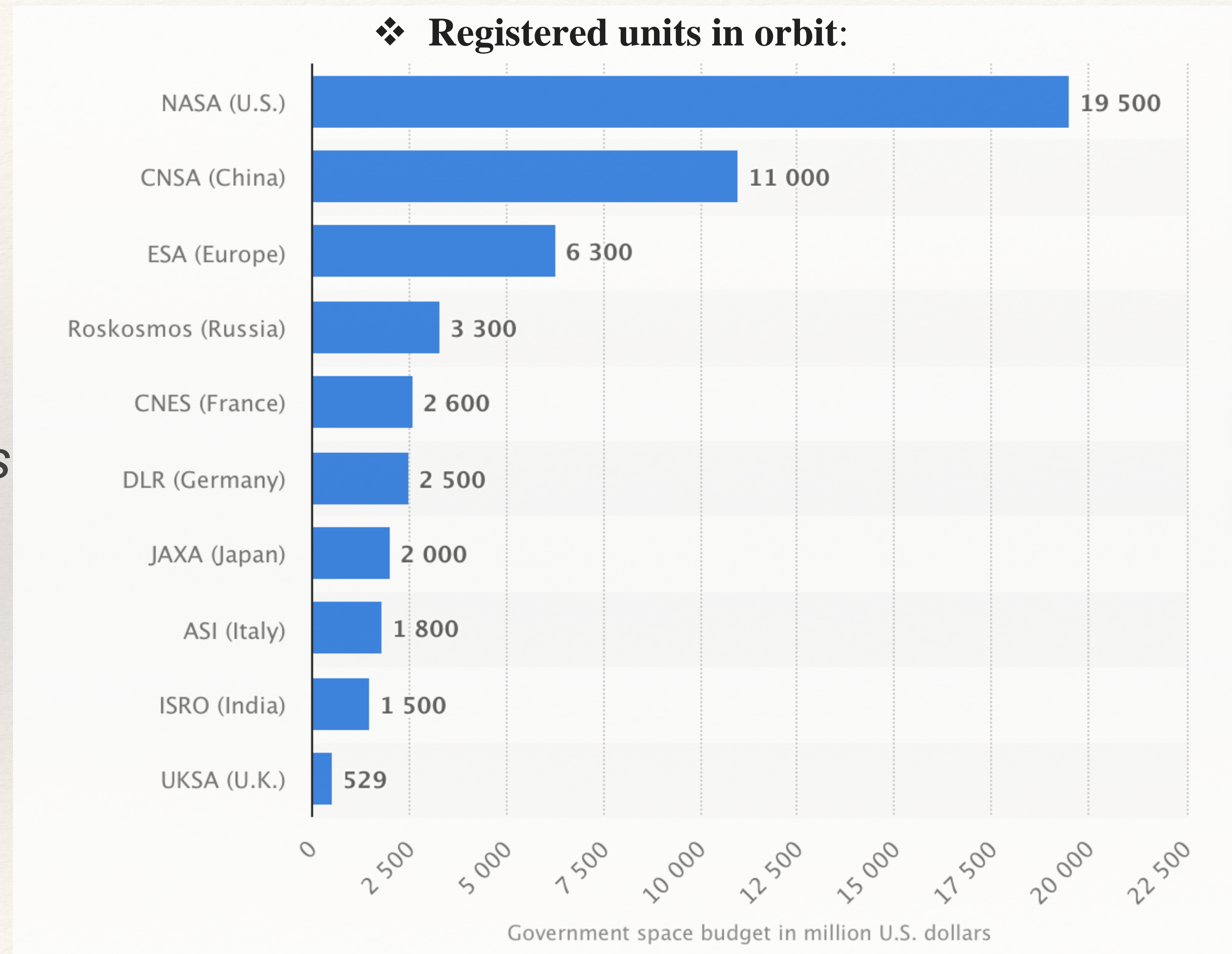
➢ Stable technology developing is critical and vital for the planet Earth and population, for instance, observation satellite proving accurate weather prediction data will save thousands of lives by giving the urgent warnings to the regions

Statistic of the Global Space Industry

❖ **Largest Space Actors:** The United States, China

- *China's government has made space as a key strategic priority, with the nation's reported $8 billion space budget – only second to the U.S., according to the Space Foundation*

❖ **Registered units in orbit:**

NASA (U.S.)	19 500
CNSA (China)	11 000
ESA (Europe)	6 300
Roskosmos (Russia)	3 300
CNES (France)	2 600
DLR (Germany)	2 500
JAXA (Japan)	2 000
ASI (Italy)	1 800
ISRO (India)	1 500
UKSA (U.K.)	529

