



Intersections is a news digest describing technology competition between the United States and the People’s Republic of China (PRC).¹ Issue seven covers changes to PRC regulations on data transfers and export controls on critical minerals, new US semiconductor export restrictions, and European Union (EU) discussions about policies to protect manufacturing and critical technology from China. We also cover new initiatives between the US and select allies and partners, in addition to our regular coverage of critical and emerging technology developments. Finally, we discuss an unprecedented public meeting among intelligence agency heads from the Five Eyes countries and potential illegal activity by technology giant Alibaba in Europe. Click [here](#) to read *Intersections* in your [browser](#).

THIS ISSUE’S CONTENTS

PRC Regulatory and Policy Measures	2
Financial Sector Reforms	3
US Regulatory and Policy Measures.....	3
Ally and Partner Developments.....	4
Advances in Critical and Emerging Tech	6
Illegal Activities.....	6

PRC REGULATORY AND POLICY MEASURES

PRC modifies export controls on graphite products. On October 20, the PRC's Ministry of Commerce (MOFCOM) and General Administration of Customs jointly announced that they were modifying export controls on graphite and graphite products with the intent of "protect[ing] national security and interests."² According to a MOFCOM spokesperson, the new measure officially places "highly sensitive" graphite products, including products already under temporary controls, on the "Dual-Use Product Export Control List" while lifting restrictions on less sensitive graphite products.³ The controls went into effect on December 1, which means that exporters now have to apply for licenses to export restricted products.⁴

The PRC produces about [65 percent](#) of the world's natural graphite as well as [90 percent](#) of the processed graphite used in electric vehicle (EV) batteries.⁵ As a result, restrictions on graphite exports from the PRC could have an outsized impact on global graphite supplies, which are already [strained](#) by increasing international demand for EVs.⁶ This, in turn, could affect the US military. In addition to large-capacity [batteries](#), graphite can also be used to make [graphene](#), an exceptionally strong and light advanced material that has numerous potential [military applications](#), including in ballistic armor and stealth aircraft.⁷

Nevertheless, it remains unclear how these controls will be implemented. One US-based think tank, the Center for Strategic and International Studies (CSIS), [speculates](#) that the graphite export controls, which were announced shortly after the US expanded export controls on semiconductor chips, may be intended primarily to signal displeasure over the new US policy. In that case, CSIS asserts, the PRC may end up approving most graphite exports, resulting in negligible disruption to global supplies.⁸

PRC cyber regulator signals loosening of rules on cross-border data flows. In October 2023, the Cyberspace Administration of China (CAC) released new draft guidelines that would loosen the PRC's restrictive regime for authorizing the transfer overseas of data stored in China.⁹ Under the current guidelines, nearly all personal data stored in China requires CAC approval to be transferred overseas. The new draft guidelines exempt several categories of data from CAC review, including the following:

- Trade, academic-related, manufacturing, and marketing data that does not contain personal information or what the CAC defines as "important data." Critically, the new guidelines state that if no PRC government organ has declared certain data "important," it is not.
- Personal information that must leave China to complete a transaction, such as booking a flight.
- Employee information for human resources management.
- Personal information during emergencies to protect health, safety, or property.
- Personal information collected outside China (but stored in China) that is to be re-exported.
- Data transfers involving fewer than 10,000 unique individuals per year.¹⁰

The initial reaction from the international business community has been mixed. Two US legal scholars [assert](#) that the new guidelines represent a "shift away from security towards [economic] growth" in China's data regulatory regime, although PRC regulators retain considerable leeway to declare data as subject to review.¹¹ Firms outside China whose business depends on cross-border data flows remain skeptical, with one social media executive [arguing](#) that, even with the new guidelines, PRC cyber regulators are still "ambiguous" about what is allowed, making planning for cross-border data operations "very hard."¹²

FINANCIAL SECTOR REFORMS

PRC government reforms financial sector to channel resources to technological innovation. In late October, the Chinese Communist Party (CCP) held its central financial work conference and announced the resumption of financial sector reforms to ensure that resources are directed to innovation-driven development.¹³ The October financial work conference was the first meeting since major changes were made to the PRC State Council organizations responsible for overseeing financial management.¹⁴ Specifically, in March 2023, CCP Chairman Xi Jinping created a Central Financial Commission to “oversee government institutions such as the People’s Bank of China and China Securities Regulatory Commission.”¹⁵

According to Xinhua, the state media news outlet, the PRC financial work conference emphasized the need for high-quality development, a [theme](#) discussed during the 20th Party Congress. The Xinhua report expressed the need for China to “channel more financial resources into promoting technological innovation, advanced manufacturing, green development, and supporting small, medium-sized, and micro enterprises, [and] vigorously support the implementation of the innovation-driven development strategy.”¹⁶ China’s innovation-driven development strategy launched in 2016 and outlines strategic goals for 2030 and 2050.¹⁷

