



Intersections, a news digest published by CNA’s China and Indo-Pacific Security Affairs Division, describes the interplay between the People’s Republic of China’s (PRC) technology acquisition efforts, US and partner nation responses to those efforts, and the critical and emerging technology risks for the US defense industrial base.¹ This issue covers recent legal, policy, and institutional changes by Beijing, the details of which have become public following the PRC’s Two Sessions meetings in March 2023. Although diverse in nature, taken together these changes are aimed at enhancing Chinese Communist Party (CCP) control over the activities of people and businesses, both foreign and domestic, that operate within the PRC, as well as control over what leaves China—be it information such as personal data or intellectual property (IP), materials such as rare earths, or even people under investigation. As in previous issues, we also examine US and allied actions to protect technology, as well as recent technological advances. Click [here](#) to read *Intersections* in your [browser](#).

THIS ISSUE’S CONTENTS

PRC Changes Following the Two Sessions.....	2
Institutional Reforms	2
Legal Changes	3
Recent PRC Regulatory Actions.....	3
Recent US, Ally, and Partner Developments	5
PRC Advances in Critical and Emerging Tech	6
Key PRC Laws, Policies, and Regulations.....	7

PRC CHANGES FOLLOWING THE TWO SESSIONS

In PRC political jargon, the “Two Sessions” (*Lianghui*, 两会 in Mandarin) refers to two major annual [gatherings](#): the meeting of the National People’s Congress (NPC) and the Chinese People’s Political Consultative Conference (CPPCC).² The former is China’s legislature, and the latter is a consultative body consisting of CCP representatives, as well as those from other small political parties that are legally allowed to exist in China but that exercise no real power. Both the NPC and CPPCC typically meet in March each year, and CCP leaders often use the occasion to announce key institutional, legal, and regulatory changes, making the Two Sessions a key set of events for foreign observers to monitor developments in China.

INSTITUTIONAL REFORMS

Major reforms increase CCP control over finance, science and technology (S&T), and other key areas.

In March 2023, the PRC State Council³ announced major organizational [changes](#) to various institutions both within the CCP and in the PRC’s formal governmental structure.⁴ Significant changes include the following:

- Establishing two new Central Commissions, one for Finance and another for S&T, and placing both under the CCP Central Committee
- Making changes to the PRC’s financial regulatory structure by establishing a new National Financial Regulatory Administration under the State Council
- Establishing a new National Data Bureau for developing fundamental data systems and the integration, sharing, development, and utilization of data resources and advancing a “digital China” and a digital economy
- Elevating the status of China’s regulatory body for IP by placing it directly under the State Council⁵

Many of these changes reflect an effort to enhance direct CCP control over the bureaucracy. Especially noteworthy are CCP decisions to create new Central Commissions for Finance, and for S&T, to give these bodies broad authority over PRC financial and S&T policy, respectively, and to place both directly under the [CCP Central Committee](#) as CCP bodies—rather than as PRC governmental organizations under the State Council.⁶ These examples show the CCP leadership’s intent to bypass the formal state bureaucracy and exercise more direct control over China’s financial system and S&T efforts.

Additional organizational changes similarly show an intent by CCP leadership to more directly control functions deemed critical to the PRC economy and innovation. For example, under the reorganization, the China National Intellectual Property Administration, which oversees the administration of IP rights in China, has been elevated from its status under a lower-level agency, the State Administration for Market Regulation, to one in which it instead reports directly to the State Council, placing it closer to the apex of CCP leadership.⁷

The impact of these changes remains to be seen. Yet, current efforts to boost funding for S&T are consistent with the CCP’s goal of ensuring that S&T research serves the Party’s agenda. During the Two Sessions, Premier Li Keqiang [stated](#) that overall spending on “R&D had risen from 2.1 percent to over 2.5 percent of GDP over the past five years,” and the draft budget from the Ministry of Finance indicated an increase in central government spending on S&T.⁸

LEGAL CHANGES

PRC expands counter-espionage law. In April 2023, the NPC approved a revision of the PRC's 2014 counter-espionage law that will go into effect on July 1. According to a *Reuters* report, the revised law expands the authority of anti-espionage investigators to access data, electronic equipment, and personal property information, and to prohibit border crossings. The report also states that the revised law categorizes cyberattacks as espionage and places all documents, data, material, and items relating to "national security and interests" under the same protection as state secrets.⁹

