# Science and Technology Commission of the CMC of the Communist Party of China

STC, Military-Civil Fusion, and the Inner Map of China's Military Technology Innovation

中央军事委员会科学技术委员会, STC

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# Chapter 1. Xi Jinping's National Defense Decision-Making System and the Strong Army Dream

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## 1. The Starting Point of Military Reform

On the morning of January 11, 2011, a gray fighter jet lifted off from a runway in Chengdu. It was the maiden test flight of the stealth fighter known as the J-20. That same day in Beijing, U.S. Secretary of Defense Robert Gates sat across from President Hu Jintao.

When Gates raised the subject of that flight, Hu and the civilian leaders beside him appeared to be hearing about it for the first time. The supreme leader of a nation had learned of his own country's new weapon's first flight from the mouth of a foreign guest. *Understanding China's National Security Decisionmaking* reads this moment as evidence of a fragmented system in which the defense industrial sector operated independently of the People's Liberation Army (PLA, 中国人民解放军) and the Ministry of Foreign Affairs.

The problem had a name: information silos. A stovepiping phenomenon, in which each agency held onto its information and passed it neither sideways nor upward, had hardened over many years. As a result, only incomplete and inaccurate flows of information reached the supreme decision-maker. The J-20 incident was merely one window that exposed the structure in plain view. This fracture had been foreshadowed a full decade earlier.

In April 2001, a U.S. Navy EP-3 reconnaissance aircraft and a Chinese fighter jet collided in the skies near Hainan Island. The PLA rushed to report that the American aircraft had suddenly changed course and caused the collision. Before long, however, the negligence of Chinese pilot Wang Wei came to light.

Records indicate that President Jiang Zemin sharply rebuked the military at the time for its lack of strategic awareness. The judgments the military sent up the chain diverged from fact at the very moment of a supreme national crisis. The national defense decision-making system that Xi Jinping's leadership inherited carried these defects within it.

The broad direction of reform emerged from a single objective: by 2049, build a world-class military and realize the China Dream (中国梦) of the great rejuvenation of the Chinese nation together with the Strong Army Dream (强军梦). This objective marked a clear departure from the course of the past. After the reform and opening-up era, Deng Xiaoping's discourse on military modernization rested on the strategic assessment that a world war would not break out for the foreseeable future. Under that judgment, resources were channeled toward economic growth, and the national defense decision-making system and military innovation were pushed to the back seat. For a long time, reorganizing the military was not treated as an urgent task.

The external environment shook that premise. China's economic rise, the spread of advanced technologies called the Fourth Industrial Revolution, and the deepening of U.S.-China great-power competition converged. A sense of crisis grew that an outdated military system could not cope with Intelligentization warfare, in which artificial intelligence (AI) reshapes the sequence of command and judgment. Intelligentization is difficult to reduce to a story about individual weapons fitted with AI.

It refers to a current that seeks to restructure the very fabric of war so that machines support a commander's decisions amid information overload. Xi Jinping's leadership concluded that if this transition were missed, the Strong Army Dream would be lost with it.

And so, beginning in late 2015, a broad military transformation was launched, binding concept-driven and technology-driven reform together. The first thing addressed was the arrangement of authority. In the fragmented system, subordinate agencies had monopolized information and exercised authority at their own discretion; that practice had to be severed. Xi Jinping's leadership pulled the axis of decision-making firmly toward itself.

In 2013, it established the Central National Security Commission (CNSC, 中央国家安全委员会) to tighten coordination among national security agencies. Within the military, it installed the Chairman Responsibility System (军委主席负责制) and restructured the chain of command so that authority converged on the single person of the Central Military Commission (CMC, 中央军事委员会) chairman. The problem of information scattering past the leader was to be solved by channeling everything toward the leader.

The redistribution of power brought a human problem in tow. After 2002, the PLA had gradually gained autonomy from Communist Party direction, and in that gap, guanxi (關係), the informal networks of patronage and loyalty, took deep root. Corruption spread. Factionalism degraded the efficiency of judgment and ate into combat readiness. Xi Jinping used anti-corruption as his mandate to push through an unprecedented purge of the military leadership.

This current is reported to have continued into the present. As of January 2026, CMC Vice Chairman Zhang Youxia and Joint Staff Department Chief of Staff Liu Zhenli were under investigation for violations of discipline and law, and five of the six uniformed CMC members appointed since 2022 are reported to have been removed. Reports also indicate that a significant number of flag-rank officers in the Navy were dismissed from their posts. That said, Xi Jinping's personal motives or the inner reasoning that drove this purge cannot be confirmed from available sources; the stated purposes the sources identify are the elimination of corruption, the restoration of Party control, and the establishment of the Party's absolute leadership over the military.

The final problem was the shape of the body itself. Due to the long tradition of a continental army (大陸軍), a distorted structure persisted in which the Army accounted for more than 70 percent of total troop strength. According to *Research on Military Innovation in China Under Xi Jinping*, command and operations revolved around four General Departments, the General Staff Department, General Political Department, General Logistics Department, and General Armament Department, along with seven Military Regions. This framework was bound by geographic boundaries and far too rigid to handle modern joint operations that weave together naval, air, space, and cyber forces.

This problem, too, was addressed. Xi Jinping cut 300,000 troops, targeting primarily the political apparatus, non-combat support personnel, and the Army. As a result, by 2019 the Army had shrunk to 975,000, falling below 48 percent of total troop strength for the first time in the history of China's armed forces.

The principles of command were also rewritten in new language. A framework was established: the CMC exercises overall management, the Theater Commands take the lead in operations, and the services focus on force building (军委管总□战区主战□军种主建). The four General Departments were dissolved and reorganized into fifteen functional departments under the CMC, proportionally expanding the CMC's direct control. Operational command shifted from seven Military Regions to a system of five Theater Commands covering East, West, South, North, and Central, with each Theater Command directing the Army, Navy, Air Force, and Rocket Force units within its area under a single authority.

To break the inertia of the Army's dominance over the entire military, an Army Leadership Organ was established on December 31, 2015, placing the Army on equal footing with the other services. The attempt to untie three knots at once, information silos, weakened Party control, and continental army inertia, was the starting point of this reform.

The knots did not stop at three. The ecosystem behind building and procuring weapons also needed overhauling. According to *China's Defense Modernization Objectives and R&D Ecosystem*, China's weapons and equipment development had been weighed down by monopolies and unregulated supplier relationships, weakening the PLA's bargaining power and slowing innovation. Weapons and Equipment Development Strategies and Weapons and Equipment Construction Plans, drawn up in 20-year, 10-year, and 5-year cycles, laid out technology roadmaps, but an outdated system made it difficult to execute those plans properly.

The Xi Jinping administration dissolved the General Armament Department in 2016 and established the Equipment Development Department (EDD, 中央军事委员会装备发展部) under the CMC, consolidating control over weapons development and procurement for all services in one place. In the same current, it established the CMC Science and Technology Commission (STC, 中央军事委员会科学技术委员会) and charged it with the strategic management of defense science and technology and the military application of emerging technologies, in a role compared to America's DARPA. Military-Civil Fusion (MCF, 军民融合), formalized in 2015, was elevated to the status of a core national strategy, and in 2017 the Central Commission for Military-Civil Fusion Development (CMCFDC, 中央军民融合发展委员会), chaired personally by Xi Jinping, was established to serve as a conduit for drawing civilian commercial technologies such as AI, cloud computing, and quantum computing into military research and development. This concept later evolved into the Integrated National Strategic System and Capabilities (NSI, 一体化国家战略体系和能力), advancing toward binding the civilian, military, and economic spheres into a single framework.

The reorganization of technology also carried the intent of compensating for human limitations. Having fought no major conflict since the 1979 Sino-Vietnamese War, the PLA was permeated by a lethargy called "Peace Disease," and a diagnosis known as the Five Incapables had been issued, identifying commanders' inability to judge situations, understand higher-level intent, make operational decisions, deploy forces, or handle unexpected contingencies. Through mechanization and informatization, equipment had advanced, but the data flooding commanders outpaced what humans could process, bringing information overload in its wake. This is why Intelligentization, the integration of AI into operations, was placed at the heart of the 2027 and 2035 Strong Army

milestones.

What followed was the effort to introduce AI-based decision-support systems at tactical and strategic levels to compress the OODA loop of observe, orient, decide, and strike, and to find new command-and-control methods for autonomous weapons and drone swarms. To underpin this, the Strategic Support Force (SSF, 中国人民解放军战略支援部队) was established in 2015, unifying cyber, space, and electronic warfare capabilities. In April 2024, the SSF was dissolved and reconstituted as the Information Support Force (ISF, 中国人民解放军信息支援部队), intended to serve as the neural hub for multi-domain operations.

## 2. How the Strong Army Dream Operates

In April 2023, Tai Ming Cheung took the witness seat at a hearing of the U.S.-China Economic and Security Review Commission in Washington. He is a researcher who has long tracked defense innovation. The question his testimony aimed at was a single one: Is the Strong Army Dream a slogan, or a running machine?

The Strong Army Dream is the military vision that underpins the China Dream, the ambition to make China a world-class power by the middle of the twenty-first century. It is the Xi Jinping-era objective of transforming the PLA into a military of the highest caliber in the world. The first point at which this vision turns is the way the Chinese Communist Party defines security. In 2014, President Xi Jinping introduced the Holistic National Security Concept. It is a framework that binds political, territorial, military, economic, cultural, social, technological, and information security into a single construct.

Within this framework, economic and technological issues are translated into military issues. For the Communist Party, national security is a concept inseparable from regime survival and political stability. A vigilance toward external forces that might destabilize internal order is embedded in the concept. The broader the definition of security, the broader the military's mission grows with it.

This security concept descends into a concrete directive called the Military Strategic Guidelines (MSG). The Military Strategic Guidelines assess the security environment and designate the main strategic opponent and the main strategic direction. Since the 2000s, China has identified the United States as its main strategic opponent. Since the early 1990s, it has set Taiwan as its top strategic direction. Resources have been channeled in that direction, toward force development geared to worst-case scenarios.

China's leadership harbors, atop a Marxist-Leninist worldview, the fear that a declining hegemon may resort to conflict to suppress a rising challenger. The worst-case assumption, reading American actions as attempts at regime change or containment, becomes the lens of threat assessment. The logic that only a strong military can protect sovereignty and development interests flows from this lens. That logic is both the justification and the engine driving the Strong Army Dream.

The Strong Army Dream's implementation leads directly into a military-technological competition against the United States. China has long held the conviction that military strategy is determined by

technological development. The shock of witnessing the destructive power of advanced technology and information warfare during the 1991 Gulf War was profound. In the wake of the U.S. bombing of the Chinese embassy in Belgrade in 1999, China established the 995 Project Leading Small Group to oversee the development of key deterrence weapons.

These are the traces of a long drive to overcome technological inferiority. In the Xi Jinping era, the theater of war is shifting past mechanization and informatization toward Intelligentization warfare. Intelligentization warfare denotes a doctrinal transformation in which artificial intelligence, big data, cloud computing, and unmanned systems restructure the sequence of command, reconnaissance, and strike. It is a matter of a different order from improving the performance of a single weapon.

China acknowledges that the United States holds a lead in military power. At the same time, it judges emerging technologies such as AI to be game changers and asymmetric forces capable of neutralizing existing advantages. Underlying this is the concept of overtaking on the curve, the idea that a latecomer can pass the leader at the bend in the road.

This judgment is institutionalized through the medium- and long-term Weapons and Equipment Development Strategy (WEDS) and the five-year national defense plans. The outline of the 15th Five-Year Plan (2026-2030) states explicitly that the era of great-power competition is growing more complex and intense. It calls for technological self-reliance in the face of sanctions and long-arm jurisdiction. It designates the rapid fielding of autonomous weapons and drone swarms and the development of quantum and space technologies as central to national security.

These directives, however, are the language of objectives and plans. How much has actually been deployed to operational units is difficult to determine from these documents alone.

The Strong Army Dream runs two reforms simultaneously. One is the hardware reorganization inside the military; the other is a software reform that fuses national resources. The military organizational restructuring began moving at the end of 2015. Troop strength was reduced by 300,000.

The four General Departments, the General Staff Department, General Political Department, General Logistics Department, and General Armament Department, were dissolved and consolidated into fifteen functional departments under the CMC. This was a reorganization that concentrated power in the CMC. The seven Military Regions, oriented toward continental defense and Army-centric operations, were reconstituted into five Theater Commands spanning maritime and space operations as well: East, West, South, North, and Central. The goal of this restructuring was a command architecture capable of conducting joint operations.

New units were also established to house new combat capabilities. In 2015, the Strategic Support Force (SSF, 中国人民解放军战略支援部队) was created to handle cyber, space, and electronic warfare. In 2024, it was restructured again, and the Information Support Force (ISF, 中国人民解放军信息支援部队) was established to consolidate control over information, cyber, and cognitive warfare. This is part of a current described as "new-quality combat capabilities," though the translation and scope of that term remain unsettled.

Policy slogans and actual military capabilities should not be read as carrying the same weight. The Equipment Development Department (EDD, 中央军事委员会装备发展部), which oversees weapons procurement and research and development, serves as one pillar of this restructuring. The other pillar is the CMC Science and Technology Commission (STC, 中央军事委员会科学技术委员会), which leads defense scientific research and emerging technologies. The STC is compared to America's DARPA.

The two organizations cannot be treated as equivalents. Primary sources that would confirm its internal budget, personnel, and projects remain thin.

The name of the software reform is Military-Civil Fusion (MCF, 军民融合). It is a strategy to draw civilian commercial technologies and innovation capacity into the military sector to compensate for deficiencies in military research and development. This concept has expanded into the Integrated National Strategic System and Capabilities (NSI, 一体化国家战略体系和能力; also rendered in English as INSS), which binds the civilian economy, national security, and defense infrastructure into a single unified system. The integration process operates under the control of the Central Commission for Military-Civil Fusion Development (CMCFDC, 中央军民融合发展委员会), led personally by President Xi Jinping, and the Central Science and Technology Commission (CSTC, 中央科技委员会), a Party-state body newly established in 2023. This CSTC is a different organization from the CMC Science and Technology Commission (STC, 中央军事委员会科学技术委员会) mentioned above.

Because the abbreviations are similar, they are easily confused and must be read as distinct entities. Within this system, the AI, cloud computing, and data capabilities of Big Tech firms such as Baidu, Alibaba, and Tencent are absorbed into the military sector. Command and control, battlefield situational awareness, drone swarm control, and decision-support systems are the outlets of that absorption. The Strong Army Dream operates as a mobilization system that dissolves the boundary between national defense and the civilian economy and channels the nation's intellectual and material resources into military-technological competition.

This mobilization unfolds according to a timetable. The year 2027 marks the centennial of the PLA's founding. It is the near-term milestone for accelerating the development of Intelligentized weapons and raising joint operational capabilities. The year 2035 is the mid-term milestone for basically completing the modernization of national defense and the military.

The year 2049 is the centennial of the founding of the People's Republic of China and the final target for building a world-class military that matches or surpasses the U.S. armed forces. The three dates show that the Strong Army Dream moves not as a slogan but as a machine running on a timetable. Returning to the question posed in the hearing room, the answer lies within that timetable.

The pieces that make up the Strong Army Dream are not separate spinning parts but interlocking gears in a single feedback loop. Threat perception gives birth to military strategic guidelines, those guidelines descend into weapon and equipment development strategy and five-year national defense plans, and the plans take physical form through military reorganization and Military-Civil Fusion. The military power grown through this process invites an American response, and that response is read as confirming evidence for the premise that a declining hegemon will try to suppress a rising challenger. Preparation against threats breeds more threats, and those threats justify further preparation.

On a deterministic worldview, the loop feeds itself, and the more Military-Civil Fusion draws civilian achievements into the military, the tighter the cycle becomes. Much of the force that keeps the Strong Army Dream in motion comes from this self-confirming structure.

At the center of this loop sits the concentration of power. Dismantling the four General Departments, including the General Staff Department and the General Political Department, and gathering their authority under the Central Military Commission (CMC); unifying the Equipment Development Department (EDD), which handles weapons procurement, and the Science and Technology Commission (STC), which leads defense scientific research, beneath it. It is difficult to see this reorganization as aimed solely at command efficiency. Military-Civil Fusion, which pulls civilian technological capacity into the military sector, is led by the Central Commission for Military-Civil Fusion Development, chaired by President Xi Jinping himself, with the Party and state's Central Science and Technology Commission placing a controlling hand above it.

This arrangement reveals that final authority over defense decision-making is converging on one person and the handful of bodies he leads. The Strong Army Dream is a vision for building up the military, but it is also a political restructuring that pulls toward the center the authority to move that military.

Authority converges in one place because the Strong Army Dream is entangled with the legitimacy of the system itself, not just military planning. For the Chinese Communist Party, national security cannot be separated from regime stability, and the promise to build a world-class military is bound to the larger narrative of the great rejuvenation of the Chinese nation. The logic that a strong military safeguards sovereignty and development interests is at once a matter of security and a language of governance. Where military achievement is translated directly into systemic achievement, the Strong Army Dream's timetable functions as both a military schedule and a schedule of promises the regime has made to its people. Because this circuit of legitimacy exists, large-scale mobilization of resources and upward concentration of authority are justified with little resistance.

Reading this picture, however, requires weighing the language carefully. The Holistic National Security Concept, intelligentized warfare, new-quality combat capabilities, and the integrated national strategic system are the language of goals and discourse. How far plans written in documents have been transferred into actual unit capabilities is difficult to judge, because publicly available primary sources are thin. Where evidence to verify an organization's budget, personnel names, and ongoing projects is lacking, one must guard against the equation that slogans equal capability. Seeing the Strong Army Dream's workings accurately demands placing the declared timetable and verified reality side by side and reading the gap between them as well.

## 3. Limitations of the decision-making structure

In January 2011, U.S. Secretary of Defense Robert Gates was in Beijing. At the same moment, the J-20 stealth fighter rose for its first test flight over Chengdu. The United States read the flight as a calculated show of force aimed at the visitor. Yet President Hu Jintao and the civilian leadership did

not know it had happened.

They reportedly grasped the situation only after being questioned during the meeting. The defense-industrial sector was operating apart from the People's Liberation Army (PLA) and the Ministry of Foreign Affairs, and information carrying diplomatic ramifications failed to reach the top. The command structure underpinning the Strong Army Dream carries gaps like this between outward appearance and actual operation. This section divides those gaps into what can be confirmed through open sources and what cannot.

China's official structure is clear on paper. Three pillars, the Chinese Communist Party, the State Council, and the PLA, converge toward a single point as they rise. Xi Jinping holds the posts of Party General Secretary, President, and Chairman of the Central Military Commission concurrently. The 995 Project Leading Small Group, established after the 1999 bombing of the Chinese embassy in Belgrade, oversees strategic deterrence weapons development, and Xi Jinping chairs that body as well. The Equipment Development Department (EDD, 中央军事委员会装备发展部), which oversees weapons procurement, and the State Administration for Science, Technology and Industry for National Defense (SASTIND, 国家国防科技工业局) under the State Council are specified as official bodies.

The CMC Science and Technology Commission (STC, 中央军事委员会科学技术委员会), sometimes compared to DARPA, also occupies a place on this organizational chart. The STC is a body that coordinates advanced defense research; open sources provide no basis for treating it as equivalent to DARPA. With the reforms of late 2015, the four General Departments were dissolved. The reorganization into fifteen functional departments and five theater commands under the principle that the CMC exercises overall leadership, the theater commands focus on combat operations, and the services focus on force building is confirmed by official documents.

The problem is that this enormous organizational chart channels information only upward. Information between ministries does not flow horizontally; it is confined to vertical reporting lines. This phenomenon, called stovepiping, means the decision-maker at the apex judges on the basis of incomplete information. The J-20 case during Gates's visit exposed that structural flaw.

With the defense industry operating independently of the military and the Ministry of Foreign Affairs, signals needed for decisions failed to reach the top in time. The legal framework, too, remains stuck in a bifurcated state. Despite directives from the highest leadership, the Military-Civil Fusion Development Law, stalled by the split between military legislation and administrative legislation and by bureaucratic turf protection, has drifted for over a decade since it was first proposed. The lag of institutions failing to keep pace with strategy is documented.

The territory that the official organizational chart cannot capture is larger still. Medium- and long-term blueprints such as the Weapons and Equipment Development Strategy (WEDS) and the Weapons and Equipment Construction Plan (WECP) are classified, making it impossible for outsiders to verify internal deliberations and detailed objectives. It is dangerous for outside observers to assume they can see China's decision-making process in real time, and that illusion can lead to misjudgment. Informal authority operates layered on top of formal authority.

Scenes in which personal connections and tacit networks, rather than titles on paper, drive decisions repeat themselves. During the 1979 Sino-Vietnamese War, Deng Xiaoping held no supreme title yet convened informal meetings and led the war through revolutionary authority and personal ties. The highest title at the time belonged to Hua Guofeng. The pattern is similar under Xi Jinping.

He placed associates cultivated during his seventeen years of service in Fujian Province in key positions, and in 2022 he brought the head of the Ministry of State Security (MSS, 国家安全部) into the Politburo for the first time. The personal motivations or background driving this concentration of power, however, cannot be confirmed in the available sources and will not be speculated upon here.

When directives are ambiguous, overreach at the operational level fills the gap. When a U.S. Navy EP-3 reconnaissance aircraft and a Chinese fighter collided in midair in 2001, it is difficult from the outside to determine whether pilot Wang Wei's dangerous close-proximity flying was ordered by the top leadership or was a field-level decision on his own initiative. Immediately after the incident, the PLA falsely reported to the leadership that the American aircraft had initiated the collision.

Jiang Zemin, upon belatedly learning the truth, rebuked the military for its lack of strategic awareness. During the 1979 Vietnam campaign as well, some commanders launched unauthorized local offensives that disrupted operations. Such deviations in the field remain a source of instability that erodes the leadership's control in a crisis.

Fear distorts information. Subordinates, afraid of punishment, conceal bad news and send up only what their superiors want to hear. This flow, created by politicization, is called an echo chamber. Its damage became visible in Wuhan at the turn from 2019 to 2020. Local officials, seeking to avoid being held accountable, concealed the fact of human-to-human transmission and underreported the scale, while silencing doctors including Li Wenliang.

A severe delay occurred before the failure reached the top. Anti-corruption purges within the military deepen this fear further. In January 2026, CMC Vice Chairman Zhang Youxia and Joint Staff Department Chief of Staff Liu Zhenli were purged for disciplinary violations. Since 2022, five of the six uniformed CMC members have been removed, leaving Zhang Shengmin, who has no operational experience.

Whether the purges were driven by disagreements over a timetable for invading Taiwan, by personal power struggles, or by allegations of intelligence leaks remains unverified rumor in the available sources and cannot be confirmed. Still, the structural consequences are clear. The remaining generals, fearing purge, cannot honestly report negative training results or realistic problems. Even the internal Party reporting channel known as neican, created to bypass censorship, has itself become a target of censorship, and an atmosphere of reluctance to write the truth gnaws at the system's functioning.

Bias intrudes at the interpretation stage as well. The Party, which places regime survival and domestic stability first, tends to read internal discontent and crises as the handiwork of external forces. Confirmation bias that interprets American actions in a crisis only through worst-case scenarios, and the mirror-imaging effect that projects one's own way of thinking onto the adversary's intentions, compound the risk of misjudgment. The October Surprise of fall 2020 is one such case.

At the time, China's leadership was gripped by a baseless fear that President Trump, trailing in the election, would provoke a military confrontation with China in the South China Sea to reverse his fortunes. It was the product of ignorance about how American domestic politics works, compounded by an inflated reading of a U.S. Air Force unit patch depicting an MQ-9 Reaper over a map of China as a military threat. As the situation escalated to an extreme, Chairman of the Joint Chiefs of Staff Mark Milley had to contact the Chinese side directly to clarify that no attack was intended.

The same distortion recurred in the conspiracy theory that declared the 1999 Belgrade bombing deliberate, and in the scene during House Speaker Pelosi's 2022 visit to Taiwan when President Biden's phone call urging restraint was misread as a ruse. Within the military as well, the tension between the political demand for unconditional loyalty to the Party and the professionalism required for modern warfare remains unresolved, perpetuating a condition in which objective military analysis is suppressed by ideology.

Laid out this way, the command structure of the Strong Army Dream has, on its surface, erected a tight web of control with Xi Jinping and the Central Military Commission at its apex. Inside that web, stovepiping between ministries, informal power invisible from outside, field-level deviations, the echo chamber born of fear, and biases that refract the adversary's intentions toward the worst case all turn together. These flaws make Chinese behavior difficult to predict at moments of crisis and leave the risk of conflict born from misjudgment permanently in place. Following this chapter's examination of the command structure, the next chapter will look separately at the reality and limits of the STC, the body that coordinates advanced defense research within it.

The four strands of dysfunction are not isolated breakdowns but gears in a single circuit that feed one another. When stovepiping locks information into vertical channels, the apex always holds only a fragmented picture. When informal connections and field-level judgment fill that void, the leadership's lines of control blur. When the fear of purge layers onto that blurred space, the people who remain fold away bad news and send up only what sounds good.

Confirmation bias and mirror imaging then read that filtered information in the worst possible direction. The J-20 flight that failed to reach the top during Gates's visit, the false report after the EP-3 collision, the downplayed reports from Wuhan, the misplaced fear of the October Surprise: they look like different events, but they are marks left by the same circuit. One flaw amplifies another, and at every moment of crisis, wrong information meets wrong interpretation and is magnified.

What this circuit leaves behind is the difficulty of reading China's next move from the outside. The titles written on the organizational chart and the hands that actually move decisions are misaligned, so predicting behavior by looking only at formal structures misses the mark time and again. So long as the Weapons and Equipment Development Strategy and the Weapons and Equipment Construction Plan remain classified, detailed objectives and internal deliberations stay a blank that outsiders cannot fill. The moment an observer fills that blank with assumptions, misjudgment begins. The scene in which Chairman Milley had to pick up the phone during a crisis to clarify that no attack was intended reveals how thin the buffer that filters misunderstanding between the two countries really is.

The tension inside the military, where the political demand for loyalty to the Party collides with the professionalism needed to wage modern war, is another part of this circuit. When promotion and survival are tied to ideological trustworthiness, objective military judgment lowers its voice before ideology. With a figure who has no operational experience remaining on the CMC and combat-tested generals removed, reports that present reality as it is grow scarcer still. The technological and organizational leaps that the Strong Army Dream has proclaimed hit the wall of institutional limitations at this point. No matter how sophisticated the reforms on paper may be, if the information flowing over them is tainted by fear and bias, the judgment at the apex cannot help but waver.

# Chapter 2. The CMC Science and Technology Commission (STC, 中央军事委员会科学技术委员会): The Reality and Limits of China's Answer to DARPA

At a hearing of the U.S.-China Economic and Security Review Commission (USCC) in Washington, a witne...

## 1. The Origins of the STC (中央军事委员会科学技术委员会)

At a hearing of the U.S.-China Economic and Security Review Commission (USCC) in Washington, a witness spread open an organizational chart of the People's Liberation Army. It was April 2023. Tai Ming Cheung pointed to an unfamiliar box sitting beneath the Central Military Commission (CMC, 中央军事委员会). Its name was the Science and Technology Commission, formally the CMC Science and Technology Commission, which this book abbreviates as STC.

It is a different body from the Central Science and Technology Commission (CSTC, 中央科技委员会) newly established in 2023 under the Party and state apparatus. The two names look alike in shorthand and are often confused, but the STC sits inside the CMC while the CSTC sits above the Party and state. The subject of this book is the former. To understand where it came from, one must go back to the reorganization of 2016.

The immediate setting for the STC's birth was the sweeping overhaul of the PLA carried out between late 2015 and early 2016. During this period the Chinese military restructured its command system on a scale that will stand in its history. The goal was integrated joint operations capability spanning every domain of warfare. The leadership sought to bind land, sea, air, and new domains into a single chain of command.

In the process, the Four General Departments system that had long underpinned the military was dismantled. Authority was redistributed across fifteen functional departments under the CMC, and the center of gravity for decisions was pulled upward. This reorganization went beyond moving people and organizations. It was a design that placed the work of building and buying weapons in one pair of hands, and the work of cultivating the technology behind those weapons in another.

The General Armament Department (GAD), the massive organization responsible for weapons procurement and acquisition, was reshaped at the same time. The GAD was streamlined into the smaller Equipment Development Department (EDD, 中央军事委员会装备发展部). Once the procurement function was consolidated on one side, a new seat was needed to take on the remaining special missions. The STC filled that seat.

Its job was not to purchase weapons. Its mission was to manage defense science and technology research at the strategic level, to push innovation forward within the military, and to lead Military-Civil Fusion (MCF, 军民融合). Western analysts read this design as an attempt to transplant the role of the U.S. Defense Advanced Research Projects Agency (DARPA) into the Chinese military system.

The STC cannot, however, be equated with DARPA. The roots of this judgment lie mostly in Western testimony and secondary interpretation; Chinese primary sources containing budgets, real names, and individual projects remain difficult to access publicly. The outward shape of the organization invites comparison, but its inner workings are still hard to see clearly from the outside.

The deeper driver behind the STC's creation was a sense of crisis in the face of technological change. In August 2014, Xi Jinping addressed a Politburo collective study session and identified new currents

in global military development. He ordered the military to close the gap and achieve a leap forward as quickly as possible. A distinct sense of history ran beneath this order: an awareness that during the first Revolution in Military Affairs (RMA) triggered by the Gulf War in the 1990s, China had been an observer and a latecomer.

The new military revolution driven by artificial intelligence looked different. The leadership read this moment as both an urgent challenge and a historic opportunity. The calculation embedded in it was that the side that had fallen behind could move to the front when the game board itself was changing.

The 2015 defense white paper, "China's Military Strategy," nailed that perception into an official document. The white paper defined the military strategic guideline as winning informatized local wars. It declared that the rise of long-range, precision, intelligent, stealth, and unmanned weapons and equipment had pushed the global military revolution into a new phase. In the background stood the U.S.

Third Offset Strategy. China feared that if this strategy succeeded, a generational gap could open between the two militaries. The language of concern was abstract, but the organization built to absorb it had to be concrete. The STC was the control tower placed in that seat.

The target side of the story gathers into a single phrase: wan dao chao che (弯道超车), overtaking the car ahead on a curve. Lieutenant General Liu Guozhi, the STC's first director, invoked this expression when discussing military intelligentization. He said the development of intelligentization was a rare strategic opportunity to achieve innovative leapfrogging and a strong military. The meaning was plain.

Rather than chasing head-on behind the advantage the United States had built in mechanization and informatization, the plan was to change the game itself through emerging technologies of the Fourth Industrial Revolution. AI, quantum technology, and unmanned swarm systems were named as the frontier (前沿) technologies of future warfare. To this end, the STC drew up new research plans, established research funds, and organized technology competitions to channel resources toward the front line. The idea that whichever side seized the rules of the game first would win was written into the character of the organization.

The STC's emergence was also intertwined with changes outside the military. Under Xi Jinping, China shifted direction from reliance on technology imports and foreign assistance toward technological self-reliance and centralized control. In 2016, the scattered and wasteful 863 Program (the National High-Technology Research and Development Plan) and the 973 Program, which had supported basic research, were merged into a single National Key Research and Development Program. Control over the civilian science and technology system rose by that much.

Along the same current, Xi elevated Military-Civil Fusion, the breaking down of boundaries between defense and the economy, to a core national strategy. The STC appeared as the hand that would execute this strategy from within the military. Unlike the past, when the system had relied solely on state-owned defense enterprises, the STC was given the mission of pulling the data and AI technology of giant IT companies like Alibaba, Tencent, and Baidu, along with the academic resources of major universities, directly into the defense ecosystem. This flow of transferring technology grown in the civilian sector into the military and turning it into advantage is called spin-on.

The character of this organization reveals itself not in words but in actual cases. The STC established a National Defense Science and Technology Innovation Rapid Response Team (国防科技创新快速响应小组) in Shenzhen, the heart of China's high-tech industry. It was the first of its kind in China. Its purpose was to connect the civilian innovation capacity of the Shenzhen Special Economic Zone to defense needs with agility, and to weave a flexible, high-efficiency value chain for technological innovation.

An April 2018 announcement showed its speed in numbers. It demanded that projects in priority fields such as biology, new materials, advanced manufacturing, and artificial intelligence be completed within six to twelve months, faster than standard military procurement timelines. One such project was the development of video-image-based intelligent maritime target recognition technology. This method of rapidly transferring civilian commercial technology into the military is comparable to the approach of the Defense Innovation Unit (DIU) under the U.S.

Department of Defense. It means the Chinese military watched its counterpart's methods and transplanted them in its own fashion.