CCP bans officials from investing in private equity funds. According to the *Financial Times*, the CCP has begun [restricting](#) officials’ investments in private equity funds, stating that these investments “should be treated as having violated rules against operating businesses.”¹⁸ The CCP expressed concerns about corruption and ongoing investigations by the Central Commission for Discipline Inspection as well as the need to ensure the safety of the financial system. One Ministry of State Security social media post stated that new rules would stop those “who attempt to shake international investment confidence in China and trigger domestic financial turmoil.”¹⁹

US REGULATORY AND POLICY MEASURES

As covered previously in *Intersections Issue 2*, since [announcing](#) controls on exporting advanced microchip technology to the PRC in October 2022, the US government has continually updated its semiconductor policies. This section highlights recent updates to those restrictions, as well as new incentives to fund domestic semiconductor research.

US moves to strengthen export curbs on artificial intelligence (AI) chips to the PRC. In October 2023, the US Department of Commerce’s Bureau of Industry and Security (BIS) issued new draft [controls](#) on exporting advanced semiconductors to the PRC.²⁰ Going further than BIS’s October 2022 [rule](#),²¹ the new controls are meant to prevent the PRC from accessing advanced chip technology used to train AI models, which could facilitate PRC military capabilities development. The latest changes include the following:

- Expanding the list of countries (beyond China) that will require a license to export advanced chips, preventing the transfer of chip technology to China through third countries
- Redefining chip performance metrics to reflect exact chip types that count as “advanced” and thus trigger the need for exporters to obtain a license
- Differentiating between chips intended for use in data centers (which can be used to train AI models) and other chip types, with the former subject to more stringent criteria for export approval

- Issuing a new rule concerning chip manufacturing equipment that goes beyond the existing limitation of exports to China and Macau to include a list of countries subject to US arms controls
- Clarifying that US persons based in the US or certain partner nations are exempt from the controls²²

According to a US academic [article](#), these regulatory changes “do not represent a major departure from the original intention of the [2022] export controls” to deny China access to advanced chip technology. However, the changes do represent a shift in the means the US government is using to achieve that goal by adding countries beyond China and controlling a broader range of semiconductor industry items.²³

Department of Defense (DOD) announces new funding for domestic semiconductor research.

According to a *New York Times* [report](#), in October 2023 the Biden Administration announced that the DOD would award \$238 million in grant money to set up eight hubs for semiconductor innovation across the US.²⁴ The awards are intended to build up the US domestic semiconductor industry. Although the US continues to lead in certain areas, such as chip design, it has lost capacity in others, such as manufacturing. Specifically, the grants are designed to fund the development of new chipmaking capacity in [applications](#) such as electromagnetic warfare, AI, 6G wireless, and quantum computing. Applications in these areas will be pivotal to the US military’s ability to maintain a technological advantage over competitors.²⁵

ALLY AND PARTNER DEVELOPMENTS

The European Union (EU) launches anti-subsidy investigation into PRC EVs. On September 13, European Commission President Ursula von der Leyen announced that the European Commission would [investigate](#) PRC subsidies for EVs to determine whether these subsidies keep the price of PRC EVs artificially low. According to the [European Parliamentary Research Service](#), this investigation is a response to a recent rapid increase in PRC EV companies’ share of the European market and concerns that this flood of cheap PRC EVs could harm the EU’s own EV industry.²⁶

The PRC has long [prioritized](#) the development of its EV industry. The PRC set goals for EV research and development as early as the 10th Five Year Plan (2001–2005) and identified the EV industry as a “strategic emerging industry” in the 12th Five Year Plan (2011–2015).²⁷ Due to its inclusion in high-level policy documents, the PRC’s EV industry has benefited from government subsidies. According to the *New York Times*, while some PRC EV companies (such as BYD) run a profit, others (such as Nio) can operate [despite losses](#) as high as \$35,000 per car because of [generous financial support](#) from PRC state-owned firms.²⁸

PRC support for its EV industry benefits the People’s Liberation Army (PLA). For example, in September, PRC researchers [announced](#) that they had developed a large-capacity rechargeable battery for use in energy-intensive military systems, such as directed energy weapons and radar arrays, that can be manufactured using existing civilian EV and lithium battery production lines.²⁹

European Commission recommends risk assessments for four critical technologies. On October 3, the European Commission, the EU’s [executive arm](#), adopted a [recommendation](#) that EU member states assess technology security and leakage risk in four areas: (1) advanced semiconductors, (2) AI, (3) quantum technology, and (4) biotechnology.³⁰ The Commission [selected](#) these four areas due to their “enabling and transformative” nature and the risk that they could be applied to military ends or enable human rights violations.³¹ In the [recommendation](#), the Commission asked that EU member states conduct their risk assessments by the end of 2023.³² Although the Commission has been reluctant to identify any individual

country as a target of the risk assessments, a Commission vice president has indicated that the PRC is of particular concern, stating that “[China](#) indeed is a big elephant.”³³

