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CHINA HORIZONS

DEALING WITH A RESURGENT CHINA

October 2025

The Arctic, outer space and influence- building: China and Russia join forces to expand in new strategic frontiers

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The project "Dealing with a Resurgent China" (DWARC) has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement number 101061700. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.

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Key findings

- **China's geopolitical competition with the West is rapidly expanding into new domains such as the polar regions, space, cyberspace and the deep sea.** Russia has emerged as a key partner for China's ambitions in these spheres.
- **External narratives depict Beijing's activities within a "win-win", multilateral approach to the global commons.** But internal Chinese writings frame them in a more geopolitical and security-first way: they call for China to establish dominance in these domains and to develop the military capabilities necessary to defend its interests.
- **China's ambitions and activities in these new frontiers pose clear challenges to European interests, security, values and future economic development.** For Europe, China's footprint in the Arctic and space demands urgent attention.
- **Beijing views the "strategic new frontiers" as providing new opportunities to advance its objective of expanding its global influence** at the expense of Western countries, from military capabilities to global governance.
- **China's engagement with the new frontiers is inherently dual-use.** Science-led, civilian activities are always accompanied by work to secure military advantages and develop new military capabilities it can deploy in case of conflict.
- **Russia has emerged as Beijing's partner of choice in these new frontiers of geopolitical competition.** Its substantial presence in the Arctic and space, often complementary to China's capabilities, includes a strong – if aging – space program, sovereign rights in Arctic regions, access to the Northern Sea Route (NSR) and a big network of Arctic infrastructure and military facilities.
- **Europe risks strategic irrelevance in the Arctic and space if it fails to respond to China's dual-use footprint.** Defending European interests in these strategic domains will require substantial rethinking and awareness; investment in Arctic infrastructure; screening European Space Agency (ESA) collaborations and Chinese investments in the European Arctic; and attention to space and Arctic governance alongside like-minded partners to monitor China's activities and to coordinate positions and responses.

Introduction: Europe needs sober realism about the Arctic and outer space

China's geopolitical competition with the West is rapidly expanding into new domains Beijing identifies as crucial to its strategic ambitions – outer space, the polar regions, cyberspace and the deep sea. As these arenas become more accessible, Beijing is expanding its dual-use presence there on its road to becoming a global power. And it is not doing so alone. Russia has become a key partner for China's ambitions in space and the Arctic as Europe and other Western nations have pulled back from cooperation with Beijing.

Beijing calls these four domains the “strategic new frontiers” (战略新疆域). The terminology is not new, but intensified China-US competition has brought it to prominence in Chinese discourses. Externally, China frames its ambitions in these domains as part of its “win-win”, multilateral approach to the global commons. But internal Chinese writings have a more geopolitical and security-first lens: they call for China to establish dominance in these domains and to develop the military capabilities to defend its interests.

China's ambitions and activities in these new frontiers pose clear challenges to European interests, security and values. But it is China's footprint in the Arctic and space that presents the most urgent challenge. Once considered strategic backwaters and simply parts of the global commons, Europe for a long time failed to consider the strategic relevance of China's dual-use presence in these domains and failed to take action.

Today, European actors face an entrenched China in the Arctic and space, with a growing military or dual-use presence and a deepening partnership with Russia. Against a background of growing geopolitical fragmentation, the EU and its members states face stark choices. They will have to find ways to contest China's footprint in these domains and secure their interests and security. They will most likely have to do it alone, given the Trump administration has adopted an increasingly transactional and volatile approach towards US allies.

To develop targeted responses in this complicated geopolitical environment, it will be essential for European actors to have a good understanding of China's ambitions and thinking towards the strategic new frontiers, its approach to the Arctic and space, the deepening Sino-Russian collaboration in these domains and the implications of a stronger Chinese footprint.

Beijing targets new arenas for geopolitical competition

Beijing recognized the importance of the “strategic new frontiers” for its long-term strategic ambitions earlier than many countries, appraising the potential for greater access to these domains offered by climate change and technological advances. The concept had fully emerged within China’s military establishment by the early 2010s, the high tide of Western engagement-based China policymaking.¹ Party-state thinkers pondering the possibility of conflict with the West concluded that any conflict would be decided in new domains where technological advancement and asymmetric capabilities could play a key role. This prompted them to group together cyber, outer space, the polar regions and the deep sea.

Since then, Xi Jinping has been clear about their strategic relevance and their importance for China’s national security, introducing them into mainstream policy discourses and positions. He has included them in his 2049 goal of achieving the “great rejuvenation of the Chinese nation,” calling for China to become a polar, space, tech and maritime global power by then. By 2015, China’s defense white paper called some of them “new commanding heights of strategic competition” for their myriad kinds of potential – their immense, often unexploited, resources, the scope to flex China’s diplomatic muscles on rules governing the global commons, the opportunities to expand its global influence at the expense of Western countries and, not least, scientific exploration to expand its military reach and technical sophistication.² By 2022, they were incorporated into Xi Jinping’s concept of “comprehensive national security,” a state doctrine permeating all aspects of China’s governance and policymaking.³

There are two other significant considerations: first, China’s leaders are now calling for an assertive, proactive approach in response to concerns that the US and its allies may gain the upper hand in these domains, hinting at more aggressive diplomacy. Second, the securitization of growing numbers of policy areas means more “strategic new frontiers” are likely. China’s Ministry of Foreign Affairs floated adding artificial intelligence (AI) to the category in 2023.⁴

¹ Chen Zhou 陈舟 (2011). “世界军事形势：军事竞争升温 “软战争”渐凸显” (Global Military Situation: Military Competition Is Heating Up, “Soft War” Is Becoming More Prominent). CCTV 央视网. December 28.

