



The Spatial Information Corridor Contributes to UNISPACE+50

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CHINA NATIONAL SPACE ADMINISTRATION

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What is Belt & Road Spatial Information Corridor?

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How to Build the 'Belt & Road' Spatial Information Corridor?

03

How the Corridor to Contribute to the Space Capacity Building of Developing Countries?

What is 'Belt & Road' Spatial Information Corridor?

Belt and Road Initiative

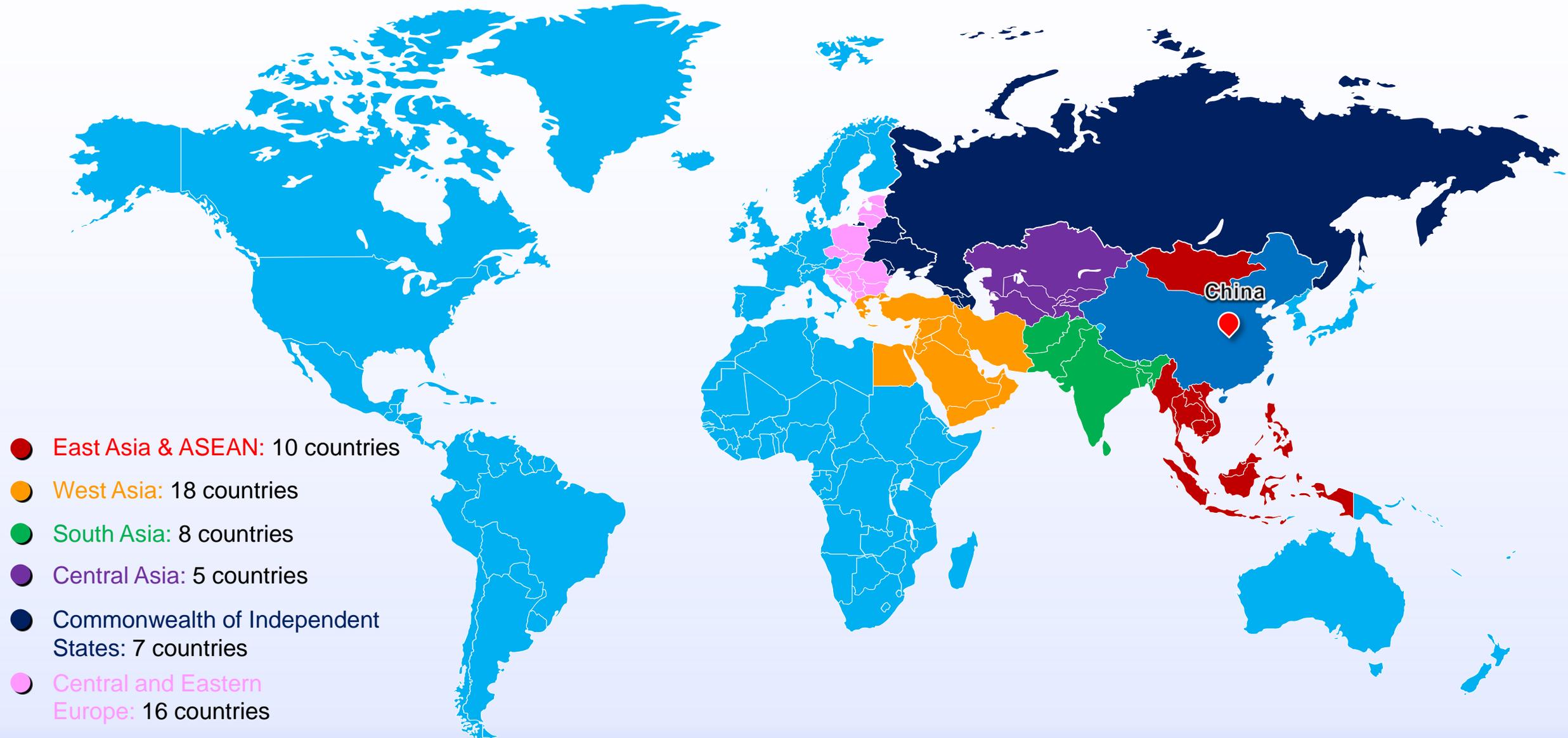
- China put forward the "Belt & Road" co-operative initiative in 2013
 - ◆ to strengthen international cooperation
 - ◆ synergize development strategies of various countries
 - ◆ achieve complementary advantages
 - ◆ promote common development.