The recommendation demonstrates the challenges European policy-makers face when making EU-wide economic policies regarding the PRC. According to one academic [expert](#), the recommendation’s “narrow” scope and “not controversial” list of technologies are symptoms of how fraught “de-risking” is in the EU. Member states disagree over how much to reduce trade ties to China and are anxious about potential PRC retaliation to actions taken by the bloc.³⁴

Japan, Australia seek to enhance economic security, supply chain resilience. On October 8, the fifth Japan-Australia Ministerial Economic Dialogue was held in Melbourne. The dialogue, co-chaired by Australia’s Minister for Trade and Tourism and Japan’s Minister of Economy, Trade, and Industry, produced a [statement](#) that included joint measures to strengthen economic security and supply chain resilience.³⁵ The two sides expressed their commitment to building “diverse, resilient, competitive, and sustainable supply chains in key goods and critical sectors,” including efforts under their bilateral [Critical Minerals Partnership](#) established in 2022.³⁶ In their statement, the ministers highlighted Japan’s “significant support” for the Australian rare-earths company Lynas as an example of cooperation to reduce supply chain vulnerabilities.

The Japan-Australia Ministerial Economic Dialogue concluded as the Japanese government was reportedly drafting a national plan to bolster industrial technologies that are key to Japan’s economic security. According to a [report](#) by the *Yomiuri Shimbun*, this “action plan on developing strategic industry and technological infrastructure” would likely focus on support measures such as subsidies and preferential tax treatment for Japanese industries in areas including biotechnology, decarbonization-focused environmental technologies, and quantum computing. The plan would also likely feature defensive measures aimed at preventing the leakage of sensitive information and technologies.³⁷

India advances friend-shoring of defense services, production. On October 17, the *New York Times* [reported](#) that USNS *Salvor* recently became the first US Navy vessel to receive repairs at southeast India’s Kattupalli Shipyard under a five-year ship repair agreement.³⁸ The agreement, signed in July, is one sign that Washington and New Delhi are implementing their historic June 2023 joint statement on the US-India Comprehensive Global and Strategic Partnership.³⁹ The partnership includes technology development and defense cooperation focused on “[friend-shoring](#),” or shifting supply chains away from nations that pose risks to US interests and security, to allies and partners.⁴⁰ Another recent development in the partnership was US congressional approval in August for US firm GE Aerospace to transfer F414 fighter jet engine technology to India.⁴¹ This transfer could help India become a more competitive supplier of military hardware to countries that cannot afford US weapons and are seeking an alternative to the PRC or Russia.

Singapore and US agree to boost technology cooperation, including defense innovation. In October 2023, a delegation of Singaporean officials led by Deputy Prime Minister Lawrence Wong visited Washington, DC, to [launch](#) the new US-Singapore Critical and Emerging Technology (CET) Dialogue.⁴² Numerous US officials took part in the dialogue, notably the Deputy Secretary of Commerce and officials from the National Security Council, National Science Foundation, Office of the US Trade Representative, and the Departments of State, Energy, and Defense. In the dialogue, the two sides resolved to cooperate on AI, the digital economy, biotechnology, climate change, quantum computing, and defense innovation. The US [Defense Innovation Unit](#) and Singapore’s Defense Ministry agreed to “more deeply integrate...defense innovation ecosystems in support of stability and security in the Indo-Pacific and beyond.”⁴³

ADVANCES IN CRITICAL AND EMERGING TECH

PRC scientists announce advanced surface material for hypersonic vehicles. According to an October article in the *South China Morning Post*, a team of PRC researchers have created a [new material](#) that, when applied on the surface of hypersonic vehicles, protects the components within the vehicle from the high temperatures caused by hypersonic flight, while still allowing wireless communication with the vehicle. The PRC has already designed hypersonic missiles, and the article claims that this new surface material could help enable the development of reusable hypersonic aircraft.⁴⁴ According to a US Congressional Budget Office [report](#), managing high temperatures is still a technical barrier to the US military's development of hypersonic technology; in fact, the report notes that dealing with the extreme heat that hypersonic weapons encounter during flight is "the fundamental remaining [technological] challenge" for US hypersonic weapons programs.⁴⁵

Taiwan acquires key technologies for domestic submarine program, but public disclosure raises concerns about the program's operational security. In late September, Taiwan officials unveiled a domestically built submarine referred to as the Hai Kun (海鲲) program.⁴⁶ Although the program is domestic, it has received foreign assistance. A 2021 Reuters investigative report describes how Taiwan has acquired [technical expertise](#) from Australia, Canada, India, South Korea, Spain, and the United States.⁴⁷ Although the program is making progress and the *Hai Kun* is expected to enter service in 2025,⁴⁸ it has faced challenges in protecting sensitive information. Specifically, in October 2023, Reuters [reported](#) that "Taiwan prosecutors...are investigating accusations that people tried to interfere in the island's submarine program and that details about [the program] were leaked."⁴⁹ The report quotes the program's director saying that an unnamed contractor who failed to win a bid may have shared information with China.