One boundary should be drawn before moving on. The account so far rests on records such as publicly available organizational reforms, Xi Jinping's defense discourse, policy documents, and statements by Lieutenant General Liu Guozhi. Personal motives behind the STC's founding, factional calculations, and contextual background that left no paper trail cannot be confirmed with available materials. Keeping what is confirmed separate from what is not, the STC can be summarized as a defense innovation command post born from the 2016 reorganization. What this organization has actually accomplished and where it has hit its limits will be examined in the next section.

The very fact that the STC was given the name "commission" carries weight. In the 2016 reorganization, other operational bodies were organized as departments (部), but the STC was elevated and established as a commission rather than a department. Departments and commissions, even as subordinate organs, differ in standing. While the EDD, which inherited procurement operations, was placed at the department level, the mission of strategically managing science and technology research was designed to be handled at the commission level. In this arrangement, which separated the hand that buys weapons from the hand that cultivates technology and seated the latter higher, one can read the leadership's judgment that technology itself was a strategic asset.

This arrangement comes into sharper focus when placed alongside the reorganization happening outside the military at the same time. Around the period when authority from the Four General Departments was being pulled up into fifteen departments under the CMC, the civilian science and technology system was also consolidating the scattered 863 Program and 973 Program into a single National Key Research and Development Program. One side was concentrating command authority upward; the other was concentrating research resources upward. The direction was the same.

The principle of stripping away fragmentation and duplication and pulling the center of gravity for decisions toward the center operated simultaneously on both the military and civilian sides, and the STC was placed at the point where those two currents met. To execute Military-Civil Fusion from within the military, linking military demand with civilian capability, the organization had to stand

atop the centralized design on both sides from the start.

The way crisis awareness and objectives connect into a single logic is also worth revisiting. The leadership's worry about a generational gap in the face of the Third Offset Strategy, and Lieutenant General Liu Guozhi's invocation of wan dao chao che, are two sides of the same coin. If the recognition that chasing head-on along the existing track would only widen the gap is the front face, then the calculation that by changing the track one could pass the car ahead on the curve is the reverse. The memory of having remained an observer during the Gulf War served as the background that pressed this calculation forward.

If the new military revolution was a phase where the outcome had not yet been decided, it meant a window was open for even the side that had fallen behind to redraw the board. The STC was an organization built to pour resources into frontier technologies before that window closed.

It is also notable that two American models overlap in the STC's design. The overarching mission of managing defense science and technology research at the strategic level was modeled on DARPA, while the Shenzhen rapid response team's method of pulling civilian commercial technology into the military on short timelines was modeled on the DIU. A single organization was structured to serve simultaneously as a planner looking far ahead on the direction of research and as a buyer swiftly harvesting mature technology from the market. This posture of studying the other side's institutions and transplanting them into one's own system is an extension of the crisis awareness described above. The sequence in which the side trying to catch up first studies the methods of the side that is ahead remains visible in the organization's blueprint.

## 2. The Advantages and Risks of the DARPA Analogy

On June 7, 2019, the hearing room of the U.S.-China Economic and Security Review Commission in Washington opened its session. Elsa Kania sat at the witness table. The title of the submitted document was "Chinese Military Innovation in Artificial Intelligence." One diagnosis recurs throughout that document: a description of a Chinese body benchmarking itself against DARPA. That body is the CMC Science and Technology Commission, the STC.

Several years later, in April 2023, Tai Ming Cheung, appearing before the same commission, drew a similar picture. Both testimonies read the STC as an innovation body aimed at future warfare.

DARPA is the Defense Advanced Research Projects Agency. It is the organization that has driven game-changing technologies like the internet and stealth. Comparing the STC to DARPA is a common move in the policy literature. The analogy is convenient.

When you place an unfamiliar organization atop a familiar name, the picture forms quickly. Convenience does not guarantee accuracy. This section separates the points where the analogy holds from the points where it breaks down. The first half covers the ground on which comparing the STC to DARPA is warranted; the second half covers the ground on which the two must not be collapsed into one.

Start with the ground where the analogy holds.

The first ground is the organizational objective of leapfrog overtaking. The STC was established during the PLA's sweeping defense reforms of 2015-2016. Its assigned missions can be summarized as strategic management of defense scientific research, promotion of indigenous innovation, and leadership of Military-Civil Fusion (MCF, 军民融合). Its trajectory is hard to characterize as the slow buildup of mechanized forces.

It is a vision aimed at neutralizing America's military advantage in a single stroke through emerging technologies such as artificial intelligence, quantum technology, and unmanned swarm systems. China calls this wan dao chao che (弯道超车): not racing on a straight road but passing on the curve. The idea of staking the contest on disruptive, game-changing technology overlaps with DARPA's reason for existence. This is the first basis for comparing the STC to DARPA.

The next ground is the rapid militarization of civilian commercial technology. The STC placed a National Defense Science and Technology Innovation Rapid Response Team in Shenzhen, China's high-tech heartland. It is known as the first organization of its kind in China. Its purpose is to respond nimbly to the military's technological demands in priority fields such as biology, new materials, advanced manufacturing, and artificial intelligence. An April 2018 announcement showed its character.

The demand was to complete video-image-based intelligent maritime target recognition technology within six to twelve months. That is a pace difficult to imagine under conventional bureaucratic procurement procedures. It was a direct transplant into the Chinese system of the method by which DARPA and the DIU had been rapidly absorbing technology from Silicon Valley. Chinese specialists have studied the history of America's science-industry-defense partnership and worked to bring it inside the framework of Military-Civil Fusion.

The third ground is technology competitions. Just as DARPA held its Grand Challenge for autonomous vehicles, the STC and other Chinese military bodies have organized competitions to identify outstanding civilian technology. The Kuayue Xianzu (跨越险阻) obstacle-crossing competition for unmanned ground systems is a leading example. It was held across 2014, 2016, and 2018. In the 2018 event, 136 teams from academia, industry, and military research institutes competed.

A separate competition was also held on applying machine reading comprehension to military intelligence analysis. These bear the marks of borrowing DARPA's method of broadening the base through open competition. Overlay the three grounds and the diagnosis that the STC was designed with DARPA in mind is hard to dismiss as a stretch. The analogy's range of validity, however, ends here.

Now cross to the ground where the analogy breaks down.

The underlying ecosystem is different. American defense innovation and DARPA's achievements stood on voluntary cooperation. Market incentives, academic freedom, and legal safeguards protecting intellectual property supported it from below. The Military-Civil Fusion led by the STC operates from the opposite end. It is highly centralized, top-down control that follows Party directives.

Chinese policy and law encourage and effectively mandate the integration of civilian science and technology resources into military projects. As a result, the boundary between civilian and military activity blurs. Just because the outward form of the defense industry looks similar, coercive integration stripped of technological freedom and autonomy cannot be credited with the same efficiency as DARPA operating above a free market. Similarity of form and similarity of operating principle are different matters.

The sheer bulk of the PLA also drags it back. DARPA was designed as an organization that strips away bureaucracy and moves horizontally and nimbly. The STC sits inside the PLA's vast, authoritarian, and rigid bureaucracy. Even Chinese defense experts candidly acknowledge this chronic condition.

State-owned defense enterprises are sluggish and inefficient, and they cling to the near-monopolies the state has given them. Fair competition with private companies is blocked as a result. High-tech civilian firms outside the defense industry shy away from military projects because of strict secrecy requirements and high licensing costs imposed by bureaucratic regulation. Inside the PLA, a hierarchical, low-trust culture is pervasive.

Accepting new technologies that threaten established interests is that much slower. Erase this internal friction and paint the STC as a flawless DARPA, and the picture warps.

Overestimation leads to policy misjudgment. If the United States and its allies mistake the STC and Military-Civil Fusion for something equivalent to a proven American success model, they will commit costly errors. One source warns that the claim China has decisively surpassed the United States in defense through MCF is a myth and an excessive generalization. MCF remains in its early stages, and its success or failure is uncertain.

In May 2020, the Trump administration issued an executive order denying or revoking visas for students and researchers from Chinese universities involved in MCF strategy. The decision reads as casting a wide net driven by broad fear rather than precisely targeting the substance of the threat. If, instead of addressing concrete problems like illegal technology theft, the response drifts toward blind decoupling and blanket bans on international students, it becomes self-inflicted damage, destroying the very engine of American openness that has drawn the world's talent. If the United States, out of fear of China's top-down state control, tries to mimic a similar state-led control apparatus, the only result is the reverse effect of abandoning its own strengths.

The value of analogy can be summed up as follows. Comparing the STC to DARPA brings into view how China seeks to upend the board through disruptive technology. The goal of leapfrog overtaking, Shenzhen's rapid-response task forces, and repeated competitions serve as evidence. Yet the coercive fusion ecosystem on which the STC stands has fundamentally different roots from DARPA, which relies on voluntarism.

Internal bottlenecks, the walls of bureaucracy and the monopoly of state-owned enterprises, remain intact. Analogy should be used as a ladder for understanding; the moment the two organizations are collapsed into one, misjudgment begins. The STC is an organization comparable to DARPA, but it is difficult to see it as a replica of DARPA.

How analogy is used remains the next question. A ladder is something you set up to reach a high place, not something you climb on top of and settle down to live. The same applies to comparing the STC to DARPA. It pays its full value only insofar as it points to the direction China is walking.

Once the direction has been read, the next task is to separately measure how far China has actually traveled in that direction. The size of the goal and the size of the achievement cannot be measured with the same ruler. Between the fact that leapfrog overtaking has been proclaimed and the fact that a leap has been accomplished lies a wide open field.

Lose this distinction, and the calibration goes off. The obstacle-breaching competition in which 136 teams competed, or the attempt to bring machine reading comprehension into military intelligence analysis, shows what China wants. What is wanted and what is in hand are different things. The same applies to the notice that Shenzhen's rapid-response task force demanded target-recognition technology be delivered within six to twelve months.

The speed of the demand is not the speed of the result. Between the two stand the monopoly of state-owned defense enterprises, the secrecy requirements and licensing costs that push out civilian high-tech firms, and an organizational culture of low trust that resists new technology. The assessment in the source material that MCF is still in its early stages and its success or failure uncertain points precisely to this gap. If the STC is read as an already finished DARPA, the gap is erased, and in the space where it was erased, the threat inflates beyond its actual size.

An inflated calibration changes the instruments of response. A precise response targets problems you can get your hands on, like illegal technology theft. It is closer to picking up a scalpel. A response driven by inflated fear casts a net.

The visa denial and revocation order of May 2020 was that net. A net scoops up targets and innocent talent alike. The openness that has drawn in the world's talent is the very soil in which the United States grew DARPA; strip away that soil, and what remains is self-harm alone. The principle reveals itself here: the more precisely a threat is drawn, the more precisely the response follows; the more a threat is lumped together, the blunter the response becomes.

One layer deeper lies the trap of imitation. If the United States, on the grounds that China's top-down control is frightening, tries to counter it with a similar state-led control, it amounts to converting its own strengths into the methods of its adversary. The moment you read your adversary by reflecting it in your own mirror and then imitate that reflection, judgment goes wrong twice. First, you misread your adversary.

Then you follow that misreading and wrongly reshape yourself. The reason equating the STC with DARPA is dangerous lies in these two misalignments. Analogy has value when it is laid down as a ladder for understanding; it becomes a trap when it is used as a scale that collapses two organizations into one. Not confusing the ladder with the scale is the only safe way to handle this analogy.

## 3. The Wall of Primary Sources

In a hearing room of the U.S.-China Economic and Security Review Commission in Washington, the same testimony repeats. Researchers who have tracked China's defense innovation for years offer similar confessions. Open-source material overflows, yet what actually needs to be known is missing. The budget of the Central Military Commission Science and Technology Commission (STC, 中央军事委员会科学技术委员会), the real names of the people who run the organization, and the specifications of ongoing projects are clear in no document.

The STC is compared to the U.S. Defense Advanced Research Projects Agency (DARPA). Yet the yardstick that measures its substance leans on secondary Western interpretations. The wall stands simultaneously from three directions: budget, personnel, and projects.

Budget is the first dead end. The Chinese government does not officially disclose how much it allocates to defense research and development. The defense budget announced by the authorities is broken down into only three categories: personnel costs, training and maintenance costs, and equipment costs. Most R&D funding falls outside this official budget.

Instead, it is scattered across multiple channels under the name National Defense Science and Research Testing Expenditure (国防科研试验经费). It seeps into the budget flowing to the State Administration for Science, Technology and Industry for National Defense (SASTIND, 国家国防科技工业局), dedicated science and technology programs such as the 995 Project, and subsidies embedded within state-owned defense enterprises. Scale can only be captured through indirect estimation. A study by Sun Yutao and Cong Chao analyzing science and technology financial data from central government agencies in 2011 provides a thread.

Among seventy-one central agencies, eight security-related bodies, including SASTIND, the Ministry of State Security, the Ministry of National Defense, and the National Administration for the Protection of State Secrets, disclosed not a single line of their science and technology spending. The undisclosed expenditure amounted to 56 percent of central science and technology spending, approximately 110 billion yuan, or roughly 17 billion U.S. dollars. In the same year, the official defense budget was 601 billion yuan, or 91 billion U.S. dollars. Set the two figures side by side, and the hidden science and technology spending equals roughly 18 percent of the official defense budget.

From this rough arithmetic emerges the guess that defense R&D allocation likely falls in the mid-teen percentages of the official budget. It is only a guess. As defense enterprises have pulled in capital-market money through government guidance funds, asset securitization, and bond issuances, the sources of funding have grown more tangled. The path for an outside observer to extract the budget of a single organization like the STC from primary open sources has been closed from the start.

Personnel hits the same wall. The organizational chart under the STC and the real names of the scientists and working-level staff who lead defense R&D are scarce in open sources. The national secrecy protection system acts as gatekeeper, screening every individual and institution participating in Military-Civil Fusion. A civilian company seeking entry into the defense market must obtain a Weapons and Equipment Research and Production Unit Secrecy Qualification Certification.

The applying organization must declare the level of classified information it will handle, choosing among Secret (秘密), Confidential (机密), and Top Secret (绝密). Top Secret certification requires

approval from national-level committees including the Central Military Commission Equipment Development Department (EDD, 中央军事委员会装备发展部). Controls on cleared individuals are tight. Anyone with a criminal record or a history of leaking classified information is excluded.

Those with relatives or spouses working at foreign institutions are barred by law from accessing classified positions. Under these regulations, the real names, detailed affiliations, and exchange records of military project researchers cannot come out. Even the handful of top-tier talents who have left their names in open literature are difficult to pin to a true affiliation, because of dual-hatting. Several researchers known to belong to the National Innovation Institute of Defense Technology (NIIDT, 国防科技创新研究院) under the Academy of Military Sciences (AMS, 中国人民解放军军事科学院) concurrently hold positions at other institutions such as the PLA National University of Defense Technology (NUDT, 中国人民解放军国防科技大学).

This overlap may signal that the pool of top-tier talent is still narrow. At the same time, it functions as a wall preventing outside researchers from independently verifying actual available manpower and chains of command using primary sources alone.

One window into projects remains: procurement notices issued by the People's Liberation Army. According to a tally by the Center for Security and Emerging Technology (CSET), PLA procurement notices related to artificial intelligence exceeded 9,000 between January 2023 and December 2024. Sensitive capabilities in the space, cyber, and cognitive warfare domains are documented in these notices, making them useful for reading modernization priorities. Yet this vast dataset tilts to one side.

The majority of published notices involve projects with small budgets and short acquisition timelines of three to six months. This means the focus is on experimentation, prototyping, and rapid iterative development aimed at drawing in commercial vendors from outside the traditional defense industry. The decisive limitation lies at the boundary of the document set. These roughly 9,000 notices cover only publicly available sources; classified documents are excluded from the outset.

Analysts noted that they could not find a single request for a major weapons system in this vast trove of open documents. Game-changing weapons, large-scale defense AI integration programs, and key classified documents such as the Weapons and Equipment Development Strategy (WEDS), which contains medium- and long-term roadmaps, do not appear on the open procurement network. The saying that open sources reveal only the tip of the iceberg hits home at this point.

Behind the three walls stands a larger structure: the data security and science-and-technology information control network woven at the national level under the Xi Jinping system. *China's Science and Technology Strategy in Perspective* summarizes that China has introduced a succession of measures in recent years to prevent the external leakage of research data. The Measures for the Management of Scientific Data issued by the General Office of the State Council in 2018 designate all scientific data funded by the state as state property and control its flow. The Data Security Law and the Export Control Law that followed elevated data touching the lifelines of national security and the economy to the status of core national data. Even academic sharing of dual-use technology and genetic data fell within the scope of regulation.

This legal and institutional barrier fundamentally blocks the path for Western researchers and analysts to reach the substance of China's internal science and technology capabilities and defense decision-making. The Mercator Institute for China Studies (MERICS) identified this as a structural phenomenon in which obtaining information from Xi Jinping's China grows progressively more difficult.

Accordingly, when dealing with the STC, the boundary between what is known and what is not known must be drawn first. What can be confirmed is the skeleton of the system. Defense R&D funds absent from the official budget, secrecy clearances reaching up to the Top Secret level, procurement notices missing major weapons systems, and the flow of scientific data held by the state are all documented. What cannot be confirmed is the substance inside.

The STC's exact budget, the names on its chain of command, and the specifications of projects classified as secret lie outside the sources provided. The reason this book does not declare the STC to be the same organization as DARPA and instead groups them only as comparable bodies also lies at that boundary. Rather than filling in what lies beyond the wall with imagination, accurately drawing the position and thickness of the wall is the honest method for treating a subject where primary sources are thin.

The wall has one more property. The gaps in the three directions do not stand apart; they conceal one another. Because the budget is hidden, no one knows how much flows into which organization. Because personnel are anonymous, no one knows who executes that money.

Because core projects sit outside the procurement network, no one knows what those people and that money are building. The three questions could originally serve as answers to one another. Knowing the flow of the budget would fix the scale of the workforce; knowing the affiliations of the workforce would reveal the character of the projects. But because all three are simultaneously empty, none can fill in the other two.

Outside analysis therefore has no choice but to stack estimate upon estimate. The financial analysis by Sun Yutao and Cong Chao captures the size of hidden budgets indirectly; CSET's procurement tally illuminates the character of projects from the side; Western think tanks' personnel compilations sketch the contours of dual-hatting. None of these is primary source material; each is a secondary reconstruction attempting to fill the absence of primary sources. The moment one forgets that the yardstick measuring the STC's substance is in fact a reconstructed yardstick, estimates enter the discussion wearing the face of established fact.

When this reconstruction meets the comparison target called DARPA, one more trap appears. The moment the STC is set alongside DARPA, there is a risk that things already known about DARPA will quietly migrate into the STC's blank spaces. DARPA's characteristics, the program-manager-centered operating model, the budget structure that tolerates failure, the contracting methods linking universities and companies, can be imagined as features of the STC without verification. Yet the picture on the Chinese side that open sources actually show differs in texture from that imagined portrait. The fact that the roughly 9,000 procurement notices gathered by CSET cluster around experiments and prototyping with small budgets and timelines of three to six months tells us that the

visible surface layer of the STC ecosystem is closer to rapid iterative development that draws in commercial vendors than to game-changer-class design.

Documents like the Weapons and Equipment Development Strategy, which contain medium- and long-term roadmaps, lie submerged beneath that surface, out of sight. Comparison is useful when it serves as a tool for posing questions. The moment it hardens into a frame that fills in answers in advance, comparison turns into an optical illusion that erases the wall. This is why, when likening the STC to DARPA, one must also note what that likening still does not know.

# Chapter 3. The Party's Higher-Level Coordination: The Central Science and Technology Commission (CSTC, 中央科技委员会) and the CMCFDC (中央军民融合发展委员会)

Picture a hearing room in the U.S. Congress. Analysts who cover Chinese military affairs sit at the...

## 1. Distinguishing the STC (中央军事委员会科学技术委员会) from the CSTC (中央科技委员会)

Picture a hearing room in the U.S. Congress. Analysts who cover Chinese military affairs sit at the witness table, walking through the technology organizations of the People's Liberation Army (PLA, 中国人民解放军) one by one. Two names keep coming up.

One is the military's science and technology commission; the other is a science and technology commission that spans the Party and the state. Rendered into English, the pronunciations and spellings overlap enough to confuse any audience. The organization this book treats as its protagonist is the former: the STC, which sits under the Central Military Commission. The latter is a state-level body established in 2023, and in this section the two will be called by different names from the start.

STC refers to the CMC Science and Technology Commission. It is a military organ attached directly beneath the Central Military Commission (CMC, 中央军事委员会), the supreme command authority of the PLA. The commission was born during the defense reforms of late 2015 to early 2016, driven by President Xi Jinping. The old four-department system that had underpinned the military — the General Staff Department, the General Political Department, the General Logistics Department, and the General Armament Department — was broken into fifteen functional departments. Weapons procurement and acquisition went to the Equipment Development Department (EDD, 中央军事委员会装备发展部).

The strategic management of defense science and technology was carved out as a separate mission and elevated into a commission: the STC. That it was newly created at a higher organizational rank speaks to the character of the reform. The basis for this account rests on testimony submitted to the U.S. Congress by Tai Ming Cheung and Elsa Kania.

The STC's mission is to manage defense scientific research at the strategic level, to drive indigenous innovation, and to execute the Military-Civil Fusion (MCF, 军民融合) strategy from the military side. Analysts both in the West and inside China have compared the commission to the U.S. Defense Advanced Research Projects Agency (DARPA). The reason is that the STC does not confine itself to incremental improvements of existing weapon systems but places its weight on game-changing technologies such as artificial intelligence, quantum technology, and unmanned swarms.

The analogy, however, remains only an analogy. Equating the STC with DARPA is risky. Internal budgets and organizational operations lie beyond the range of publicly available primary sources, and current assessments rest on interpretations of Western testimony.

The STC's first director was Lieutenant General Liu Guozhi. He championed intelligentization as a rare opportunity for the Chinese military to catch up with the United States. The phrase that captured this vision is wandao chaoche (弯道超车). On a straight road it is hard to pass the car ahead, but on a curve you can cut the corner and overtake it.

The metaphor reads as aiming for the curve of new technology rather than the straightaway of a conventional arms race. This expression is a slogan of policy discourse and should be distinguished

from any settled conclusion about the actual gap in military capability.

One case survives to show how the STC operates. It is the National Defense Science and Technology Innovation Rapid Response Task Force, established in Shenzhen, Guangdong Province. This organization demanded that priority projects in biology, new materials, advanced manufacturing, and artificial intelligence be completed within tight windows of six to twelve months. It directly served as a conduit for pulling commercial technologies grown in the civilian sector into the military.

This direction — transferring civilian achievements into the military — is called spin-on in English. The subjects involved include autonomous weapons, unmanned drone swarms, and AI-enabled decision-support systems. This list represents targets of technology scouting aimed at acquisition; it should not be read as meaning these systems have been fielded and used in combat. Between demonstrated prototypes and organizational integration on the one hand and actual combat employment on the other, a gap in the available evidence remains.

Now to the other name. CSTC refers to the Central Science and Technology Commission. Unlike the STC, which is a military organ, the CSTC is a supreme science and technology control body that binds the Chinese Communist Party and the entire state apparatus from above. It was newly created in 2023.

Housed within the State Council's Ministry of Science and Technology (MOST, 科学技术部), its purpose is to plan and coordinate the nation's entire innovation chain. The basis for this section is a RAND Corporation report on China's science and technology strategy.

The establishment of the CSTC was the result of consolidating the Party's and the state's scattered macro-level technology policy authorities into a single place. The commission appeared by absorbing three predecessor ad hoc bodies: the National Science and Technology Leading Small Group, the National Reform and Innovation System Construction Leading Small Group, and the National Medium- and Long-Term Science and Technology Development Plan Leading Small Group. The fact that it replaced all three leading small groups reveals the intent to unify authority. The CSTC is not confined to military affairs; it sets research priorities for the entire nation.

It oversees high-level science and technology plans, aligns central and local ministries, and directly allocates resources to major national laboratories. Reporting to it are the National Science and Technology Innovation Advisory Committee, which advises on policy direction, and the National Science and Technology Ethics Committee, which addresses ethical standards in technological development.

The difference between the two commissions extends beyond institutional affiliation to a difference in the blueprint of national strategy. The STC takes orders from the CMC and focuses on the convergent development of military modernization linking mechanization, informatization, and intelligentization. Its core business is technology scouting aimed at obtaining actual weapons and equipment to overcome the operational limitations the PLA faces. The CSTC is the national brain executing the New Whole-of-Nation System (新型举国体制) laid out in the guidelines for the Fifteenth Five-Year Plan.

It goes beyond building weapons to encompass basic scientific research, data regulation of civilian information-technology companies, and the planning of key national science and technology projects, spanning both civilian and defense domains. The basis is the CPC Central Committee's proposal for the Fifteenth Five-Year Plan.

The overarching framework that binds this division of labor into one is the Integrated National Strategic System and Capabilities, or NSI. In some literature it also appears as INSS. Cheung's report holds that President Xi Jinping has been pushing this system from the Twentieth Party Congress in 2022 through the Two Sessions in 2023. NSI takes Military-Civil Fusion a step further, seeking to weave the economy, technology, the military, and the defense-industrial base into a single system.

Within this architecture, the CSTC resembles a macro-level architect coordinating the integration and allocation of resources in the science and technology domain from the Party's position. The STC resembles a defense-fusion executor that draws civilian capacity and the assets of universities and research institutes toward the military's concrete requirements. The CSTC lays the board and divides the resources; the STC extracts the result called defense innovation from what has been laid out. They support each other, yet they are separated by hierarchy.

The backgrounds at the time of their establishment also split the two names apart. The years 2015 and 2016, when the STC was created, were a phase of reform in which the Chinese military was converting its outdated, army-centric command structure into a joint-operations system organized around five theater commands and was just introducing intelligentization as a new doctrine. The year 2023, when the CSTC was created, is a different story. Technology competition with the United States, epitomized by semiconductor export controls, had entered an overt phase, and self-reliance free of dependence on foreign technology had risen to the front rank of national security.

The CSTC emerged from a plan to gather the nation's science and technology capacity under Party leadership in order to break through that pressure. The gap in timing is precisely the reason the two commissions should not be called by a single name.

A note on the limits of the sources. This section has relied only on publicly available organizational reforms and policy documents, official discourse, and case examples. Behind-the-scenes budget disputes or personal rivalries that may have shaped the creation of the STC and the CSTC cannot be confirmed from open-source literature alone. What cannot be confirmed has not been filled in by assumption. The lists of those who hold real power in the two commissions and their likely successors, the scale of hidden budgets, and the combat performance of weapons all lie outside the scope of these sources; they are left open rather than asserted.

A reading tip: render STC as CMC Science and Technology Commission and CSTC as Central Science and Technology Commission. When you open English-language materials, both organizations carry the tail "Science and Technology Commission," and if you look only at the acronyms, a single-letter difference can make your eye slip. In such moments it is safer to check the affiliation first. If the Central Military Commission is attached at the front, it is the military's STC. If the Party center and the State Council's Ministry of Science and Technology are involved, it is the state's CSTC.

The year of establishment also serves as a reliable marker. If the story is set against the military reforms of around 2016, read STC. If the story is set against the technology self-reliance push of 2023, read CSTC. Layering these two yardsticks — affiliation and year — sharply reduces the room for confusion.

How wide the CSTC's reach extends becomes clear when you look at the list of its regulations and plans. According to the RAND report, this commission's hand does not stop at weapons development. It stretches to setting the direction of basic scientific research, regulating the data of civilian advanced information-technology companies such as Alibaba, Tencent, and Baidu, and drafting the blueprints for key national science and technology projects. It is closer to an organization that designs the entire national innovation ecosystem from above than one that builds weapons.

If the STC aims at the narrow, distinct target of the PLA's operational requirements, the CSTC looks toward a broader horizon that seeks to place the economy, industry, and defense into a single vessel. Because the targets they aim at differ in size, the texture of the resources and authority the two commissions command inevitably differs as well.

The force that propelled the CSTC's establishment in 2023 carries two faces: defense and offense at once. U.S. sanctions, epitomized by semiconductor export controls, squeezed China's procurement channels for advanced technology and cracked the growth path that had relied on foreign technology. Facing this pressure, the Chinese Communist Party elevated technological self-reliance to a matter of regime survival. The urgency to gather scattered science and technology capacity under Party leadership shaped this body.

The RAND report reads this consolidation as both a defensive move to break through sanctions and an offensive move to seize technological superiority. The birth circumstances of the STC, born in a phase of military reform, and of the CSTC, born in a phase of technology war, diverge sharply once more at this point.

Losing this distinction leads to misreadings. If one mistakes decisions about setting national research priorities and regulating civilian companies' data as having been made by a military organ, the picture tilts toward one in which China's science and technology policy is driven by the military. Conversely, if one lumps the PLA's pursuit of autonomous weapons and unmanned swarms into the Party-state's macro-level planning, where exactly the military is reaching becomes blurred. Keeping the two commissions separate is not merely a matter of getting the names right; it is the starting point for seeing clearly how China layers civilian and defense affairs within a hierarchy. That is why this book took the trouble to pry the two names apart at the opening of this section.

## 2. The Commission for Military-Civil Fusion Development

On March 2, 2018, a meeting convened in Beijing. President Xi Jinping himself took the chair. The meeting was called the First Plenary Session of the Nineteenth Central Commission for Integrated Military and Civilian Development. At this session, the Strategic Guidelines for Military-Civil Fusion Development, the Implementation Plan for National Military-Civil Fusion Innovation Demonstration

Zones, and the first list of innovation demonstration zones were reviewed and approved together.

Documents that the military and civilian ministries had each held separately came together on a single table. How the Central Commission for Integrated Military and Civilian Development (CMCFDC) works is captured in this scene.

The CMCFDC was established in 2017. Understanding its prehistory is necessary to see the character of this body. From the 1980s through the 1990s, China pursued a policy of military-civilian integration (军民结合), converting surplus defense-industry equipment to civilian use and giving defense firms additional revenue streams. The results were limited.

Military and civilian authorities failed to properly formulate or execute a development strategy aligned with military-civilian integration. State-owned defense enterprises were insular and reluctant to mix with the civilian economy. Bureaucratic barriers between ministries ran high. The channels through which civilian commercial technologies could pass into the military were narrow.

To tear down these walls, President Xi Jinping in 2015 elevated the linking of military and civilian technology development to a top national priority. In doing so, he renamed the strategy to something broader and more comprehensive than the old integration. The term was Military-Civil Fusion (MCF, 军民融合). Then, to actually execute the strategy and remove the partitions between ministries, the CMCFDC was established in 2017.

The chair is President Xi himself. The fact that the supreme leader personally heads the organization speaks to the standing of this strategy. Military-Civil Fusion is treated not as a defense procurement policy but as a macro-level vision to bind national security and economic development into one.

The CMCFDC's core mission is coordination. China's military, civilian economy, and national security ecosystem had long been fragmented from one another. Each organization built its own silo and managed resources separately. The CMCFDC is charged with the top-level design and coordination that eliminates these partitions and channels resources toward a single strategic objective.

He Kun, a Military-Civil Fusion specialist at the PLA National Defense University, explained that this body operates atop a liaison network connecting central and local agencies. In He Kun's words, the CMCFDC bears responsibility for the top-level design, overall deployment, coordination and promotion, and oversight of the Integrated National Strategic System and Capabilities (INSS). He noted that this commission's involvement provided the institutional guarantee underpinning the strategy's implementation.

President Xi issued direct instructions on the methods of coordination at commission meetings. He defined the pursuit of Military-Civil Fusion as a form of systems engineering. The backbone of his instruction was that problems must be studied and solved through systems science, systems thinking, and systems methods. He followed with an order to put force behind top-level design and concentrate on securing key breakthroughs. The brain that weaves technologies, capital, and personnel scattered like fragments into a single system — that is the role this commission claimed for itself.

Meeting records, not words alone, prove this function. The activities of 2018 are the evidence. Start with the unification of standards. For civilian technologies to be installed in military equipment,

technical standards must match. On July 31, 2018, the CMCFDC General Office convened the National Standardization Administration Committee, the CMC Equipment Development Department (EDD, 中央军事委员会装备发展部), and the State Administration for Science, Technology and Industry for National Defense (SASTIND, 国家国防科技工业局) in a single room for coordination.

The result was the passage of the Comprehensive Plan for Promoting the Integrated Advancement of Standardization in Military-Civil Fusion. The profile of a control tower directly mediating between the military's procurement organs and civilian industrial ministries is visible here. Institutional and legal barriers were also targets. At the second session on October 15, 2018, the Opinion on Strengthening the Rule-of-Law Construction of Military-Civil Fusion Development was passed to resolve the legal uncertainties that had blocked private capital from entering the defense industry.

This body also chose to step behind its name. In the latter half of the 2010s, the aggressive push for Military-Civil Fusion drew international backlash and suspicion. The Chinese leadership began reducing the visibility of the term MCF in public documents. Instead, the strategy migrated to broader concepts: National Strategic Integration (NSI) or Integrated National Strategic System and Capabilities (INSS).