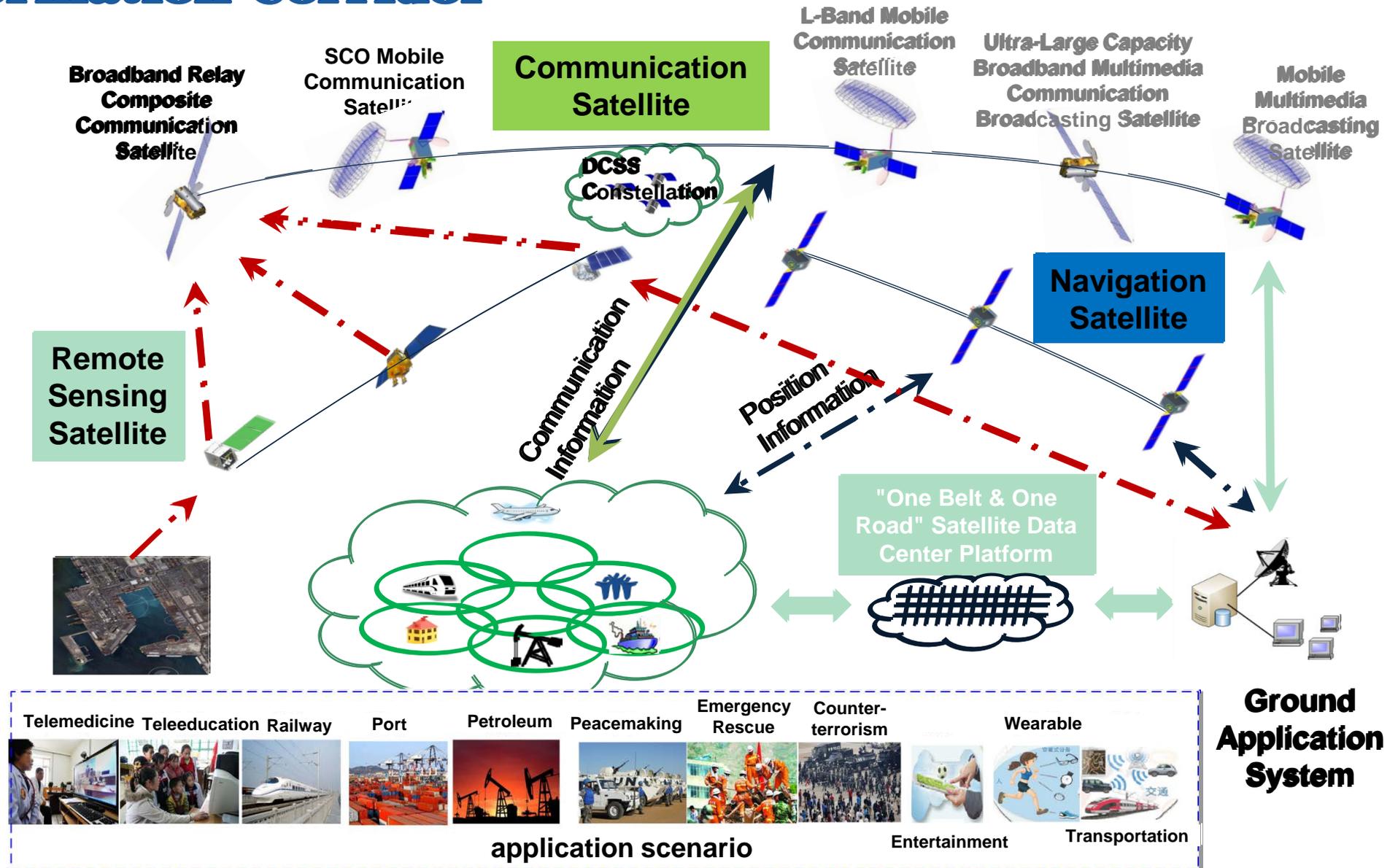
What is 'Belt & Road' Spatial Information Corridor?

65 countries along the 'Belt & Road' :



What is 'One Belt & One Road' Spatial Information Corridor?