0   2 500   5 000   7 500   10 000   12 500   15 000   17 500   20 000   22 500

Government space budget in million U.S. dollars

(*according to World Economic Forum database) Source: © Statista 2019

China's success in developing technologies is impressive

❖ Population of1.418 billion inhabitants, **the largest in the world**

❖ The example of China as an emerging technology superpower proves the benefits gained from space technology. The rise of China over the last few decades has been one of the most significant developments in the World.
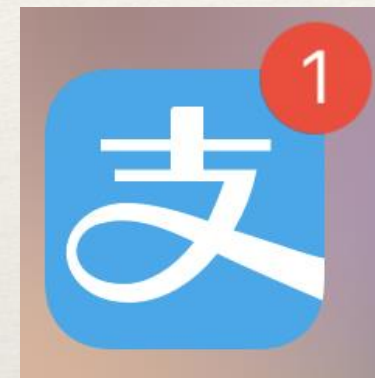
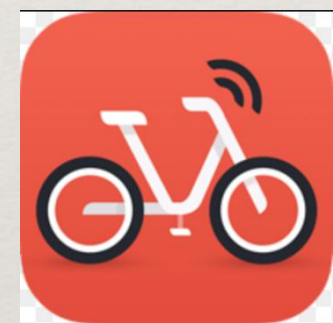# Space and technology as a driver for socio-economic development
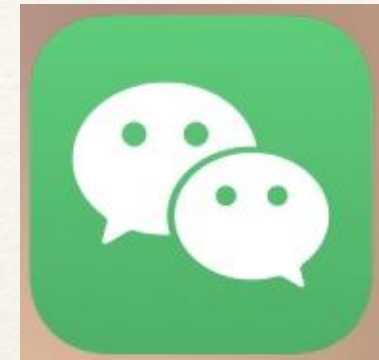
Wechat

Alipay

Mobike

➢ Technologies like WeChat, the do-it-all app that combines services for messaging, electronic payment, news and access to public services

➢ Mobike — bike-sharing, combines technology with satellite navigation and e-business

➢ China`s infrastructure is depending on space-based technologies, such as satellites communication, Earth observation, internet and navigation, all of which support a large population in the world.

Thus,
China has demonstrated the importance of space and technology as a driver for socio-economic development

Development of Space Industry in China

Future

Focus of Space Information Corridor is on the interconnection of ground network services to accumulate integrated space information.

Sustainable development

Belt and Road Initiative Space Information Corridor

- It is a global development strategy proposed by Chinese President Xi Jinping in 2013, involving infrastructure development and investments in 152 countries and international organizations in Asia, Europe, Africa, the Middle East, and the Americas

Growth industry

Long term plan for National Space Infrastructure (2015-2025) issued by State Council;

National long-term Science and Technology Plan

Capacity building

National Space Program (5 years White Paper Plan)

High-resolution Earth observation system (since 2010)

Forming globalization

Facilitating

Long March rocket (1970)
Recoverable satellite (1975)
Ground satellite (1986)
FY-1A (1988)
Human into space (2003)

Education is a common element which connects people all over the world.

➢ *The empowerment of individuals with knowledge and education has become the most critical agenda for experts and policymakers.*

Belt&Road Education (B&R Education)

Belt&Road Education company is established in the end of 2018 with the aim to serves as a tool to build bridges among field experts and governments to enhance join efforts in solving current problems in outer space and creating a scientifically literate society.

PROMOTING EDUCATION AMONG SOCIETY:
▪TEDx talks, Workshop for expat in Chinese cities on Space Education (laws and policies on space activities)
▪Online workshop with NASA scientists for expat in Shanghai
▪Five classes on space science for children (as a testing project in private schools)
▪Summer camps

Belt&Road Education (B&R Education)

- ❖ Promoting Space Education among society

- ❖ Serving as a bridge between experts and governments

- ❖ Collective design of educational programs

- ❖ Cultural exchange programs

- ❖ Addressing Climate Change

- ❖ Advocating solutions for space issues (militarization, space debris)

- ❖ Supporting global governance

- ❖ Promote world peace and development.
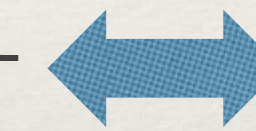
Action plans