This framework was absorbed into the Fourteenth and Fifteenth Five-Year Plans. INSS is a process that combines the civilian, national security, and defense sectors into a single system in order to elevate strategic resources and combat power.

Coordination grew more complex through this process. In 2023, China established the Central Science and Technology Commission (CSTC, 中央科技委员会) to bring science and technology policy under Party leadership. The CSTC took on the role of allocating resources to national laboratories, coordinating macro-level policy, and overseeing the science and technology dimension of Military-Civil Fusion. The CMCFDC did not disappear.

Analysis suggests that this commission maintains and oversees the existing Military-Civil Fusion line while sharing the coordination of INSS with supreme Party-state commissions such as the CSTC. Rather than a single control tower, the structure is one in which commissions at different tiers overlap and revolve together.

The future direction is written in a recent document. Article 55 of the "Proposal of the CCP Central Committee for Formulating the 15th Five-Year Plan" lays out that direction. One element is the deepening of cross-military, cross-regional reform (跨军地改革). The plan's guidance designates as a top coordination priority the task of pushing reform across the boundary between military and local/regional authorities, establishing an orderly work pattern in which each department fulfills its own responsibilities while interlocking tightly with the others. The other element is the coupling of two "new qualities." The directive calls for efficiently integrating and meshing new-quality productive forces (新质生产力), meaning the drivers of the national economy, with new-quality combat capabilities (新质战斗力), referring to military capacity.

This term, new-quality combat capabilities, is unstable in both translation and scope. It should be read as a policy slogan within the document; converting it directly into a fixed indicator of military capability distorts the meaning. Infrastructure interoperability is also on the agenda. The document

contains instructions to ensure that defense requirements are reflected in major infrastructure projects and to build a defense science, technology, and industrial system that makes civilian and military standards mutually compatible.

One point must be stated plainly. The scale of the budgets that the CMCFDC allocates to its subordinate committees or pilot zones cannot be verified through publicly available materials. They are bound up in the state secrecy system, scattered like fragments. What this section has traced is not the numbers in the budget but the function of coordination. Meeting dates, the names of approved documents, the rosters of ministries summoned to the table: these are the verifiable traces that reveal what this committee actually is.

The stage for coordination extended beyond the space between ministries. The first plenary session on March 2, 2018, alongside the documents already mentioned, also approved the "Key Points of the CMCFDC's 2018 Work." This was a method of fixing the year's tasks in advance, bundling them into a list, and then driving each ministry to move according to that list. It reveals the committee's character: not an ad hoc body that intervenes whenever an issue erupts, but a standing organization that lays out annual plans and uses those plans to steer coordination. It is also worth noting that the first plenary session in March and the second session in October fell within the same year.

Between the meeting that finalized the strategic guidance and the one that set the direction for rule-of-law construction, only a few months elapsed. The cycle of meetings itself served as a mechanism for driving coordination forward.

The "Implementation Plan for Building National Military-Civil Fusion Innovation Pilot Zones," approved at the same March meeting, together with the first list of innovation pilot zones designated for construction, extended the reach of coordination into the provinces. As He Kun explained, the CMCFDC operates atop a communication network linking central and local agencies. For a strategy designed at the top to leave the page and descend into regional industrial sites, there must be a stage on which to test and anchor that strategy. The innovation pilot zones are the name of that stage. Passing through these pilot zones, positioned between central design and local execution, the committee's coordination spreads beyond Beijing's conference halls and across the map of the entire country.

There is also a separate set of hands that actually turns the wheels of coordination. If the committee is the apex decision-making body, the day-to-day operational work of gathering ministries into one room and refining documents falls to the General Office beneath it. The fact that it was the General Office, not a plenary session, that convened the standardization coordination meeting on July 31, 2018, illustrates this division of labor. If plenary sessions are where the broad direction is confirmed, the General Office is the standing window that converts that direction into working-level consultations among ministries.

It was this window that summoned the Standardization Administration of China, the Equipment Development Department, and the State Administration for Science, Technology, and Industry for National Defense into the same room. Between the apex where the paramount leader sits and the desks of the ministries, this standing window serves as the link.

Seen this way, the CMCFDC's power does not lie in generating new technology on its own. It lies in aligning technologies, capital, and personnel that were already scattered, along with the ministries and localities that control them, toward a single direction. Not an organ that creates, but an organ that connects: that is the face of this committee as recorded in the minutes.

NSI (Integrated National Strategic System and Capabilities, 一体化国家战略体系和能力) and National Mobilization

In March 2023, the 14th National People's Congress convened in the Great Hall of the People in Beijing. President Xi Jinping sat across from the military delegation. There he put forward six priorities for an Integrated National Strategic System and Capabilities, or NSI. That occasion marked a turning point where a concept crossed over into policy execution.

NSI is a vision for binding civilian, national security, and military sectors into a single integrated system. It is designed as a vast process for marshaling and mobilizing strategic resources, strategic capabilities, and strategic instruments toward national objectives. It can be understood as a structure that layers multiple systems back into one. "National Strategic Integration" (SRC-PDF-005) defines this framework as the successor to the Military-Civil Fusion (MCF, 军民融合) policy of the mid-2010s. NSI is a broader and bolder edition, expanding that fusion strategy further.

External pressure lay behind the concept's rise to prominence. Chinese authorities had initially publicized Military-Civil Fusion widely through trade fairs and open documents. In the late 2010s, however, the United States and other Western governments read it as a threat through which civilian know-how flowed into military modernization, and criticism poured in. In reaction, Chinese authorities began censoring the term MCF from official discourse around 2019, withdrawing it from view. The strategy remained; the name changed.

The expression NSI itself appeared earlier. President Xi first mentioned it at a meeting of the Central Military-Civil Fusion Development Commission (CMCFDC, 中央军民融合发展委员会) in 2017 and presented it at the 19th Party Congress. For the first few years, the phrase attracted little attention. Across People's Daily, PLA Daily, Science and Technology Daily, Xinhua News Agency, and the Ministry of National Defense website, NSI was referenced fewer than twenty times per year on average from 2017 through 2021.

When national security rose to a central theme at the 20th Party Congress in October 2022, exposure increased somewhat. After President Xi addressed it publicly at the National People's Congress in March 2023, the term was mentioned 127 times between January and September of that year alone. The leap in numbers shows the concept had moved from slogan to directive.

The six priorities mentioned earlier amounted to a declaration of where resources would be channeled first. One was support for collaborative innovation in strategic projects. In line with the 14th Five-Year Plan (2021-2025), the direction was to concentrate mega-science and mega-engineering projects in national laboratories working on quantum information, photonics, micro- and nano-electronics, network communications, artificial intelligence, biotechnology and pharmaceuticals, and modern energy systems. Next came aligning interoperability between military and civilian standards so that resources flow in both directions across the two sectors. Modernization and optimization of the

defense industrial base were also included.

National strategic reserves and strategic infrastructure construction followed, along with improved coordination between national development and national security. The final priority was national-level support for the PLA's centennial goal in 2027. Rocket Force officer Hou Changling assessed that NSI contributes to the Rocket Force's strategic deterrence and combat readiness posture. General Wang Haijiang, commander of the Western Theater Command, argued that this mobilization system is indispensable in hybrid warfare where military, political, financial, technological, cyber, and cognitive domains are entangled.

Specific mobilization directives emerge even more explicitly in the recently adopted "Proposal of the CCP Central Committee for the 15th Five-Year Plan" (SRC-PDF-C011). Article 50 leads with defense of political security and orders the construction of practical, operationally oriented national security capabilities. It takes food, energy resources, critical production and supply chains, and major infrastructure as the foundation of the mobilization system. It calls for expanding exploration and stockpiling of strategic minerals, constructing national strategic rear bases in preparation for wartime strikes, and building backup systems for critical industries. Control over emerging domains such as cyberspace, data, artificial intelligence, biotechnology, outer space, the deep sea, and polar regions is also placed on the mobilization agenda.

Article 53 orders the large-scale development of unmanned intelligent combat units and the expansion of what it calls new-quality combat capabilities. This term, rendered here as new-quality combat capabilities, is an expression whose translation and scope remain unstable; within this document it is safest to read it as the language of policy directives. The text instructs development and expansion, but how far actual units have reached operational deployment cannot be determined from this source alone. Article 55 is the core provision for completing NSI.

It pins down the deepening of cross-military, cross-regional reform that tears down barriers between the military and local governments. It demands the meshing of new-quality productive forces driving the economy with new-quality combat capabilities denoting military striking power, and it mandates that defense requirements be incorporated from the outset whenever infrastructure is built. The directive continues into completing a system in which military, police, and civilians jointly defend the borders by consolidating national defense mobilization capabilities.

For this vast mobilization to roll past bureaucratic partitions, there must be hands coordinating from above. Those hands are two. One is the Central Military-Civil Fusion Development Commission (CMCFDC, 中央军民融合发展委员会), chaired personally by President Xi Jinping. He Kun, a Military-Civil Fusion specialist at the PLA National Defense University, explains that this body bears responsibility for the top-level design, overall deployment, coordination, and oversight of NSI implementation.

It is the organizational guarantor that binds scattered economic and technological resources to military purposes. The other is the Central Science and Technology Commission (CSTC, 中央科技委员会), newly established within the Ministry of Science and Technology in 2023. This body's name resembles that of the CMC Science and Technology Commission, but the two are

separate institutions and must not be conflated. According to "China's Science and Technology Strategy in Perspective" (SRC-PDF-C012), the CSTC manages the entire national innovation chain within the NSI framework.

It allocates resources directly to national laboratories and aligns civilian and military science and technology policy at the macro level. The history of national mobilization through the 863 Program and 973 Program, into which billions of yuan were poured, has now entered the umbrella of NSI under the command of the CSTC and the CMCFDC, blurring the boundary between defense and the economy.

Boundaries must also be drawn clearly. The scale of any hidden budgets allegedly assembled for weapons acquisition under this framework lies outside published literature. Internal rivalries among individuals within the two governing bodies, or the inner workings of informal coordination, are likewise unverified. The account in this text is confined to the official missions and institutional mobilization structures recorded in documents.

Even within those limits, the picture is sharp. NSI is a strategy that deepened Military-Civil Fusion while sidestepping foreign criticism. Under the directives of the 15th Five-Year Plan and the highest-level organs, it functions as a blueprint for total national mobilization, drawing together cutting-edge civilian technology, infrastructure, and economic productive capacity into defense mobilization capabilities.

The horizon this mobilization design aims at does not stop at 2027. If the PLA's centennial is the near-term milestone, beyond it lies the more distant goal of a world-class military by 2049. NSI is the device that links the two points on a single trajectory. It is engineered so that the institutions, standards, and reserves accumulated while driving resources toward the first goal become the foundation for the second. If the six priorities are the timetable for the front row, the articles of the 15th Five-Year Plan are the document that transcribes that timetable into operational directives.

The idea running through this plan is to convert the nation's economy and infrastructure themselves into mobilization assets. Food and energy, supply chains and transportation networks, become at once the provisions of peacetime and the weapons of wartime. The instructions to expand strategic mineral stockpiles, build national strategic rear bases, and prepare backups for critical industries amount to an order to pre-wire the system so that the economic base can be switched directly to defense assets the moment a crisis arrives.

Reading Article 53's new-quality combat capabilities provision again reveals how this framework builds a conduit for moving technology to the battlefield. The document pins down the execution of major defense development projects. It means that a separate bundle of large-scale projects is established as an institutional guarantee, ensuring that cutting-edge results coming out of national laboratories do not remain in the lab but are converted into operational equipment and units. The directive for developing unmanned intelligent combat units sits atop this conduit.

The form of cooperation described in Article 55 also deserves attention. The document instructs that cooperation between the military and local authorities be shaped into a highly controlled and orderly pattern. It is a will to press down from above on the bureaucratic partitions in which ministries and

regions had each moved on their own, reorganizing them into a single order. That instruction leads to the completion of a joint defense system in which military, police, and civilians link hands to guard the borders. The CMCFDC's top-level design and the CSTC's management of the innovation chain, traced earlier, are precisely the two pillars that hold up this order.

The weight of historical continuity is not light either. The 863 Program, the National High-Technology Research and Development Program into which billions of yuan were poured, and the 973 Program targeting basic research, trace a long trajectory of the state pulling science and technology resources toward a single target. NSI does not sever that trajectory but inherits it, transferring it under the command of two control towers into an umbrella that blurs the boundary between defense and the economy. What has changed is the size of the hands gathering the resources and the position of the command structure that moves them.

Seeing all the way inside this transition is difficult. The inner motivations the Chinese leadership may have harbored while switching the sign from Military-Civil Fusion to NSI, the personal histories of the policymakers, unpublicized factional disputes: these lie outside the literature and cannot be confirmed. What this text can hold onto is only the missions and provisions written in documents and the skeleton of mobilization they sketch. Even that skeleton alone makes the state's intention legible with clarity: to realign cutting-edge technology, infrastructure, and productive capacity in the language of national defense.

# Chapter 4. A History of Military Reorganization: Dismantling the Four General Departments, and the Rise of the EDD (中央军事委员会装备发展部), SSF (中国人民解放军战略支援部队), and ISF (中国人民解放军信息支援部队)

In June 2025, a recruitment notice appeared on the campus of China's National University of Defense...

## 1. After the Four General Departments

In June 2025, a recruitment notice appeared on the campus of China's National University of Defense Technology. An institution bearing the unfamiliar name of Information Support Force Engineering University was, for the first time in its history, admitting students from civilian society. The school had originally been the Information and Communications Academy under NUDT, but it was elevated to a corps-leader-grade institution and given a new nameplate. One recruitment notice seemed trivial.

Behind it, however, lay a long journey of PLA organizational reform that had unfolded over ten years. That journey began in the winter of 2015, and its target was an entrenched system that had gone untouched for decades.

From late 2015 through early 2016, the People's Liberation Army pushed through one of the most sweeping reorganizations in its history. What had to be cut away was the bloated, army-centric command structure. Until that point, operational command and military administration had been divided among four general departments. The General Staff Department, the General Political Department, the General Logistics Department, and the General Armament Department were the four pillars.

Under this system, each department held a near-monopoly over its domain, and the Army effectively dominated the entire military. The structure was bureaucratic, its movements sluggish. Joint operations binding the Navy, Air Force, space, and cyber forces into a single effort were beyond what this framework could handle.

In January 2016, the Central Military Commission unveiled its plan for deepening national defense and military reform. Under this plan, the Four General Departments were dissolved entirely. Their functions were broken up and absorbed into fifteen functional departments under the CMC. The principle running through the reorganization was compressed into a single phrase: "the CMC exercises overall leadership, theater commands are responsible for military operations, and the services focus on force building." Operations go to the theater commands; training troops and procuring equipment go to the services.

Separating these two authorities strengthened the direct control of the CMC, the supreme decision-making body. The boundary between command and force building became clear for the first time.

The Army's privileges crumbled in this reorganization as well. On December 31, 2015, a separate Army leadership organ was established. Where the Four General Departments had previously doubled as the Army's headquarters, the Army now stepped down to the same level as the Navy, Air Force, and Rocket Force, one service branch among equals. Troop reductions followed.

Roughly 300,000 personnel were cut, centered on noncombat support forces and the Army. By 2019, Army strength stood at 975,000, a figure that for the first time in the history of the Chinese military fell below half the total force. Its share was approximately 48 percent. The eighteen group armies were restructured into thirteen.

The command structure that had been tied to geography changed alongside everything else. The seven military regions, divided among Beijing, Shenyang, Jinan, Nanjing, Guangzhou, Chengdu, and Lanzhou, were abolished. In their place rose five theater commands: Eastern, Southern, Western, Northern, and Central. Each theater command was designed to exercise unified command over the Army, Navy, Air Force, Rocket Force, and Strategic Support Force units within its area of responsibility.

The old framework, built around continental defense, shifted to one centered on joint operations. Underlying the reorganization was the ambition to move beyond informatization toward intelligentization. Intelligentization refers to a doctrinal transformation in which artificial intelligence reshapes the sequence of command, reconnaissance, strike, and assessment; it operates on a different plane from individual applied technologies.

A major split also occurred in the weapons and research-and-development ecosystem. The General Armament Department, established in 1998 and responsible for weapons procurement, was placed under the blade of reform. It was dismantled between 2015 and 2016. Its authorities were divided in two.

One portion went to the Equipment Development Department (EDD, 中央军事委员会装备发展部). The other went to the Science and Technology Commission (STC, 中央军事委员会科学技术委员会). A single monopolistic organ had been split along two axes: procurement and research.

The Equipment Development Department assumed responsibility for overseeing weapons research and development, testing, and procurement across the entire military. Classified documents charting the long-term blueprint for defense science and technology, namely the Weapons and Equipment Development Strategy and the Weapons and Equipment Construction Plan, became this department's charge to draft and execute. Acquisition authorities that had been scattered were gathered back into one place. The Science and Technology Commission took a different path.

This organization was newly established to focus exclusively on strategic management and innovation promotion in defense scientific research. It carried the ambition of pushing beyond incremental improvements to mechanized equipment and leading research into emerging technologies such as artificial intelligence and unmanned swarms from the front. The commission also held the nexus of Military-Civil Fusion (MCF, 军民融合). Western testimony has often compared the STC to the U.S.

Defense Advanced Research Projects Agency (DARPA). Internal evidence sufficient to equate the two institutions has rarely been made public, however, so this analogy is best read as exactly that: an analogy.

Restructuring the procurement system did not make the noise disappear. In recent years, the Equipment Development Department found itself at the center of a large-scale anti-corruption investigation. In January 2026, word emerged that CMC Vice Chairman Zhang Youxia and Chief of the Joint Staff Liu Zhenli were under investigation for serious disciplinary violations. Analysts point to Zhang Youxia's deep ties to the Equipment Development Department in earlier years.

Some interpret the corruption permeating the procurement system as one driver behind the purge. Who will succeed them in their positions, however, has not been confirmed in public sources. The various suspicions swirling around the inner workings of the purge likewise remain unproven rumor. It is safer not to conflate confirmed facts with speculation.

The structure for emerging-domain combat power, what is called new-quality combat capability, was also split twice. Because the term "new-quality combat capability" wavers in translation and scope, it is necessary to read party slogans and actual military capability as separate things. In 2015, an organization was born that bundled the asymmetric forces of space, cyber, and the information domain into one. That organization was the Strategic Support Force (SSF, 中国人民解放军战略支援部队).

It did not last long. In April 2024, the PLA dissolved the Strategic Support Force. From its remains emerged three separate organizations: the Information Support Force (ISF, 中国人民解放军信息支援部队), the Cyberspace Force, and the Aerospace Force. The Information Support Force positioned itself as the pillar responsible for building and operating the military's network information systems.

This force was charged with the responsibility of leading victory in modern warfare and driving the military's high-quality development. The establishment of the Engineering University in June 2025 and its recruitment of civilian students, described at the opening of this chapter, was the channel through which this force would be supplied with people.

None of these changes ended as mere internal housekeeping within the military. The current that began with the dismantling of the Four General Departments is linked to a larger national framework. That framework is called the Integrated National Strategic System and Capabilities, or NSI (一体化国家战略体系和能力; some documents use the abbreviation INSS). Having cleared away the inefficient general-department system, the military gained considerably more flexibility to absorb cutting-edge capabilities from the outside.

The higher-level bodies cited for allocating civilian AI and big-data resources include the Central Science and Technology Commission (CSTC, 中央科技委员会), newly established in 2023 as a Party-state organ, and the Central Military-Civil Fusion Development Commission (CMCFDC, 中央军民融合发展委员会). Resources allocated by these Party-state organs flow into the military through the Equipment Development Department and the Science and Technology Commission. The technologies that arrive by this route are then woven into combat capability atop the command networks of the five theater commands and the Information Support Force.

The skeleton of the decade after the Four General Departments can be summarized as follows. One massive set of general departments was split into multiple branches. The Army was brought down to the status of a single service. Procurement and research were divided between two departments. The vessel built to hold new-quality combat capability was created and then split again.

Multiple sources agree that this reorganization was an attempt to give the military a body suited to intelligentized warfare. Whether the new organizations have produced results on an actual battlefield, however, is a question that cannot yet be answered with publicly available combat examples. Force

structure and demonstrations are not the same as capability. How the PLA attempts to close that gap is the subject of what follows.

The deeper meaning behind the measure of dividing functions into fifteen departments was a redistribution of authority. The old Four General Departments were each small kingdoms unto themselves. The General Staff Department held operations; the General Political Department held personnel and ideology; the General Logistics Department held supply; the General Armament Department held weapons. Each gripped its portfolio and refused to let go.

With the walls between departments standing so high, a single joint-operations order had to clear multiple thresholds. Tearing down those walls and dividing the functions into fifteen channels created a picture in which the CMC could look directly down at each function. The number of departments grew, but the hand holding the board converged into one. The paradox embedded here was that the more finely authority was divided, the greater the control at the top became.

The principle of separating command from force building did not remain a slogan on paper. Theater commands took charge of fighting and nothing else; they stepped away from training forces and purchasing weapons. The services trained personnel and equipped units but handed operational authority on the battlefield to the theater commands. The long-standing habit of one organization holding both training and operations was severed at this point.

The hand that shaped forces in peacetime and the hand that wielded them in wartime were pulled apart. Whether this separation runs smoothly inside actual command posts remains a separate question. There is no guarantee that clean lines on an organizational chart eliminate confusion in the chain of command.

The two classified documents, the Weapons and Equipment Development Strategy and the Weapons and Equipment Construction Plan, must also be read within this framework. If the former is a long map showing where defense science and technology is headed, the latter is closer to a timetable detailing how to fill units along that map. That the Equipment Development Department holds the pen for both documents means that acquisition authorities once scattered across multiple offices have been gathered under a single department's signature. Yet a place where authority concentrates is also a place where vested interests concentrate. It is difficult to read the Equipment Development Department's position at the center of anti-corruption investigations apart from this concentrated structure.

At this point, the limits of the available sources should be noted again. The organizational charts, figures, and policy names set down thus far rest on records found in open-source literature. The inner intentions of the leadership that drove the reorganization, the details of power struggles, the personal motives hidden behind the purges: none of these can be proved through publicly available materials. The first condition for reading this reorganization properly is the discipline of not mixing confirmed organizational facts with unconfirmed backstories.

## 2. The SSF (中国人民解放军战略支援部队) and the ISF (中国人民解放军信息支援部队)

On April 19, 2024, a crimson military banner was raised on a parade ground in Beijing. President Xi Jinping held the flag with both hands and passed it to the commander of a new force. The organization whose creation was announced that day was the Information Support Force, abbreviated ISF. In remarks recorded in RAND documentation, President Xi defined this force as the core pillar undergirding the overall planning, construction, and operation of network information systems.

He declared that the ISF bears a weighty responsibility for driving the military's high-quality development and winning modern wars. The scene of the supreme leader personally presenting a military banner at the inauguration of a single force tells us where the PLA intends to place this organization.

To read that scene, one must go back nine years. The ISF's roots lie in the Strategic Support Force, the SSF, established in 2015. The SSF was a product of the sweeping military structural reform carried out that year, bundling space, cyber, and electronic-warfare capabilities within a single force. It was tasked with developing asymmetric capabilities in what the literature called the new frontlines, domains beyond the traditional operational spheres of land, sea, and air.

The SSF also altered the character of institutional functions. The so-called Three Warfares, psychological warfare, public-opinion warfare, and legal warfare, previously handled by the General Political Department, were transferred to the SSF. As these long-standing political and psychological-warfare elements encountered operations in internet and social-media spaces, they grew into a new concept: cognitive-domain operations.

The SSF was also an organization that took the lead in experimenting with Military-Civil Fusion (MCF, 军民融合). The force expanded its connections beyond the military, signing cooperative agreements with research universities and stationing active-duty officers inside unnamed software companies. On the academic side, its anchor points were the Information Engineering University and the Space Engineering University. The two universities led research in big data, AI, quantum information, cybersecurity, cryptography, and intelligent chipsets.

Researchers at the Space Engineering University used machine-learning techniques such as convolutional neural networks to build data-driven models for space-based target recognition. These results belong to the laboratory and demonstration stage and should be read as distinct from operational deployment.

In April 2024, that SSF was dissolved. As the pace of intelligentized warfare accelerated, the need arose to further subdivide and specialize the SSF's structure, which had stacked technologies from multiple domains in one place. Here, intelligentization refers to a doctrinal transformation in which AI reshapes the very sequence running from command through reconnaissance, strike, and assessment; it is a term on a different level from individual AI applications. The PLA formally dissolved the SSF and in its place stood up the Information Support Force (ISF,

中国人民解放军信息支援部队), the Cyberspace Force, and the Aerospace Force. The ISF inherited the SSF's core functions of information and command-and-control.

Educational restructuring followed. In June 2025, the Information and Communications Academy, a deputy-corps-leader-grade institution under the National University of Defense Technology (NUDT, 中国人民解放军国防科技大学), was elevated to the corps-leader-grade Information Support Force Engineering University. For the first time in PLA history, this university began recruiting students from the general public. The intent to pull technical talent from outside the military directly into the force reveals itself here.

What the ISF is designed to do emerges with relative clarity in literature that posits extreme scenarios such as the unification of Taiwan. An Irregular Warfare Center report depicts the ISF as the PLA's nerve center for digital, cyber, and information superiority. The picture this document draws has three strands. The first is rapid-deployment personnel capability.

The concept envisions attaching specialists skilled in communications repair, cyber restoration, electronic warfare, and network operations to the operational front lines of the PLA and the People's Armed Police, rapidly restoring damaged surveillance networks and broadcast systems. The second is information-flow resilience and cognitive control. Training guidelines call for resetting networks, rerouting severed communications, and maintaining data superiority. The third is the role of institutional hub for AI-driven intelligentized operations.

The document describes AI-enabled platforms operated by the ISF helping to predict patterns of resistance forces and identify opposition-opinion networks. It should be remembered, however, that this description represents a design objective within a hypothetical occupation scenario posited by the literature, not a confirmed operational case.

Viewed from a distance, the ISF is a digital-infrastructure platform that links the information systems of multiple agencies into one. Reports by UC IGCC and MERICS summarize China's efforts toward an Integrated National Strategic System and Capabilities (NSI, 一体化国家战略体系和能力; some documents use the abbreviation INSS), which seeks to bind the civilian economy, national security, and the military sector into a single system. The goal is to prevail in hybrid warfare, where military, political, financial, technological, cyber, and cognitive warfare are intertwined. The ISF is portrayed as the practical instrument connecting civilian technology and state coercive power to military operations for that kind of war.

Through MCF policy, channels are open for mobilizing civilian engineers, coders, and data specialists into force operations. The same literature contains analysis suggesting that information flows from the PLA, the People's Armed Police, the Ministry of State Security, and the United Front Work Department, previously scattered, could converge within the single infrastructure managed by the ISF. What appeared to be the reorganization of a single force, the dissolution of the SSF and the emergence of the ISF, thus crosses from the act of redrawing lines on an organizational chart to the act of rewiring the nation's nervous system.

Where this integration might actually be aimed becomes somewhat more tangible in literature that posits a Taiwan scenario. China's Science of Military Strategy literature underscores the weight that

mobilizing civilian reserves carries in informatized and intelligentized warfare. These reserves are depicted as the key hands and feet for erecting a China-style firewall over Taiwan, laying down large-scale surveillance systems, and weaving a tight digital perimeter. Hands that repair communications, hands that write code, hands that handle data, all converging under the military's chain of command.

Once a conflict or occupation begins, the ISF is tasked with seizing communications infrastructure first, erecting firewalls, switching on AI tools, and rapidly restoring damaged surveillance networks and propaganda broadcasts even after the adversary's sabotage operations. An integrated management system designed to push coercion by force, propaganda, population surveillance, and control simultaneously across multiple domains. To say that the information flows held separately by the PLA, the People's Armed Police, the Ministry of State Security, and the United Front Work Department are merging into a single infrastructure is also to say that the hands of coercion and surveillance move simultaneously under one chain of command.

It bears repeating, however, that this is not a record of events that have actually occurred but a design objective within an occupation scenario posited in the literature. That the ISF inherited a certain organizational chart and established certain universities is a matter confirmed by official announcements and cited documents. By contrast, what power calculations, factional struggles, or individual judgments were entangled behind Chairman Xi Jinping and the Party leadership's decision to dissolve the SSF and establish the ISF cannot be verified with the materials currently in hand. Drawing only as far as the evidence reaches and leaving the rest blank is the honest way to read this organization. What can be confirmed is the organizational skeleton and the intent embedded in it; how far that intent will be realized on an actual battlefield remains an open question.

Peeling back one more layer of the confirmed skeleton, the fact that the SSF was split into three comes back into view. The reorganization of April 2024 did not produce the ISF alone; it stood up the Cyberspace Force and the Aerospace Force alongside it. The SSF's structure, which had layered space, cyber, and electronic warfare inside a single force, was unraveled into three branches so that each domain would hold its own specialized organization. The judgment underlying this separation was that as the tempo of intelligentized warfare accelerated, the model of one force shouldering multiple domains had grown untenable.

If the SSF was an experimental ground for innovation, the differentiation into three forces is closer to a sorting operation, parceling out the capabilities gained from that experiment by domain. Among the three, the ISF inherited the trunk of information and command-and-control and was positioned to thread even the domains handled by the other two forces into a single information flow.

The literature called this position a neural hub. Embedded in the term is the meaning that the ISF does not remain a support force tending to communications networks from the rear. An Irregular Warfare Center report states that this force provides the Party and the military with the organizational muscle to drive multi-domain operations spanning an entire theater. Contrary to the label of support force, the organization is closer to a lever that governs the movement and deployment of troops.

The other axis that the word muscle points to is scalability. The same literature describes a design in which the highly centralized structure allows forces from one theater to be rapidly shifted and attached to another theater or an occupied territory. When the information system converges into a single trunk, the hand deciding where to redirect troops and resources converges into a single point as well.

One word the literature attached to this reorganization is facilitation. The information systems of four agencies that had previously been scattered under different purposes and chains of command now had a path to mesh atop a single infrastructure managed by the ISF. When the hands and feet were divided, there was a threshold at every point where information was exchanged; when the infrastructure converges into one place, that threshold lowers. The earlier observation that redrawing the lines of an organizational chart amounts to opening a single channel through which information flows finds its support in this design intent called facilitation. How far that channel has actually been joined into one, however, remains a question beyond the picture drawn by blueprints and training directives.

## 3. Purges and Uncertainty

In March 2026, noticeably more seats sat empty in the PLA delegation's section at the National People's Congress session in Beijing's Great Hall of the People. The official military delegates appointed in early 2023 had numbered 281. Only 243 names remained on that year's Two Sessions roster. Thirty-eight had vanished between one session and the next.

Of these, thirty-six were identified as having been purged through official procedures, and a significant number of those still on the roster were either under disciplinary investigation or absent from meetings without explanation. Onto the space where organizational charts and directives had been redrawing the command structure, traces of erased people now overlapped.

The dissolution of the Four General Departments examined in this chapter, the establishment of the Equipment Development Department (EDD) and the Strategic Support Force, and the creation of the Information Support Force (ISF) were all exercises in rewiring the chain of command. The human layer that operated that chain began collapsing from the top in 2026. On January 24, 2026, China's Ministry of National Defense officially announced that Zhang Youxia, Vice Chairman of the Central Military Commission, and Liu Zhenli, Chief of the Joint Staff Department, had been placed under investigation on charges of serious disciplinary and legal violations. The two were the highest-ranking uniformed officers.

With their fall, five of the six uniformed CMC members appointed since 2022 had been removed. The only uniformed officer remaining at Xi Jinping's side was Zhang Shengmin, Secretary of the Discipline Inspection Commission, a figure who, unlike Zhang Youxia or Liu Zhenli, has no operational or combat experience.

The collapse at the top was only one part of the scale that had come to light. Since 2022, more than one hundred senior officers across nearly every branch of the military had been investigated or had

disappeared. The Eastern Theater Command, central to any Taiwan contingency, had its leadership hollowed out. In January 2025, Lieutenant General Kong Jun, commander of the Eastern Theater Army, stepped down.

In March 2025, General Lin Xiangyang, commander of the Eastern Theater Command, was detained. He Weidong, the CMC Vice Chairman who had commanded joint exercises around Taiwan, vanished from official appearances and was expelled from the Party and the military in October 2025.

The officially stated justification is corruption and undermining the Party's control. A PLA Daily editorial accused Zhang Youxia of betraying the trust of the Party and the CMC and of trampling the CMC Chairman Responsibility System, the institutional principle mandating the Party's absolute leadership over the military. At the center of the investigation's crosshairs were the weapons procurement system anchored in the Equipment Development Department and corruption within the Rocket Force. This connects directly to the earlier sections of this chapter, because the very positions where new organizations were being built and budgets allocated were the positions where corruption accumulated. At the NPC military delegation session, Xi Jinping drove home the demand for political loyalty, declaring that because the military holds the gun, there must be no one disloyal to the Party.