<https://news.cntv.cn/military/20111228/104584.shtml> Accessed: 18 October 2025.

² State Council of the People’s Republic of China (2015). “China’s Military Strategy (full text)”. May 27.

https://english.www.gov.cn/archive/white_paper/2015/05/27/content_281475115610833.htm Accessed: 18 October 2025.

³ Chen Wenqing 陈文清 (2022). “牢固树立和践行总体国家安全观 谱写新时代国家安全新篇章” (Firmly Establish and Practice the Comprehensive National Security Concept, Write a New Chapter for National Security in the New Era). Qiushi 求是. April 15. https://www.qstheory.cn/dukan/qs/2022-04/15/c_1128558801.htm Accessed: 18 October 2025.

⁴ Ministry of Foreign Affairs of the People’s Republic of China (2023). “Proposal of the People’s Republic of China on the Reform and Development of Global Governance”. September 13. https://www.mfa.gov.cn/eng/zy/gb/202405/t20240531_11367498.html Accessed: 18 October 2025.

Comprehensive national security checklist

The “strategic new frontiers” are key elements of China’s concept of national security



1		Political security 政治安全 Maintain regime stability and party supremacy
2		Military security 军事安全 Defend against military attacks; prevail in conflict
3		Territorial security 国土安全 Protect borders, territorial integrity and sovereignty
4		Economic security 经济安全 Protect economic stability and manufacturing base
5		Financial security 金融安全 Maintain stability of financial system and capital markets
6		Cultural security 文化安全 Prevent harmful ideologies and thinking in society
7		Societal security 社会安全 Maintain public security and societal control
8		Technological security 科技安全 Develop science and tech capabilities; increase self-reliance
9		Cybersecurity 网络安全 Defend against cyberattacks; protect critical infrastructure; maintain information control
10		Food security 粮食安全 Guarantee and expand domestic food production and distribution
11		Ecological security 生态安全 Protect ecosystems; prevent pollution and ecological crises
12		Resource security 资源安全 Guarantee stable supply of energy and other resources
13		Nuclear security 核安全 Modernize nuclear facilities and capabilities; prevent accidents
14		Security of overseas interests 海外利益安全 Ensure development opportunities; protect citizens and assets abroad
15		Space security 太空安全 Maintain access to outer space; protect space-based assets
16		Deep-sea security 深海安全 Maintain access to seabed; protect ability to conduct research and exploration
17		Polar security 极地安全 Maintain access to the polar regions; protect research and exploration ability
18		Biosecurity 生物安全 Protect against biological risks; develop biotech and vaccines
19		AI security 人工智能安全 Develop AI capabilities; ensure AI safety; strengthen regulation and supervision
20		Data security 数据安全 Ensure data security and availability; control data flows

Source: China’s “National Security for the New Era” white paper, MERICS

China's external messaging highlights the global commons

China's securitization of these domains contradicts its own external messaging (promoting its "peaceful rise" as a responsible global power and a force for peace), and the still prevalent European view of these arenas as parts of the global commons. To international audiences, Chinese officials, including Xi himself, tend to speak of "new frontiers" or "new frontiers for cooperation", stressing their desire to improve multilateral governance and create opportunities for all. Xi's 2017 address at the UN Office in Geneva urged the international community to uphold the principles of "peace, sovereignty, inclusiveness, and shared governance, and turn the deep sea, the polar regions, outer space, and the Internet into new frontiers for cooperation rather than a wrestling ground for competition."⁵

China's exchanges with international partners deploy this cooperative narrative, including within BRICS and the Shanghai Cooperation Organization (SCO), which may find fertile ground in the Global South amid the dislocation caused by the Trump administration. Beijing's multilateral narratives position China to push for a reform of the global governance system more in line with its own interests.

Against a background of deepening geopolitical fragmentation, the implications for Europe of China's approach and narratives are profound. The United States' retreat from many aspects of the post-1945 global order it helped create, its alienation of allies and partners, and its planned refocus away from the European theater and into the Indo-Pacific are creating a power vacuum that Beijing will try to fill. Europe will not only face greater contestation and higher risks in these areas of the global commons, but it will also be forced to respond alone (or with other partners).

⁵ Xi Jinping 习近平 (2017), "Work Together to Build a Community of Shared Future for Mankind". Xinhua. January 18. http://www.xinhuanet.com/english/2017-01/19/c_135994707.htm Accessed: 18 October 2025.

China's power and capabilities have grown fast in the new frontiers

Beijing does not have a single, unified strategy for all four of these domains, although its overall objectives – shaped by Xi's strategic ambitions for China – are similar. Its interests in the polar regions, outer space, cyberspace, and the deep sea can be categorized into four main groups:

- **Economy and Resources:** Gain and secure access to the natural resources, trade routes and economic opportunities flowing from expanded access to these domains.
- **Science and Technology:** Gain understanding of these spaces to develop China's technological capabilities.
- **Governance:** Shape the rules and norms governing them in ways aligned to China's interests and priorities.
- **Security:** Establish a strong Chinese military, diplomatic or other official presence to compete with the West and defend China's national security and overseas interests.