Media reports assert that these legal changes could increase risks for foreign businesspeople, journalists, and academics operating in China.¹⁰ For example, a [CNN](#) report notes that the law's expansive definition of matters related to "national security" could potentially include research on sensitive subjects, such as collecting data on the PRC economy or COVID-19 deaths.¹¹ Tellingly, the CNN report also notes that there has been a recent increase in the PRC of investigations into foreign businesses and arrests of foreign businesspeople.¹²

RECENT PRC REGULATORY ACTIONS

Recent PRC regulatory actions may be intended to send a message to the US and its allies. *The Financial Times* [reported](#) on 16 April that recent PRC regulatory actions against US, Japanese, and UK companies may be intended to signal Beijing's displeasure to the US and its partners for implementing technological and economic restrictions against the PRC. Specifically, the article cites [new sanctions](#) placed on Lockheed Martin and Raytheon, a [raid](#) on US due diligence firm Mintz, the [detention](#) of a Japanese pharmaceutical company executive, and a "record fine" [levied](#) against the UK firm Deloitte.¹³ Of note, in April 2023 [comments](#) on the US-China relationship, Treasury Secretary Janet Yellen stated that "we are concerned about a recent uptick in coercive actions targeting US firms."¹⁴

PRC launches cybersecurity investigation of Micron. In March, the Cyberspace Administration of China (CAC) announced that it had launched an investigation into US semiconductor manufacturer Micron to "safeguard the security of the information infrastructure supply chain, defend against hidden product issues that pose cybersecurity risks, and to protect national security."¹⁵ Various US media reports speculate that the investigation is retaliation for US regulations curtailing PRC access to high-end semiconductor chips.¹⁶ According to *The South China Morning Post*, China's investigation of Micron could benefit local PRC [companies](#) and encourage domestic production of alternatives.¹⁷ However, reporting on the investigation varies regarding how possible punitive action against Micron would affect the PRC. Although [some media reports](#) argue that Beijing has mitigated risks by targeting a US company that already has a relatively advanced PRC competitor (Yangtze Memory Technologies Company), [others](#) note that the combination of current US sanctions and PRC measures against Micron could further limit PRC access to advanced memory chips like those that Micron produces.¹⁸

Other possible beneficiaries of the PRC's investigation of Micron are South Korean chip-making companies. Companies such as Samsung Electronics and SK Hynix are Micron's competitors and may gain new clients as PRC companies shift their supply chains to reduce their exposure to Micron.¹⁹ Notably, *The Financial Times* reported on April 24 that the Biden administration asked the South Korean government to tell its semiconductor companies not to fill any [market gaps](#) that occur if Micron is banned from the PRC.²⁰

PRC considers banning export of rare earth technologies. An April 2023 article in *Nikkei Asia* reported that the PRC may [prohibit](#) the export of certain rare earth technologies. Specifically, the article cites a draft of possible amendments to the PRC technology export restriction list that was published for comment in December 2022, and further states that the proposed revisions would ban or restrict the export of technology used in processing and refining rare earths as well as alloy technology used for making high-performance rare earth magnets. Given the PRC's strength in rare earths, the article notes that this move may be meant to counter US and partners' restrictions on the PRC technology sector. Any changes are expected to go into force this year.²¹

As of 2022, [the PRC accounts for](#) 63 percent of the world's rare earth mining, 85 percent of rare earth processing, and 92 percent of rare earth magnet production. The rare earth sector has national security implications: rare earth products are used in a variety of US military systems, including the *Virginia*-class submarine and the F-35.²² The PRC considering rare earth export bans as a political tactic is not unprecedented; of note, in 2010, the PRC [blocked](#) exports of rare earths to Japan following tensions over the disputed Senkaku/Diaoyu islands.²³

PRC imposing licensing requirements on undersea cable projects through the South China Sea.