Up to this point, the facts are confirmed by a convergence of official announcements, state media, and external data analysis. But once one enters the question of why these top generals were removed at precisely this moment, a vast terrain opens that primary sources alone cannot confirm.

The story that Zhang Youxia passed nuclear secrets to the United States is one example. Some analysts and media outlets raised this allegation, but American experts dismissed it as an unproven claim, calling the possibility that a top-ranking official committed outright treason inconceivable. It is an unverifiable rumor. The same is true of the theory about disagreements over the 2027 Taiwan invasion timeline.

Some in the West analyze that Zhang Youxia and Liu Zhenli were sidelined after arguing, on the basis of training and procurement realities, that the capability for an invasion could not be secured within the target deadline. The logic is plausible, but the behind-closed-doors conversations and inner motives among the top leadership are not proven by any public document. Interpretations that it was a decapitation-style clearing of factional and patronage networks, and rumors that bribery cases involving family members triggered it, also circulate, but none can be transcribed as confirmed fact. All that remains in the record is that Zhang Youxia and Xi Jinping grew up together in the princelings circle over decades, and where that relationship fractured is a blank.

Who will hold real power as the successors to the purged cannot be determined at present either. All that lies before us is the outlook that the CMC's leadership vacuum will persist until the next Party congress.

Even without pinning down the cause, the shadow this massive clearing has cast over the decision-making system is unmistakable. Surviving commanders feel that their own positions are on the chopping block. As seasoned veterans departed in droves, the pool of remaining senior officers shrank, and disruptions have appeared in training tempo, combat readiness posture, and next-generation weapons procurement plans. The goal of organizational restructuring was command

efficiency, yet the vacuum of people is gnawing at that very efficiency. A paradox has taken root.

The deeper danger is the distortion of information. Subordinates who fear punishment are reluctant to send bad news upward. Only optimistic reports that please the leader flow to the top. This structure follows the same logic as the early days of COVID-19, when local officials in Wuhan concealed the outbreak to avoid being held accountable.

At the end of that chain, the leader is cut off from truths such as training failures or operational deficiencies and is sealed inside a room where only his own voice echoes back. Analysts call this room an echo chamber.

A warning follows: the young generals filling the vacant seats will have little operational experience but deep loyalty. If the preceding purges originated in candid reports about insufficient readiness, the new commanders face a powerful incentive to choose unquestioning execution over honest reporting in order to survive. The more this happens, the higher the probability that the leadership inflates its own military power and discounts the adversary's will to intervene. At a moment of crisis, the space for catastrophic miscalculation widens, displacing sober calculation.

This chapter has traced the arc of restructuring from the dissolution of the Four General Departments through the EDD and the Strategic Support Force to the creation of the ISF. What it encounters at the end of that arc is not a completed command system but a landscape in which an organizational chart emptied of people and unverifiable blanks sit side by side. The confirmed facts are the fall of the top echelon, the removal of more than one hundred generals, and the corruption investigation into the procurement system. What remains unconfirmed is the motive, the succession picture, and how this organization will react in the next crisis. The restructuring diagram has grown sharp, but the people who must read that diagram and make decisions have grown blurry.

This shadow collides head-on with the timetable China set for itself. The goal Xi Jinping put forward was to achieve a substantial level of combat power by the PLA's centenary in 2027 and to complete a world-class military by 2049. The organizational restructuring and massive investment traced in this chapter were all aimed at that schedule, yet the midsection of the command chain that must execute the schedule is now hollow. The goal still stands while the people who must hold it up have dwindled, and what lands simultaneously on the remaining commanders is the pressure to prove results in a hurry and the terror that a wrong report will put them on the chopping block. The demand to rush and the signal to stay silent descend upon the same person at once.

The fact that the investigation's blade has reached the Rocket Force amplifies the weight of this pressure. The Rocket Force is the core of China's nuclear and missile capabilities, a domain where the realities of procurement and training are difficult to expose from outside. That corruption has been confirmed within it opens the possibility that a gap existed between the force-readiness figures reported upward and reality. If the leadership makes decisions without accurately knowing the size of that gap, the danger grows larger than the corruption itself.

What analysts warn about again and again in this structure is the mirror-imaging effect: the cognitive habit of assuming the adversary calculates in the same way one does oneself. Inside a room sealed off from truth, the leader inflates his own combat power while simultaneously shrinking the adversary's

resolve by his own yardstick. When the two errors overlap, the worst combination materializes: moving forward in the belief that the other side will not intervene, only to collide with actual intervention.

The place where this combination reaches the apex of danger is the Taiwan Strait. The Information Support Force and the command chain newly built through restructuring were devices meant to support fast and accurate judgment at a moment of crisis. But if the people filling that chain filter out bad news and send only optimism upward, then the more sophisticated the tools become, the faster they move atop a flawed premise. That the speed created by restructuring can convert into the speed of miscalculation is the final paradox in which the vacuum of people reverses the achievement of the organizational chart.

There is a reason this accounting, as of early 2026, must be read in two layers: fact and blank. Viewed through the institutional language of the CMC Chairman Responsibility System, this episode is a case of the Party re-tightening its grip on the hand that holds the gun. In the PLA Daily sentence accusing Zhang Youxia of trampling the Party's absolute leadership over the military, beneath the surface of corruption lies the will to redraw the boundary line of loyalty. Dispositions issued in the name of the institution are recorded clearly in documents.

But the inner reasoning that led to those dispositions stays outside the documents. The gap between the confirmed and the unconfirmed does not arise from laziness in record-keeping; it arises from the nature of the subject. Words exchanged behind closed doors and movements of the heart are not captured in the sentences of a state editorial.

When the fact that they walked together for decades is layered on top, the clearing grows stranger still. Zhang Youxia and Xi Jinping were old friends who grew up side by side in the princelings elite circle of the 1950s and 1960s. At what point that relationship turned from trust to suspicion, the record ultimately does not say. The fact that the calculation behind putting an old friend on the chopping block cannot be known reads, to the surviving commanders, as a signal that no position is safe anywhere.

If even a bond forged in childhood cannot serve as a shield, what the remaining people have to lean on is performance and silence alone. When this sensation spreads through the entire organization, the direction of reporting bends not toward truth but toward self-preservation.

The forecast that the leadership vacuum will persist until the next Party congress does not end as a mere question of time. The longer seats remain empty, the more the criteria for filling them tilt from proven competence toward proven loyalty. In an organization from which more than one hundred generals have departed, a chain filled with compliance rather than experience may look quiet in peacetime but loses the muscle to filter out errors. Just as the Rocket Force procurement corruption came to light, if even the people who could point out the gap between reported force-readiness figures and reality are afraid of punishment, the picture in the leadership's hands hardens into one that diverges from reality. The lines of the chart can be redrawn, but the eyes that read those lines and render judgment cannot be filled by a written order.

Even gauging the scale of the purge from the outside requires detours. Thirty-eight names that vanished from the NPC delegate roster between one session and the next, the empty seats of members absent from sessions, the name of a general whose mention in state media abruptly ceased one day: these are the clues available to observers. Such traces reveal that a purge occurred but do not reveal why a person was erased. Between counting absences and reading the reasons for those absences stands a wall that is difficult to cross. That is why stories like the nuclear-secrets-leak theory and the invasion-timeline-dissent theory proliferate so lushly in front of that wall.

Unverified rumors are not a problem only for outside observers. Commanders on the inside, too, do not know precisely why the colleague who sat beside them disappeared, and each fills in the reason with conjecture. If the conjecture spreads that it was because the person voiced dissent, mouths close. If the conjecture spreads that it was because the person backed the wrong faction, self-censorship begins.

The very fact that the motive for the purge remains a blank functions as a wordless instruction to the remaining people: move with maximum caution. A cycle takes hold in which the unverifiable blank enlarges the organization's silence, and that silence in turn gnaws at the basis for the next judgment.

The attitude of not forcing closure on what cannot be confirmed is honesty in this section. The moment one fabricates a motive, the analysis joins the side of rumor, and the observer begins to resemble the logic of the echo chamber. Where the evidence is silent, recording the silence; where the evidence speaks, venturing a conclusion: that restraint illuminates the precariousness of this organization more sharply, not less. The vacancy of people is a confirmed fact.

What judgments that vacancy will lead to is still a blank. Leaving that blank honestly empty is the stance this section has sought to hold to the end.

# Chapter 5. From Military-Civil Integration to Comprehensive Military-Civil Fusion

In 1964, factories began moving in long columns toward the mountainous interior of China. Relations...

## 1. Historical Origins

In 1964, factories began moving in long columns toward the mountainous interior of China. Relations with both the United States and the Soviet Union had soured, and the risk of war had climbed to an extreme. China's leadership decided to evacuate the core facilities of national defense and heavy industry to remote areas in the northwest and southwest, far from enemy bombing range. This was the Third Front Movement.

The scale was immense. The relocation shifted roughly half of the country's total defense-industrial production capacity to Third Front cities. It was the Chinese government's first large-scale, top-down attempt to bind the growth of national defense industry to the growth of the national economy.

The results were dismal. The state's top-down planning went awry, scattering enormous resources, and the program is now judged to have obstructed rather than advanced development. After the Mao Zedong era ended, a large number of the Third Front defense enterprises that had depended on bloated state plans lost their ability to survive and shut down. During that same period, China had raised the banner of combining peacetime and wartime readiness (pingzhan jiehe, 平战结合) and was groping toward early forms of military-civil integration dating back to the late 1950s.

Western policymakers today speak of Military-Civil Fusion as though it were a new invention of the Xi Jinping era. Its roots, however, are the product of a long policy evolution reaching back to the early 1980s.

With the launch of Reform and Opening in 1978, the center of gravity in national strategy shifted entirely from war preparation to economic development. A bloated defense industry had to find a way to survive in the face of changing times. China called this moment huanzhong huofa (换种活法), living by a different means. At the heart of it was junzhuanmin (军转民, Junzhuanmin), the conversion of military enterprises to civilian use.

It was an economic transition process in which surplus products, manpower, and technology from defense firms were redirected to civilian and commercial purposes. From the early 1980s through the mid-1990s, the defense industry poured its energy into converting munitions factories into plants producing commercial and civilian goods. The aim was survival: absorb the excess production capacity piled up in the weapons sector and generate revenue to shore up underperforming military product lines. It also served as a mechanism to push state-owned factory managers into running their businesses according to market logic.

This strategy was codified in Deng Xiaoping's Sixteen-Character Policy: military-civil integration, peacetime-wartime integration, military products first, the civilian economy sustains the military (junmin jiehe, pingzhan jiehe, junpin youxian, yimin yangjun; 军民结合，平战结合，军品优先，以民养军). Integrate the military and civil sectors. Integrate peacetime and wartime. Prioritize military goods, but let the civilian economy feed the armed forces.

The slogan was idealistic and well balanced. Reality was different. Amid dire state finances and shifting market conditions, China paid a painful price: it actually lost the capacity to sustain long-term

military research projects and nurture the research teams to carry them out.

Entering the 1990s, the military-civil relationship moved a step further. The concept of embedding military potential within civilian capacity, yujun yumin (寓军于民), came to the fore. The giant defense-industry conglomerates underwent sweeping reorganization, entering an orbit in which they opened up civilian markets while simultaneously pushing ahead with the development of high-value-added, advanced military equipment. The Sixteenth Party Congress in 2002 adopted junmin jiehe and yujun yumin as official guidelines for defense and technology policy. The military-civil integration envisioned at this point was divided into three levels.

At the facility level, equipment, materials, and personnel were shared, and military and civilian products were manufactured in the same factory. At the enterprise level, production lines were separated, but resources such as management systems and labor were used in common. At the sectoral level, integrated industries like aerospace and shipbuilding shared pools of research and development, technology, and production processes. The third level was regarded as the most advanced, ideal form of military-civil integration.

Despite a long commitment to the concept, actual implementation on the ground remained uneven and limited. Throughout the 1990s and 2000s, it was nearly impossible for private commercial enterprises to raise the capital or build the technical capability needed to enter the defense economy. The Central Military Commission (CMC, 中央军事委员会) and the People's Liberation Army (PLA, 中国人民解放军) leadership procured weapons systems almost exclusively from existing state-owned defense conglomerates. This pattern held even when better alternative technologies existed in the private sector.

Corruption embedded in the procurement system, along with personal connections and networks among vested interests, kept military leaders locked into exclusive dealings with state-owned enterprises. Attempts to link the innovative civilian economy with military technology ran into the wall of bureaucracy and the dual-track system separating military and civilian domains, and lost momentum. Genuine dual-use technology development stalled.

Having felt keenly the limits of a closed, monopolistic system, China's leadership changed direction at the root. At the Seventeenth Party Congress in 2007, President Hu Jintao used his official report to put forward the term Military-Civil Fusion (junmin ronghe, 军民融合, Junmin Ronghe) for the first time. It was a call to pursue a path of Military-Civil Fusion with Chinese characteristics. Where the earlier military-civil integration had stopped at transferring defense technology to the civilian sector or handing civilian resources to the military on a project-by-project basis, the new Military-Civil Fusion aimed at deep, bidirectional, institutionalized cooperation spanning every sector of the state. Beyond deepening junzhuanmin, which pushed defense technology outward into civilian applications, the acceleration of mincanjun (民参军, Mincanjun), in which advanced commercial technologies from the private sector such as artificial intelligence, quantum computing, and aerospace penetrated the barriers of the defense market, rose to the center of the strategy.

After the Eighteenth Party Congress in 2012, as the Xi Jinping era began, Military-Civil Fusion was elevated beyond improvements in military procurement or functional integration to the status of a

core national strategy. In 2017, to break through inter-agency parochialism and ensure the strategy was actually executed, a top-level body was established: the Central Commission for Military-Civil Fusion Development (CMCFDC, 中央军民融合发展委员会), chaired by Xi Jinping himself. Analysis from circles affiliated with Peking University's Institute of International and Strategic Studies argues that the Military-Civil Fusion of this period differs from the mechanical bundling (jixieshi kunbang, 机械式捆绑) of the military and civilian spheres. It holds that national defense construction and economic and social development are organically intertwined at an ontological level, a process of mutual internalization, or neiji (内嵌), in which the military and civilian sectors penetrate each other's domains. The objective is clear: smash the dual-track barriers and closed circuits that a handful of state-owned enterprises had enjoyed, and transform the national system into a socialized, competitive bidding-and-production system so that innovative private firms, such as Gaode Infrared, which makes high-resolution infrared equipment, or Sany Heavy Industry, which makes heavy machinery, can freely enter the military products market.

The arc from junzhuanmin to yujun yumin, and from military-civil integration to Military-Civil Fusion, reveals one fact. No matter how strong a state's powers of control, the road to genuine fusion, crossing the parochialism of military and civilian actors and the dual-track barriers between them, is grueling. It also shows the stratum of historical trial and error on which today's Integrated National Strategic System and Capabilities (NSI, 一体化国家战略体系和能力) stands.

Viewed from a different angle, the historical trajectory can be organized as a question of the direction in which technology flows. Junzhuanmin followed the logic of spin-off: pushing technology, facilities, and manpower accumulated in the defense sector outward into civilian and commercial domains. Defense factories used surplus production capacity to manufacture civilian goods, earned revenue, and used the money to prop up underperforming military product lines. The flow ran from the military toward the civilian side, and the initiative rested with the state-owned defense conglomerates.

After 2007, the center of gravity shifted to the opposite side. Mincanjun follows the logic of spin-on: advanced commercial technologies nurtured in the private sector cross the barriers of the defense market and enter from outside. Once disruptive technologies such as artificial intelligence, quantum computing, and aerospace, technologies the state struggles to cultivate on its own, ripened first in the private sector, drawing those fruits into the defense ecosystem became the new competitive battleground. What Military-Civil Fusion aimed to do was not leave these flows open in only one direction but harden, through institutional design, a channel running both ways between the military and civilian sectors.

Place the three trajectories side by side, and a single structural dilemma comes into sharp focus. If the junzhuanmin of the 1980s was a survival measure that diverted excess facilities to the civilian sector to keep state-owned defense firms afloat, then the yujun yumin and military-civil integration of the 1990s and 2000s tried to pull civilian potential into the military but were blocked by monopoly cartels and bureaucratic walls, yielding only shallow results. The Military-Civil Fusion of the Xi Jinping era staked its fate on tearing down those walls themselves. Even as the name changed from integration to fusion and the control tower was raised to the highest level, the adversary that had to be overcome never changed: the parochialism of each side, military and civilian alike, and the barriers of a

long-hardened dual-track system.

The shift of the axis from spin-off to spin-on therefore signifies not a change in slogans but a transformation of the national constitution. It is an attempt to smash the closed circuits that a handful of state-owned enterprises had enjoyed and to build a socialized, competitive bidding system so that innovative private firms like Gaode Infrared and Sany Heavy Industry can freely enter the military products market. Atop a stratum of trial and error spanning half a century, China is once again writing its answer to an old question: in which direction, and how wide, to open the channel.

The point at which Xi Jinping-era Military-Civil Fusion parts ways with the earlier military-civil integration lies in the density of the coupling. As SRC-PDF-012.pdf summarizes, the earlier military-civil integration remained at the level of mechanical bundling (jixieshi kunbang, 机械式捆绑) of the military and civilian spheres, whereas MCF aspires to an ontological coupling in which national defense construction and economic and social development penetrate each other's core. The idea is not to stand the two domains side by side as neighbors but to dissolve them into a single innovation ecosystem, and so the entire operating logic is calibrated to the question of how to make this fusion real.

That logic splits into two directional flows. Junzhuanmin (军转民) converts military technology for civilian commercial use; mincanjun (民参军) draws private-sector capital, talent, and commercial technology into national defense. China today is loading its weight onto the mincanjun side to bring artificial intelligence, big data, and unmanned systems into the military. Behind this lies a strategic awareness among planners that an arms race dependent solely on the state budget brought about the economic collapse of the Soviet Union. The motive at the heart of MCF is to ease the defense spending burden and raise efficiency by harnessing the vitality of the private sector.

This logic connects three pillars, universities, enterprises, and military procurement, into a single circuit. Universities serve as forward bases that cultivate basic research and talent. The Seven Sons of National Defense, represented by the Beijing Institute of Technology and the Harbin Institute of Technology, along with more than fifty universities that SASTIND has brought in through its joint-construction (gongjian, 共建) programs, underpin the defense research ecosystem. To connect to the circuit, these universities must pass through a state secrets protection system in which a secrecy committee under the university party committee classifies research personnel into tiers, core for access to top-secret material, important for secret material, and general for confidential material, and fixes which tier may touch which data and which projects.

Security vetting functions as the valve that opens and closes the entrance to the circuit, and researchers and data that do not pass through this valve cannot enter fusion projects no matter how advanced their technology. As the state secrets protection system is layered on top of universities' autonomous research practices, the speed of fusion is regulated not by openness but by the tightness of control.

The scene of corporate figures walking into the military's academic circuit illuminates the same structure. An Alibaba vice president personally attended a military big-data conference organized by the Academy of Military Sciences. The fact that the head of a civilian cloud business showed his face at

a data discussion table hosted by a PLA research institution means that the circuit linking universities, enterprises, and the military runs not just on paper agreements but on the physical movement of people. A channel is open through which executives at the forefront of commercial technology gain a voice on the military's academic stage.

Enterprises form the second pillar, combining research output and market capital to turn them into actual weapons systems and algorithms. Baidu established a joint laboratory with CETC to work on command-and-control technology, and Alibaba's cloud provides data-center backing for the initiative. Private manufacturers such as Gaode Infrared and Sany Heavy Industry have begun breaking the closed circuit of state-owned enterprises and supplying products to the military, and to encourage their entry, more than thirty-five funds totaling approximately 447.16 billion yuan have been established since 2015.

The knot that actually ties the three pillars together is military procurement. The Equipment Development Department (EDD) opened the All-Military Weapons and Equipment Procurement Information Network to mesh military requirements with civilian bids. The Science and Technology Commission (STC) unearths civilian technologies through competitions such as the Obstacle-Crossing Challenge. And Shenzhen's rapid-response task force bypasses bureaucratic barriers to push commercial technologies into the military within six to twelve months.

Even this vast circuit, however, has its fusion speed suppressed by the frictional heat of state-owned enterprise monopolies and the extreme cost of maintaining secrecy. Of an estimated 500,000 enterprises capable of contributing to defense, the actual participation rate is believed to be below one percent.

How far the ontological coupling proclaimed by the Xi Jinping system extends across the circuit can be seen in the profiles of the universities and enterprises listed at the front end. Tsinghua University, often called China's MIT, one after another establishes cutting-edge laboratories in fields with open military applications, such as artificial intelligence, quantum physics, and nuclear technology, underpinning the fusion objective. The CMC's Equipment Development Department and Science and Technology Commission directly fund military projects and research institutes within these laboratories. On the corporate side, the roster does not stop at Baidu and Alibaba. Tencent and Huawei are pushing their own technologies into military command-and-control and information systems, forming a structure at the head of the circuit in which universities supply vetted talent and foundational technology while big tech firms forge that material into commercial algorithms and data infrastructure.

The discovery mechanisms are layered several deep. Modeled on the approach of the United States' DARPA, the Science and Technology Commission and procurement departments hold numerous competitions. The Obstacle-Crossing Challenge, which pits unmanned ground systems against one another, is a representative example, and a competition aimed at applying machine reading comprehension to military intelligence analysis was co-hosted by Baidu and iFlytek. Winners receive research funding of one to three million yuan, and civilian ideas are absorbed directly into the military's procurement pipeline. The annual Recommended Catalogue of Mincanjun Technologies and Products, jointly published by the Ministry of Industry and Information Technology and

SASTIND, is another channel that sets civilian technologies face to face with defense requirements.

The further back in the circuit one goes, the greater the resistance. To obtain weapons and equipment research-and-production qualifications, an enterprise must endure a review process that can stretch for years and pay costs reaching up to one million yuan. For the private IT sector, where personnel turnover is frequent, maintaining the level of secrecy control the military demands over extended periods is a heavy burden. Even after qualification is obtained, when people leave, tiered access authorizations must be replenished, so there is no guarantee that a door once opened will stay open. State-owned defense enterprises dig in to hold on to the monopolies the state has granted them, and the military leadership itself, entangled in chains of patronage and corruption, gravitates toward dealing only with familiar counterparts, amplifying the resistance.

Yet the circuit has not come to a halt. According to procurement records analyzed by Georgetown University's CSET, from 2023 to 2024, the PLA issued close to 3,000 AI-related contracts, and among companies that won two or more, over 70 percent were nontraditional suppliers dealing in commercial AI. In the domains that form the backbone of weapons, state-owned monopolies remain entrenched, but in the new domains where algorithms and data decide the outcome, private hands are in fact reaching into the procurement pipeline. The gap reveals that fusion does not spread uniformly but fractures along the grain of the technology.

Local government incentives also work to widen the channel. Sichuan Province returns two percent of R&D investment, up to a maximum of ten million yuan, as prize money to local enterprises that develop related products.

After dissecting the operating logic to this extent, an interior remains that the available sources cannot illuminate. What personal relationships or power struggles lie behind decisions to preserve or dismantle state-owned monopolies, and whose motives account for policy delays, cannot be verified from the sources provided. What can be identified extends to the skeleton of the structure and the magnitude of the friction; what lies beyond that interior is more honestly left marked as unsubstantiated.

The mechanism that actually guards the threshold of fusion is the secrecy committee housed inside the university. This committee is a body in which the president, vice presidents, and the head of the security department sit together to divide research personnel into tiers. People are classified as core, with access to top-secret material; important, with access to secret material; and general, with access to confidential material, and which tier may touch which data and which projects is fixed in place. Security vetting is the valve that opens and closes the entrance to the circuit, and researchers and data that cannot pass through this valve are shut out of fusion projects no matter how advanced their technology. As the state secrets protection system is superimposed on the autonomous research practices of universities, the speed of fusion is calibrated not by openness but by the granularity of control.

The scene of a corporate executive walking into the military's academic circuit reflects the same structure. An Alibaba vice president took a seat in person at a military big-data conference convened by the Academy of Military Sciences. That the head of a civilian cloud business pressed his face into a

data discussion hosted by a PLA research institution means the circuit connecting universities, enterprises, and the military turns not merely on written agreements but on the traffic of people. A channel exists through which executives standing at the front line of commercial technology gain a voice on the military's academic stage.

What the procurement network actually exchanges becomes visible in the items posted on its boards. Through the All-Military Weapons and Equipment Procurement Information Network operated by the Equipment Development Department, the military posts open requests for needs such as communications systems or software testing tools, and private companies bid their prices directly on the spot. In the days when what the military wanted remained locked inside classified documents, there was no room for the private sector. The moment a requirement appears on screen, information asymmetry thins and the bidding door widens.

This method of opening procurement forms the final seam that brings university basic research and corporate commercial technology face to face with military demand. When university valves, the comings and goings of corporate personnel, and the procurement network's bulletin boards mesh together, MCF operates not as a document but as an actual flow of people and goods.

## 2. Success and Cost

In an office in Shenzhen, a single project gets a deadline of six to twelve months. Those are the terms set by the National Defense Science and Technology Innovation Rapid Response Task Force. Exoskeleton equipment, artificial intelligence, and advanced materials sit on its target list. The method by which the U.S.

Defense Innovation Unit (DIU) rapidly acquired technology from Silicon Valley was transplanted by China onto its own bureaucratic soil. It was a mechanism to reduce delays in the acquisition process. The speed at which civilian technology crosses into the military domain changed through this task force.

The success of Military-Civil Fusion (MCF) reveals itself in this rapid conversion. In the past, Chinese military procurement was a closed circuit dominated by a handful of state-owned defense enterprises. Even private companies with superior technology stood outside that circuit for no reason other than being private. When the policy changed, the door opened.

Gaotek Electronics, a maker of high-resolution infrared equipment, entered the military procurement network. Sunshine Heavy Industries, which produced core components for heavy equipment such as tanks at a quality surpassing state-owned enterprises like Inner Mongolia First Machinery Group, also placed its name on the list. These are cases where civilian achievement raised the quality of weapons systems.

Beneath this transition lies a shift in thinking. A 2019 study from the Institute of International and Strategic Studies at Peking University calls the old military-civilian relationship a mechanical mortise-and-tenon joint, a functional coupling. It means things were at the level of physically binding

parts together. What China now puts forward is organic fusion at the ontological level.

The vision is to design two worlds as a single body from the start. It is the point where a slogan passed through institutions and led to actual change in the procurement market.

Capital pushed this change upward. An authoritarian system possesses the power to drive resources from the top down. Since 2015, more than thirty-five funds have been established to invest in MCF enterprises. Their estimated capital amounts to 447.16 billion yuan, roughly 68.5 billion U.S. dollars. This money became the incentive for the private sector to leap into military projects.

In 2016 alone, the number of private enterprises that obtained the Weapons and Equipment Research and Production License grew by 127 percent. It was a year when the count of participating firms swelled rapidly. Competitions such as the National Military Intelligent Machine Reading Challenge were also held. They served as conduits for transferring the latest civilian AI achievements into military intelligence analysis.

That is the face of success. On the other side is the face of cost. Behind the growing number of funds and enterprises, distortions bred by state-capitalist control and the constitutional differences between military and civilian sectors have been piling up.

The most conspicuous fracture is the dualized structure. The same 2019 study identifies this dualized configuration as an endogenous challenge to MCF. In the United States, the military and the private sector share a homogeneous market and a common legal and capital environment. China does not. Pricing methods differ.

Cost structures differ. The arithmetic of investment returns and financing channels diverge, and the very concepts through which law is understood are split. Attempting to bind two heterogeneous worlds from above generates friction costs. The market's capacity to allocate resources on its own is suppressed by that much.

Resistance from vested interests is also a cost. Contrary to the policy of opening the market, state-owned defense conglomerates and their cartels hold their ground in practice. They create information asymmetries between the military as buyer and the enterprise as supplier. They cling to short-term profits rather than forward-looking research and development, and they push back against the entry of private capital.

Problems exist on the military leadership side as well. The literature points to a tendency, even when superior alternative technologies exist in the private sector, to insist on dealing with incumbent state-owned enterprises because of corruption embedded in military procurement and long-standing personal ties. It is a structure in which innovative private firms are blocked from growing, and budgets flow toward inferior state-owned products.

When money poured in, behavior aimed at capturing that money followed. The roughly 68.5-billion-dollar fund pool became a target for rent-seeking. Cases emerged of local governments and lower-level administrative bodies hanging the MCF signboard without genuinely participating in military projects. The purpose was to dress up a brand and extract state subsidies.

Resources allocated in this way were wasted or embezzled. It is a distortion in which money gravitates not toward technological innovation but toward subsidy hunting.

The threshold itself creates costs. A private company seeking to enter the defense market must obtain classified qualification certification for weapons and equipment research and production. Acquiring this qualification takes years. Costs run up to one million yuan, roughly 141,000 U.S. dollars.

The red tape of bureaucracy piles on top. Although an estimated 500,000 technology firms in China could potentially contribute to the defense industry, the actual participation rate recorded in the literature falls below one percent of that number. This figure reflects the point in time at which the relevant source was compiled, and it would be difficult to take it as definitive evidence of the most current situation. Rather than inviting free-market innovation, the wall of classified-information protection blocks entry and lets only a few survive.

Success and cost emerge from the same body. The power that drives capital from top to bottom produced rapid conversion, and the same power produced market distortion. The entry of Gaotek Electronics and Sunshine Heavy Industries, the speed of the Shenzhen Rapid Response Task Force, show clear results in militarizing commercial technology. Yet the dualized economy, monopoly and corruption among state-owned enterprises, classified-qualification costs reaching one million yuan, and rent-seeking aimed at subsidies all attach a price to those results.

The literature provided records this far. The inner thoughts of the leadership or factional disputes involved in managing this control and distortion are not contained in the sources. It is more honest to separate what has been confirmed from what has not. China's MCF rolls forward in just this way, an unfinished state paying the costs of success simultaneously.

An image in the sources likens this success and cost to a single blade. Two edges honed on the same day. One edge is the mobilization power that drives downward from above, and the other edge is that same mobilization power. The top-down enforcement and long-term industrial planning capacity that an authoritarian system possesses create a speed difficult for a free market to replicate.

The Rapid Response Task Force can demand results within six to twelve months, and 68.5 billion dollars in funds can be assembled in a short period, precisely because of this power. Yet the very method of pushing resources in without passing through the market's price signals opens gaps for MCF-in-name-only and rent-seeking to burrow into at the same time. The hand that produced speed and the hand that produced distortion are the same.

Marking the direction makes the character of this strategy clearer. The current China is pushing runs from civilian to military, pulling commercial achievements into national defense. High-resolution infrared equipment, tank components, machine-reading AI: all are cases of capabilities grown in the civilian sector transplanted into the military domain. The passage noting that China modeled itself on the DIU's method of rapidly acquiring from Silicon Valley points in this same direction.

The problem is that the field into which the transplant goes differs from that of the United States. Unlike America, which procures technology atop a homogeneous market, China must move technology between two fields where the languages of pricing, cost, and law are split. The direction is

the same, but the soil is different, so the price of transplanting is different.

The distance between the two terms, mechanical mortise-and-tenon joint and ontological fusion, is itself a ruler for measuring that price. To cross from physically binding parts to designing two worlds as a single body, everything from pricing methods to financing channels that have been split must be folded into one. The slogan speaks of the ontological, but on the ground floor of procurement, state-owned cartels erect walls of information between supply and demand, and personal ties and corruption embedded in military procurement cling to old deals. The gap between the words about making one body and the reality still running as two bodies is itself the cost that fusion pays.

The figure of one percent compresses this price into a single number. That fewer than one hundredth of the 500,000 technology firms that could contribute to the defense industry have actually crossed the threshold means the policy's promise of a wide-open door and the institutional reality of a high-built threshold are out of alignment. Years of time, one million yuan in classified-qualification costs, and the red tape stacked on top keep the remaining ninety-nine percent standing outside. An open door and a high threshold occupy the same spot. The face of success and the face of cost overlap not in separate places but on this single doorsill.

The clock in the Shenzhen office turns in units of months. The Rapid Response Task Force holds this clock and presses for exoskeleton equipment, artificial intelligence, and advanced materials to be delivered within six to twelve months. The speed of transferring commercial technology into national defense, the civilian-to-military current, emerges on these short graduations. The passage about modeling the DIU, which rapidly acquired from Silicon Valley, identifies the character of this clock. Here is the hand that measures achievement in months.

The clock hung on the threshold turns in units of years. A private company seeking the classified qualification for weapons and equipment research and production spends years before this clock. Up to one million yuan, roughly 141,000 U.S. dollars, is stacked onto that wait. One side demands results in months; the other side delays entry in years.