To achieve these objectives, Beijing leverages a wide and varied range of instruments, actors and governance structures across the different domains. However, there are commonalities. The main purpose of China's activities is framed as scientific advancement, deploying win-win and multilateral narratives. By leading with scientific endeavors, China can avoid scrutiny and pushback and present itself as a more responsible power than Western countries. Chinese companies have been mobilized in service of Beijing's objectives, although the state has always remained in control.

Military-civil fusion is one of the vehicles through which Beijing encourages these public-private partnerships with Chinese characteristics. In keeping with the highly geopolitical and securitized approach, many or most of China's activities have strong dual-use implications, with the People's Liberation Army (PLA), playing a key role, directly or indirectly.

Partnerships can fill any gaps in China's reach, capabilities or know-how. Often, these are more relevant in the earlier stages of a push into any new domain, before Chinese actors are able to operate alone. Later on, partners help Beijing amplify its reach but are less vital.

China has had varying levels of progress and success in each strategic new frontier. In cyberspace or outer space, China is already a leading power. Strategic, state-led investments in technology and infrastructure have generated a globally competitive tech sector and advanced cyber and space capabilities. In some indexes, China ranks as the second cyber power, after the United States.⁶ China's space program, meanwhile, has reached milestones, including human spaceflight and moon landings, previously achieved only by Russia, the United States and few other countries. It has an extensive satellite network

⁶ Voo, Julia; Hemani, Irfan; Cassidy, Daniel (2022). "National Cyber Power Index 2022". Belfer Center for Science and International Affairs, Harvard Kennedy School. September. <https://www.belfercenter.org/publication/national-cyber-power-index-2022> Accessed: 18 October 2025.

and the BeiDou global navigation system, a homegrown rival to GPS.⁷ Sophisticated efforts to shape global internet governance at the UN and through its own initiatives, like the Digital Silk Road, have had some success.⁸ It has also initiated similar efforts to reshape space governance in collaboration with Russia and Global South countries.⁹

In the deep seas, Beijing is still a rising power, working to develop advanced capabilities that could expand its influence. But it is progressing fast. For example, the Chinese navy now operates 52 attack submarines; six are nuclear powered and only four can be considered “obsolescent”.¹⁰ It is developing new underwater capabilities, from UUVs and cable-cutting devices¹¹ to sonar systems and stepping up surveys of the ocean floor (vital for cable laying, and deep-sea mining).¹²

China's polar ambitions are expressed in its claim to be a “near-Arctic state”.¹³ Collaboration with Russia is vital for Beijing, given the basic geography and its lack of territorial claims or sovereign rights in the Arctic or Antarctica. To expand its presence, it needs partners. However, its Arctic and Antarctic capabilities are growing fast. Since 2019, three new icebreakers have been launched, more are being built, and it has established multiple polar research stations in recent years.

⁷ BeiDou (no date). “BeiDou Navigation Satellite System” <http://en.beidou.gov.cn/SYSTEMS/System/> Accessed: 18 October 2025.

⁸ Cary, Dakota (2023). “Community watch: China's vision for the future of the internet”. Atlantic Council. December 4. <https://www.atlanticcouncil.org/in-depth-research-reports/report/community-watch-chinas-vision-for-the-future-of-the-internet/> Accessed: 18 October 2025.

⁹ Xinhua (2025). “Chinese envoy urges stronger int'l cooperation on peaceful uses of outer space”. May 6. <https://english.news.cn/20250506/b391727b740d4bc9a6ea748e861fc517/c.html> Accessed: 18 October 2025.

¹⁰ Bentham, Jonathan; Bearn, Louis (2025). “China's Outsized Advantage in its Critical Maritime Infrastructure Protection”. International Institute for Strategic Studies. March 21. <https://www.iiss.org/online-analysis/charting-china/2025/03/chinas-outsized-advantage-in-its-critical-maritime-infrastructure-protection/> Accessed: 18 October 2025.

¹¹ Chen, Stephen (2025). “China unveils a powerful deep-sea cable cutter that could reset the world order”. South China Morning Post. March 22. <https://www.scmp.com/news/china/science/article/3303246/china-unveils-powerful-deep-sea-cable-cutter-could-reset-world-order> Accessed: 18 October 2025.

¹² Pradhan, S.D. (2025). “China's Growing Subsea Capabilities”. Taipei Times. April 15. <https://www.taipeitimes.com/News/editorials/archives/2025/04/15/2003835184> Accessed: 18 October 2025.

¹³ State Council of the People's Republic of China (2018). “Full text: China's Arctic Policy”. January 26. https://english.www.gov.cn/archive/white_paper/2018/01/26/content_281476026660336.htm Accessed: 18 October 2025.

The Arctic and space need Europe's urgent attention

China's activities and ambitions in the Arctic and outer space require the most urgent European action. The situation in both these domains is fluid and escalating and awareness is low. While they are no less relevant or geopolitically salient, other domains are either further away (Antarctica, or deep-sea activities as Beijing prioritizes the Indo-Pacific) or their threats are better-recognized. Stakeholders, for example, approach cyberspace with better defined strategies and far greater awareness.

China's rapid build-up in the Arctic and space, and growing China-Russia collaboration in these domains, are already affecting European interests. Further expansion will pose challenges needing immediate action from the EU and its member states. European policymakers have largely ignored the geopolitical relevance of the Arctic and space for years, making a reconsideration urgent to meet the requirements of this new era of competition and geopolitical fragmentation.