According to a *Financial Times* [article](#), the PRC has recently begun to impose increasingly stringent permitting requirements for undersea cable projects that pass through its territorial waters. Beijing is also starting to require a permit for projects whose routes run through Beijing's claimed maritime areas within the "nine-dash line" in the South China Sea.²⁴ Of note, the PRC recently delayed a cable project owned by a three-way PRC-Taiwan-US consortium that would pass through PRC territorial waters near Hong Kong and would connect Japan, Taiwan, Hong Kong, and Singapore, citing concerns the cable could be used to enable foreign espionage.²⁵

According to two cable industry executives, the PRC has begun requiring companies to seek permits for cables in Beijing's claimed Exclusive Economic Zone areas in the South China Sea, in apparent contravention of international maritime law.²⁶ The executives assert that this permitting process gives Beijing a "seat at the table" in projects allowing the PRC to impose requirements such as providing the PRC government with detailed data on proposed project routes, or requiring that a PRC company join project consortiums. These PRC permitting requirements can be viewed as an example of [bargaining](#), an economic tactic whereby Beijing demands that foreign companies agree to various conditions in exchange for access to PRC territory or markets.²⁷ The key difference in the case of subsea cables is that the PRC is now attempting to impose such conditions extraterritorially over Beijing's claimed maritime areas.

China's Cyberspace Administration publishes draft measures to control the development of generative AI.

On April 11, the CAC released draft regulations for public comment titled "Administrative Measures for Generative Artificial Intelligence Services."²⁸ According to the draft, the purpose of these regulations is to "promote the healthy development and standardized application of generative artificial intelligence."²⁹ The draft measures state that generative AI "should reflect the core values of socialism" and should not "undermine national unity" or disrupt the social or economic order.³⁰ The CAC measures were published about a week after US technology companies published an [open letter](#) calling for a moratorium on AI development.³¹ The open letter calls for a "six-month pause in developing systems more powerful than OpenAI's newly launched GPT-4" to evaluate more fully the potential societal risks of these types of AI systems.³² Although the new regulations do not specify whether PRC companies will take part in the moratorium, the draft measures state that organizations and individuals using generative AI products "assume the responsibility of the produced content" and before providing services "a security assessment

shall be submitted to the National Network Information Department that ensures compliance with cyberspace regulations already in place.”³³

RECENT US, ALLY, AND PARTNER DEVELOPMENTS

US Commerce Department adds entities associated with PRC spy balloon program to export control list. In February, the US Department of Commerce’s Bureau of Industry and Security (BIS) added six PRC aerospace and technology entities to the [Entity List](#) for supporting PRC military programs, including programs related to airships and balloons.³⁴ BIS actions are in response to the overflight, of a PRC high-altitude [balloon](#) across the continental US. According to US media reporting, the balloon flew over a US Air Force base in the state of Montana and attracted nationwide attention before ultimately being shot down by the US military off the US East Coast.³⁵

The recent addition of these PRC firms and research institutes to the BIS Entity List highlights the challenge of identifying and restricting exports to the vast network of PRC entities that provide support to the People’s Liberation Army (PLA). Many of these entities have little publicly available information about their activities, and there is not always an obvious connection to the PLA. As a result, US firms may be inadvertently providing technology to these military programs via their relationships with PRC intermediate entities. In the case of China’s surveillance balloon program, for example, a recent NBC News [article](#) notes that a California-based US technology firm “owns an 85% stake in a Chinese subsidiary that produces materials for semiconductors and has counted as one of its biggest customers” a PRC defense firm linked to the balloon program.³⁶ One division of this defense firm, China Electronics Technology Group Corp., is one of the six entities added to the Entity List.³⁷

Technology sharing between Australia, the UK, and the US expands as AUKUS partnership takes shape. The Australia-United Kingdom-United States ([AUKUS](#)) partnership was announced in September 2021 to “foster deeper integration of security and defense-related science, technology, industrial bases, and supply chains” and to “support security and defense interests” of all three countries.³⁸ According to US-Australia experts, AUKUS is a technology-sharing initiative.³⁹ The main pillars center on technology cooperation for nuclear submarines and other advanced capabilities.⁴⁰

The AUKUS announcements in 2021 focused on four advanced capabilities for trilateral development:

- Undersea systems, including autonomous underwater vehicles
- Quantum technologies to “accelerate investments to deliver generation-after-next quantum capabilities”
- AI focused on “accelerating adoption, and improving the resilience of, autonomous and AI-enabled systems in contested environments”
- Cyber capabilities, including “protecting critical communications and operations systems”⁴¹

In 2022, the AUKUS partners also initiated work on four additional areas: hypersonic and counter-hypersonic capabilities, electronic warfare, defense innovation, and information sharing.⁴²