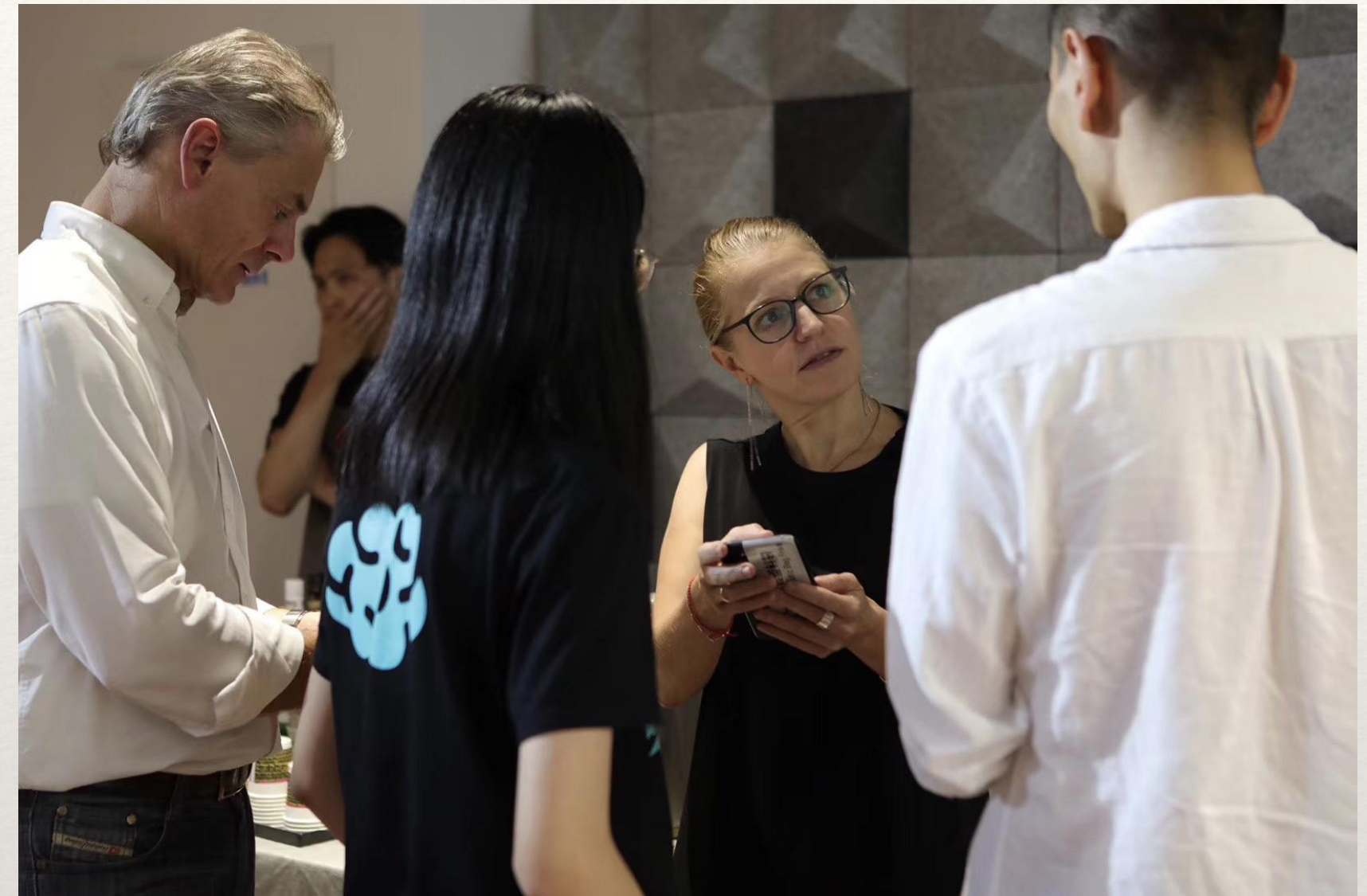# Promoting SDGs in Shanghai June 2019

Report shared by the Shanghai community by September 2019

Capacity Building Measures by attending Shanghai University Workshop and International Network

Classes in the Shanghai School

B&R Education will continue to inspire people young and old about new frontiers, discoveries, and technologies, and foster interest in PBL (Project Base Learning) and STEM (science, technology, engineering, art, and math) disciplines

As by September 2019

A Step Forward to Partnerships

❖ B&R Education is currently seeking partners, volunteers and event organizers, who will help us create space curriculum, organize international exchange programs and writing stories of the space actors and astronauts for educational purposes

❖ Perhaps eventually create an International Program for this purpose based on the mutual efforts and agreements in order to spread it globally.

Sustainable Development Goals (SDGs)

Curated by the United Nations

Space activities, technologies and applications play key role in helping countries achieving sustainable development goals

Education is a common element connects people all over the World. It helps create a scientifically literate society able to participate in an increasingly technology-driven world

- **17 Goals** ➡ **169 Targets** ➡ **232 Indicators**

Global Agenda to Sustain the Planet Earth

Global Goals: 2015 -2030

- Sustainable Development Goals UN SDGs
- Sendai Framework for Disaster Risk Reduction
- Paris Agreement on Climate Change

A key policy outcome of UNISPACE+50 was the international community's agreement to establish a Space2030 agenda

Sum up

China is a strategic partner for many countries in different areas of space activities for economical as well as social development therefor to facilitate productive and impactful international cooperation in the peaceful uses of outer space between superpowers is a key to achieve the common goals.

Education helps create a scientifically literate society able to participate in an increasingly technology-driven world. It is central to the ability to correct the imbalances in systems that undermine development in political, economic or social domains. After all, the transmission of knowledge across the generations has shaped, ultimately, space civilization itself.

Thus, space technologies and education can save, enrich and connect lives and on the international level have assumed systemic global importance.

Thank you for your attention

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