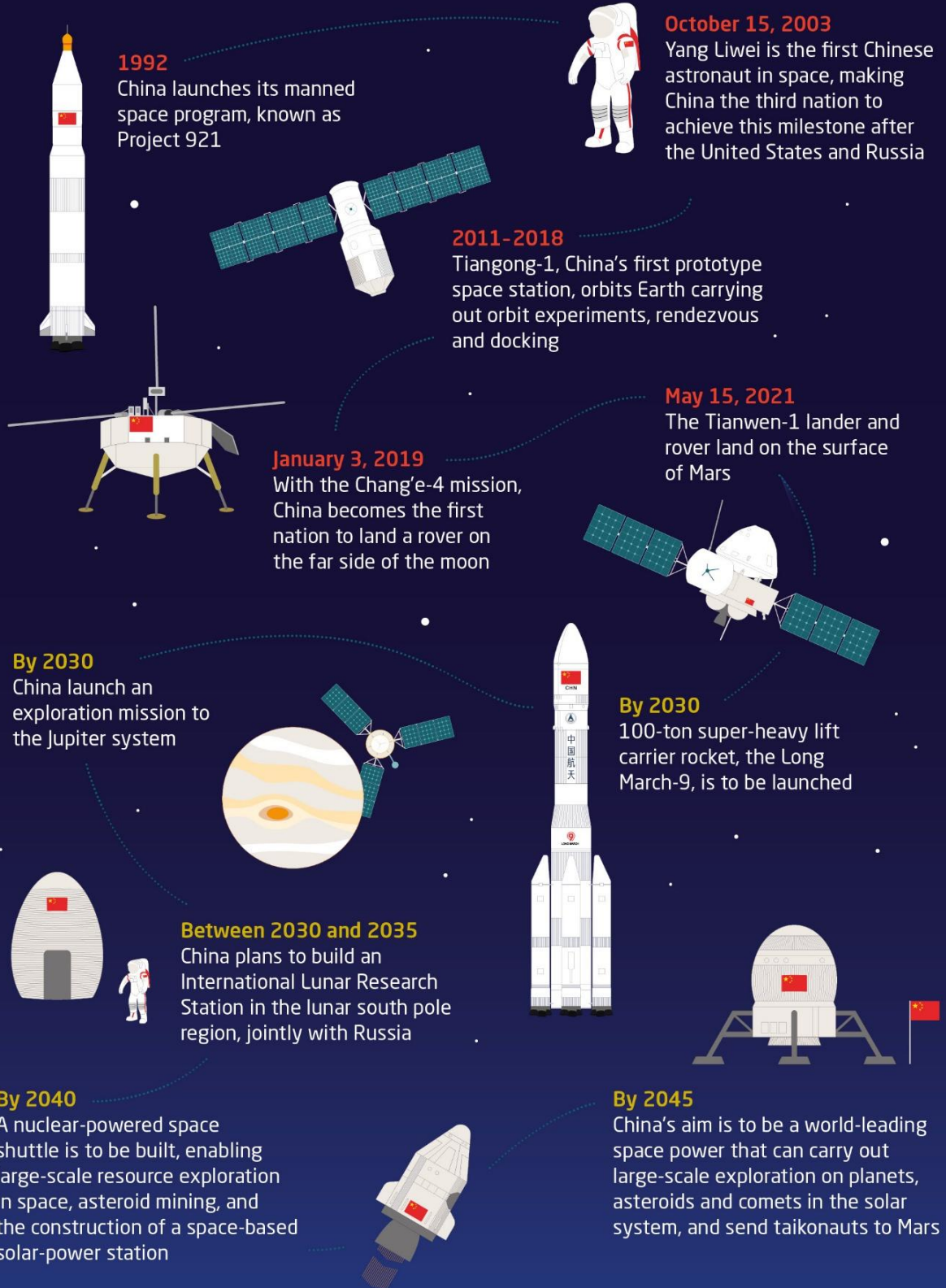
The EU Strategic Compass alluded to the differing degrees of awareness, capabilities and general sense of urgency between the new frontiers. On cybersecurity, it called for fortifying Europe's cyber-defenses against attacks, but proposals for the other domains were absent or thin.¹⁴

Developing targeted responses to China's growing footprint in the Arctic and space will require greater attention to two defining characteristics of Beijing's actions in these domains: their dual-use nature, and China's growing cooperation with Russia.

¹⁴ European External Action Service (2022). "A Strategic Compass for Security and Defence". EEAS. March 24. https://www.eeas.europa.eu/eeas/strategic-compass-security-and-defence-0_en Accessed: 18 October 2025.

Mars landing is only the latest milestone in China's ambitious space program

A fast journey to one of the world's leading space powers



Source: Xinhua, China Daily, SpaceNews

China's activities in the Arctic and space have dual-use dimensions

China's engagement with the new frontiers is inherently dual-use. Its civilian activities are always accompanied by efforts to secure military advantages for China and develop new military capabilities it could bring to bear in case of a conflict. This dynamic is particularly prominent in the Arctic and space, where it could jeopardize Europe's security and defense.