Spatial Information Corridor



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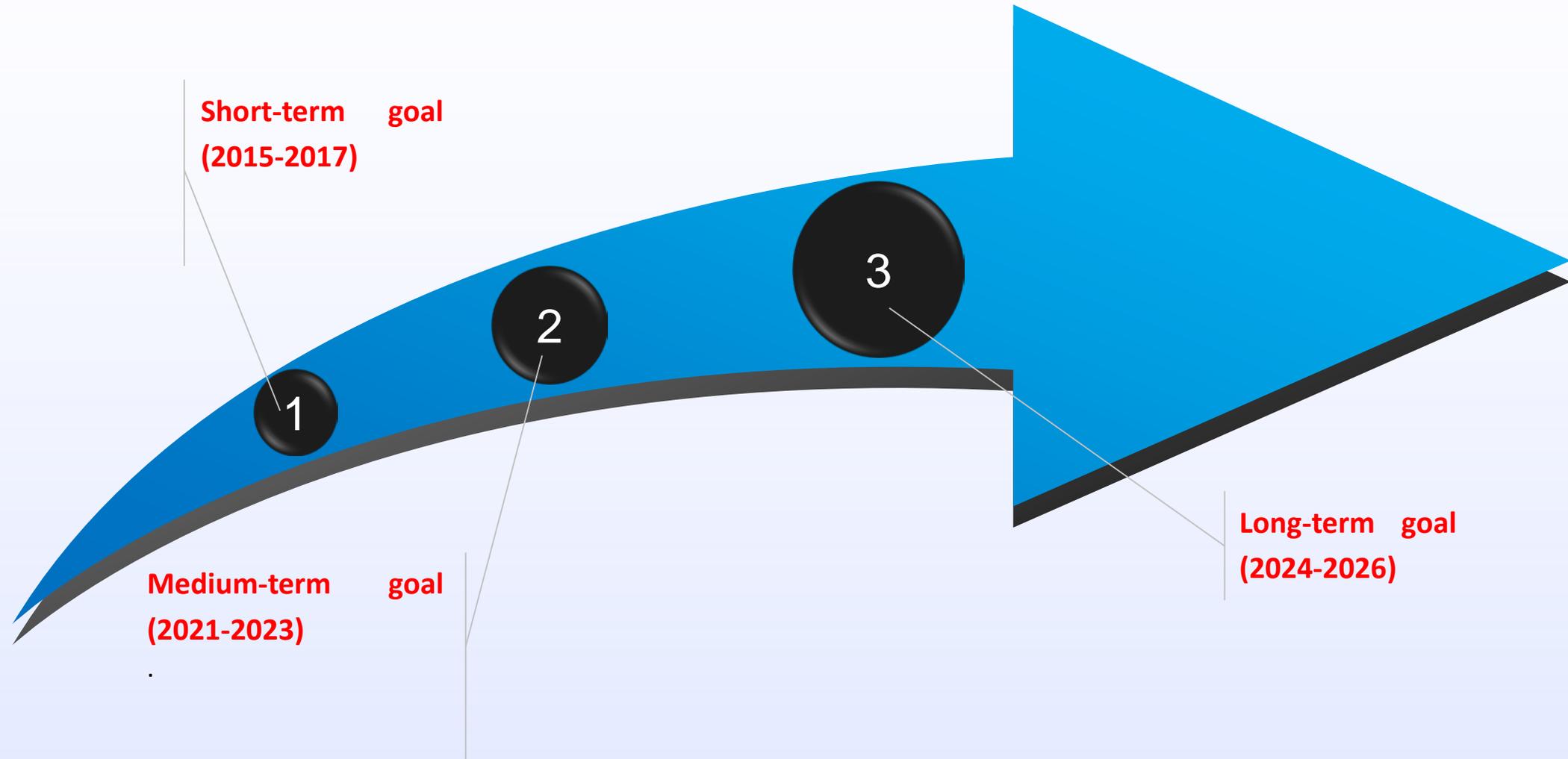
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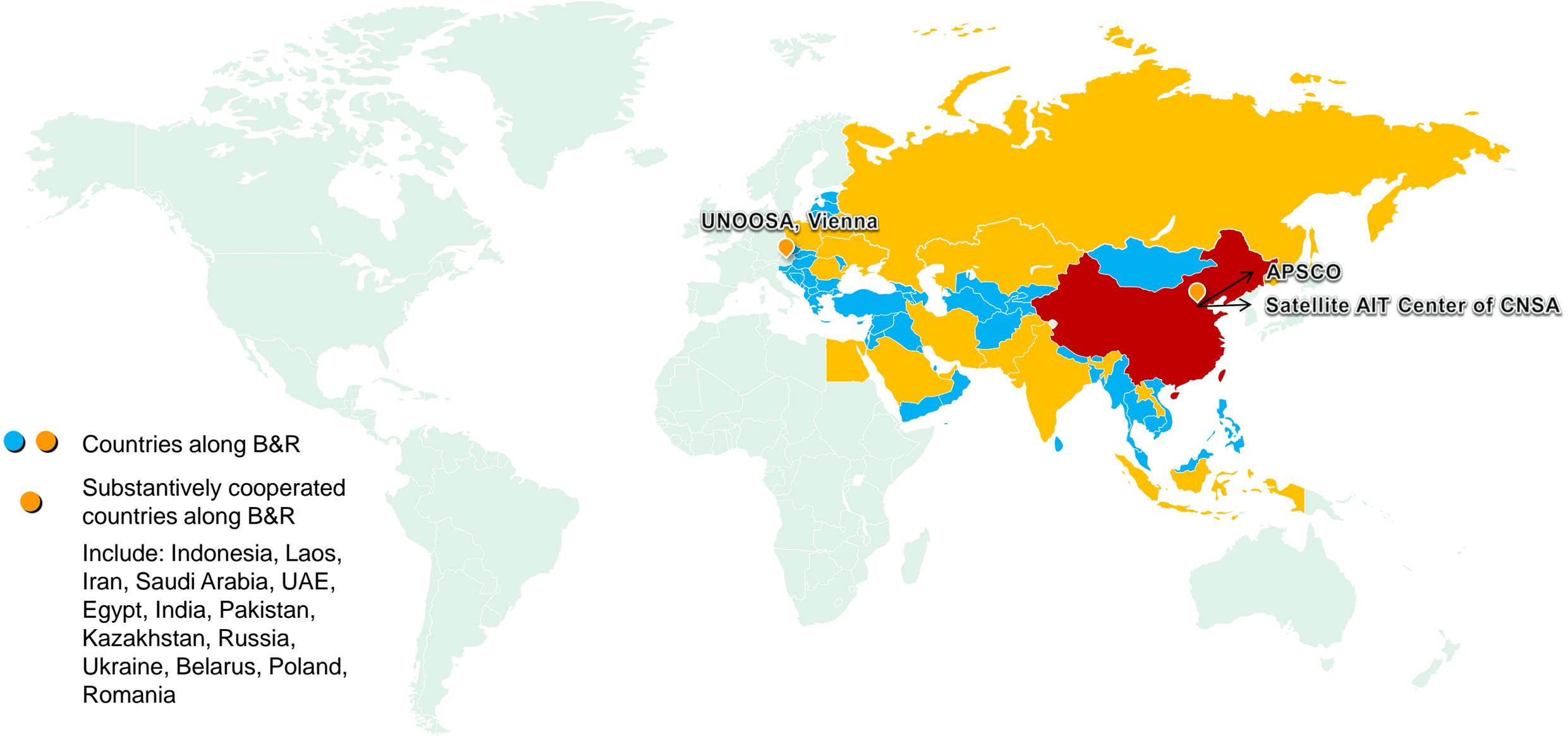
How to Build the 'Belt & Road' Spatial Information Corridor?