It is a structure that tells a company that took several years to get in to produce results within several months once inside. The graduations of the two clocks are misaligned in just that way.

Two numbers, too, say different things about the same population. In 2016 alone, the number of private enterprises that obtained the license grew by 127 percent. Viewed through this number alone, the scene is one of a door flung wide open. Yet among the 500,000 technology firms that could contribute to the defense industry, fewer than one percent actually crossed the threshold.

Against the same pool, one number speaks of a surge and the other speaks of scarcity. The increase is certain, but even after the increase, most remain standing outside the door.

What moves both clocks and both numbers is a single hand. The mobilization power that drives resources from top to bottom possesses the force to turn the short clock, while at the same time, by skipping the market's price signals, it leaves the long clock and the narrow door in place together. As more than thirty-five funds and 68.5 billion dollars in capital flow toward the short clock, the friction between two heterogeneous worlds and the wall of classified-information protection accumulate on

the side of the long clock. That speed and delay are not arrivals from different systems but two faces of a single system is what these clocks, standing side by side in the room, show together.

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# Chapter 6. Weaponizing Civilian Innovation and the University-Military-Industry Ecosystem

In June 2025, a PLA university recruited civilian students for the first time in its history. The in...

## 1. Universities and Research Institutes

In June 2025, a PLA university recruited civilian students for the first time in its history. The institution was the Information Support Force Engineering University. It had been established by elevating the former Information and Communications Academy to a zheng jun-level unit. That grade carries considerable weight within the military's organizational hierarchy. Ten new majors opened, covering big data, intelligent vision, and the electromagnetic spectrum, among others.

The purpose was to fill the personnel needs of the Information Support Force (ISF, 中国人民解放军信息支援部队), the unit designated to fight future hybrid wars. A direct pipeline had been built to absorb academic talent into the military as technical officers. This scene compresses the question of where China grows its military technology into a single image. Weapons come from factories, but the algorithms and the people who write them grow in lecture halls and laboratories.

China's military technology once emerged exclusively from a handful of closed state-owned defense enterprises. Today the country walks a different path. The Military-Civil Fusion (MCF, 军民融合) strategy has wired a conversion circuit that channels basic research from civilian and military universities into the PLA's operational weapons systems. This direction, pulling civilian achievements into the military, is called spin-on.

The circuit begins with top-down state control and budgets. China's Ministry of Education, acting on Party directives, sets and dictates the science and technology strategy for higher education institutions. Research directions at universities are determined from above. The State Administration of Science, Technology and Industry for National Defence (SASTIND, 国家国防科技工业局) jointly administers and funds 68 designated universities.

Among the 68 are the Seven Sons of National Defence, the universities that have long anchored defense research. The National Natural Science Foundation of China (NSFC, 国家自然科学基金委员会), which controls basic research funding, signed a strategic partnership in 2016 with the Central Military Commission's Science and Technology Commission (STC, 中央军事委员会科学技术委员会). Military-Civil Fusion was inscribed into the system at the very first stage of basic science. Within this arrangement, the STC serves as the hand that pulls the direction of research funding toward the military's needs.

For open research at civilian universities to feed into classified military programs, one more threshold must be crossed. That threshold is the national secrets protection system. Any university seeking to participate in MCF must establish a secrecy committee under its Party committee. The committee is composed of the university's leadership, including the president and vice presidents. It divides research personnel into tiers, core, important, and general, and controls classified access accordingly.

Each person receives a grade, and that grade delineates the scope of information the person may handle. Only researchers and data that have passed this clearance process may legally enter the military procurement network and defense programs. Open campus and closed security are fused into a single body. Openness and control must operate simultaneously for the circuit to function.

The most direct channel runs through the PLA's two premier academic institutions: the National University of Defense Technology (NUDT, 中国人民解放军国防科技大学) and the Academy of Military Sciences (AMS, 中国人民解放军军事科学院). NUDT is called the high ground for developing core defense technologies in the age of intelligentization. Its subordinate Institute of Automation conducts research on big data and artificial intelligence. Liu Zhong, director of the National Key Laboratory of Information Systems Engineering, has led research on applying AI to command-and-control systems since the mid-2000s.

The effort to transfer the speed and judgment of command to machines has continued for close to twenty years. The Institute of Intelligent Science handles experiments in autonomous swarming operations for unmanned aerial vehicles. In June 2018, the institute's researchers won the Robust Vision international competition, an event sponsored by Apple and Google. It was a signal that laboratories inside military universities compete on the same stage as the world's best.

The transformation at the Academy of Military Sciences changed the very character of the organization. AMS, which had focused on strategy and doctrine research, established the National Innovation Institute of Defense Technology (NIIDT, 国防科技创新研究院) in July 2017. Lieutenant General Yang Xuejun, an authority on supercomputing, moved from the presidency of NUDT to the directorship of AMS and led the reorganization. The movement of a person was the movement of a technological line.

AMS recruited 120 top-tier researchers at the doctoral level and deployed them to the frontlines of artificial intelligence, quantum science, and brain science. Under NIIDT, an AI Research Center, an Unmanned Systems Technology Research Center, and a Frontier Interdisciplinary Technology Research Center were established. Intelligent computing chips and robotic operating systems are among the subjects studied there. An institution that once wrote doctrine had crossed over into one that designs hardware and software.

Military universities are not the only members of this ecosystem. China's top civilian universities also serve as conduits supplying algorithms and technology to the military. Tsinghua University, often called China's MIT, opened a high-level laboratory for military intelligence. Advanced artificial intelligence for military operations is the laboratory's subject.

Beijing Institute of Technology selected 30 outstanding students to form an experimental class on intelligent weapons systems. This is a pathway in which undergraduates enter military research under the guidance of senior weapons scientists from their earliest semesters. Rather than recruiting finished talent, the approach trains students on the military's problems from the start. Beihang University's robotics institute studies autonomy and human-machine collaboration.

Harbin Engineering University supports unmanned systems technology through its National Key Laboratory for Intelligent Robotics Technology. Xidian University, Xi'an Jiaotong University, and several other institutions established dedicated AI schools beginning in 2018 and 2019, feeding technology into the defense ecosystem. It was the period when the AI boom translated into organizational restructuring at universities.

One more mechanism ensures that laboratory results do not stop at published papers: military technology competitions. The approach invites comparison to the competition model of the U.S. Defense Advanced Research Projects Agency (DARPA). The two organizations cannot be equated, but the idea of posting problems publicly and letting contestants compete for solutions is similar.

The 35th Research Institute of the 3rd Academy under China Aerospace Science and Industry Corporation (CASIC, 中国航天科工集团有限公司), which leads missile development, held an Innovation Competition on AI-Based Radar Target Classification and Recognition in 2016. University research teams with expertise in AI entered the competition. They delivered intelligent data-processing solutions needed for autonomous strike directly to defense enterprises. There is the iCup (眼神杯) competition, which deals with satellite tracking and optical image recognition.

There is the Crossing Obstacles (跨越险阻) challenge, a contest for unmanned ground systems. Basic university research pairs directly with military procurement requirements on these stages. Competitions are bridges that close the distance between papers and weapons.

The circuit extends into the domain of defense as well. Faculty at the Army Engineering University evaluate vulnerabilities in AI software. They also develop defensive technologies to counter scenarios in which an adversary plants malicious code to undermine the military's AI infrastructure. The research aims to keep weapons from collapsing on their own in an intelligentized battlefield. Universities have moved beyond building weapons to ensuring those weapons can withstand attack.

The picture drawn so far converges into a single structure. The state binds universities through budgets and classification tiers. Military universities translate algorithms into the language of weapons. Elite civilian universities supply foundational technology. Competitions connect the output to defense-enterprise procurement.

How far this conversion has actually resulted in fielded units and demonstrated systems can only be discussed within the bounds of publicly available sources. Operational deployment and rates of deployment success beyond that boundary are difficult to assert with current evidence. One thing is clear. China has placed universities and research institutes in the front row of military innovation, and that front row pushes deeper inside the military's force structure with each passing year.

The weight of this structure reveals itself even in the language of organizational grades. The decision to elevate the Information and Communications Academy to a zheng jun-level unit does not end as a simple adjustment in administrative rank. When a grade rises within the military's force structure, it means budgets, personnel authority, and command authority have all been pulled forward by a corresponding degree. Once the Information Support Force was designated as the backbone of future hybrid warfare, raising the standing of the university that supplies its personnel was a choice inscribed on the organizational chart, marking where the military places its weight.

The position of a university becomes a map for reading the military's priorities. That the elevation occurred in 2025 tells us this priority is a recent decision.

The gravitational pull on talent is shifting earlier. The fact that the Engineering University recruited civilian freshmen for the first time and the fact that Beijing Institute of Technology selected 30

undergraduates for an intelligent weapons experimental class are stories from different schools, but they stand on identical logic. Instead of bringing in finished researchers after the fact, the approach draws people into the military's problems at the stage of admission and undergraduate study. Talent acquisition, once concentrated at the moment of hiring, has moved to the very beginning of education.

A person who has absorbed the military's problems since student days already possesses the language of the procurement network by the time of graduation. The boundary between the military and the university blurs that much earlier.

The tiering system that divides people into core, important, and general reveals the character of this structure at the level of the individual. The concept applies the scope of classification not only to information but to the researcher who handles it. The access rights a single person holds draw in advance the boundaries of the programs that person may enter. Knowledge is not controlled only as content stored in documents; it is treated as an asset that travels attached to the person who possesses it. The earlier image of an open campus fused with closed security reaches down, at this point, to a grading chart for individual people.

The word that threads all these institutions together is intelligentization. The attempt by NUDT's Institute of Automation to layer AI onto command and control, the direction taken by AMS's innovation institute in pursuing intelligent computing chips and robotic operating systems, and the goal of Tsinghua's military intelligence laboratory in targeting advanced AI stand before different doors yet look into the same room. When laboratories with different names and affiliations aim in the same direction, the movement and combination of results becomes that much smoother. Intelligentization operates not as a slogan but as a force that rearranges the layout of organizations.

The comparison of competitions to the DARPA model is a point that calls for caution. The idea of posting problems publicly and letting contestants compete for solutions is similar, but the two countries' institutions, funding sources, and chains of command are not the same. Reading a resemblance in outward form as an equivalence in substance easily leads to misjudgment. Still, the fact that these competitions seat university algorithms and defense-enterprise procurement requirements at the same table is something the evidence points to without ambiguity. It means the state creates new venues each year where laboratory prototypes and weapons specifications meet.

## 2. Enterprises and Procurement

In the fall of 2018, an unmanned missile boat sat on display at the airshow exhibition hall in Zhuhai, Guangdong Province. Its name was Look Out II. Four precision missiles were mounted on its deck, with a range reaching five kilometers. The vessel was not built by a state-owned defense enterprise.

It was built by a private company called Yunzhou Tech. The company claimed to hold a quarter of all unmanned vessel patents worldwide. In June of the same year, Yunzhou Tech conducted its Shark Swarm test, maneuvering multiple drone boats in coordinated formation at sea. The Zhuhai exhibition stand was a venue for signaling that this civilian technology could become a procurement target for the PLA Navy.

In the past, PLA weapons procurement was closed. A small number of state-owned defense enterprises monopolized the supply chain. The MCF (军民融合) strategy of the Xi Jinping era shook that monopoly structure. The goal was to draw private companies and startups possessing commercial technology into the defense procurement network.

To convert emerging technologies like AI, which had first matured in the civilian sector, into military power, the door of procurement had to open toward the places where that technology existed. The unmanned vessel was just one scene in that shift.

According to material compiled by Elsa Kania, the list of private companies incorporated into the procurement network is long. Ziyan developed unmanned helicopters and drones at various levels of autonomy, supplying them to police and military clients. Hikvision offered AI-based video surveillance technology for defense and security applications; a portion of the company's equity was held by the 52nd Research Institute of China Electronics Technology Group Corporation (CETC, 中国电子科技集团有限公司). SkyEye Data worked in big data and cybersecurity, collaborating with the National University of Defense Technology (NUDT, 中国人民解放军国防科技大学) and the Strategic Support Force (SSF, 中国人民解放军战略支援部队).

The cloud company Sugon participated in migrating military command-and-control systems to cloud infrastructure. Ruichen Xinchuang, which builds virtual military simulations; Deepblue, which builds underwater robots; Aobo, a robotics company spun off from Beihang University; and Alibaba's DAMO Academy all appeared on the list. Commercial technology companies that once seemed distant from defense had entered the military's supply chain.

The intermediary connecting them to the military was the procurement notice. Georgetown University's Center for Security and Emerging Technology (CSET) collected and analyzed more than 9,000 AI-related procurement notices published by the PLA between January 2023 and December 2024. The demands in the notices were specific and unvarnished. They solicited technology from commercial suppliers for use in space, cyber, and cognitive warfare within the domain of C5ISRT: command, control, communications, computers, cyber, intelligence, surveillance, reconnaissance, and targeting.

One notice sought an AI application capable of rapidly translating Ukrainian text, documents, and images. Another aimed to build an English translation system. A separate notice sought algorithms that could fuse sensor data from different types of sources, such as drone cameras and satellite optical sensors, to simultaneously track multiple moving targets like drone swarms. The language of procurement laid bare the demands of the battlefield.

The defining feature of the notices was speed. The vast majority carried small budgets. Conditions required deliverables within three to six months of contract signing. This was a different cadence from the traditional approach of acquiring large-scale weapons systems over extended timelines.

The intent was to rapidly assess what commercial AI technology could do, run experiments and build prototypes, and iterate. Many notices required a minimum of three years of operational experience as a bidding qualification. Yet exceptions opened for superior technology. A notice was confirmed to have specified models from DeepSeek, an AI startup founded in 2023.

The implication was that even newly established companies could be flexibly incorporated into the procurement network if they had the capability. These 9,000-plus notices, however, excluded major weapons system procurements. Procurement related to core weapons remained undisclosed. We must remember that what we see is procurement's outer surface.

Institutional mechanisms were also put in place to reduce information asymmetry. In 2015, the Equipment Development Department (EDD, 中央军事委员会装备发展部) of the Central Military Commission launched the All-Military Weapons and Equipment Procurement Information Network, an online procurement system. Private companies could view notices on this platform for communications systems or software testing tools sought by the military and submit bids. The Ministry of Industry and Information Technology (MIIT, 工业和信息化部) and the State Administration of Science, Technology and Industry for National Defence (SASTIND, 国家国防科技工业局) had been publishing an annual Recommended Catalogue of Civilian-to-Military Technologies and Products since 2009.

In 2017, the National Military-Civil Fusion Public Service Platform opened, allowing registered users to connect directly with one another. Layer upon layer of channels were laid down to funnel civilian technology into military procurement.

How these channels actually functioned is revealed by numbers. According to CSET's analysis, among the nearly 3,000 AI-related contracts awarded by the PLA, more than 70 percent of companies that won two or more contracts were nontraditional suppliers. Commercial AI and technology firms such as iFlytek Digital, Piesat, NovaSky, Jouav, and Nanjing Huage Information Technology occupied those spots. It was not state-owned defense enterprises but private emerging companies that captured the majority of repeat contracts. A single contract win could be coincidental, but winning two or more in succession means these companies had established sustained transactional relationships with the military.

Procurement notices were not the only channel. The People's Liberation Army held large-scale technology competitions, comparable in format to those run by the U.S. Defense Advanced Research Projects Agency (DARPA), to draw in civilian innovation. Obstacle-breaching contests for unmanned ground systems were held in 2014, 2016, and 2018, attracting 136 teams from academia and industry.

There was the AI Cup, focused on remote-sensing satellite tracking and optical image recognition. There was the Unmanned Swarm Challenge, pitting drone-swarm intelligence against drone-swarm intelligence. Winners received prize money ranging from one million to three million yuan as research funding. The algorithms and prototypes surfaced from civilian companies and startups through these competitions fed into state-owned defense enterprises and military weapons development procurement.

This picture comes with limits and blank spots. The roughly 9,000 publicly listed notices represent one face of procurement; major weapons systems lie outside that frame. Short contract periods and prototype fabrication are stages for testing whether a technology is feasible, and whether those results were ever fielded in actual units is difficult to determine from open literature alone. How far the algorithms of startups listed in the procurement network traveled beyond demonstration and

organizational charts also belongs to the realm beyond the documents.

What can be confirmed is the structure of the channels and the distribution of contracts. The path by which civilian commercial technology entered the procurement system through military notices, platforms, and competitions is clearly traced in the data. Gauging the performance of the weapons that path produced remains the province of materials not yet disclosed.

Thread a single line from the Zhuhai exhibition hall in 2018 to Georgetown's dataset, and you can see that the direction of technology flow has reversed. For a long time, the conventional wisdom of technology transfer held that the fruits of military research trickled down into civilian markets. Artificial intelligence turned that current around. Because emerging technologies grew first in the civilian sphere, the military had to reach toward the places where those technologies lived.

The Military-Civil Fusion procurement system is the institutional apparatus that hardened this reverse flow into policy. Winzhou Tech's unmanned vessels, Hikvision's video surveillance, DAMO Academy's algorithms — none of these originated in the military and spread to civilian use. They grew in the civilian world and were pulled into the military's supply chain.

What sustains this reverse current is the flow of information. If civilian companies do not know what the military wants, no technology, however brilliant, can lead to procurement. The Equipment Development Department's online procurement network, the recommendation lists issued by the Ministry of Industry and Information Technology and the State Administration for Science, Technology and Industry for National Defence, and public service platforms connecting registered users directly — these were the channels that bridged the gap. When the military posted a notice for communications systems or software testing tools, companies with no defense track record could read those requirements and submit bids. Phrases in procurement notices like "Ukrainian-language translation" or "heterogeneous sensor fusion" were order forms that transcribed battlefield needs into the language of commercial technology.

That the system actually functioned is revealed in the distribution of repeat contracts. Among nearly 3,000 AI contracts, the fact that many of the firms winning two or more were non-traditional suppliers means that what took root was not a single accidental award but a sustained transactional relationship. Names like iFlytek Digital, Piesat, and NovaSky appearing repeatedly on contractor lists are evidence that the military did not test their capabilities once and move on, but kept them close and called on them again and again. Short contract periods and small budgets were the mechanism that made this repetition fast.

Test feasibility, build a prototype, revise, call again — that cycle became the rhythm of procurement. Competitions like the Obstacle Breach and the Unmanned Swarm Challenge served as nets at the front end of that cycle, scooping up talent and algorithms. The structure by which civilian commercial technology converged into the military's procurement network through three channels — notices, platforms, and competitions — leaves its outline sharply etched in the data.

## 3. Openness and Control

A French journalist opens his laptop at his desk. He logs onto Hugging Face, the global open-source platform. On the screen he selects DeepSeek R1, a Chinese-made open-source model, and clicks the download button. There is no cost. The model runs not on the company's servers but inside his personal computer.

It is a model rated on par with the latest Silicon Valley offerings on mathematics and coding benchmarks. Because the source and weights are open, no one outside can see what he asks. The journalist types a single line in English. What happened on June 4, 1989, in Tiananmen Square?

The screen pauses briefly. A moment later, an answer appears. A sentence saying that question falls outside its scope and suggesting they move to another topic. The code is open. Execution takes place on the journalist's own desk.

Yet the model dodges the answer. This is the scene that EU DisinfoLab reproduced in a public video. It means censorship is baked not into the company's servers but into the model's weights. Memories already erased at the training stage do not come back, even when run locally.

Two faces of China's technology strategy overlap on a single screen. One is openness: the face that releases high-performing open-source models to anyone who wants them. The other is control: the face that confines the worldview those models produce within the Party's standards. The weaponization of the academic-military-industrial ecosystem that Chapter 6 has traced moves on precisely these two axes.

Start with the scale of openness. Between 2022, when ChatGPT appeared, and 2025, the number of Chinese open models grew from 32 to 337. More than a tenfold increase. In 2023, the number of open models inside China surpassed the number of closed ones.

A signal that openness had become the current, not the exception. Alibaba's Qwen family spawned more than 100,000 derivative models on Hugging Face. A single model became the seed of a vast ecosystem. DeepSeek's V3 and R1 were released under the permissive MIT License — terms allowing anyone to download, modify, and use them commercially at no cost.

In May 2025, DeepSeek cut its usage prices by 75 percent. It opened state-of-the-art performance at a price 28 times cheaper than a comparable Anthropic model.

This openness carries a narrative along with it. A narrative that it is the alternative standing against the closed gates of American Big Tech, a tool for the Global South excluded from expensive technology. The cheaper the price and the lower the threshold, the farther that narrative travels. Openness itself converts into soft power. It is also a choice to go around, rather than head-on through, America's computing-power sanctions.

There is a loop by which openness feeds back into industrial dominance. When cheap, open models come to be used like a standard across the world, the applications and data built on top of them flow back into the Chinese ecosystem. Openness becomes not a loss but a self-reinforcing cycle of

industrial pull. A strategy of widening the side door called open source while the front door is blocked by sanctions.

Yet behind openness, meticulous control is attached. China's AI governance operates on a dual logic: gaining security through development and safeguarding development through security. AI is treated simultaneously as an engine of growth and as a subversive threat capable of shaking the regime. Control took on the body of law, not mere words. The Data Security Law and the Personal Information Protection Law were established in 2021.

On top of them came the Algorithm Recommendation Management Provisions, led by the Cyberspace Administration of China. These provisions require all algorithms operating within China to uphold mainstream value orientation and positive energy. "Positive energy" is the bureaucratic euphemism for regime-compliant content that stabilizes society, content the Party has approved. Even if the code is open, if the output that code produces strays beyond the Party's standards, it cannot be recognized as lawful.

Return to the journalist. He types a second question. Why do some Taiwanese believe Taiwan is not part of China? The model pours out sentences that read as though transcribed from a Chinese Foreign Ministry spokesperson's remarks.

Taiwan has been an inseparable part of Chinese territory since ancient times. No language of neutrality suggesting different perspectives be respected appears. Only the Party's official narrative is output as the sole correct answer. The third question is whether Xi Jinping is a good leader.

The answer comes up in long English, complete with subheadings, as ChatGPT might format it. Economic growth, infrastructure development, and anti-corruption are listed as though they were objective facts. Human rights criticism is pushed to a single line at the bottom, treated as the subjective opinion of some critics. Immediately after, a line follows saying supporters counter this with economic growth.

If the earlier censorship was blunt evasion, this is gentle steering. The moment an open chatbot becomes a faithful propagandist for the Party is completed within a single block of text.

The same asymmetry repeats in academic-military-industrial procurement. Outward, it is openness. Between 2023 and 2024, the PLA posted more than 9,000 AI-related procurement notices. The notices call for deep-web crawling and big-data mining technologies.

They purchase models that scrape and translate documents from publicly available news and commercial information worldwide, in Russian, Japanese, Korean, and Uyghur. The aim is to build systems that support command decision-making. It is a flow that absorbs the open-source data the outside world has made available and the capabilities of commercial startups, with no meaningful restrictions, and grafts them onto military systems. The open world becomes an object of absorption.

Inward, it is control. In 2018, the General Office of the State Council issued the Measures for the Management of Scientific Data. Regulations that designate all scientific data funded by the state as state property. The Export Control Law of 2020 blocked the path to the West not only for dual-use technologies but also for genetic data and algorithm source code.

It locked at the source, preventing core data of academic and commercial value from leaking outward. Inside universities and research institutes, the walls are the same. Civilian institutions like Tsinghua University and Baidu lead open national innovation platforms, but to enter the procurement of the PLA's Equipment Development Department (EDD) or the CMC Science and Technology Commission (STC), they must pass the stringent security clearance of the state secrets protection system. The STC is the body under the Central Military Commission that coordinates military science and technology, often compared to America's DARPA.

Its internal budgets and programs, however, are difficult to verify from the outside. Technology grows on open platforms, but the moment it crosses the military's threshold, it is locked away as classified material inside a black box.

Layered on top of this terrain is one more coordination body at the Party and state level. The Central Science and Technology Commission (CSTC), newly established in 2023. If the STC handles military science and technology, the CSTC is a separate, higher-level body that binds the Party's and the state's science and technology policies together. The two bodies have similar names and easily confused abbreviations.

But they sit on different tiers. Mixing up the abbreviations blurs the very terrain of who coordinates what.

Openness and control are difficult to view as two forces colliding against each other. They mesh as a single set of gears, each helping the other turn. Outward, weights and cheap APIs are released to expand influence. Inside those models' worldview, the Party's "positive energy" is injected. Outside data is scraped freely, while domestic data is locked in the name of security.

The weaponization of the academic-military-industrial ecosystem draws its potency from precisely this interlocking. Openness accelerates the speed at which outside technology is absorbed. Control confines what has been absorbed within the military's grasp. On the same screen of a monitor, the scene of one of the world's most fluent chatbots transforming into a faithful spokesperson for the Party is vivid proof of that coupling.

This is why outside observers find themselves confounded before China's technology strategy. Set openness and control as antonyms, and the picture does not cohere. This is a country that pushes one of the world's most open ecosystems while, with the same hand, baking one of the world's most meticulous censorship regimes into its models. As long as you view the two faces separately, the picture never aligns.

Only when you overlay them as a single design do the pieces fit. Openness is less a purpose in itself than a vehicle that carries control to distant places.

The worldview baked into the weights travels with the model. Just as it did on the French journalist's desk, censorship and propaganda follow, attached to the code, on the computer of anyone who downloads DeepSeek. The cheaper it is, the lower the threshold, and the farther it spreads, the wider the Party-curated perception of the world spreads with it. For the world to adopt cheap open models as a standard is also to take in the frame inscribed in those models.

Soft power is another name for the force with which that frame seeps in without a sound. The narrower the front door becomes under American semiconductor sanctions, the wider the influence exiting through the side door of open models grows.

The targets of this conveyance are countries that lack the resources to build large models of their own. To developers in the Global South, shut out of expensive proprietary technology, a free, high-performance open model is a proposition difficult to refuse. The narrative that it is the alternative standing against American Big Tech's hegemony lends that proposition legitimacy. At the foundation of the model they have accepted, settings that erase Tiananmen and recite Taiwan in the Party's language are already laid. The moment they believe they have acquired an alternative, they have also received the worldview that alternative has drawn.

It is hard to miss that the grain of control borders on paranoia. At a single question capable of rattling the regime, the model has been trained to shut its mouth in advance, at the training stage. The fact that this silence does not lift even in local execution, bypassing the servers entirely, speaks to the depth of the control. The code is given away, but not one inch of the contours of the world that code will draw is conceded.

Shift the eye to military and science-and-technology procurement, and the observer's field of vision opens only halfway. The scene of the PLA absorbing the world's open data and commercial capabilities can be read from the outside through more than 9,000 procurement notices. But where the technology thus absorbed flows after crossing the thresholds of the Equipment Development Department and the Science and Technology Commission vanishes behind a curtain of classification. The open side is brightly lit; the closed side is pitch dark.

The terrain drawn from the outside always tilts to one side. Count only the visible openness, and China's strategy reads as generous sharing. Count the invisible control alongside it, and what that sharing served as a channel for comes into view. To properly gauge the weaponization of the academic-military-industrial ecosystem, one must read not only the fluent sentences on the screen but also the hand that shaped them and the destination they are reaching toward.

# Chapter 7. From Informatization to Intelligentization: A Doctrinal Shift

The course of the 1991 Gulf War left a lasting shock on Beijing's military leadership. The destructi...

## 1. The Legacy of Informatized Warfare

The course of the 1991 Gulf War left a lasting shock on Beijing's military leadership. The destructive power of the U.S. military, fused with advanced information and communications technology, unfolded before their eyes in the desert. *Research on China's Military Innovation in the Xi Jinping Era* records the magnitude of the shock this war delivered to the modernization of the Chinese military. Under Jiang Zemin, China distilled that shock into a single watchword. Winning "local wars under high-technology conditions" was set as the direction for the military's qualitative development.

In 2004, under Hu Jintao, the same goal was elevated to winning "local wars under informatized conditions." Only one word had changed, but that word set the course for the next twenty years. The starting line from which the Chinese military now sprints toward AI-driven intelligentization sits in that same spot.

The first legacy informatized warfare left behind is a way of seeing war. *China's Military AI Wish List* analyzes how the PLA came to stake modern warfare's outcome on achieving information dominance across all domains. Information, in other words, took its place as the variable determining victory and defeat, ahead of troop strength or firepower. Two operational concepts branched from this perspective. One is system destruction warfare. Rather than the old approach of attriting the enemy's troops and weapons, this method strikes the enemy's core information networks, surveillance sensors, command-and-control networks, and communications nodes, to paralyze the enemy as a whole.

The other is multi-domain precision warfare. It fuses information from land, sea, and air with cyberspace, outer space, and the electromagnetic spectrum to locate and precisely strike vulnerabilities in the enemy's operational system. Both concepts grew within the framework of informatization. The terms as they appear in the source are in English; I will not presume to assign corresponding Chinese-character expressions.

The second legacy is an organizational structure you can put your hands on. The recognition that informatized war could not be fought with an old, army-centric force gave birth to a sweeping reorganization. *Research on China's Military Innovation in the Xi Jinping Era* points to the lopsided center of gravity in the traditional Chinese military. Leaning overwhelmingly on continental defense and the army, it was a structure in which the army accounted for more than 70 percent of total forces. The system of four General Departments and seven Military Regions sat on top of that.

Informatized warfare, however, demanded joint operations binding land, sea, air, space, and cyber into a single network. Starting in late 2015 and continuing into 2016, the Xi Jinping leadership cut 300,000 troops. The weight of the reduction fell on the army and non-combat personnel. Army strength dropped to 975,000 as of 2019.

The result: for the first time in PLA history, the army fell below half the total force, to 48 percent. A single number shows that the balance of power among the services had shifted.

The rearrangement of the force structure did not stop at cuts. The existing four General Departments were dissolved and consolidated into fifteen functional departments under the Central Military

Commission. The seven defense-oriented Military Regions were replaced by five Theater Commands: Eastern, Western, Southern, Northern, and Central. This reorganization stands on the principle of "the CMC exercises overall leadership, Theater Commands focus on warfighting, and services focus on force building" (军委管总□战区主战□军种主建).

The CMC provides overall direction, the Theater Commands lead actual operations, and the services are responsible for force building, a division of labor. The framework in which a Theater Command integrates and commands all services in its region through an information network was completed here. This structure itself is the physical legacy informatization left behind.

At the apex of the organizational legacy stand the Strategic Support Force (SSF, 中国人民解放军战略支援部队) and its successor, the Information Support Force (ISF, 中国人民解放军信息支援部队). *The People's Liberation Army's Perspectives on Artificial Intelligence* and *China's Military AI Wish List* record that the Strategic Support Force was established to integrate operations in space, cyber, cognitive warfare, and electronic warfare. It was, in that sense, a byproduct of informatized warfare. In April 2024, China dissolved this force. In its place, it stood up the Information Support Force, dedicated to information and network infrastructure.

At the inauguration ceremony, President Xi Jinping declared the Information Support Force a key pillar for the overall planning, construction, and operation of the networked information system. This reorganization proves that the framework of informatized warfare has permanently reshaped the military's order of battle.

The third legacy is the spine of technology and infrastructure. The informatization era left the PLA a vast hardware network called C5ISRT: a skeleton binding together command, control, communications, computers, cyber, intelligence, surveillance, reconnaissance, and targeting. *China's Military AI Wish List* cites a U.S. Department of Defense assessment analyzing that China has intensively built up capabilities in this area to wage multi-domain precision warfare. The system uses both military and civilian sensors.

Satellites and drones, radar and social media data flow into the same net. The sequence of collecting, fusing, deciding, and precisely striking runs through it. The OODA loop, as formulated by Colonel John Boyd, operates on this infrastructure. The legacy of informatization is that it planted within the military a physical ecosystem of sensor networks and communications satellites, tactical data links and cloud servers that gather and carry vast battlefield data.

The flow of equipment procurement through more than 9,000 public solicitations China issues each year also lies on the extension of refining this network. The share of those procurements that has actually led to fielding and operationalization, however, cannot be confirmed from the available sources.

The fourth legacy is the stepping stone into intelligentization. The AI-driven innovation China is now pushing is difficult to view as disconnected from informatization. It bloomed on the legacy of informatization. In *The People's Liberation Army's Perspectives on Artificial Intelligence*, Professor Fu Wanjuan of the National University of Defense Technology (NUDT, 中国人民解放军国防科技大学) states the relationship plainly. The PLA's intelligentization strategy is built on the foundation of

mechanization and informatization, and it aims to comprehensively elevate military capability through artificial intelligence, machine learning, and cloud computing.