Internal documents are much clearer about the military dimension of China's activities than those directed at international audiences. The 2020 edition of the Science of Military Strategy, an influential and authoritative textbook on China's strategic thinking published by the National Defense University, is blunt: "military-civilian mixing is the main way for great powers to achieve a polar military presence," it says of the Arctic. China should "give full play to the role of military forces in supporting polar scientific research and other operations". Control and dominance in outer space is essential, otherwise "information control will be impossible, and air control, sea control, and land control will also... fall like dominoes."¹⁵

China's research and satellite ground stations in the Arctic track and link its scientific satellites, while also supporting intelligence collection and the accuracy of the BeiDou global positioning system, which provides missile targeting and timing capabilities to the PLA. In 2024, the US Congress' Select Committee on the Chinese Communist Party also raised concerns over the military implications of the particular research underway at China's research stations in Svalbard and Iceland.¹⁶

During the PRC's 13 Arctic research expeditions to date, Chinese vessels have conducted extensive oceanographic surveys and acoustic modeling, vital for the PLA Navy (PLAN) and especially its submarines to operate effectively there. The expeditions have also reportedly tested unmanned underwater vehicles (UUV) and polar-capable fixed-wing aircraft.¹⁷

China also continues to strengthen its space-based military capabilities. The military relevance of this domain was underscored by the recent creation of the PLA's Aerospace Force, directly overseen by the Xi-chaired Central Military Commission (CMC).¹⁸ China's large, and growing, network of satellites, including the remote-sensing Yaogan series, serve primarily

¹⁵ National Defense University 国防大学 (2020). 战略学 (The Science of Military Strategy). China Aerospace Studies Institute, Air University. January 2022. <https://www.airuniversity.af.edu/Portals/10/CASI/documents/Translations/2022-01-26%2020%20Science%20of%20Military%20Strategy.pdf> Accessed: 19 October 2025.

¹⁶ Select Committee on the Chinese Communist Party (2024). "Letter to Pentagon and State Department on Chinese Military Research in the Arctic". United States Congress. October 17. <https://selectcommitteeontheccp.house.gov/media/letters/letter-pentagon-and-state-department-chinese-military-research-arctic> Accessed: 19 October 2025.

¹⁷ United States Department of Defense (2024). "Arctic Strategy". July 24. <https://media.defense.gov/2024/Jul/22/2003507411/-1/-1/0/DOD-ARCTIC-STRATEGY-2024.PDF> Accessed: 19 October 2025.

¹⁸ Ou Can 欧灿; Li Jianwei 李建文 (2024). "中国人民解放军信息支援部队成立大会在京举行 习近平向信息支援部队授予军旗并致训词" (The founding ceremony of the People's Liberation Army Information Support Force was held in Beijing. Xi Jinping awarded the military flag to the Information Support Force and delivered a speech). Ministry of National Defense of the People's Republic of China. April 19. http://www.mod.gov.cn/gfbw/sy/tt_214026/16302017.html Accessed: 19 October 2025.

military purposes, contributing to the PLA's C4ISR¹⁹ capabilities. Some satellites – like some of the Shijian series – appear to have robotic arms that could be used to destroy or disable adversaries' satellites, potentially disrupting rival military communications or missile launches and detection.²⁰

China's dual-use activities are contributing to the militarization of space and the high north and compounding the risks to European interests. Beijing's growing cooperation with Moscow in these domains is sharpening the problem, which has expanded from economic and governance challenges into a direct challenge to European security.

¹⁹ C4ISR stands for Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance.

²⁰ Sheu, Jyh-Shyang (2025). "Space Warfare: From Hybrid Operations to a First Strike" in China's Space Dream: No Limits, No End. Institut Montaigne. February 18. <https://www.institutmontaigne.org/en/expressions/china-trends-22-chinas-space-dream-no-limits-no-end> Accessed: 19 October 2025.

The road to becoming a polar power

Key milestones in China's Arctic presence

1993

China buys its first icebreaker, the Xue Long, from Ukraine



July-September 1999

China conducts its first Arctic expedition



2004

China's first permanent Arctic research station "Yellow River" opens in Svalbard



2012

The Xue Long becomes the first Chinese ship to sail through the Northern Sea Route



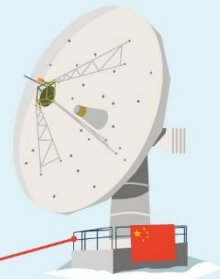
2013

China becomes a permanent observer state to the Arctic Council



2016-2020

China operates a Remote Sensing Satellite North Polar Ground Station in Kiruna, Sweden



2018

A second permanent research station, the China-Iceland Arctic Science Observatory, opens in Kárhóll, Iceland



2018

China launches its second icebreaker, and the first indigenously produced one, known as the Xue Long 2



2023-2024

Two more icebreakers, the Ji Di and the Explorer 3, are launched



By 2030

China's aim is to become a polar great power



Sources: Xinhua, China's Ministry of Foreign Affairs, Polar Research Institute of China

China-Russia cooperation accelerates Beijing's progress in the Arctic and space

The “strategic new frontiers” is a Chinese concept, which centers Beijing's interests and objectives. But the pursuit of its goals in these domains has always needed external partnerships to fill gaps in its capabilities, know-how or geographical access. As European partners have moved towards de-risking, curbed technology transfers, pulled out of joint initiatives with China and imposed sanctions on Russia, Moscow has increasingly filled the partnership gap – though not without friction in domains that it too considers strategically important.

Up until a few years ago, Europe was Beijing's preferred partner in the Arctic and space. Through science diplomacy, China positioned itself as a potential collaborator for European countries also seeking to build up their polar and space programs and capacities. China-Europe research collaboration in these spaces grew rapidly, sidestepping the questions of the risks inherent in this relationship. European nations unwittingly, but effectively, helped Beijing along, allowing and facilitating China's access to (back then) more advanced European (dual-use) technology and know-how and to strategic Arctic regions.