UK launches new organization to link MI5 and business, academic communities. In March 2023, the UK [established](#) the National Protective Security Authority (NPSA) as part of MI5 to strengthen Britain’s economic security against hostile state actors.⁴³ Originally a counterterrorism organization focused on protecting critical infrastructure, the NPSA’s [mandate](#) has now been expanded to include threats to the UK’s

strategic technology advantage, such as IP theft. The NPSA uses intelligence to inform its development of physical, personnel, and cybersecurity [guidance](#) that is accessible to public and private institutions. With this guidance, the NPSA hopes to engage with a variety of organizations, raise awareness of the risks that state actors pose toward industry, and better protect the UK's citizens, infrastructure, economy, and science and technological advantage.⁴⁴

PRC ADVANCES IN CRITICAL AND EMERGING TECH

The PRC Ministry of Science and Technology launches the “AI for Science” initiative. In March, the Ministry, along with the National Natural Science Foundation, launched a “special [deployment](#) of ‘AI for Science,’” focused on such areas as drug and genetic research, biological breeding, and new material research.⁴⁵ The initiative is part of the PRC government's efforts to implement the “Next Generation AI Development Plan,” announced in 2017,⁴⁶ which is an aspirational blueprint for China's AI technology goals out to 2030.⁴⁷ Since the release of the plan, the Ministry has created an “AI Planning and Promotion Office” to integrate funding, attract talent, and “accelerate the construction of a national open innovation platform.”⁴⁸ These AI initiatives are examples of [boosting](#), a tactic where Beijing creates talent recruitment and funding opportunities in an effort to drive progress on technologies that PRC leaders deem vital to China's economic, and often military, objectives.

Recent report argues PRC has established lead in multiple critical and emerging technologies. A February 2023 [report](#) by the Australian Strategic Policy Institute (ASPI) found that, between 2018 and 2022, the PRC published the largest number of “high-impact” (i.e., the 10 percent most-cited) scientific papers in 37 out of 44 tracked strategic technologies, including advanced aircraft engines and advanced radio frequency communications.⁴⁹ According to ASPI, high-impact research output can provide useful insight into nations' future technological capabilities and current technological priorities because high-impact papers are more often referenced in patents and thus have an outsized impact on scientific, technological, and commercial innovation. However, there are limitations to this metric. To take just one limitation, as the report notes, high-impact research does not necessarily translate into manufacturing capability. For instance, although PRC researchers have published high-impact work on advanced aircraft engines, the PRC still struggles to manufacture reliable jet engines.

ASPI also collected data on where the authors of highly cited papers were trained and where they worked when they published their high-impact work. According to ASPI's own ranking based on these data, PRC institutions are often among the top institutions worldwide publishing the most high-impact research in the 44 strategic technology areas. ASPI has made their data publicly available through the [ASPI Critical Technology Tracker](#).

PRC a leader in developing sodium batteries, promising similar performance as lithium batteries at lower cost. According to an April 2023 *New York Times* [article](#), China is making rapid advances in developing what promises to be a significant advance over current lithium-ion battery technology: sodium-ion batteries.⁵⁰ Although not yet ready for widespread commercialization, sodium-ion batteries have several potential advantages over lithium-ion batteries, including sodium's widespread availability and lower cost as an input material, and sodium-ion batteries' faster charging time and resistance to overheating.⁵¹

The PRC's increasing investment in new battery technologies reflects an increasing awareness that energy storage is a critical technological enabler. Countries are moving both individually and collectively to secure the critical minerals necessary for advanced battery production. Of recent note, in March 2023, the US and

Japan signed a new [agreement](#) in which the two countries agreed not to impose export duties on lithium, cobalt, manganese, nickel, and graphite—all minerals commonly used in battery production.⁵² US officials have also indicated that their objective in pursuing such deals with “like-minded partners” is to “ensure the United States and allies and partners are not reliant on other countries [e.g., China] for critical minerals.”

KEY PRC LAWS, POLICIES, AND REGULATIONS

The PRC uses [lawfare](#) to improve its military capabilities and gain advantage in international competition, including acquiring emerging and critical technology.⁵³ In the past several years, the PRC has passed a number of laws, policies, and regulations—such as the just-revised counter-espionage law discussed earlier in this issue—with potential implications for the US and its allies and partners. These measures are implemented at various levels and affect the security and economic activities of individuals, businesses, and organizations. We organize these laws, policies, and regulations according to four categories: (1) national security, (2) military-civil fusion, (3) export controls, and (4) investment laws, as shown in the figure below. For more information, see our [briefing](#) on this topic.⁵⁴

Categories of Laws, Policies, and Regulations

National security laws aim to strengthen PRC and Chinese Communist Party (CCP) control over claimed territories, people, and interests.