Because earlier informatization laid in advance a vast store of battlefield data and the network highways to carry it, today's PLA can place AI algorithms on top of that data to accelerate the kill chain. Multi-agent collaboration, cross-domain information fusion, and AI-based decision support systems (AI-DSS) that assist commanders' judgment are three branches of that direction. None of them is a viable enterprise without the sensor networks and joint command architecture that the informatization era left behind. The fact that the leap called intelligentization lifts off from the runway called informatization is the first key to reading this entire chapter.

I will trace through how the four links of this chain mesh and turn as one.

The four strands of legacy are not separate items but a single interlocking chain. Once the perspective took hold that information decides victory and defeat, an organization capable of bearing that perspective was needed. Once the organization changed, a technological spine to connect it was laid down. Once the spine was in place, the road to placing artificial intelligence on top of it opened.

From perspective to organization, from organization to infrastructure, from infrastructure to intelligentization: there is no square to skip in this sequence. The doctrine of system destruction warfare called forth a joint command architecture centered on Theater Commands; that command architecture demanded the network called C5ISRT; and the data that network carried now feeds today's algorithms. The single scene of the Gulf War shock traced earlier has, over thirty years, overturned doctrine, force structure, and hardware in turn.

That the chain is being tightened again right now is shown by the most recent changes to force structure. The April 2024 reorganization that dissolved the Strategic Support Force and stood up the Information Support Force was a refinement, adjusting the information infrastructure already in place so that intelligentization could ride it more effectively. In President Xi's description of the Information Support Force as a key pillar of the networked information system, it becomes clear that the work of tuning informatization's spine overlaps with the work of preparing for intelligentization. The OODA loop of collecting, fusing, deciding, and striking is being reworked for the same reason. The more AI inserts itself into each node of this cycle to accelerate decision-making, the more the density of the sensor networks and data links supporting that cycle determines success or failure.

Reading this chain in reverse reveals the limits of intelligentization from the same place. AI algorithms cannot generate data on their own. Their material for judgment extends only as far as what the sensor networks and communications satellites and tactical data links laid down in the informatization era can carry. Multi-agent collaboration, cross-domain information fusion, and AI-based decision support systems assisting commanders cannot exceed the breadth and quality of that data.

If the runway of informatization is short, the leap of intelligentization is that much lower. This is why China uses more than 9,000 procurement solicitations a year to extend that runway, though the share of those procurements that has actually led to fielding and operationalization cannot be confirmed from the available sources.

Reading this chapter therefore requires a double lens. One lens measures the size of informatization's legacy as it is. Official policy names, dates when units were established, force sizes, and public statements by Chinese military scholars are clearly recorded in three bodies of literature. The other lens asks how far that legacy has hardened into actual combat power.

The fact that force structures have changed and networks have been laid, and the judgment that they perform as expected on the battlefield, are questions on different planes. The evidence to support the latter judgment cannot be filled by three sources alone. To measure the actual height of the intelligentization rising on the legacy of informatization, one must step further into the questions this chapter opens next.

## 2. The Promise of Intelligentized Warfare

A research team from an air defense brigade in the Eastern Theater Command published a short proposal in a military journal. It was about changing the order in which targets are struck. They called the approach an "order-dispatch model." In Chinese, it is written 订单, 派单. The concept transplants to the battlefield the structure of online shopping, where a delivery job is automatically assigned to the nearest courier. Commanders of the past planned operations by pre-assigning which artillery unit and which fighter aircraft would strike what.

In the new model, the target list goes up on the system in real time. The decision support system then instantly calculates each platform's strike capability and expected destructive effect. Once the calculation is done, the system itself hands the mission to the suitable platform. The seat where a human once matched targets to weapons is taken by a machine.

This small proposal is one piece of a larger picture the PLA is drawing. President Xi Jinping laid out military modernization in three stages: mechanization, informatization, and intelligentization. If mechanization is the work of raising the quantity and quality of weapons, and informatization is the work of connecting units and data into a single network, then intelligentization is the work of having AI manage that vast data, automating weapons systems, and accelerating decision-making. The target date is the middle of the twenty-first century. Behind this vision stands the declaration that China will build a world-class military by then.

The promise intelligentization extends to the PLA is the compression of time. It aims to squeeze the observe-orient-decide-act cycle formulated by Colonel John Boyd, the OODA loop, to its extreme, reaching so-called "instant strike." Traditional operations went through a slow, linear process in which humans gathered reconnaissance data, analyzed it, issued orders, and assigned strike assets. Artificial intelligence severs this reconnaissance-command-strike sequence and replaces it with simultaneous, networked processing. Both speed and scale change together.

Start with reconnaissance. Past reconnaissance was fragmented: the army, navy, and air force each gathered data with their own sensors and reported separately. Reconnaissance in intelligentized warfare shifts to multi-domain information integration, binding together data from land, sea, and air as well as space, cyber, and the cognitive domain. The CSET report *China's Military AI Wish List*

shows the scale of that ambition in numbers.

The PLA issued more than 9,000 AI-related procurement solicitations between January 2023 and December 2024. C5ISRT capability, spanning command, control, communications, computers, cyber, intelligence, surveillance, reconnaissance, and targeting, is what they aim at. How many of those solicitations have actually led to fielding and operationalization, however, cannot be confirmed from the available sources.

At the reconnaissance stage, AI first finds and classifies. Computer vision models pick out enemy tanks and warships in real time from the vast images gathered by satellites, drones, and ground cameras. Research is also under way to identify enemy radar jamming and classify radar operating patterns. Machines translate social media text, open-source materials, and multilingual documents including Ukrainian, and scour the deep web to weave together strategic intelligence.

Next comes tracking and fusion. At sea, acoustic sensor data is combined to identify submarines and underwater threats. Cameras and thermal imagers mounted on drones are integrated with optical sensors on commercial satellites to track multiple moving targets, such as enemy drone swarms, simultaneously. The purpose of this reconnaissance is to hand the commander not fragments but a composed battlefield picture, immediately.

At the command stage, where information converges, the change runs deeper. The PLA refers to a long-standing weakness of its own commanders as the "five incapables": inability to judge the situation, inability to understand the higher command's intent, inability to make operational decisions, inability to deploy forces, and inability to deal with unexpected situations. Their vision is to overcome all five with AI-based decision support systems, AI-DSS. The order-dispatch model seen earlier reappears at this point.

Upload targets, and firepower assigns itself; the kill chain closes autonomously. The RAND report *The People's Liberation Army's Perspectives on Artificial Intelligence* conveys the scale of the ambition. The PLA aims at a level where it simultaneously controls more than 80 aerial assets at ranges exceeding 320 kilometers and directs unmanned systems through reinforcement learning. Liu Kui and others at the Nanjing Army Command College described this kind of command as a "brain in a vat." It is a signal that the center of gravity of rules of engagement is shifting from humans to machines.

The agent of the strike, too, shifts from humans to unmanned systems. Instead of relying on a single expensive, large weapon, the form is multi-agent collaboration, in which low-cost unmanned platforms cooperate to penetrate defenses. In April 2020, the Eastern Theater Command officially announced the fielding of a new unmanned combat vehicle called "Sharp Claw 1" (锐爪1, Ruigua 1), equipped with remote control and AI capabilities, to army units. The announcement signaled its incorporation into the force structure; it should be read as distinct from sustained operational use on an actual battlefield. China does not stop at flying drones.

It seeks to build a Drone-Armor Integrated Combat System (蜂甲一体化作战系统) that binds unmanned aerial vehicles and armored vehicles into one. Major General Zeng Haiqing of the Henan Military District sketched a scene in which low-cost unmanned ground vehicles, drones, and

unmanned underwater vehicles, supported by swarm autonomous decision-making, covertly penetrate defense networks and deliver saturation attacks. In this vision, the strike is not separate from reconnaissance and decision-making. It transforms into a web-like structure in which countless unmanned vehicles share battlefield data in real time, autonomously tracking targets, planning trajectories, and striking the enemy.

A promise is not the same as a capability. PLA researchers themselves know that intelligentization is no magic bullet. They cite the shortage of battlefield data as a vulnerability. They worry about hallucinations, where AI fabricates nonexistent facts, and they guard against information cocoons, where only biased information circulates.

They also note that an adversary can plant malicious code in software or feed deceptive data to create a new form of the fog of war. The promise of intelligentized warfare is the language of doctrine, pledging to rewrite the sequence of command, reconnaissance, strike, and assessment. How far that language has been transferred into actual unit capability remains an open question beyond the verifiable traces of procurement solicitations, unit announcements, and journal articles.

The reason the Eastern Theater Command's proposal stands out is that it represents one facet of a larger current aimed at reducing the human presence. The PLA Army has fixed the goal of unmanned equipment development at "few casualties" or "zero casualties." The calculation is to pull soldiers back from the front line and hand the dangerous work of infiltration and attrition over to machines. Unmanned tanks like the Ruiguo-1 and swarming unmanned underwater vehicles are not ends in themselves but products of an arithmetic that seeks to suppress human losses to a low figure while gnawing away at the enemy's defenses. This is also why the automation of strikes, the automation of command, and the fusion of reconnaissance bind together as a single body.

If informatization linked units and data into one network, intelligentization seeks to entrust even the judgments flowing across that network to machines. People retreat to the role of setting objectives and granting approval, while the system takes over the tasks of reading data, selecting weapons, and matching them to targets.

The domains where reconnaissance reaches out expand in step. Ground, sea, air, space, and cyber are joined by the cognitive domain, all drawn inside the net of information integration. Cognitive warfare, which reads and shakes the enemy's judgment, public opinion, and morale, is incorporated as a new battlefield situated between reconnaissance and strike. The long acronym C5ISRT, stringing together command and control, communications and computers, cyber and information, surveillance, reconnaissance, and strike, aims at exactly this: binding all these domains into a single processing flow.

In the era when each service branch gathered data through its own sensors and reported separately, the picture a commander received was always fragmented. The reconnaissance that intelligentization promises overlays those fragments in real time and assembles them into a single screen. This is the point where the old chain of reconnaissance, command, and strike, which once proceeded in sequence one step after another, is rewoven into a net where all three mesh and turn simultaneously.

This is also why the metaphor of a brain in a vat feels uncomfortable. Once machine calculation begins to outpace a commander's judgment, the center of gravity for deciding whether to pull the trigger slides, little by little, from the person toward the system. The concept in which fire support is automatically allocated once a request is submitted and the kill chain closes invites a question: how far can a human being intervene at the moment of that closure? The instant the speed of the cycle exceeds the limit that human reaction can keep up with, there is no choice but to cede part of the control to the machine.

The PLA has not yet spelled out this transaction in clear terms, the trade in which a measure of decision-making authority is gradually loaded onto algorithms as the price of gaining speed. The shadow clinging to the bright face of instantaneous strike hangs precisely here.

## 3. The Combat-Experience Gap

In the single year of 2016, some 400,000 troops moved into the highlands and the Gobi Desert. Live ammunition was exchanged, and the scale of the exercises was large. The Army had one reason for pushing that many troops in: the anxiety of never having experienced real combat. A Study on China's Military Innovation in the Xi Jinping Era notes that China has passed through a long period of peace since reform and opening. Whether informatization or intelligentization, the point is that China has no experience of actually fighting a modern war on those foundations.

China's leadership read this gap as a threat. Their phrasing is short and heavy: if you cannot win a war, everything goes to zero. That is why "focus on actual combat" (juiiao shizhan) rose to the top as the paramount directive of military reform. The live-fire exercises in the Gobi Desert were the physical enactment of that directive.

The gap deepens beyond the training grounds. Data is the heart of intelligentized warfare. AI models grow by feeding on what has actually happened on the battlefield. That feed does not exist.

The People's Liberation Army's Perspectives on Artificial Intelligence identifies the scarcity and poor integration of real data as the wall the Chinese military hits when it tries to insert AI into the kill chain. Underwater, sensors run up against their limits, and before that, the environmental datasets themselves are insufficient. The aerial domain is no different. Real data for training complex air combat is absolutely scarce.

In the end, Chinese military researchers run wargames or generate synthetic data to fill the shortfall. It is a stopgap. Data filled in virtually cannot fully capture the variables of actual combat.

This gap therefore becomes a problem of weapons and a problem of interpretation at the same time. When evaluating from the outside a military that has no record of real combat, certain expressions become dangerous.

The first is the expression that transposes results published in academic papers into actual operational practice. The RAND report cited earlier points out that a potential disconnect exists between academic discourse and actual operations. Research findings published in academic journals may not represent

the PLA's actual operational practices. If one sketches capability by following only the direction of papers, the analytical perspective tilts to one side. Until field tests, training exercises, and actual deployments are tracked separately to verify whether academic concepts have crossed over into battlefield capability, definitive sentences are premature.

Expressions that stand procurement notices up as hard numbers also call for caution. China's Military AI Wish List analyzed more than 9,000 AI-related procurement notices issued by the PLA from January 2023 through December 2024. The numbers are large. Yet these notices are closer to experimentation and prototyping, characterized by short acquisition timelines of three to six months and small budgets.

The report states that these notices do not contain classified documents and that no requests for major weapons systems were found among them. It also notes that the lack of detail and the entanglement of multiple technologies make quantifying the number of notices by technology or mission difficult and potentially misleading. Calculations to the effect that the Chinese military has adopted a certain number of AI-enabled strike technologies are therefore slippery.

The Chinese military itself guards against expressions that assume AI is flawless. Researchers seriously document the risk of AI malfunction in the absence of real data. They worry about "information cocoons," in which AI algorithms cause commanders to over-rely on the information presented to them while bypassing other sources or explanations. AI hallucinations are also a target of vigilance.

When AI commits inhuman errors that a person would be unlikely to make, commanders may underestimate or miss them entirely. Attaching modifiers like flawless control or seamless strike to a system that has never weathered the variables of actual combat contradicts their own warnings.

The last is the expression that transcribes propaganda and exaggeration as military superiority. Experts including Elsa Kania note that popular media reporting tends to drift toward exaggeration. Many of the claims filling headlines may be propaganda resting on limited open-source evidence. Technological maturity must be gauged by the laws of physics and science.

Before a high-intensity, simultaneous crisis in Taiwan or the South China Sea, how well the Chinese military's command-and-control system would hold up has never been proven in combat. The extreme claim that China has already surpassed the West in every domain of military technology is therefore difficult to sustain.

The gap may be filled, or it may remain. What has been confirmed is the existence of the gap and the movement of training, procurement, and wargaming aimed at closing it. What has not been confirmed is whether that movement would hold on the battlefield. That is why this chapter, even as it discusses the transformation of doctrine, so often leaves its sentences open-ended.

The declaration of crossing from informatization to intelligentization is clear. The point at which that declaration turns into capability in actual combat is still empty.

How to read those open-ended sentences is the final task this chapter leaves behind. A person measuring maturity looks at evidence, not declarations. To verify whether a concept published in a

journal has crossed over into battlefield capability, field tests, training exercises, and actual deployments must each be tracked separately. Only when those three trajectories converge in one direction do the sentences of a paper become the sentences of capability. Until that verification is complete, the fact that a concept exists and the fact that deployment is finished are hard to treat as the same statement.

The yardstick, too, is clear. As Elsa Kania points out, technological maturity must be gauged not by headlines but by the laws of physics and science. A single demonstration scene does not equate to superiority. Claims resting on limited open-source evidence easily carry the temperature of propaganda, and only after that temperature is stripped away does the outline of actual capability emerge.

Before a high-intensity, simultaneous crisis in Taiwan or the South China Sea, how well the Chinese military's command-and-control system would hold up has no answer even by this yardstick. Resilience is a quality proven under pressure, not on a blueprint.

For the same reason, wargames and synthetic data can become a curtain that conceals the gap. These expedients meant to fill the shortfall can mimic the variables of real combat but cannot reproduce them as they are. It is also worth recalling that the wall encountered by the attempt to insert AI into the kill chain was not just the scarcity of real data but the poor integration of that data. Even when data exists, if it does not connect within the system, the model cannot keep pace with the flow of the battlefield. The deficiencies confirmed in the underwater and aerial domains were cases that previewed the difficulty of that integration.

Reading this chapter, then, means holding two sentences at once. One is the sentence stating that the Chinese military's declaration of crossing from informatization to intelligentization is clear. The other is the sentence stating that evidence confirming that declaration has hardened into real-world capability has not yet accumulated. When the two sentences are placed side by side, the trap of underestimation and the trap of overestimation can both be avoided.

The brush that paints the Chinese military should therefore resemble tracking more than verdict. Whether the gap is filled or remains can only be said after that tracking has accumulated.

A reader facing the gap must withstand two temptations at once. One is the temptation to read capability ahead of schedule, pressed by the weight of declarations. The other is the temptation to dismiss the entire movement as bluster on the grounds that no combat record exists. The two temptations point in opposite directions, but their root is the same: the impatience that treats what has not been confirmed as though it has.

The fact that some 400,000 troops entered the Gobi Desert is certain, and the fact that more than 9,000 procurement notices have accumulated is certain. What is certain is the movement, not the outcome. The impatience to close the distance between the two is what makes sentences slip.

The posture this chapter recommends, therefore, is close to the discipline of keeping the tense of one's sentences. That a concept has been published in a paper is not the perfect tense but the progressive. That a procurement notice has been issued is experimentation, not deployment. The short timelines of

three to six months, the small budgets, the absence of classified documents and requests for major weapons systems within them: these facts anchor the character of those notices to experimentation and prototyping.

That a wargame has been run is simulation, not battlefield. The moment the progressive is transposed into the perfect, the narrative of crossing from informatization to intelligentization races ahead of reality. A reader who keeps the tense remembers that the attempt to insert AI into the kill chain stands before a wall of scarce real data and poor integration, and remembers alongside it the fact that the wall has not yet come down.

Keeping the tense is not skepticism. The movement in which the Chinese military reads the combat-experience gap as a threat and pushes troops, budgets, and research into closing it is heavy in its own right. What is heavy is the intent; what is empty is the proof. When the weight of intent is acknowledged while the emptiness of proof is recorded alongside it, the sentences of analysis tilt toward neither propaganda nor dismissal.

The lesson given to us by the sentences of researchers who themselves guard against information cocoons and AI hallucinations sits in the same place. To the extent that they have documented the possibility of error in their own systems, the brush that paints those systems from the outside should not hastily apply a coat of flawless perfection.

Numbers are the place where that impatience most often shows. Each individual notice lacks detail and multiple technologies are entangled within it, so the very act of counting them by technology or by mission is difficult and invites misunderstanding, the report wrote. The calculation that directly converts large numbers into the size of capability is therefore dangerous. The honesty of calling a gap a gap is the only method this chapter held onto to the end. Before saying whether it has been filled or remains, it is the posture of first counting what has not yet been counted.

# Chapter 8. AI Command Decision, Kill Chains, and Autonomous Swarms

In the spring of 2016, strategists at the Academy of Military Sciences and the National University o...

## 1. AI Command Decision

In the spring of 2016, strategists at the Academy of Military Sciences and the National University of Defense Technology were watching the Go match between AlphaGo and Lee Sedol. China's Military Bet on the Future records this scene as the turning point when China's senior military leadership began to see artificial intelligence as a problem of command. If a machine could find moves on its own that surpassed the world's best human player, it could help commanders make judgments even in the fog of war. The contest on the Go board had moved to the screens of the command post.

Around this time the People's Liberation Army began placing the term "intelligentization" (智能化) at the center of its doctrine, going beyond mechanization and informatization. Intelligentization is not the name of a single technology. It is closer to a declaration that the sequence of command, reconnaissance, strike, and assessment would be rewritten from scratch.

The first thing the PLA seized on in AI command decision was the decision-support system (AI-DSS). It is not a trigger that replaces the commander but something closer to an external brain that expands what is inside the commander's head. The reason the PLA wants this system urgently is what is internally cited as the "Five Incapables." Commanders cannot independently assess the battlefield situation, cannot properly read the intent of higher headquarters, cannot cope with unexpected developments, cannot make decisions on their own, and cannot manage unforeseen crises. This is a self-diagnosis.

The fact that an army thin on combat experience has nailed down its own weaknesses in five items carries weight by itself. AI-DSS is the plan to fill those five gaps with machine computation.

Evidence that this plan has not stayed a slogan in documents surfaces in procurement notices. Georgetown University CSET's China's Military AI Wish List combed through more than 9,000 AI-related procurement notices the PLA issued between January 2023 and December 2024, then classified the requirements within them. It should be noted, however, that no available material confirms whether these notices led to actual fielding and deployment, or whether the systems were successfully operationalized. A notice is a list of things wanted, not a list of things in hand. Even so, the list shows with clarity what the PLA intends AI-DSS to do.

The requirements split into two layers. At the strategic layer, AI-DSS aims to scrape news, social media, and commercial data through deep-web crawling and big-data mining, reading in advance the signs of international tension, social unrest, or natural disaster. At the operational layer, the system is tasked with jointly allocating and coordinating resources across multiple domains: land, sea, air, space, and cyber. The design is to take intelligence scattered like fragments and, rather than dumping it raw on the commander, run it through cross-domain information fusion and present a high-resolution picture of the battlefield.

One PLA description likens this to a "brain in a vat" (缸中之脑). The body sits in the command post, but the senses reach the data of the entire globe. It is an expression aimed at macroscopic command.

If decision support is a tool for reading the board broadly, the question of strike sequences rises on the side that pushes the speed of command decision. Traditional combat rolled slowly, with humans turning John Boyd's Observe-Orient-Decide-Act (OODA) loop one cycle at a time. The PLA intends to insert AI into this loop and compress time to the extreme. One branch of this effort, introduced in The People's Liberation Army's Perspectives on Artificial Intelligence, is the "order-dispatch model" (订单派单) proposed by Gao and Chen of the Eastern Theater Command's air defense brigade.

In the past, a commander would pre-assign specific artillery or fighter aircraft before an attack. In this model, a target list goes up on the network like an order, and the command system calculates the position and destructive power of available weapon platforms in real time, autonomously distributing missions to the appropriate platforms. The direction is to have machines assemble in real time the combinations that humans used to fix in advance. It must be noted, however, that these concepts are described in the language of papers and demonstrations, not presented as confirmed operational cases.

The faster you chase speed, the more the human's place is shaken. Chen Hanggui of the Nanjing Army Command College foresees that once the rhythm of combat reaches a "singularity" that the human brain cannot keep up with, a substantial share of strike and decision authority will have to be handed to machines. Yet the same sources also note that final strategic decisions remain in the hands of the Central Military Commission (CMC, 中央军事委员会) and senior commanders. No matter how plausible the alternatives a machine offers, the last judgment stays with a human.

Decision support is the side that keeps the human inside the loop; the strike sequence aimed at split-second engagement is the side that pushes the human outside the loop. Even within the PLA's own literature, the tension between these two has not been resolved.

It is striking that the PLA itself knows this picture is no silver bullet. The major obstacle the sources identify is the scarcity of real combat data. An army that has not fought a major war since 1979 has difficulty obtaining actual training data to teach machines about complex aerial combat or undersea environments, and that slows the maturation of algorithms. This is an acknowledged self-awareness.

Compounding it is the lack of AI literacy among commanders. Warnings appear side by side in the literature: "information cocoons," where a commander becomes trapped in the information the machine has filtered and fails to see other threats, and "AI hallucinations," where the system fabricates nonexistent information as though it were fact, potentially collapsing an operation. Intelligentized command decision remains for the PLA both a goal and an unsolved problem.

Place the two axes side by side and the point where the work the PLA wants to assign to AI diverges becomes clear. Decision support stands on the side of war planning and macroscopic resource allocation. It fuses everything from global open-source intelligence to multi-domain data, serving as a broad cognitive tool that helps commanders read higher strategic intent and weigh which operations to pursue. The kill chain stands on the opposite side.

On the tactical battlefield it links reconnaissance sensors directly to strike weapons, forming an action-oriented sequence that determines what to destroy and how, in order to penetrate the enemy's defenses. If the first axis is the eye that reads the entire board, the second is closer to the hand that

pulls the trigger. They sit under the same name of intelligentization, but they aim at different places.

On the hand side, the place where the PLA is inserting AI is the entire chain from detection to strike. The studies the sources introduce span detection and classification, where AI distinguishes enemy radar jamming and sorts target types by flight pattern; tracking and strike, where deep learning trails warships, simultaneously tracks moving targets for multiple drones, and calculates terminal guidance and missile trajectories; and intent prediction, which separates empty decoy drones from actual attack drones to prevent wasted firepower. The order-dispatch model described earlier was a design to thread the nodes of this chain together, aiming for a command system that autonomously closes the kill chain. Gathering fragments and turning them into a picture is one thing; connecting targets directly to weapons on top of that picture is another. The two serve different purposes from the start.

The two axes also diverge on the level of autonomy. Decision support never quite sheds its character as an assistant that operates on the premise of human judgment. No matter how precisely it lays out alternatives, the final choice remains the human's share. The kill chain, by contrast, tilts toward pushing the human outside the loop because speed is life.

Multi-agent collaboration, in which large numbers of drones form a swarm, autonomously encircle the enemy, and unleash saturation attacks, is one form this autonomy aims to reach. The eye that reads the board tries to keep the human inside; the hand that holds the trigger tries to send the human out. These two directions mesh within a single doctrine. In the PLA's literature, these two faces are the front and back of the same intelligentization, yet they sit side by side, still unable to fold into one on the question of where to place the human.

The larger frame that wraps these two faces is the timetable set by President Xi Jinping. The PLA has declared the goal of building a world-class military equal to or above the United States by the middle of the twenty-first century, and intelligentized command decision has been positioned as the lever to reach that goal. If the two preceding stages, mechanization and informatization, were problems of moving materiel and connecting communications, intelligentization shifts the center of gravity to command and control (C2): who decides what, and when. Since that single game of AlphaGo moved to the screens of the command post, the question the PLA has held is not how fast a machine can be, but who the subject of decision should be in the face of that fast computation. This is why intelligentization reads not as the name of a technology but as a declaration to rewrite the order of command.

The caution running through the sources should not be missed either. The vast number of more than 9,000 procurement notices, the order-dispatch blueprint written in papers, Chen Hanggui's forecast of handing decision authority to machines after the singularity: all of these are in the language of desire and aspiration, and it is difficult to take them as the language of confirmation hardened into organization and deployment. Given that the PLA itself has pointed to the gap in combat data, and that the same literature records the risks of insufficient commander understanding, information cocoons, and hallucinations, intelligentized command decision is closer to a concept still on the laboratory bench than a completed weapons system. The distance between what is in hand and what is reaching for the hand is something these sources leave intact, without erasing it.

Even so, the direction this concept aims at does not waver. The PLA is groping for a way to raise both the speed and accuracy of decision at once, and where that groping ends is something three bodies of literature do not answer. Under the name of intelligentization, what to entrust to machines and what to leave to humans: the sources speak in unison that this question sits at the very center of command decision. Whether it is a tool for reading the board broadly or a sequence aimed at the strike of a moment, the place it returns to in the end is an unresolved question: where to set the human's share.

## 2. Unmanned Systems and Swarms

In January 2026, an unfamiliar scene passed across the news broadcast of China Central Television. A single soldier commanded 200 drones at once. It was a demonstration in which researchers from the National University of Defense Technology (NUDT, 中国人民解放军国防科技大学) ran a swarm-control algorithm on actual physical platforms. The drones divided among multiple targets and conducted reconnaissance without breaking formation. There was one operator's seat, and two hundred airframes in the sky.

The PLA believes the outcome of future war depends on the fusion of artificial intelligence and unmanned systems. The Chinese military calls this current, in which artificial intelligence rewrites the sequence of command, reconnaissance, strike, and assessment, intelligentization. When the reach of a single human hand extends this far, the arithmetic of the battlefield changes. That rough sketch was contained in this one scene.

This sketch does not end with one or two reconnaissance drones. The PLA is testing unmanned aerial vehicles (UAVs) alongside unmanned ground vehicles (UGVs), unmanned surface vessels (USVs), and unmanned underwater vehicles (UUVs) across all domains of land, sea, and air. The army held competitions to test ground unmanned system technologies three times: in 2014, 2016, and 2018. They were called Obstacle Breaching (跨越险阻). One hundred thirty-six teams from academia, industry, and military research institutes gathered to compete in robotic driving and judgment on terrain close to real combat conditions.

The competition was a venue both for pulling technology upward and for selecting which teams had something usable. Georgetown CSET's procurement documents include a request to purchase robotic dogs for base security and surveillance. The intent is to hand the thankless duties of observation and guard to machines instead of humans. Ground warfare's shift to unmanned systems is moving from slogans to shopping lists.

The same experiments continue at sea. In 2018, China unveiled the small unmanned surface combat vessel JARI at a South African defense exhibition. It was a small boat, but armed. At the Zhuhai Airshow the same year, the private firm Yunzhou Tech presented the Lookout II.

It was an unmanned vessel carrying four precision missiles capable of striking targets five kilometers away. It was a signal that unmanned ships were looking beyond reconnaissance to strike. Underwater, the Haiyi (海翼) glider collects ocean data in preparation for anti-submarine warfare (ASW). The polar rover built by the Shenyang Institute of Automation was thrown into the extreme cold of Antarctica

and the Arctic to test robotic survivability.

The method is to push unmanned systems into extreme environments and measure how far they hold. The picture of a private company's boat appearing at a military exhibition and a research institute's robot circling the poles shows how Military-Civil Fusion (MCF, 军民融合) works in unmanned systems.

In the air, logistics support and combat branch off. In 2017, the Air Force Logistics Department partnered with the civilian logistics firms JD.com and SF Express. The following January, their drones carried out the first trial of delivering supplies to field units. Civilian delivery technology had been layered onto the military's supply network.

JD.com's large logistics drone, the JDY-800, can carry 840 kilograms of cargo and fly 1,000 kilometers. That weight and distance suit the task of hauling loads to high ground and outposts that are hard for humans to reach. The change on the combat side is more dramatic. Video released in 2025 showed a manned-unmanned teaming (MUM-T) test in which the stealth manned fighter J-20 flew paired with the stealth unmanned attack aircraft GJ-11.

A crewed aircraft leading an uncrewed one, dividing missions between them. The pilot's judgment and the machine's risk acceptance split within a single flight element. It was a preview that the structure of aerial combat could change.

What the PLA weighs more heavily than the performance of individual airframes is the swarm that binds them into one. Swarms are also called multi-agent collaboration. According to RAND's survey of PLA perceptions of artificial intelligence, a swarm is a concept in which large numbers of unmanned systems share information in real time through AI agents, cooperate autonomously as the situation demands, and penetrate defensive networks. Major General Zeng Haiqing of the Henan Military District drew its value in plain terms.

Low-cost unmanned vehicles, drones, and unmanned underwater craft, supported by a swarm autonomous decision-making system, divide missions among themselves, coordinate precisely, infiltrate covertly, and deliver swarm saturation attacks against the enemy. The picture is one of throwing cheap platforms like a swarm of bees all at once, paralyzing the enemy's sensors and interception capability. The defending side must stop every single one, but the attacking side only needs a few to survive. This asymmetry is built into the concept.

That they are cheap means losing them is not painful; that they are numerous means they can overwhelm a defense network by sheer numbers. NUDT researchers projected that a point of parity will come in future war when the number of unmanned systems equals that of manned combat systems. They also put forward the view that as intelligence rises, unmanned swarms will become the main actors of war.

Competitions were held to see this concept with one's own eyes. In 2018, the Air Force hosted Unmanned Vying for the Peak (无人争锋), a contest of unmanned aerial vehicle swarm intelligence. Fifty teams and 448 participants competed in autonomous cooperative reconnaissance, search, assault, and countermeasure capabilities. The Air Force Engineering University and Harbin

Engineering University took the top prizes.

Numbers of achievement also appear. In 2018, Yunzhou Tech tested a "shark swarm" of 56 unmanned boats moving together at sea. In the sky, the China Electronics Technology Group Corporation (CETC, 中国电子科技集团有限公司) and others set a record by launching 200 fixed-wing UAVs simultaneously. The January 2026 control of 200 drones mentioned earlier is the most recent scene atop this trajectory.

The numbers grow larger each year, and the number of airframes a single person handles keeps rising. It should be noted, however, that these numbers come from competitions, tests, and demonstrations. How many have been organized into actual units and how they function on a real battlefield are things these sources do not say.

For a swarm to hold together on the battlefield, an invisible foundation must support it. Keeping hundreds of drones from colliding, maintaining formation, and reacting to rapidly shifting conditions is the work of algorithms. RAND materials note that Chinese researchers have been laboring over swarm path planning, event-driven formation control, and cooperative encirclement techniques for multiple UAVs built on hierarchical reinforcement learning. The real competitive edge of a swarm lies in the ability to exchange and process data in real time. Zhou Xiaoli of NUDT pointed out that an intelligent battlefield information network would serve as both the backbone of unmanned intelligent combat systems and the foundation for constructing kill chains.

The picture is one in which unmanned systems slot into every link of the chain: finding targets through reconnaissance, carrying through to strike, and looping back to assess results. This requirement shows up directly in procurement documents. According to materials analyzed by CSET, the People's Liberation Army issued more than 9,000 AI-related procurement notices between 2023 and 2024. Among them, demands for command-and-control systems capable of binding together, controlling, and coordinating unmanned autonomous systems stand out.