China's permanent research stations in the Arctic, for example, were all established in European countries, and in some cases in collaboration with European research organizations. Beijing's first, known as the Yellow River Station, opened in 2004 in Norway's Svalbard islands.²¹ A remote sensing satellite ground station was set up in Kiruna, Sweden in 2016 in collaboration between the Chinese Academy of Sciences (CAS) and the state-owned Swedish Space Corporation (SSC).^{22,23} And China's second permanent facility in the region, the China-Iceland Arctic Science Observatory, has been operating in Kárhóll, Iceland, since 2018.²⁴

The picture is similar in outer space. China was closely involved in the early stages of the EU's Galileo global satellite navigation system: in 2003, it became a partner in Galileo, contributing around 200 million euros to the project, though the EU later barred China from the program.²⁵ The China National Space Administration (CNSA) has cooperated closely and regularly with the European Space Agency (ESA) on various projects, including astronaut training. Beijing

²¹ Polar Research Institute of China (no date). “Arctic Yellow River Station”. <https://en.pric.org.cn/index.php?c=category&id=98> Accessed: 19 October 2025.

²² Chen Na (2016). “China's First Overseas Land Satellite Receiving Station Put into Operation”. Chinese Academy of Sciences. December 16. https://english.cas.cn/newsroom/archive/news_archive/nu2016/201612/t20161215_172471.shtml Accessed: 19 October 2025.

²³ This ground station ceased operations in 2020, due to concerns over the potential risks China's involvement posed to Sweden's security.

²⁴ Polar Research Institute of China (no date). “China-Iceland Arctic Science Observatory”. <https://en.pric.org.cn/index.php?c=category&id=99> Accessed: 19 October 2025.

²⁵ Ren Jianmin (2003). “China joins EU space program to break US GPS monopoly”. People's Daily. September 24. https://en.people.cn/200309/26/eng20030926_124990.shtml Accessed: 19 October 2025.

has also extended invitations to European partners to collaborate on its Tiangong space station, an offer the ESA initially took up.²⁶

Today, Europe, the United States and other Western nations are increasingly wary of cooperating with China in strategic sectors. European states have gone from cooperation partners to blocking or canceling several Chinese projects in their territories for national security reasons. Such projects have included, for example, a bid to purchase an abandoned naval base in Greenland in 2016,²⁷ a 2018 attempt to buy a local airport in northern Finland,²⁸ and an attempt in 2024 to purchase land on the Svalbard archipelago.²⁹ In 2023, the ESA also announced it was no longer planning to send astronauts to China's Tiangong space station.³⁰

Russia has since emerged as Beijing's partner of choice in these new frontiers of geopolitical competition. Russia's contributions in the Arctic and space are substantial, and in many cases complementary to China's capabilities. It remains a relevant, albeit declining, space power with a well-established space program from which China can benefit. It also has sovereign rights to the Arctic, including access to the Northern Sea Route (NSR), and an extensive network of Arctic infrastructure and military facilities. Beijing, meanwhile, provides economic muscle and technological support that Russia needs to counteract Western sanctions.

Russia was initially reluctant to allow China unfettered access to its Arctic waters, facilities or trade routes, or to its space program, fearing competition or interference in its sphere of influence. Moscow initially opposed China's campaign to become an observer state in the Arctic Council and was reluctant to permit Chinese ships to navigate the Northern Sea Route through the Arctic Ocean to Europe and North America independently.³¹ In 2021, Russian media reported the Ministry of Industry and Trade had blocked Chinese shipyards from winning a tender to build a new icebreaker for Russia due to concerns about the implied transfer of designs.³² In 2025, the New York Times obtained an internal FSB planning document detailing Moscow's concerns about Chinese intelligence agents carrying out espionage in the Arctic using mining firms and university research centers as cover.³³

²⁶ European Space Agency (2017). "ESA and Chinese astronauts train together". ESA. August 24. https://www.esa.int/Science_Exploration/Human_and_Robotic_Exploration/Astronauts/ESA_and_Chinese_astronauts_train_together Accessed: 19 October 2025.

²⁷ Matzen, Erik (2017). "Denmark spurned Chinese offer for Greenland base over security – sources". Reuters. April 7. <https://www.reuters.com/article/world/denmark-spurned-chinese-offer-for-greenland-base-over-security-sources-idUSKBN1782E1/> Accessed: 19 October 2025.

²⁸ Vanttinen, Pekka (2021). "Finland denied China airbase in the Arctic". Euractiv. March 5. https://www.euractiv.com/short_news/finland-denied-china-airbase-in-the-arctic/ Accessed: 19 October 2025.

²⁹ Agence France-Presse in Oslo (2024). "Norway blocks sale of last private land on Svalbard after Chinese interest". The Guardian. July 1. <https://www.theguardian.com/world/article/2024/jul/01/norway-blocks-sale-last-private-land-svalbard-china-interest> Accessed: 19 October 2025.

³⁰ Jones, Andrew (2023). "ESA is no longer planning to send astronauts to China's Tiangong space station". SpaceNews. January 25. <https://spacenews.com/esa-is-no-longer-planning-to-send-astronauts-to-chinas-tiangong-space-station/> Accessed: 19 October 2025.

³¹ Yun Sun (2018). "The Northern Sea Route: The Myth of Sino-Russian Cooperation". Stimson Center. December 5. <https://www.stimson.org/2018/northern-sea-route/> Accessed: 19 October 2025.

³² Eiterjord, Trym (2023). "Checking Back in on China's Nuclear Icebreaker". The Diplomat. February 13. <https://thediplomat.com/2023/02/checking-back-in-on-chinas-nuclear-icebreaker/> Accessed: 19 October 2025.