PRC is positioned to dominate deep sea mining. An October article in the *Washington Post* reports that the PRC is positioning itself to take the lead in the [emerging industry](#) of deep sea mining. The deep sea floor is home to reserves of economically important metals, such as manganese and cobalt, that are estimated to be several times larger than the reserves on land.⁵⁰ These deep sea resources are not yet [mined](#) on a large scale, and the United Nations' (UN's) International Seabed Authority (ISA)—an organization established to regulate seabed mining under the UN Convention on the Law of the Sea (UNCLOS)—is still formulating regulations for deep sea mining.⁵¹ Although the US is not a member of the ISA because it has not ratified UNCLOS, the PRC is a major donor to and participant in the organization. Some academic experts argue that the PRC uses its [influence](#) in the ISA to shape deep sea mining regulations in its favor.⁵²

The PRC may be able to gain militarily-relevant knowledge from civilian deep sea mining. Mapping the subsea floor is required for both mining and other commercial activities, such as laying subsea telecommunications [cables](#), but some academics have expressed concern that this seafloor mapping could also have implications for [undersea warfare](#). According to a *Washington Post* [report](#), PRC deep sea mining projects have received funding from PLA research programs.⁵³

ILLEGAL ACTIVITIES

Five Eyes intelligence chiefs gather publicly for the first time to warn of PRC espionage risks. In October 2023, according to the *New York Times*, the heads of leading intelligence agencies in the "Five Eyes" countries—the US, the United Kingdom (UK), Canada, Australia, and New Zealand—gathered for the first time in public since the establishment of the Five Eyes as an intelligence-sharing group in the 1940s.⁵⁴

Present at the meeting were the US FBI director, the head of the UK's Security Service (a.k.a., MI5), the Canadian Security Intelligence Service, the Australian Security Intelligence Organisation, and the New Zealand Security Intelligence Service—all organizations whose main responsibilities include countering foreign threats to their respective countries' national security.

Notably, this unprecedented meeting took place in Silicon Valley. This choice of venue was intentional as the five intelligence chiefs used the opportunity to emphasize the PRC's extensive use of espionage to target advanced technology across the Five Eyes. In the *New York Times* report, the FBI director asserted that PRC espionage was an "unprecedented threat" to innovation. He and the other intelligence chiefs said they were in Silicon Valley to make the case to technology company executives that intellectual property and technology theft by the PRC was a threat not only to their respective countries' national security but also to firms' bottom line, with PRC actors particularly targeting Silicon Valley companies. Specifically, they noted PRC targeting of AI technology both as an end in itself and as a means to augment PRC hacking capabilities.

The five intelligence chiefs also noted PRC state actors' use of [diverse tools and tactics](#) to acquire foreign technology, including hacking, pressuring Chinese students studying overseas to steal technology, and motivating PRC companies to create joint ventures with firms in the Five Eyes countries and beyond.⁵⁵ The intelligence chiefs asserted that these PRC efforts far exceed traditional espionage—which has historically been directed at government targets—because of how extensively PRC actors target the private sector and academia. In the words of Australia's intelligence chief, "The Chinese government is engaged in the most sustained scaled and sophisticated theft of intellectual property and expertise in human history."⁵⁶

Alibaba accused of engaging in espionage at European logistics hub. According to the *Financial Times*, Belgium's State Security Service (VSSE) is investigating PRC e-commerce giant Alibaba's main logistics hub in Europe over concerns about espionage.⁵⁷ The hub is located at Liege Airport in eastern Belgium, which is Europe's fifth-largest cargo airport by cargo tonnage.⁵⁸ In 2018, Alibaba signed an agreement with the Belgian government to invest 100 million euros in developing logistics infrastructure at the facility.⁵⁹

Since then, the VSSE has become increasingly concerned about security vulnerabilities by Alibaba subsidiary Cainiao at the airport. In particular, the VSSE expressed concern about Cainiao software used at the Liege facility to manage logistics and Cainiao's data access at the logistics center. The report cites an unnamed source "familiar with Alibaba's relations to China's government," who asserts that the logistics center is expected to "report data about European trade and logistics to Beijing's authorities."⁶⁰ One pathway by which Cainiao could share this data is through Alibaba's Electronic World Trade Platform (ETWP).⁶¹ EWTP is intended to facilitate global e-commerce, but Belgian authorities have raised concerns that the platform could compile data that would give Beijing insight into pan-European supply chains and vulnerabilities.⁶²

NOTES

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