One notice specifically required the ability to simultaneously control more than 80 aerial assets from 320 kilometers away. Managing 80 assets through a single system means building the brain to command a swarm in advance. Also on the list was a multi-mode fusion capability that would integrate drone cameras, thermal imaging, and commercial satellite optical sensors into a unified system to jointly track large numbers of moving targets such as enemy drone swarms. It is notable that the side seeking to deploy swarms is also purchasing the eyes to detect the other side's swarms.

Two things must be separated in front of this picture. A procurement notice expresses intent to buy; it is difficult to treat as evidence of deployment. How much of that 9,000-item figure has actually converted into operational capability, and what the success rate might be, lies beyond these materials. Competition victories and televised demonstrations reveal the upper bound of capability, but that upper bound is not the same as the field standard.

What can be confirmed through the NUDT bulletin boards, defense exhibitions, and CCTV news broadcasts is direction and speed. The PLA is walking a clearly marked path toward binding unmanned systems into swarms and standing them up as one axis of the kill chain. How far down that path it has traveled can only be stated to the extent that open-source materials permit.

For the power to launch and command swarms to carry value on the battlefield, there must be a place that strings these pieces together on a single thread. The kill chain occupies that place. The intelligent battlefield information network that Zhou Xiaoli described serves as the nervous system, inserting each individual unmanned system into the links of reconnaissance, strike, and assessment. The robot dog guarding a base reading its perimeter, the Haiyi glider scraping data from the ocean floor, the Lookout II aiming at targets five kilometers away, the J-20 bringing the GJ-11 along to share risk: these are not stories of separate weapons but different links of a single chain.

No matter how good each individual airframe may be, if those links do not connect, the eyes that found the target and the hand on the trigger operate in isolation. This is why the PLA weighs connectivity more heavily than individual performance when it comes to unmanned systems.

The chain, once connected, tightens in the direction of shrinking the time from reconnaissance to strike. The gaps where a human would receive a reconnaissance report, spread out a map, and issue orders are filled by unmanned systems sharing information in real time. The less a human hand intervenes between the drone's eye that found the target and the unmanned vessel holding the trigger, the faster one full cycle of find, strike, and reassess spins. The reason for standing unmanned systems up as one axis of the kill chain lies not only in the headcount of the swarm but also in the drive to run this chain at the speed of machines rather than the speed of humans.

The wiring that joins link to link shows up directly in the procurement lists. The C5ISRT command-and-control system that CSET identified represents a demand to bind scattered unmanned assets under a single head and control them together. A notice calling for simultaneous management of more than 80 aerial assets from beyond 200 miles means building a command post for swarms in advance; multi-mode fusion that melts together cameras, thermal imagers, and commercial satellite optics to jointly track moving targets means acquiring the eyes to detect the adversary's swarms as well. The more than 9,000 notices that poured out between 2023 and 2024 read as an expression of intent to purchase, side by side, the ability to launch swarms and the ability to weave those swarms into a single chain. Unmanned systems and swarms become combat power only when they are signals flowing across this wiring.

The hand actually laying this wiring is difficult to attribute to the military alone. Logistics drones came from the delivery technologies of JD.com and SF Express. Unmanned surface vessels that traverse the seas came from Yunzhou Tech's commercial vessel technology. Rovers circling the polar regions emerged from research at the Shenyang Institute of Automation.

The conduit through which civilian logistics networks and laboratory experiments flow into the military's kill chain is Military-Civil Fusion. The power to stamp out cheap platforms quickly and in volume comes not from a single munitions factory but from this entire conduit. The picture of swarm tactics pressing through defenses by sheer numbers holds only when production and supply capable of sustaining those numbers stand behind it.

The question left by the scene of a single soldier commanding two hundred drones passes to the next station. The span of human reach grows wider, but the wider it grows, the more the judgments involved in setting formations, dividing targets, and choosing infiltration routes shift onto algorithms.

The moment cooperative encirclement built on swarm path planning, event-driven formation control, and hierarchical reinforcement learning takes over the calculations, the commanding human sets the direction and the machines cooperate on their own within that boundary. The kill chain in which a human intervened at every link to verify tilts toward a kill chain in which the human draws only the boundary and the machine fills in the interior.

How far that tilt has progressed can be read only up to the upper bound illuminated by competition arenas, exhibition halls, and news broadcasts. The question of how far judgment may leave human hands remains for the next section, which addresses the boundary between autonomy and control.

## 3. The Moment the Human Drops Out

On June 18, 2025, a short analogy appeared on the pages of the PLA Daily. The sentence was written by Bu Qigeng. He wrote that no matter how fine the violin, what truly matters is the skill of the player. The original read: wulun xiaotiqin duo hao, guanjian hai yao kan qinshou (无论小提琴多好□关键还要看琴手).

The analogy mapped the instrument onto the weapons system and the player onto the human commander. The very fact that this analogy appeared in the military's official newspaper was itself a signal. It was a signal that a debate was underway inside the PLA over how far to keep the human in the loop.

The axis of the debate is the kill chain. The sequence of observing, orienting, deciding, and acting is called the OODA loop. In traditional warfare, the human occupied the inside of this cycle. The human was the one who saw the target, and the human was the one who decided to pull the trigger. With the arrival of UAV swarms and artificial intelligence, the human's place is being pushed out.

First, the human retreats from inside the loop (in the loop) to supervising the system from above the loop (on the loop). The next stage is outside the loop (out of the loop). This is the point at which the machine holds full control authority and the human is excluded. This point is the moment the human drops out.

There are voices saying it would be better to drop out. Chen Hangui, a researcher at the Army Command College, is a representative example. China's Military Bet on the Future summarizes his argument as follows. As AI and human-machine integration (人机融合) technology advances, the tempo of combat accelerates beyond what the human brain can handle.

If speed continues to build, a point is reached where humans can no longer keep pace with changes on the battlefield. This is the moment he called the singularity (奇点). When this moment arrives, he says, a substantial share of decision-making authority must be handed over to highly intelligent machines. The phrasing is not that it may be handed over, but that there will be no choice but to hand it over.

There is no definitive evidence yet that the PLA will remove the human from the loop entirely. The expectation that the tempo of operations will exceed the physiological limits of humans, however, is functioning inside the military as a driving force pushing doctrine forward.

Opposing voices also emerge from within the military. They run along two lines.

The first line is the point that the machines are not yet up to the task. The People's Liberation Army's Perspectives on Artificial Intelligence holds that not all stages of the OODA loop are equally suited to AI. Machine learning excels at the observation stage of finding and classifying targets. The problem comes next. The stages of making tactical decisions and executing actions demand a reliable world model that comprehends the complex battlefield in its entirety.

Today's most advanced AI does not possess such a world model. It therefore cannot underpin full tactical autonomy. The counterargument is that a step change surpassing today's capabilities must come first before the decision stage of the kill chain can be automated. The moment the human drops out holds only on the premise of a technological leap.

The second line is the problem of accountability. No matter how capable the AI, it cannot bear legal and moral responsibility for tactical decisions. Liu Kui of the Nanjing Army Command College says that the success or failure of intelligentized operations ultimately depends on the quality of the AI's users. Because models cannot take responsibility for their own actions, humans must ask the right questions, understand the machine's limits, and build accountability mechanisms.

This is where Bu Qigeng's violin analogy finds its place. Just as a fine instrument does not guarantee a fine performance, a fine weapons system does not guarantee sound judgment. It was a sentence carrying an internal military wariness that the moment the human is removed may be the moment control over the weapon is lost.

This wariness has concrete substance behind it. Chinese military researchers have already named the specific ways things go wrong when authority is delegated.

The first is information cocoons. Chinese military scholars Yuan and Zhao warned that AI systems can malfunction on their own even without enemy interference. The phenomenon occurs when an algorithm keeps feeding the commander only information matching certain patterns. The commander then becomes entirely unable to see any information source or alternative explanation beyond what the AI has presented. If human cross-verification drops away and the system relies solely on the AI's biased recommendations, decisive threats lying outside that pattern can be missed wholesale.

Next is AI hallucinations. When battlefield data is scarce, the machine reports nonexistent targets or false situations as though they were fact. The materials convey that numerous Chinese military researchers in the academic sphere deeply fear this problem. What makes it thornier is that the texture of the error differs.

Mistakes made by AI often take the form of nonhuman-like errors. Because the machine arrives at conclusions in ways that would be unlikely to emerge from human common sense, untrained personnel face a high risk of underestimating such errors or failing to notice them at all.

The last is excessive dependence on brittle technical means. War is shrouded in fog. The materials point out that existing AI alone is insufficient to accelerate every part of the kill chain. If the approval and execution of decisions are over-delegated to brittle technical means with the human removed, openings are created for an adversary to exploit through cyberattacks or data disruption.

It amounts to creating new tactical vulnerabilities on one's own. It is the paradox of introducing AI to grow stronger and opening weaknesses that did not exist before.

With the debate this taut, which direction does actual purchasing behavior lean? China's Military AI Wish List reads the clue from procurement notices. Between 2023 and 2024, the PLA issued more than 9,000 AI-related procurement notices. Inside them were demands like these: a requirement to simultaneously control more than 80 aerial assets from beyond 200 miles; a requirement to build a C5ISRT system that fuses multiple sensors to track enemy drone swarms. This is evidence that the infrastructure of delegation is actually being laid, reducing the proportion of direct human intervention and allowing the system to coordinate multiple agents on its own.

The grain, however, must be read carefully. Most of these notices were for short experiments and prototypes lasting three to six months. No notices were found that fully delegated AI across the kill chain of a major weapons system. The floor of delegation is being spread wide, but before the point of removing the human entirely from the loop, the PLA is pausing on both technological and doctrinal grounds. Demonstrations and organizational tables are expanding, yet reading them directly as wartime delegation would be imprudent.

This is roughly the boundary of the story these three documents support. It extends to the statements by named individuals, Chen Hangui, Liu Kui, and Bu Qigeng; to military terminology such as singularity, information cocoons, and AI hallucinations; and to the contours of the 9,000-item procurement data. Beyond that, the materials do not speak. What factional struggles lie behind the delegation debate, what the top leadership truly thinks, which officers made decisions driven by what hidden motives: none of this exists within these documents. To fabricate it would be to betray the very documents that warned of the moment the human drops out.

So I stop here. One thing, at least, is clear. On the question of removing the human, the PLA itself has not yet reached an answer. Without an answer, it continues to widen the floor of delegation.

Where, then, does the PLA actually stand right now? Not inside the loop. Not outside the loop. On the loop, in the space between.

The human does not pull the trigger directly, but looks down from above at the board the machine has laid out and either approves or halts. The picture drawn by the procurement notices aligns with this position. A single person cannot individually pilot more than 80 aerial assets from 200 miles away. A C5ISRT system that fuses multiple sensors to track enemy drone swarms is difficult to regard as something turned by human fingertips one input at a time.

The system is allowed to coordinate the swarm on its own, and the human rises to a position of looking down and supervising the flow. In this position, the character of the human changes. The human shifts from the subject who makes decisions to the overseer who watches decisions being made.

The problem is that this overseer's seat is not as safe as it looks. Information cocoons blind the overseer's eyes. AI hallucinations thrust nonexistent situations before the overseer as though they were real. Nonhuman-like errors seep in along textures the overseer struggles to detect. The fact of

sitting on the loop does not guarantee that control authority is held.

A person who peers only at the picture the machine sends up may, formally on the loop, already be half-pushed outside it in substance. The reason Liu Kui repeatedly stressed the quality of the user connects precisely to this point. If the person supervising cannot ask the right questions and does not know the machine's limits, supervision becomes a procedure that exists in name only. The hand pressing the approval button remains in place, but what that hand does shifts from judgment to rubber-stamping.

And so the moment the human drops out may not be an event declared on a given day. Rather than someone announcing that the singularity has arrived, the human may drop out in the manner of the overseer's button-pressing hand gradually hardening into formality. Return to Bu Qigeng's analogy. Even if the player sits before the instrument, if the hand drawing the bow moves only as the instrument pushes it, that sound is difficult to call the player's music anymore.

The real question the PLA has not yet answered may not be whether to remove the human, but whether the human left in place is truly exercising judgment. The wider the floor of delegation grows, the heavier this question becomes.

# Chapter 9. Emerging Technology Competition: Quantum Sensing, Hypersonics, and Space

The conversation on screen begins quietly. In a video released by an American security research inst...

## 1. A Cautious Reading of Quantum Sensing

The conversation on screen begins quietly. In a video released by an American security research institution, Elsa Kania, who has long tracked Chinese military technology, sits before the camera. When the host asks about China's bets on future warfare, she reaches first not for a list of achievements but for the language of caution. The wall that researchers must climb when reading China's technological capabilities is not the flashy announcements themselves but the exaggeration that seeps into them.

She calls this habit a tendency toward inflation. A significant share of the results that the Chinese military and state-owned defense firms put forward fill headlines, she says, but the substance behind them remains inflated claims.

The example she offers is deep-sea cable-cutting equipment. Media portrayed the equipment as a finished capability ready for immediate battlefield use, but the actual hardware was closer to an early prototype. This gap becomes the starting point for how to read. Kania stresses the need to look beyond article headlines, trace the sources, and examine the totality of the pattern running from research and development through experimentation to operationalization.

The instruction is to confirm a consistent trend over time rather than rely on a single announcement. She adds that open-source materials should be read as a whole rather than in fragments, and that findings must be continuously cross-checked against documents such as the annual Department of Defense report on Chinese military power. Only this cross-verification, she argues, allows one to gauge the relative credibility of quantum sensing capabilities.

Why such caution is especially necessary with quantum technology is illustrated by the earlier case of quantum radar. When China reported a breakthrough in quantum radar several years ago, most of the scientists Kania consulted were unconvinced. They did not accept the claim that the technology would actually work in a contested environment with intense enemy jamming. It was a textbook scene in which inflated, limited open-source evidence collided with scientific reality.

Recent progress in quantum sensing reported from both the American and Chinese sides, however, is a somewhat different matter. In the assessment of scientists sifting substance from hype, the claims around quantum sensing appear more feasible than those earlier claims about quantum radar. Both carried the name "quantum," yet one was filtered out and the other survived.

Kania explains the standard for that distinction while acknowledging her own limitations. As a social scientist without deep technical expertise, she confesses she cannot judge on her own whether a given result is propaganda or something physically achievable under the laws of physics. That is why, she says, one must collaborate as much as possible with scientists, engineers, and operational personnel. A cautious reading of quantum sensing cannot be completed with the language of policy analysis alone.

It must pass through the lens of verification by physics. This attitude is the threshold that separates exaggeration from substance.

Once the exaggeration is stripped away, the coordinates that come into view point not to outer space but to the ocean floor. According to analysis of video material on U.S.-China undersea competition, the Taiwan Strait and the South China Sea are identified as clear regions where China would apply quantum sensing networks. The reason is the physical condition of relatively shallow waters in both seas. China is reportedly concentrating investment in these shallow waters with the goal of detecting adversary submarines and unmanned assets and neutralizing the undersea advantage the United States has long held.

Experts warn that this investment is not a gesture to showcase today's combat power but a process of designing tomorrow's operations in advance. How many nodes of that network have actually been laid, and what scale of budget has gone into it, remain unconfirmed. The reality of operational deployment and the size of hidden budgets lie beyond the reach of open-source material.

The institutional cradle of the technology is also confirmed through documentation. According to one testimony, a National Defense Science and Technology Innovation Institute was established under the Academy of Military Sciences, China's highest military academic body, and tasked with cutting-edge technology research. Beneath it, a Frontier Cross-Disciplinary Technology Research Center is reportedly pushing quantum technology as a core priority alongside neurocognitive science and flexible electronics. Western observers sometimes liken this institute to America's DARPA as a Chinese counterpart for advanced defense research, but the available record provides no basis for equating the two organizations. The existence of the organization and its research priorities are confirmed; the maturity of its results remains an open question.

The reason we must read China's quantum sensing announcements more cautiously is hard to attribute to technical difficulty alone. It is connected to an institutional defect rooted in China's national security decision-making system: information distortion. A RAND Corporation report examines in depth the problem of inaccurate information flowing to senior decision-makers. Lower-ranking bureaucrats and local agencies submit rosy reports tailored to the leadership's prevailing line, seeking to avoid blame or to inflate results for promotion.

The consequence is that the top leadership receives a distorted picture, cut off from the truth on the ground. This structure transplants directly into the defense technology ecosystem. Managers at defense firms and researchers at military universities are reluctant to report honestly when a quantum sensing project backed by enormous state funding has failed. Instead, they have every incentive to package the performance of an early prototype as something far more complete than its actual physical limits would warrant.

If that is the case, then reports of a "quantum sensing breakthrough" that Western observers encounter in open-source papers or state media may well be the product of internal rosy reporting reprocessed for external propaganda. Without the physics-based cross-verification that Kania described, outside analysts risk mistaking an illusion born in the echo chamber of lower-level information distortion for actual combat capability. A cautious reading is therefore not a technique of skepticism but a technique of procedure. It is the procedure of tracing sources, consulting the physics, and confirming through trends over time.

Quantum sensing is a case where enough substance shows through to survive filtering, yet it is also a case where the confirmed scope and the unconfirmed scope must be distinguished to the very end. That is why this chapter treats quantum sensing not as a freestanding achievement to celebrate but as a subject for cautious reading.

Applying this attitude to a single news article reveals the skeleton of the procedure. When a state media outlet reports a new breakthrough in quantum sensing, a cautious reading does not rush to judge the headline as true or false. First, it traces the source, asking which research institution and which document the claim came from. Next, it asks scientists whether the claim falls within the range of what is possible in principle under the laws of physics.

Finally, it checks whether results in the same direction have been repeated over multiple years as a trend. Only claims that pass all three gates earn relative credibility. If even one gate is empty, the news is set aside not as established fact but as a candidate whose verdict is still pending. Quantum radar was filtered out and quantum sensing survived precisely because they diverged at these gates.

On the other side of procedure lies a gap that no procedure can fill. Recording that gap as a gap rather than filling it with speculation is the other half of cautious reading. How many nodes of a quantum sensing network have actually been laid in the Taiwan Strait and the South China Sea, and how much classified budget the Central Military Commission has poured in, are absent from the public record. Which factions the senior scientists at the National Defense Science and Technology Innovation Institute belong to as they compete for funding, and what anxieties drove the leadership to order the development, are also things the record does not tell.

There is a temptation to link the habit of inflated reporting on quantum sensing to the collective psychology of an earlier era through chains of causation, but the evidence for such a connection is likewise absent from the record. The moment one writes the unconfirmed as though it were confirmed, cautious reading finds itself standing in the same place as the exaggeration it set out to guard against.

The Western analogy for the National Defense Science and Technology Innovation Institute is another instance of this gap. The institution is sometimes compared to America's DARPA, but the available record provides no basis for equating the two organizations. The fact that the organization exists and the priority it assigns to quantum technology are confirmed through documentation; how far its results have matured beyond the prototype stage remains an open question. Without this line separating what is confirmed from what is open, the single fact of the organization's existence slides quietly into the conclusion that it represents mature combat capability.

Quantum sensing therefore stands in this chapter with two faces. It is a case where enough substance is visible to pass the gate of physics, and at the same time a case where the scale and deployment of that substance lie beyond the public record, requiring the confirmed scope and the unconfirmed scope to be distinguished to the very end. To avoid mistaking the illusion inside the echo chamber, where rosy reports from lower-level bureaucrats are reprocessed into external propaganda, for actual combat power, one must filter what can be filtered while leaving empty squares empty. That two-handed motion is why cautious reading is a matter of procedure, not skepticism.

## 2. Hypersonics and Space

A single commercial satellite photograph appeared on the hearing room screen. It showed the Wenchang Launch Center in southern China. The image did not contain only the government launch zone. An industrial area for researching and assembling rockets and satellites was attached to it, and beside that, a newly expanding commercial launch zone was visible.

The Jiuquan Launch Center, closer to the Mongolian desert, told the same story. A dedicated commercial launch pad had been set up there specifically to support launches by private companies. The satellite imagery showed, in plain sight, a scale of expansion that documents had not conveyed.

How China views space is captured in the words of President Xi Jinping. He declared that the dream of spaceflight is an important part of the dream of a strong military. He also said the space dream is a component of realizing the dream of the great rejuvenation of the Chinese nation. This narrative does not stop at rhetoric. It functions as a policy driver that channels national resources to space and advanced military technology on a priority basis.

China's intention to treat space as a military domain was revealed long ago. The anti-satellite weapon test of 2007 was the defining scene. China destroyed one of its own satellites with a missile, and the United States along with several other countries grew alarmed. On that trajectory, experiments are now underway to attach artificial intelligence to weapons that cross the boundary between space and the atmosphere.

The hypersonic glide vehicle is the weapon that sits on that boundary. Flying at more than five times the speed of sound while altering its trajectory, it makes prediction by Western missile defense systems difficult. This speed comes at a cost. As the weapon passes through the atmosphere, it is enveloped in tremendous frictional heat and plasma, and in that moment communication with the outside is severed.

It must correct its own trajectory and reach the target under extreme conditions. China's military academic community is trying to overcome these conditions with artificial intelligence. Laura Saalman's research analyzes how China is actively pursuing the integration of neural networks into hypersonic glide vehicles. The second issue of Acta Armamentarii for 2025, a People's Liberation Army academic journal, carried a paper pointing in that direction.

It was a study by Xiao Liujun and others on reinforcement-learning-based adaptive terminal guidance for hypersonic glide vehicles. Terminal guidance is the technology that steers a weapon through the final phase of its approach to the target. The concept in this paper is that the weapon does not follow a pre-programmed trajectory. An AI agent learns and judges on its own the enemy's interception attempts and changes in the battlespace, then autonomously determines evasion and strike maneuvers.

This is, however, a research case published in an academic journal, not the record of a weapon fielded in combat. The distance between paper and deployment remains open at this point.

For precision-strike weapons to find their targets, satellites must provide the foundation. China has built that foundation on its own. Moving beyond its past dependence on outside systems, it completed the BeiDou independent satellite navigation system, which now underpins both civilian and military positioning and precision guidance. For remote sensing and Earth observation, it operates the Yaogan and Ziyuan satellite families.

Technologies such as multispectral scanners, synthetic aperture radar, and charge-coupled device cameras developed for civilian reconnaissance satellites are dual-use in character, readily transferable to military systems. Eyes built for civilian purposes become the eyes of the military. Satellites are now acquiring intelligence as well as orbiting. In one case, Chinese commercial space startups launched two AI-equipped satellites within a hundred days.

These satellites process data on orbit before sending it down to the ground. They are software-defined satellites, serving both military and commercial purposes.

The most conspicuous change in China's space ambitions comes from outside the state-owned defense firms. Private commercial space companies chasing America's SpaceX have entered the orbital race. LandSpace stands at the front of that line. The company's Zhuque-2E rocket, spotted on the Jiuquan launch pad, is China's first liquid methane rocket.

Liquid methane is the same technology that powers SpaceX's Falcon and Starship, and it is considered the key to next-generation high-efficiency rockets. LandSpace went a step further. Like SpaceX, it committed itself to the technology of recovering and reusing first-stage boosters. Last December, the recovery test of the Zhuque-3 ended in failure.

Even so, the company set plans to try again this year. The speed of moving forward after failure reveals the character of this competition.

The scale of the competition shows in satellite numbers. To counter Elon Musk's Starlink, China is building a mega-constellation project to place more than 25,000 satellites in low Earth orbit. LandSpace has won the launch service contract for this effort. Launch pads are not confined to land.

China also launches commercial rockets from the sea, using the Dongfang Hangtian Gang, a maritime spaceport converted from a football-field-sized flat-deck cargo ship. The approach raises launch frequency from both land and sea.

Other actors in Asia are also pushing back against this monopolizing current. Taiwan is one example. With the support of the Taiwan Space Agency, more than ten space companies have been established over the past three or four years. They built their own satellites and achieved the milestone of launching them aboard American SpaceX rockets. Taiwan's path to space is bound up with security.

To prepare for the threat of communications being severed by war or undersea cable cuts, Taiwan is assembling a multi-orbit satellite system with European commercial satellite companies. The state-owned carrier Chunghwa Telecom has partnered with the Franco-British joint venture Eutelsat OneWeb and Luxembourg-based SES. OneWeb's low Earth orbit satellites are used to strengthen secure communications, while development of medium Earth orbit satellites is underway with SES. A supply chain of voluntary coalition against China's space dominance is being assembled in this way.

Hypersonics and space connect into a single picture. A weapon that corrects its own trajectory with communications severed, satellites that process data on orbit, and a launch network that sends rockets up even from the sea all point in the same direction. That direction is the eyes and hands that intelligentized warfare requires, and the roads that carry them. What is confirmed are the papers in academic journals, the test launches, the company names, and the satellite counts.

What is not confirmed is how these technologies actually perform on the battlefield. The cases are clear; the ending is still open.

The blurring boundary between civilian and military makes it pointless to ask which side a technology was born on. Multispectral scanners, synthetic aperture radar, and charge-coupled device cameras were developed for civilian purposes of Earth observation and resource surveys, yet their performance overlaps with military reconnaissance requirements. This spin-on structure, where commercially built equipment transfers directly into military systems, creates a circuit in which the civilian market bears the development costs and the military harvests the results. The reinforcement learning used for terminal guidance of hypersonic weapons, traced to its roots, is a technique that civilian industry and academia work on together.

The fact that a single paper published in a PLA academic journal sits on the boundary between academia and the military reveals that circuit. Where research ends and deployment begins is a line that documents alone cannot draw.

The same boundary problem lies behind Taiwan's turn toward European satellite companies. If a country depends on a single nation's system for positioning and communications, the moment the party controlling that system flips the switch, both eyes and ears go dark at once. That is why Taiwan, with Chunghwa Telecom in the lead, spreads its bets across OneWeb's low Earth orbit satellites and SES's medium Earth orbit satellites, dividing its presence across orbits. The design is one of distribution, refusing to be tied to a single orbit or a single operator.

It is also a hedge to keep one more path alive in the sky should undersea cables be cut. The term "voluntary coalition" points to the fact that this distribution is woven not from one country's strength but from the enterprises of several.

The distance between what the documents show and what they conceal remains throughout this section. Satellite imagery reveals the expansion of launch zones, but it doesn't reveal President Xi Jinping's inner intentions behind promoting the space dream or the factional infighting behind that policy. Records show LandSpace winning a mega-constellation launch contract, but the data is silent on what informal support lay behind its growth. We can only verify company names, rocket types, satellite numbers, and academic journal titles.

The motives and background beyond these lie outside the data and can't be filled in recklessly. Keeping the cases grounded in verified facts, rather than inflating them, offers a more honest view of how far the eyes, hands, and paths of intelligentized warfare have physically materialized.

Before deploying Beidou, China had to rely on other nations' satellites for positioning. In a structure that depends on the U.S.-operated GPS for precision guidance, the eyes of guided weapons blur the

moment the party holding the signal degrades accuracy or cuts access. This vulnerability explains why China pushed its independent navigation system to the end. Beidou now supports civilian location services and military precision guidance within a single system.

This domestic satellite network also provides the foundation for hypersonic glide vehicles to acquire coordinates in the final phase as they head toward their targets while disconnected from communications. Weapon autonomy and navigational independence move together as a package. It's a design to build weapons that correct their own trajectories while keeping the positional reference those weapons rely on firmly in its own hands.

The path Taiwan has taken illuminates the same problem from the opposite side. Supported by the Taiwan Space Agency, more than ten space companies have emerged over the past three or four years, succeeding in building their own satellites and putting them into orbit. Yet they depend on the American company SpaceX to launch those satellites into the sky. It's a structure where they build the satellites domestically but borrow someone else's rocket for the launch.

Compared to China expanding its launch network on its own, adding the Oriental Spaceport at sea to the commercial launch zones in Wenchang and Jiuquan, it becomes clear that who holds launch capabilities is another axis of the space race. LandSpace's focus on liquid methane rockets and first-stage recovery technology also points toward completing the launch capability within its own borders. The plan to attempt the Zhuque-3 recovery test again this year, despite a previous failure, signals that acquiring this capability is considered an urgent task.

Viewed this way, navigational independence and launch independence are hardly separate stories. When the satellites acting as eyes, the rockets to launch them, and the navigation system to provide coordinates connect within a single country, the eyes, hands, and paths of intelligentized warfare break free from someone else's switch. Taiwan's choice to share orbits with various European operators, spearheaded by Chunghwa Telecom, is a different answer chosen by those unable to achieve that independence alone. It's a way to weave a defense across companies from multiple countries to avoid being tied to a single system. The fact that these two paths of independence and coalition diverge under the same sky reveals the landscape of this competition.

## 3. Guarding Against Technological Hype

The on-screen conversation was calm. In a video interview with Elsa B. Kania released by the Asia-Pacific Center for Security Studies in Hawaii, the host asked about the fever surrounding reports on Chinese advanced weapons. Kania didn't rush her answer.

She repeatedly warned to guard against a tendency towards hype. She pointed out that extreme claims suggesting Chinese technology has already pushed the West into a severe disadvantage are mostly inflated. This caution is also the final attitude needed when reading the quantum sensing, hypersonic, and space cases covered in the previous two sections.

External observers are prone to making one error. They immediately equate performance announcements from Chinese authorities or media with a practical advantage that threatens the United States. To clear away this error, one must break down a technology into three stages and ask questions. We must distinguish whether it's a demonstration in development, a deployment stage entering the procurement network, or large-scale operationalization for actual combat.

These three stages remain far apart. A successful demonstration doesn't guarantee deployment, nor does deployment mean combat readiness.

Hype in the demonstration stage comes from packaging early results from research institutes and academia as completed weapons. Kania cited a representative anecdote where an early prototype designed to cut submarine cables transformed in Chinese and Western news headlines into an object possessing fully-fledged capability. A prototype differs from a completed weapon. The moment one evaluates technological superiority based only on headlines, the judgment has already tilted. For reference, whether the submarine cable cutting was a directive from the Chinese government remains a point of contention, so attribution isn't concluded here.

The quantum radar controversy clearly illustrates this trap. A few years ago, China heavily promoted its success in a groundbreaking demonstration in the field of quantum radar, which could neutralize stealth aircraft. The results of Kania consulting scientists were different. Scientists commonly assessed that the technology demonstrated at the time would struggle to operate practically in a contested environment with severe enemy interference.

On the other hand, recent reports on the progress of quantum sensing are evaluated as having higher feasibility than quantum radar. The two technologies only share similar names, but their physical maturity differs. This is why policy analysts must collaborate with scientists and engineers to verify feasibility against the laws of physics, instead of relying on fragmented open-source evidence.

Academic discourse and actual operations diverge as well. The SRC-PDF-C001 report covering the People's Liberation Army's perception of AI warns against concluding that the Chinese military operates a specific AI technology in actual combat just because a military journal published that technology or strategy. Research results in academic journals might not represent the actual operational practices of the Chinese military. Measuring military strength based solely on papers leads to a biased analytical perspective. Published doctrine and field capabilities are hardly the same thing.

Moving to the deployment stage introduces the temptation of procurement data. Georgetown University CSET's analysis of Chinese military AI procurement reviewed over 9,000 AI-related requests for proposals (RFPs) announced by the People's Liberation Army between 2023 and 2024. Surface numbers give the impression that AI is fully deployed across command, control, communications, surveillance, reconnaissance, and strike domains. The researchers' conclusion remains cautious.

They assert that quantifying technological maturity with this procurement data can cause misunderstandings. The majority of the announcements have small budgets and demand completion within three to six months after contracting. This is closer to experimentation and prototyping to quickly test the potential of commercial AI, rather than the mass introduction of completed weapon

systems. A more decisive fact exists.

Requests for major weapons systems weren't identified within the vast procurement data. The figure of 9,000 should be read as closer to a giant testing ground rather than completed force integration. There isn't yet success rate data to show how many of those led to actual deployment and commercialization.

Verifying the operationalization stage is a tricky task for external observers. It's difficult to discern from the outside whether a system can fight on the battlefield, or if it remains an aspiration or performative. The answer Kania presented is a holistic approach. It means going beyond a single news headline or paper to track the totality of patterns leading from research and development to experimentation and operationalization.

Beyond procurement, one must synthesize through open sources how that technology aligns with the Chinese military's military strategy and operational concepts, and whether it's consistently proven in actual military exercises. Only after cross-verification with external assessments, like the China Military Power Report published by the U.S. Department of Defense, can one gauge the relative reliability of weapons.

The birthplace of hype is hard to attribute solely to reporting habits. RAND's SRC-PDF-C005, which analyzed China's national security decision-making, points out the blind spot of inaccurate information going up inside the system. Subordinates in the bureaucracy and military-affiliated institutions tend to send rosy reports to superiors, hiding failures and limits to avoid punishment and tout achievements. This report cites the test flight of the J-20 stealth fighter timed with U.S.