³³ Judah, Jacob; Sonne, Paul; Troianovski, Anton (2025). "Secret Russian Intelligence Document Shows Deep Suspicion of China". The New York Times. June 7. <https://www.nytimes.com/2025/06/07/world/europe/china-russia-spies-documents-putin-war.html> Accessed: 19 October 2025.

Russia's international isolation since it began the full-scale war in Ukraine has forced Moscow to abandon some of its concerns. Western sanctions narrowed Russia's options to maintain and expand its aging Arctic infrastructure and space program. Moscow has clearly decided it cannot afford to lose China's support, despite the risks. Their collaboration in the Arctic and space is becoming broader and deeper, facilitating Beijing's progress on its strategic ambitions. Russia's partnership is amplifying the hazards of China's activities in these domains for European security and interests.

China-Russia moon base fits into a wider challenge to Western dominance in space

The biggest project in China-Russia space cooperation so far is their plan to develop a joint lunar base as part of China's International Lunar Research Station (ILRS) initiative. Construction is due to begin in the 2030s, to be fully operational by 2050. They also recently unveiled a new agreement to build a nuclear power plant on the moon to power the research base.³⁴ To date, 13 countries have signed on to participate in the ILRS, but Russia remains China's primary partner.³⁵

China and Russia have also been improving the compatibility and interoperability of the BeiDou and Glonass navigation systems (their alternatives to GPS).³⁶ Regular bilateral consultations on the peaceful uses of outer space and the security of outer space have produced pledges to step up cooperation and work together to shape international law on space.³⁷

Lack of transparency makes it difficult to assess the specifics and progress of the programs announced. But the increasing number and sensitivity of China-Russia space cooperation agreements indicates a deepening strategic partnership. Besides making scientific progress, both sides envision a counterbalance to US and Western dominance in space (including the space-based economy and the rules and norms governing space), and collaboration on space-based capabilities with military uses.

China is opening up Arctic navigation routes and investing in Russian Arctic infrastructure

Cooperation between China and Russia in the Arctic is broader and more fully established. China has invested in many mining, energy and infrastructure projects in Russia's north. A subsidiary of China Poly Group, the state-owned defense conglomerate, signed an

³⁴ Bela, Victoria (2025). "China and Russia sign nuclear reactor deal to fuel lunar research station". South China Morning Post, May 14. <https://www.scmp.com/news/china/science/article/3310315/china-and-russia-sign-nuclear-reactor-deal-fuel-lunar-research-station> Accessed: 19 October 2025.

³⁵ The 13 countries are Azerbaijan, Belarus, Egypt, Kazakhstan, Nicaragua, Pakistan, Russia, Serbia, Senegal, South Africa, Thailand, Turkey, and Venezuela.

³⁶ Balazs, Daniel (2025). "China-Russia Dual-Use Cooperation Stays Resilient Amid Sanctions". S. Rajaratnam School of International Studies, August 25. <https://rsis.edu.sg/rsis-publication/rsis/china-russia-dual-use-cooperation-stays-resilient-amid-sanctions/> Accessed: 19 October 2025.

³⁷ Ministry of Foreign Affairs of the People's Republic of China (2024). "China and Russia Hold the First Consultation on the Peaceful Uses of Outer Space Affairs". August 9. https://www.mfa.gov.cn/mfa_eng/xw/wjbxw/202408/t20240809_11468731.html Accessed: 19 October 2025.

agreement to invest USD 300 million into a coal terminal in Murmansk³⁸ and agreed to develop a deepwater port at Arkhangelsk on the White Sea, which COSCO reportedly planned to use as its main base for Arctic through-shipping.³⁹ The status of these projects, however, is unclear. The China Development Bank and the Export-Import Bank reportedly provided much of the capital to develop Russia's Yamal Liquefied Natural Gas project in western Siberia. In return, about 80 percent of the equipment will reportedly be made in Chinese and Indonesian shipyards.⁴⁰

During Vladimir Putin's visit to Beijing in 2023, the two sides also agreed to establish a joint body to jointly develop the Northern Sea Route and polar ship technologies. This new body, headed by Aleksei Likhachev, head of Russia's State Atomic Energy Corporation (Rosatom), and China's Transport Minister Liu Wei, met for the first time in late 2024 and is expected to lead to greater access for China to the Northern Sea Route.⁴¹

In the Arctic, the military orientation of Beijing and Moscow's activities is more transparent. While Russia has still not granted China permission to carry out independent military operations in Russia's Arctic waters, the partners have held several joint operations in the region in recent years. These included annual joint bomber flights near Alaska between 2022 and 2024, and a 2024 joint Coast Guard patrol in the Arctic.⁴²

³⁸ Staalesen, Atle (2017). "Murmansk counts on Chinese investors". The Barents Observer. March 14. <https://www.thebarentsobserver.com/industry-and-energy/murmansk-counts-on-chinese-investors/135263> Accessed: 19 October 2025.

³⁹ TASS (2107). "Arkhangelsk governor names China as key partner in Arctic projects". December 19. <https://tass.com/economy/981893> Accessed: 19 October 2025.

⁴⁰ Karkalanov, Tsvetko (2016). "Energy in Russia's Foreign Policy and EU-Russia Relations Circumventing sanctions: Yamal LNG becomes a precedent". Russian International Affairs Council. May 16. https://russiancouncil.ru/en/blogs/tsvetko-karkalanov-en/_2472/ Accessed: 19 October 2025.