Goals & Tasks



How to Build the 'Belt & Road' Spatial Information Corridor?

Present Cooperation between China and B&R Countries

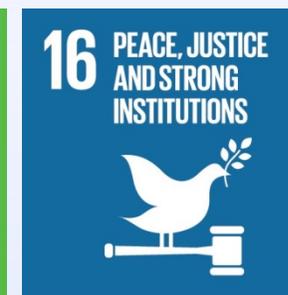


How to Build the 'Belt & Road' Spatial Information Corridor?



SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



How to Build the 'Belt & Road' Spatial Information Corridor?



Ice

The melting of sea ice and of the ice not only contributes to sea level rise, but also changes the salinity and temperature of the water, influencing global ocean circulation patterns that regulate Earth's climate.

With frequent and global coverage, satellites provide the best source of information on Earth's cryosphere. Satellites also provide the best means to study polar regions on the whole, providing precise measurement of ice extent and thickness.



Water

Less than 3% of water is fresh, leaving a very small fraction accessible to humans.

Satellites provide information on sea-level change, sea-floor topography, ocean currents, sea-surface salinity, waves, algal blooms and much more. This information helps to improve our understanding of changes in aquatic ecosystems, the global ocean and the water cycle, paving the way towards a more sustainable exploitation of this precious natural resource.