Military-civil fusion (MCF) enhances collaboration between civilian organizations and the PLA, often blurring the line between technology end-users.



Export controls aim to secure PRC manufacturing inputs and could disrupt foreign supply chains or be used to retaliate against foreign sanctions.



Investment laws protect sensitive domestic sectors, encourage investment in key technologies, and create avenues for CCP involvement in companies.



NOTES

¹ *The People's Republic of China Uses Diverse Tools to Access Foreign Technology and Critical Infrastructure*, CNA, Apr. 2022, <https://www.cna.org/quick-looks/2022/PRC-USES-TOOLS-TO-ACCESS-FOREIGN-TECHNOLOGY.pdf>.

² For more explanation of the "Two Sessions," see: Helen Davidson, "Explainer: What Is China's 'Two Sessions' Gathering, and Why Does It Matter?" *The Guardian*, Mar. 1, 2023, <https://www.theguardian.com/world/2023/mar/02/china-two-sessions-explainer-what-is-it>.

³ The PRC State Council is an organ often referred to in Western media as China's "cabinet" that is formally the PRC government's highest executive body, but in practice is composed exclusively of the most senior CCP leaders, and whose role is to implement the CCP leadership's directives via issuing regulations and overseeing the PRC bureaucracy.

⁴ "CCP Central Committee and State Council Publish 'Party and State Organizational Reform Plan'" (中共中央 国务院印发《党和国家机构改革方案》), PRC State Council, Mar. 16, 2023, http://www.news.cn/politics/zywj/2023-03/16/c_1129437368.htm.

⁵ Ibid.

⁶ The Central Committee is the CCP's third-highest decision-making body, after the Politburo Standing Committee and Politburo. For a primer on CCP and state institutions and how the CCP exercises control over the Chinese state, see: "Understanding the Black Box of Chinese Politics: FAQ on the Chinese Political System," *Asia Society Policy Institute*, accessed May 1, 2023, <https://asiasociety.org/policy-institute/decoding-chinas-20th-party-congress/introduction-black-box-chinese-policy>.

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¹² Ibid.

¹³ Edward White and Kana Inagaki, "China Starts 'Surgical' Retaliation Against Foreign Companies After US-Led Tech Blockade," *Financial Times*, Apr. 16, 2023, <https://www.ft.com/content/fc2038d2-3e25-4a3f-b8ca-0ceb5532a1f3>.

¹⁴ Janet L. Yellen, "Remarks by Secretary of the Treasury Janet L. Yellen on the U.S. - China Economic Relationship at Johns Hopkins School of Advanced International Studies" (Washington DC, Apr 20, 2023), <https://home.treasury.gov/news/press-releases/jy1425>.

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- ²⁵ “China Exerts Control over Internet Cable Projects in South China Sea.”
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- ²⁷ For more on the PRC government’s tactic of “bargaining,” see: Rose Tenyotkin, April Herlevi, Alison Kaufman, and Anthony Miller, *Economic Statecraft: How China Legally Accesses Foreign Technologies to Build Military Capabilities*, CNA, June 2020, <https://www.cna.org/reports/2020/08/DRM-2020-U-027240-1Rev.pdf>.

²⁸ "Notice of the Cyberspace Administration of China on Public Solicitation of Comments on the 'Administrative Measures for Generative Artificial Intelligence Services (Draft for Comment)'" (国家互联网信息办公室关于《生成式人工智能服务管理办法（征求意见稿）》公开征求意见的通知), Cyberspace Administration of China, Apr. 11, 2023, http://www.cac.gov.cn/2023-04/11/c_1682854275475410.htm.

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⁴⁰ US White House, "FACT SHEET: Implementation of the Australia – United Kingdom – United States Partnership (AUKUS)," Press Statement, Apr. 5, 2022, <https://www.whitehouse.gov/briefing-room/statements-releases/2022/04/05/fact-sheet-implementation-of-the-australia-united-kingdom-united-states-partnership-aukus/>. Force posture is also part of AUKUS.

⁴¹ Ibid.

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