⁴¹ Global Times (2024). "China, Russia hold first meeting of subcommittee on Arctic shipping routes cooperation". November 27. <https://www.globaltimes.cn/page/202411/1323886.shtml> Accessed: 19 October 2025.

⁴² United States Coast Guard News (2024). "U.S. Coast Guard encounters joint Chinese Coast Guard, Russian Border Guard patrol in Bering Sea". October 1. <https://www.news.uscg.mil/Press-Releases/Article/3922625/us-coast-guard-encounters-joint-chinese-coast-guard-russian-border-guard-patrol/> Accessed: 19 October 2025.

Europe faces difficult choices in the Arctic and space

In the strategic new frontiers, China has leveraged narratives of multilateral cooperation and scientific advancement to instrumentalize cooperation that grows its dual-use presence and capabilities. Europe's failure to treat the Arctic and space, or China's ambitions and activities there, as strategically consequential has put it in a difficult position: it must now find ways to confront a China that is entrenched in the Arctic and space, and it must likely do so without the backing of the United States.

China challenges European interests in the Arctic and space across four main policy areas:

- **Economy:** China's expanded presence and influence in the Arctic and space will increase competition for resources, access to trade routes and new economic opportunities. There are potential impacts on Europe's future economic prosperity, and energy security, which is even more critical as Europe pursues a de-risking strategy aimed at reducing its dependence on China in key supply chains. The Arctic, for example, has large deposits of many metals, rare earth elements, oil and gas, which could help the EU diversify its critical mineral and energy suppliers. European firms will also face greater competition for the space economy, which is expected to be worth USD 1.8 trillion by 2035. Deteriorating relations with Russia over Ukraine, and a deeper Russia-China partnership, could put European vessels at a disadvantage in securing Moscow's permission to use the shorter Northern Sea Route, undermining their competitiveness in global markets.
- **Technology:** China's rapid advances in space and polar technology could jeopardize the US and European technological and competitive edge in these areas. As Beijing acquires the ability of offering cost-effective alternatives to Western systems, it will compete more strongly in third markets. For instance, Argentina, Egypt and South Africa have signed co-operation agreements to use BeiDou, a rival to GPS and Europe's Galileo system, as the system's reach and accuracy improves due, in part, to its Arctic-based ground stations which support an expanded satellite network. Pakistan and Saudi Arabia have inked deals to use BeiDou militarily. Other countries may follow if BeiDou's capabilities match its rivals' more cheaply.
- **Governance:** Beijing's wish to remake the rules governing the polar regions and outer space – and other strategic new frontiers – to better align with its own values and interests promises to weaken the rules-based international order and alter the global power balance. China, likely with support from Russia and others, will push for a governance model that does away with universally binding rules, prioritizing national interests. This would open the door for greater competition and a race for resources, traffic management and military capabilities in the Arctic and space.
- **Security:** Europe's security environment is put at risk by the military and dual-use orientation of China's space and Arctic programs, along with its deepening cooperation with Russia in both. A more regular PLA presence (or that of PLA-linked assets) in Europe's north and in space will demand more resources to monitor the situation and prepare potential responses. These efforts need to run alongside those in other priority theaters, like Europe's eastern flank or the Indo-Pacific. Concerns will

increase about the potential for sabotage to undersea cables and pipelines, espionage, disruptions to communications and trade routes or other grey-zone activities.

Europe risks strategic irrelevance in the Arctic and space if it fails to respond to China's dual-use footprint. Defending European interests in these strategic domains will require some adjustments:

- **Investment in Arctic infrastructure and space-based capabilities:** The EU should support higher investment in infrastructure and capabilities in the European Arctic and in space by leveraging funding vehicles such as Horizon Europe or the European Defense Fund. The EU's 2021 Arctic policy's support should be broadened beyond the current priority areas (climate change, environment, sustainable development and international cooperation) to other critical infrastructure and defense-relevant projects.
- **Screening ESA collaborations and Chinese investments in the European Arctic:** The EU and member states should step up screening of China-Europe research collaboration projects that involve the European Space Agency and Arctic actors, and Chinese investments in the Arctic. Vetting should screen for their impact on European or national security and the risk of dual-use technology transfers.
- **Shaping governance of space and the Arctic:** The EU should work to develop a common understanding of the challenges emanating from China in the Arctic and space. Consensus-building will enable the EU to take a more proactive, unified stance in defending existing rules, norms and international law pertaining to these domains and to shape new ones within multilateral institutions.
- **Coordination with like-minded partners:** Collaboration and coordination with international partners is needed to meet the multi-faceted challenges China poses in these domains. Although full cooperation with the United States seems unlikely at present, the EU should explore partnerships with other countries with stakes in these domains, such as the United Kingdom, Canada or India, among others. NATO should be leveraged as a platform to monitor China's activities and discuss positions and responses.

Above all, crafting an adequate response will demand greater awareness across Europe that space and the Arctic are no longer merely part of the global commons. Competition over the "strategic new frontiers" has, as always, potential to spur innovation and generate some positive spillovers. However, there is a higher, and growing, possibility that both domains will become increasingly fragmented and militarized arenas. Rising geopolitical tensions and a weaker transatlantic alliance dictate that Europe take these risks seriously and act to defend its own national security, economic prosperity and geopolitical interests.

Imprint

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STOCKMAR+WALTER Kommunikationsdesign

FÖRM – Design Studio
www.foerm.net

PUBLISHER

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The project "Dealing with a Resurgent China" (DWARC) has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement number 101061700. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.