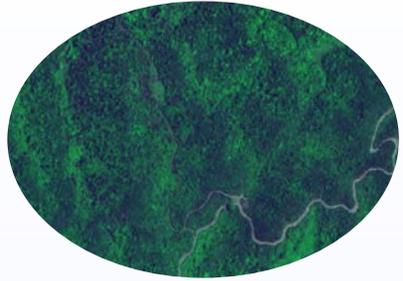
Atmosphere

Both natural and human-made emissions influence the levels of trace gases in the atmosphere, having several effects, including rising temperatures.

Satellites are the only way to obtain consistent, global measurements of the distribution and concentration of trace gases.

Meteorological satellites are used to monitor clouds over large areas for weather forecasting.

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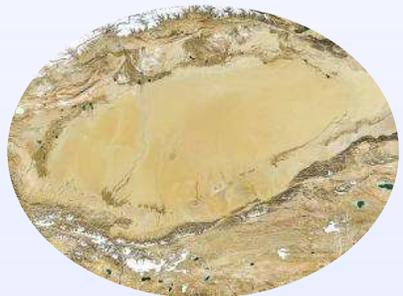
Forests

Forests are home to the majority of the world's terrestrial animal and plant species. Large forest areas play a key role in the global carbon cycle, absorbing carbon dioxide and emitting oxygen. Earth-observing satellites monitor changes in and the health of global forests, and can assist in their protection and sustainable use.



Agriculture

Agriculture is essential for feeding the world, but can only support the growing population if it is sustainable. Earth observation satellites can support sustainable agricultural practices by mapping and classifying land use and detecting change.



Deserts

About one third of Earth's land surface is categorised as arid or semi-arid, with a severe lack of water and vegetation. Satellites provide information on desert ecosystems and their expansion, and about areas at risk of soil degradation, erosion and desertification.



cities

Home to over half of the world's population, urban areas are rapidly changing environments. Observations based on high-resolution satellite data provide essential information for city planning and for the sustainable development of urban regions.

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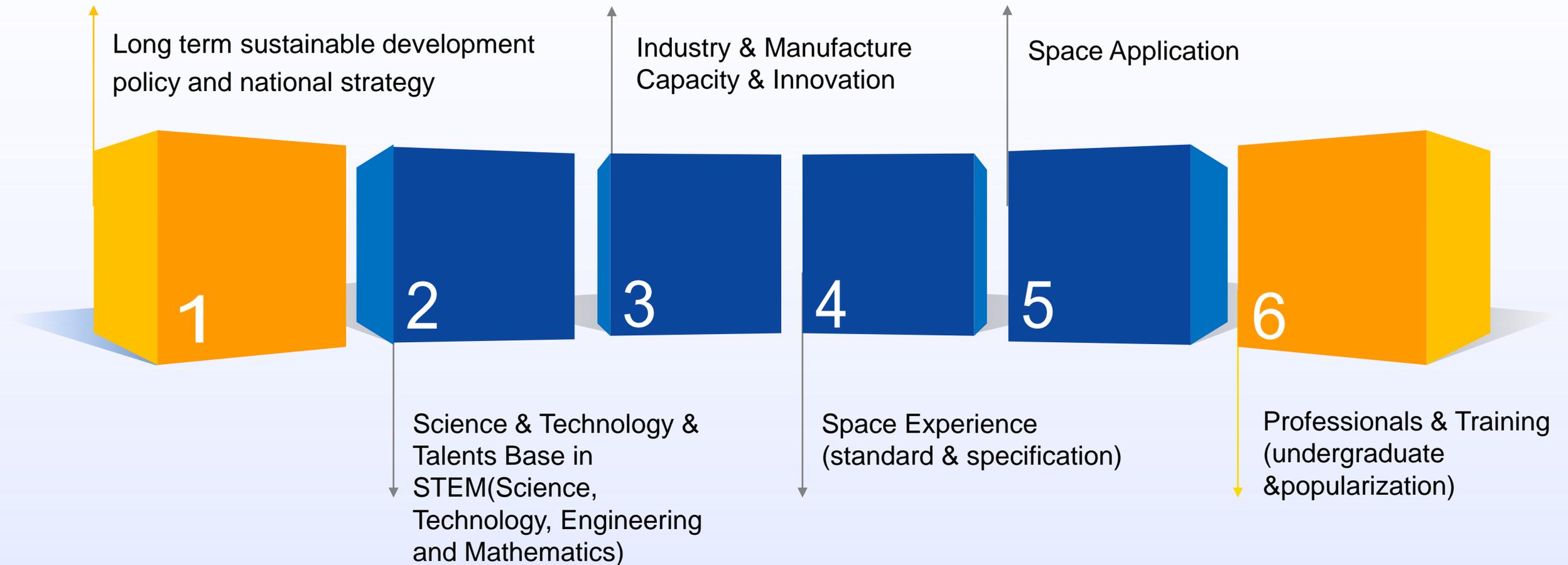
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How the Corridor to Contribute to the Space Capacity Building of Developing Countries?

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Key Elements of Space Capacity Building





How the Corridor to Contribute to the Space Capacity Building of Developing Countries?

Major Tasks for the Next Five Years

- to enhance the basic capacities of its space industry,
- to strengthen research into key and cutting-edge technologies,
- to implement manned spaceflight, lunar exploration, the Beidou Navigation Satellite System, high-resolution earth observation system, new-generation launch vehicles and other important projects,
- to launch new key scientific and technological programs and major projects, complete, by and large, its space infrastructure system, expand its space applications in breadth and depth, and further conduct research into space science, promoting the integrated development of space science, technology and applications.



How the Corridor to Contribute to the Space Capacity Building of Developing Countries?

Major Tasks for the Next Five Years

Space transport system

- medium-lift launch vehicles
- heavy-lift launch vehicles
- low-cost launch vehicles, new upper stage and the reusable space transportation system between the earth and low-earth orbit.



How the Corridor to Contribute to the Space Capacity Building of Developing Countries?

Major Tasks for the Next Five Years

Space infrastructure

China is to improve its satellite systems and their basic related items, develop the three major satellite systems of remote-sensing, communications and broadcasting, and navigation and positioning, and build a space-ground integrated information network.

Satellite remote-sensing system

Satellite communications and broadcasting system

Satellite navigation system



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Major Tasks for the Next Five Years

Manned spaceflight

Space launch sites

Deep-space exploration

Space TT

Experiments on new space technologies



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Major Tasks for the Next Five Years

Space applications

China will improve its space application service system oriented toward **industries, regions and the public**, expand integrated application of space information, and improve the application and marketing of scientific and technological results. Consequently, the scale, operational standards and industrialization level of space applications will be raised to serve national security and national economic and social development.

Industrial applications

Regional applications

Public services



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Major Tasks for the Next Five Years

Space science

Targeting major frontier areas of space science and technology, China will implement a series of new space science satellite programs, establish a series of space science satellites featuring sustainable development, and reinforce basic application research. Major discoveries and breakthroughs are expected in the frontier areas of space science to further mankind's knowledge of the universe.

Space astronomy and space physics

Quantum experiments in space

Scientific experiments in space

Basic and applied research



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Major Tasks for the Next Five Years

Space environment

- China will improve the standardization system for space debris, near-earth objects and space climate.
- It will enhance the space debris basic database and data-sharing model, and advance the development of space debris monitoring facilities, the early warning and emergency response platform and the online service system, through reinforcing integrated utilization of resources.
- The protection systems of spacecraft will be further strengthened. Furthermore, efforts will be made to improve the space environment monitoring system and to build a disaster early warning and prediction platform to raise our preventative capability.
- It will conduct studies on the building of facilities for monitoring near-earth objects, and put the plan into operation to elevate our capability to monitor and catalog such objects.

How the Corridor to Contribute to the Space Capacity Building of Developing Countries?

Key areas for future cooperation

Construction of the Belt and Road Initiative Space Information Corridor, including earth observation, communications and broadcasting, navigation and positioning, and other types of satellite-related development; ground and application system construction; and application product development.

Construction of the BRICS remote-sensing satellite constellation.

Construction of the APSCO Joint Small Multi-mission Satellite Constellation Program and University Small Satellite Project Development.

The Moon, Mars and other deep space exploration programs and technical cooperation.

Inclusion of a space laboratory and a space station in China's manned spaceflight program.

Research and development of a space science satellite, a remote-sensing satellite, payloads, etc.

Construction of ground infrastructure such as data receiving stations and communications gateway stations.

Satellite applications, including earth observation, communications and broadcasting, navigation and positioning.

Exploration and research on space science.

Launching and carrying services.

Space TT&C support.

Space debris monitoring, early warning, mitigation and protection.

Space weather cooperation.

Import and export of and technical cooperation in the field of whole satellites, sub-systems, spare parts and electronic components of satellites and launch vehicles, ground facilities and equipment, and related items.

Research on space law, policy and standards.

Personnel exchanges and training in the space field.



THANKS!