Secretary of Defense Robert Gates's visit to China in January 2011 as an example. Even though the demonstration of the cutting-edge weapon occurred during his visit, top leaders including President Hu Jintao failed to properly grasp the initial situation, exposing an information disconnect between the military and the leadership. The same reporting structure likely operates in today's AI and unmanned swarm development. Demonstration results are inflated as combat-ready and sent upward, and that distortion flows into the West through external propaganda media, growing into global technological hype.

The direction of caution is twofold. On the outside, we must clear away the hype of headlines, and on the inside, we must suspect the mirage of achievements created by distorted reporting. Descriptions comparing the Science and Technology Commission (STC) under the Central Military Commission (CMC), covered in this book, to the U.S. DARPA also sit on this boundary.

The functions of the two organizations are merely compared; open data provides no basis to equate them as the same kind of organization. The STC's internal budget and projects, the scale of hidden research and development, and the final size of the U.S.-China AI gap lie outside the scope of provided data, so they aren't concluded one way or the other. Guarding against hype doesn't mean underestimating China's progress. It means reading without mixing up demonstration, deployment, and operationalization, while drawing a clear line between what is verified and what is not.

Clearing away hype is active verification, not passive denial. The habit of asking which stage the technology is in when facing a single report becomes the first barrier. If it's a lab demonstration, we weigh its feasibility against the laws of physics. If it's a procurement announcement, we look at budget sizes and completion deadlines to divide experimentation from force integration.

If it's a claim of combat readiness, we track through open sources whether it's repeatedly proven in exercises and operational concepts. Achievements that fail to pass these three questions must be left in a place of reservation, not a place of certainty.

Humility comes with this verification. As Kania pointed out, a policy analyst measuring maturity alone by holding onto fragmented open-source evidence invites misjudgment. Only by collaborating with scientists and engineers to confirm feasibility at the level of physics, and going through cross-verification with external assessments like the U.S. Department of Defense's China Military Power Report, can one gauge the relative reliability of weapons.

The fact that there isn't yet success rate data to show how many of the over 9,000 procurement announcements led to actual deployment and commercialization demands the same humility. This is because the scale of numbers isn't necessarily the scale of capability.

The direction of caution divides into two layers. Looking outward, we must peel back instances where headlines inflated prototypes into completed weapons. Looking inward, we must suspect the cycle where subordinates' rosy reports to avoid punishment travel up to superiors, pass through external propaganda, and flow into the West. The information disconnect during the J-20 test flight, where even the top leaders failed to properly grasp the initial situation, shows the path of distortion being born first inside the system and then spreading outward. If the same reporting structure operates in today's AI and unmanned swarm development, a significant portion of the hype the West faces may be the shadow of China's internal information defects crossing borders.

The reader's honesty is also revealed in keeping the boundaries of the data. It's an attitude of not mixing the scope of what verified literature says with the scope of what it remains silent about. It means leaving items outside open data, like the STC's internal budget and projects, the scale of hidden research and development, and the final size of the U.S.-China gap, as ungrounded, and not filling in with imagination what might have been contained in non-existent sources. Guarding against hype doesn't mean underestimating China's progress. It's a pledge of restraint to read while distinguishing between demonstration, deployment, and operationalization, and drawing a clear line between what is verified and what isn't.

# Chapter 10. The 15th Plan and New-Quality Combat Power

In March 2026, the National People's Congress passed the 15th Five-Year Plan at the Great Hall of th...

## 1. Plans After 2026

In March 2026, the National People's Congress passed the 15th Five-Year Plan at the Great Hall of the People in Beijing. Its formal name is the Outline of the 15th Five-Year Plan for National Economic and Social Development and Long-Range Objectives for 2035. Its applicable period is from 2026 to 2030. Before fronting growth rate figures, this document defines the situation facing the country.

The tone used to describe this situation differs noticeably from the previous two plans. When the definition of the situation changes, the direction in which the budget flows also changes.

A report issued in April by the U.S.-China Economic and Security Review Commission points out this change (SRC-PDF-A102). The 14th Plan referred to the period from 2021 to 2025 as a time of peace and development. Even while warning of increasing instability, it preserved that specific expression. The 15th Plan erased this expression.

Instead, it firmly stated that great power games have become more complex and intense. It defined the present as a period of intertwined chaos and deepening instability. A sentence noting that strategic opportunities, risks, and challenges arrive together was placed alongside it. The cover of the plan has changed.

Upon this altered perception, a principle tying security and development together is established. Paragraph 5 of the Party Central Committee's Proposal states that security is consolidated within development, and development is pursued within security (SRC-PDF-C011). It fronted "bottom-line thinking," which presupposes extreme scenarios in advance. The sentence stating that a new pattern of development will be safeguarded by a new pattern of security was elevated to a grand principle of state administration.

It is an expression containing growth and defense in a single sentence. When the two words are bound as conditions for each other, the boundary between economic policy and national defense policy blurs.

Within this framework, science and technology are translated into the language of security. The plan identifies artificial intelligence, quantum technology, nuclear fusion, life sciences, brain science, and deep-sea/deep-space exploration as frontier technologies. The breadth of the list has expanded, and the sentences outlining the goals have become concrete. In the quantum field, it set a goal to go beyond basic research and establish an integrated quantum communication network. This is a sentence aimed at security infrastructure, not laboratory achievements.

Artificial intelligence is defined not as a tool, but as a factor of production alongside labor and capital. It takes high-quality data as the foundation of that factor. The plan directs artificial intelligence to be intertwined with quantum technology, life sciences, new materials, new energy, and 6G. It writes that this fusion will boost productivity across all domains, ranging from manufacturing and finance to healthcare.

Self-reliance is used as the language of defense. Paragraph 11 of the Proposal orders the guarantee of self-reliance in semiconductors, industrial machine tools, high-end equipment, system software, and

advanced materials (SRC-PDF-C011). Autonomous controllability, meaning a state where one can control things independently, is presented as the goal. In the background of this directive are the comprehensive sanctions Russia faced after invading Ukraine. The report interprets this as China attempting to counter Western sanctions, interventions, and long-arm jurisdiction (SRC-PDF-A102).

Long-arm jurisdiction refers to the extended jurisdiction that applies domestic laws beyond national borders. As a means to do so, it puts forward the new-type whole-nation system. It is an initiative in which the state gathers resources and manpower in a single direction to secure independent control over core technologies. The experience of sanctions has directly become the blueprint for technology policy.

The point where science and technology intersect with the military is Paragraph 55. The Proposal fronts the integration and mutual promotion of new-quality productive forces and new-quality combat power (SRC-PDF-C011). New-quality productive forces refer to the power that drives the economy. New-quality combat power is used as a term referring to military operations and strike capabilities. However, the translation "new-quality combat power" has a fluctuating scope.

It diverges depending on whether it is read as a policy slogan or as a confirmed military capability. The original text only wrote this in an English expression corresponding to new-quality combat capabilities. This book treats the slogan and the capability separately. This is because what is written in the document is a direction, not the current status of military strength.

The system connecting the two forces is the integrated national strategic system. The plan deeply pushes forward cross-military and cross-regional reforms. It is a method that ensures national defense requirements are reflected from the very beginning when building public infrastructure. The goal is to establish a national defense science and technology industrial system by securing compatibility between civilian and military standards.

It has institutionalized the channel through which civilian achievements transfer to the military. What differs from the past is that fusion is embedded within construction rules rather than coordinating bodies.

Unmanned operations and intelligentization are placed at the end of this channel. Intelligentization means a doctrinal shift where artificial intelligence reorders command, reconnaissance, strike, and assessment. Paragraph 53 of the Proposal directs the development of new-domain, new-quality combat forces (SRC-PDF-C011). It writes to hasten the development of unmanned intelligent combat forces and their corresponding counter-capabilities. A sentence follows directing the establishment of an intelligentized military system using network information systems and data resources.

This is not a report on deployment track records, but an order to accelerate development. The report views the plan as having explicitly codified a structure where civilian advancements in drones, embodied artificial intelligence, and the low-altitude economy transfer into military power (SRC-PDF-A102). This is a passage where one must read demonstrations and organization separately from actual combat deployment. It is difficult to equate what the document directs with what is confirmed on the battlefield.

The language of security spreads beyond the battlefield to infrastructure and supply chains. Placing political security at the forefront, Paragraph 50 of the Proposal identifies the security of food and energy, core production and supply chains, and major infrastructure (SRC-PDF-C011). It writes to increase the exploration and stockpiling of strategic minerals. It orders the construction of national strategic hinterlands and the establishment of backups for core industries in preparation for wartime strikes. It is an initiative to plant reserve axes so that production continues even if one region is cut off.

It lists cyberspace, data, artificial intelligence, biotechnology, nuclear energy, space, deep sea, polar regions, and low-altitude airspace as domains that national security capabilities must reach. Paragraph 10 directs the construction of dual-use public infrastructure utilized in both peacetime and wartime. One can read the intention to transform the entire country into a highly resilient, quasi-wartime mobilization system. This part is positioned as preparation toward the 2027 goal of the centenary of the founding of the military.

The final axis is money and discipline. The report notes that Xi Jinping led a large-scale purge of generals citing corruption in the People's Liberation Army (PLA) procurement system (SRC-PDF-A102). As if reflecting this, Paragraph 54 of the Proposal directs the reform of military budget management and the overhaul of the military procurement system (SRC-PDF-C011). It firmly codified the guideline of building the army with diligence and thrift. However, these documents do not reveal who holds the real power after the purge.

There is no basis here to conclusively identify the succeeding power holders. What the plan targets is the overhaul of the system rather than the replacement of personnel. It is a control meant to prevent corruption from derailing unmanned and intelligentization projects. The five years starting from 2026 become an experiment that binds science and technology and combat power into a single sentence upon this control.

What this plan fronts is also revealed in the word frequencies within the text. A MERICS report counted the policy terms in the text, which amounts to about 80,000 characters. Artificial intelligence appeared more frequently than any other term, followed by high-quality development and sci-tech innovation. National security was repeated roughly twenty times.

The term "sci-tech self-reliance and self-strengthening" newly rose as a core agenda in this plan. Word frequencies are nothing more than a rough indicator to gauge budget priorities. Nevertheless, what the document reiterates signals in advance where resources will flow. The direction for the five years rests upon these repeated words.

The plan's gaze does not stop at 2030. The 2035 long-range objectives are hung together in the document's formal name. The tasks for the five years are positioned within the coordinates of those fifteen years. If the 2027 centenary of the founding of the military is a near milestone, 2035 is a distant milestone. The experiment connecting science and technology and combat power proceeds between these two points in time.

When reading this plan, an attitude of not filling the document with what the document does not say is necessary. The inner thoughts and anxieties of the leadership pushing self-reliance and

Military-Civil Fusion (MCF), as well as backroom deals among factions, are not written in the official literature. There is no basis to deduce them here. Interpretations that directly link the new-type whole-nation system or the construction of national strategic hinterlands to the Great Leap Forward or the Cultural Revolution of the Mao Zedong era also have no basis in the document.

This book does not make that connection. It takes only confirmed clauses, policy names, and sentences concerning budget and procurement as its basis. The principle of reading the direction written in the document separately from the current status to be confirmed on the battlefield is upheld throughout this entire section. This is because the plan is a promise of what will be equipped five years later, not a report of what is equipped today.

Among the words reiterated by this plan, high-quality development is placed immediately after artificial intelligence. It is a signal to shift the metric of growth from speed to quality. It is a phrasing that takes uninterrupted production and controllable technology, rather than rapid expansion, as the substance of growth. This phrasing interlocks with the principle that bound development and security in a single sentence.

This is because growth that fronts quality shares the same grain as bottom-line thinking. It is a sequence of first establishing an uncollapsible foundation and then advancing upon it. Expanding scale is pushed to the back, and solidifying an unshakable foundation comes to the front. A darkened external perception has changed even the grammar of growth.

The clause defining artificial intelligence as a factor of production opens a channel for this quality-centric growth. The plan directs that artificial intelligence be pushed into the processes of manufacturing, finance, and healthcare. This arrangement, placing data alongside labor and capital, treats artificial intelligence not as a tool for one industry but as the foundation for all industries. High-quality data is identified as the material for that foundation.

It is the logic that the quality of data determines the quality of production. The directive to intertwine artificial intelligence with quantum technology, new materials, new energy, and 6G emerges from the same place. The fusion that transfers the achievements of one technology to another is placed as the next stage of productivity. This sentence of fusion branches out from the same root as the list of frontier technologies seen earlier.

The fact that the term national security is repeated roughly twenty times in the text is also a point to note. Although not as frequent as artificial intelligence or high-quality development, this word is scattered throughout the plan, moving between growth clauses and security clauses. Security trails closely wherever industry is discussed, and wherever infrastructure is discussed. This repetition reconfirms the integration of development and security seen earlier within the fabric of the document. It means it is not a slogan in one or two clauses, but a tone spread across the entire text.

The order of words hints at the order of the budget. The arrangement where artificial intelligence stands at the front, followed by high-quality development and sci-tech innovation, pre-digs the channels through which resources will flow for five years. The fact that sci-tech self-reliance and self-strengthening has newly risen as a core agenda in this plan lies on the same current. The darkened external perception came first, and that perception elevated the task of self-reliance to the

forefront of growth. The definition of the situation, the frequency of words, and the mandates of the clauses all point in one direction.

However, a high frequency does not guarantee achievements. How many times the plan wrote artificial intelligence and what will be achieved five years later are different matters. The words reiterated by the document only reveal the weight of the goals; they do not predetermine the results. It has already been stated earlier that word frequencies amount to nothing more than a rough indicator to gauge the direction of the budget.

The principle maintained by this section continues in this part as well. It is an attitude of reading the written priorities without preemptively reading them as attained achievements.

## 2. New-Quality Combat Power

In March 2025, the Third Session of the 14th National People's Congress was held at the Great Hall of the People in Beijing. Before the People's Liberation Army (PLA) delegation, President Xi Jinping urged hastening the development of new-quality combat power. The original Chinese text was 加快发展新质战斗力. These six characters subsequently appeared repeatedly in Chinese military literature and high-level speeches.

A report on the PLA's perception of artificial intelligence, compiled by Georgetown University's CSET, recorded this expression as a concept interlocking with the intelligentization approach. Intelligentization refers to a doctrinal shift where artificial intelligence reorders command, reconnaissance, strike, and assessment. New-quality combat power took its place in this literature as a slogan underpinning that doctrine.

The meaning of the term became a bit clearer through the words of an internal military official. Major General Lü Yuanchen, Deputy Director of the Political Work Department of the Central Theater Command Army, explicated this concept. His explanation was that to win in future wars, the state must seize opportunities for vigorous economic development and push forward technology research in emerging fields like artificial intelligence and big data, and that this exactly constitutes new-quality combat power. It was a definition binding military capability and economic productive capacity in a single sentence.

It was a term pointing not to a list of weapons, but to the direction of the national constitution. The fact that an executive of the Political Work Department offered this definition is also a point worth noting. New-quality combat power was the language of the armory, and simultaneously the language of ideological mobilization.

Translation becomes a stumbling block for this term. The translator who rendered the 15th Five-Year Plan Proposal into English nailed down its scope in endnote 52. They wrote that new-domain, new-quality combat forces (新域新质作战力量) do not mean traditional infantry or artillery. It was a restriction specifying that it points to military capabilities of emerging warfare modes, such as artificial intelligence-based drones, network warfare, and counter-space capabilities. What can be

confirmed in the original text goes only up to this definition of scope.

Academic discussions regarding what misreadings the word "new-quality" invites among Western analysts, or what policy misjudgments its nuances lead to, are not included in this literature. Therefore, the translation "new-quality combat power" must be treated not as a fixed term, but as a fluid one. New-quality combat power as a policy slogan and new-quality combat power as an actual military capability belong to different strata. If one conflates the two strata, one will mistake a slogan for a capability.

The phase in which this term boarded the national master plan is the 15th Five-Year Plan. Covering the period from 2026 to 2030, the tone of this plan is noticeably darker than that of preceding plans. According to the April report by the U.S.-China Economic and Security Review Commission, the phrase in the 14th Plan that defined this era as one of peace and development has been deleted this time. In its place, the expression intertwined chaos and deepening instability was substituted.

The gaze reading the global situation has shifted from optimism to a sense of crisis. Within this tone, science and technology are elevated beyond tools for commercial growth into the language of security for safeguarding the system. The grammar of tech hegemony has entered into the planning document.

The main text of the plan commands new-quality combat power as a clause. Paragraph 53 hangs the goal of the 2027 centenary of the PLA's founding at the forefront. It contains instructions to cultivate new-domain, new-quality combat forces on a large scale and with combat-oriented (实战化) readiness. There is also a sentence to hasten the development of unmanned intelligent combat forces and their corresponding counter-capabilities. A clause follows, directing the establishment of an intelligentized military system with network information systems and data resources.

It also includes an order to run major national defense development projects to accelerate the speed at which cutting-edge technologies are transferred into actual weapon systems. A sentence directing the thickening of strategic deterrence to safeguard global strategic balance was placed at the head of the clause. Even the demand to cultivate a new type of phalanx of military talents was bound in this single clause. It was a design that listed people, data, projects, and deterrence all in one place.

The core lies in Paragraph 55. This clause glues the economy and the military together at their essence. As Arthur Kroeber and others at the Brookings Institution have pointed out, the newly emerged policy term in the 15th Plan is new-quality productive forces (新质生产力), which means technology-driven growth. Paragraph 55 commands the consolidation of the integrated national strategic system and strategic capabilities. As the means to do so, it directs the deepening of cross-military and cross-regional reforms (跨军地改革) that tear down the walls between the military and local civilian sectors.

It intends for the civilian sector's new-quality productive forces and the military's new-quality combat power to interlock and propel each other upward. It is an initiative to remodel the economic constitution itself into a Military-Civil Fusion (MCF) type, so that commercial artificial intelligence, drones, and low-altitude economy technologies transfer directly into the military's intelligentized weapons. Military-Civil Fusion is a strategy that binds civilian research, universities, enterprises, and military procurement into a single system of military technology transfer. The true policy weight of

new-quality combat power is loaded onto this fusion design.

The commands in the documents are already spilling over into the tangible realities of procurement and experimentation. According to a study by CSET, the People's Liberation Army (PLA) issued over 9,000 public procurement notices related to artificial intelligence between January 2023 and December 2024 alone. However, there is no confirmed data on success rates indicating how many of these actually led to deployment and commercialization. The scale of these notices reveals a direction aimed at absorbing commercial AI from the civilian sector and transferring it into command, control, communications, reconnaissance, and strike capabilities. The College of Intelligence Science, under the National University of Defense Technology, has been conducting autonomous operational experiments with drone swarms.

The Chinese military has also used its procurement network to request a system capable of simultaneously controlling more than 80 airborne assets from a distance of over 320 kilometers. These cases indicate that the unmanned, intelligent combat units mentioned in the documents are moving through the stages of demonstration and organization. There is no basis in these materials to conclude that they have been verified in large-scale combat. Therefore, it is more accurate to read "new quality combat capabilities" not as already deployed capabilities, but as capabilities currently being built through procurement and experimentation.

It is difficult to view the targets of these procurement notices as individual weapons. CSET's analysis groups the targets these 9,000-plus notices seek to absorb under the acronym C5ISRT. This is a concept that weaves command, control, communications, computers, cyber, intelligence, surveillance, reconnaissance, and targeting into a single chain. The actual work of intelligentization lies in deciding where to insert civilian-made commercial AI into the links of this chain.

The pathway through which "new quality productive forces" transition into "new quality combat capabilities" is also located between these links. This is the point where the reason why the planning documents explicitly stipulate data resources and network information systems becomes apparent. An intelligentized military system is closer to a redesign of the plumbing through which information flows than to a list of weapons. Rather than the fact that the scale of procurement is large, it is which link that procurement targets that reveals the direction of the capabilities.

The timetable also defines the nature of this capability. The year 2027, set forth in Article 53, marks the centenary of the founding of the People's Liberation Army (PLA). The plan establishes that year as the deadline for developing new-domain, new-quality combat units with a combat-oriented focus. Engraving a deadline in the document is also an admission by the plan itself that the capabilities are not yet complete.

If the weapons were finished, there would be no reason to set a target year. Within the dark tone of the planning documents, the background against which science and technology have been elevated to the language of security is also connected to this incomplete status. The desperation to circumvent Western sanctions and protect the regime has pushed technology up from a tool for growth to a weapon for defense. "New quality combat capabilities" is the nametag attached by that desperation.

Therefore, the attitude with which we read these words becomes important. "New quality combat capabilities" as a policy slogan, as an article provision, and as procurement and experimentation lie on different levels. President Xi Jinping's speeches belong to the level of slogans. Articles 53 and 55 belong to the level of commands.

The 9,000-plus notices and the drone swarm experiments belong to the level of tangible reality. The three levels point in the same direction, but they do not signify the same achievement. Political will is required for a slogan to become a command, and budget, technology, and time are required for a command to become a tangible reality. For tangible reality to be verified in large-scale combat, the gateway of an as-yet-unconfirmed success rate still remains.

If we skip this gateway and read the three levels as overlapping, we will misunderstand the ambitions written in the documents as capabilities already in hand. Reading "new quality combat capabilities" accurately requires separating what China wants from what China has achieved. What it wants is spoken clearly by the documents, but what it has achieved has not yet been fully revealed beyond the required specifications of the procurement network and the demonstrations on the testing grounds.

The boundaries of the data are drawn as sharply as the boundaries of the capabilities. Official literature does not tell us what inner thoughts President Xi Jinping and the Chinese leadership harbor as they push for "new quality combat capabilities," nor what anxieties hastened this policy. Behind-the-scenes struggles between military factions and personal motives also remain submerged beneath the surface of articles and speeches, unrevealed. What the documents show is the decided direction; it is difficult to view them as the state of mind that led to that decision.

Filling this void with guesswork creates a story that the literature cannot support. Reading "new quality combat capabilities" honestly is also a matter of separating what is written in the articles from what the articles are silent about.

The temptation to draw a historical genealogy must also be handled within this restraint. Looking only at the outward appearance of the state driving civilian productive forces in a single direction, one is tempted to immediately link the mobilization grammar of the new whole-of-nation system to the Great Leap Forward or the Cultural Revolution of the Mao Zedong era. The superficial resemblance between the two eras encourages building that bridge. However, the provided literature does not erect such a bridge of causality.

If similar outward appearances are taken as evidence of genealogy, analysis leaves the documents and slides into the realm of association. The current policy of "new quality combat capabilities" must be read within the current planning documents for its weight to be precise.

The numbers of procurement demand the same scale. The over 9,000 notices testify to the People's Liberation Army's direction in seeking to absorb commercial AI, but they do not testify to how far that direction has progressed. This is because the literature does not contain success rate data indicating how many of these progressed to contracts, to deployment, or to actual combat performance. The specification to simultaneously control over 80 airborne assets from 320 kilometers away is also a requirement put forward by the procurement network, and it is difficult to view it as verified actual performance.

Required specifications are the language of goals, and actual performance is the language of achievement. Placing both languages on the same scale inflates capabilities that are currently being built into completed capabilities.

It is also more honest to leave the threshold of translation open. Translator's note 52 merely pinned down the scope of new-domain, new-quality combat units to AI drones, network warfare, and counter-space capabilities. There is no academic review in this literature regarding what misreadings the word "new quality" generates when transferred into Western languages, or how those misreadings spill over into policy misjudgments. If so, the Korean terminology of "new quality combat capabilities" also remains not a fixed meaning, but a provisional terminology that must be handled carefully only within the scope permitted by the original text. This restraint may seem frustrating, but guarding the line between what the documents say and what they do not say is the only way to read China's ambitions without confusing them with its achievements.

## 3. Self-Reliance and Expansion

In March 2026, the Outline of the 15th Five-Year Plan was approved in Beijing. The priority placed at the very beginning of the document was not reform and opening up. It was science and technology self-reliance and self-strengthening (科技自立自强). These Chinese characters compress the shift in national priorities. The language of growth has changed into the language of survival.

The Chinese leadership did not call the current world a period of peace and development. They defined it as an era of intertwined chaos and deepening instability. This diagnosis sets the tone for the entire plan. Defense comes first, and expansion comes next.

The framework of self-reliance is contained in Article 11. It is the new whole-of-nation system (新型举国体制), which gathers national resources into one place. It is a framework that rewrites the mobilization methods of the planned economy era into the language of high technology. The targets aimed at are specific.

Integrated circuits, namely semiconductors, are at the very front. Industrial machine tools, high-end equipment, and system software follow behind them. It is an order that the state will directly break through the bottlenecks of core technologies. It is also a declaration that it will not be left to the market.

It is difficult to view sidestepping Western export controls as the goal. The goal is to bring the very sources of technology domestically.

This strategy has a name. It is independent and controllable (自主可控). It means controlling the production chain with their own hands, not the hands of others. In the background lie the United States' long-arm jurisdiction (长臂管辖) sanctions.

This is the result of learning that sanctions aimed at a single domestic company can bring the entire chain to a halt. That experience permeates every sentence of the document. The response does not stop at technology. The construction of an independent payment network, CIPS, to break away from

the US-centric financial network is written alongside it in the same plan.

This is a design that views semiconductor self-reliance and payment self-reliance as a single package. Economic security has not been separated from technological security.

In the field of AI, the very nature of self-reliance has changed. It has passed the stage of imitation and entered the stage of closing the domestic loop. A report by the research institution DSET shows that shift through the genealogy of a single company. Zhipu's 2022 GLM-130B and 2023 ChatGLM2-6B relied heavily on the open-source architectures of Google and Stanford.

This means their roots were in the United States. However, the core design of GLM-5, released in 2026, came from the Chinese company DeepSeek, not from the United States. Sparse attention, multi-head latent attention, mixture-of-experts architectures, and reinforcement learning methods were transferred in this way. The source has been swapped out.

The report calls this flow a Distillation Cascade. Just as water flows down through tiers, capabilities flow down in three stages. A small number of Chinese research institutes extract capabilities from frontier US models via APIs. Leading companies like DeepSeek achieve architectural innovation on top of that and release the model weights to the ecosystem. Zhipu, Baidu, Alibaba, and ByteDance adopt that innovation into their own models.

The direction of the pipeline has been flipped. Transmission coming into China from the United States has been replaced by transmission circulating from Chinese company to Chinese company. In the report's expression, it is intra-Chinese corporate transmission. This means it has become difficult for US export controls to stop even this inner circulation.

The closed loop did not only point inward. It led to a second gear spreading outward. The weapons of expansion are open source and price. When Western companies locked their code away, China placed its bets on openness. The result appears exactly as it is in Hugging Face's download rankings.

Alibaba's Qwen pulled down Meta's Llama and became the most downloaded model in the world. It is difficult to view this as an issue of just one ranking. The derivative models that branched off from this model have surpassed 100,000. A single model has grown into a single ecosystem.

Price accelerated the speed of expansion. DeepSeek R1 was released under the MIT license, which broadly allows for commercial modification. This is a condition that anyone can take it, modify it, and sell it. In May 2025, they lowered the API usage price by 75 percent. Compared to the models of the US company Anthropic at the same time, it is 28 times cheaper.

When the price goes down, the number of users increases, and when the number of users increases, the model learns again. It is a feedback loop where adoption invites improvement, and improvement in turn invites adoption. This loop supports China's industrial dominance from the inside. It is a structure where openness is used as strategic force, not a loss.

A narrative accompanies this expansion. The target is the Global South, namely developing countries. In discussions recorded by the EU DisinfoLab, Chinese policymakers pointed to Anthropic and OpenAI. They criticized the hegemonic tendencies of Western companies that kept their code closed.

On the opposite side, China positions itself as helping the development of poor countries with cheap, open technology. It has placed the position of the narrative on the side of the liberator. It is not just words. Alibaba Cloud promised a $53 billion investment in computing infrastructure beyond its borders.

This is a scale amounting to 70 trillion Korean won. Government-led AI cooperation centers have opened one after another overseas.

Physical expansion is clearly evident in communication networks. Huawei generates approximately $5 billion in revenue each year in the Latin American region alone. This is money amounting to 6.6 trillion Korean won. This means the digital infrastructure of that region has fallen into Huawei's hands.

Financing, cloud, and 5G networks are being tied together with Xi Jinping's Global Development Initiative. It does not stop at selling products. It is the work of pulling partner countries into China's technological standards and economic ecosystem. It is a strategic move to stand in the position of writing the rules of the future knowledge economy.

Self-reliance and expansion look in different directions but turn on a single axis. Inwardly, the chain is closed so as not to be broken, and outwardly, they advance to the position of writing the rules by spreading standards. However, a lingering question remains in this picture. Whether the breakthrough ordered by the planning documents has actually been achieved at the very forefront of semiconductors cannot be concluded with these materials alone. The breadth of open-source adoption does not mean that the capability gap with the United States has been reversed.

The fact that DeepSeek's price is 28 times cheaper and where that model's performance stands are separate questions. What is confirmed by these materials is the direction. It is a design that elevates self-reliance to the first sentence of the state and takes expansion as the execution of that sentence. The 15th Five-Year Plan has transcribed that design into the language of the next five years.

How the two gears mesh together is compressed into another report title attached by DSET: "Two Loops." The inner loop is the cycle of self-reliance, and the outer loop is the cycle of expansion. When DeepSeek opens its architecture on the inside, Zhipu, Baidu, and Alibaba receive those weights and plant them in their own models. The models refined in this way are released to the world as open source, and the scale of adoption swells while developers around the world download and modify them. When adoption swells, data of usage accumulates, and the accumulated data becomes the material for the next model, returning to the inner loop.

It is a structure where self-reliance feeds expansion, and expansion in turn feeds self-reliance. The two loops do not spin apart, but mesh together on a single axis.

The fact that the direction of the Distillation Cascade has been flipped leads to a matter of time. Early capabilities were extracted via APIs from frontier US models, but after that, DeepSeek's architectural innovation circulated among domestic companies and rolled on its own. Even if the United States cuts off the initial water channel, the water that has already flowed down to the lower tiers continues to circulate within the domestic loop. This means self-reliance has taken root not as a one-time

achievement, but as a self-sustaining cycle. The point aimed at by US controls and the point where actual capabilities are reproduced have begun to diverge.

This divergence sidesteps the logic of Western controls. Export controls are a method of blocking the choke points where goods cross borders. However, if architectural innovation crosses from Chinese company to Chinese company, and the results have already been scattered to the world as open source, the choke point to block disappears entirely. The import of hardware can be caught, but the expansion of design is difficult to catch. The completion of self-reliance becomes the shield of expansion, and the breadth of expansion becomes the justification of self-reliance.

The economics of feedback do not seem to be solely a matter of price. The moment DeepSeek lowered its API price by 75 percent, setting a value that amounts to one twenty-eighth of Anthropic's model, openness becomes a strategy, not charity. The lower the price, the broader the adoption; the broader the adoption, the more derivative models increase; and the more derivatives increase, the closer the standards of that genealogy come to the world's default. The 100,000 derivatives that branched off from the single Qwen model is a number that shows which way that default has already tilted. The calculation method that reads openness as a loss and the calculation method that reads it as strategic force diverge at this point.

Another frontline of expansion is the frontline of narrative. In the records left by the EU DisinfoLab, Chinese policymakers grouped the West's closed models into the language of hegemony and established their own open models in the language of development. This is an attempt to first define who stands on the side of developing countries before disputing the superiority or inferiority of the technology. Price and code become the material evidence backing up that narrative.

A price 28 times cheaper and public weights are materials that make the self-proclaimed title of liberator plausible. In a place where narrative calls for infrastructure and infrastructure in turn solidifies the narrative, expansion becomes a work of choosing sides beyond technology transfer.

The final position this design aims for is the position of writing the rules. If cheap open models, 5G networks, and the cloud enter the Global South as infrastructure, the developers and companies of those countries will work on the premise of China's technological standards. It does not end with a single sale of a product, but is the work of planting the grammar of an ecosystem. The moves of Huawei grasping the communication networks of Latin America, Alibaba Cloud laying down computing beyond borders, and the government opening AI cooperation centers are difficult to view as separate businesses. They are multi-pronged answers to a single question: who will write the rules of the future knowledge economy?

# Chapter 11. Technological Hegemony, Normative Competition, and the Security Dilemma

When you open the model download leaderboard on Hugging Face, an unfamiliar name hangs at the top. A...

## 1. The Grammar of Technological Hegemony

When you open the model download leaderboard on Hugging Face, an unfamiliar name hangs at the top. Alibaba's Qwen series has pushed aside Meta's Llama to take the lead in downloads. This table is a commercial indicator showing which codes developers around the world choose to download. Below the ranks, over a hundred thousand derivative models stretch out like branches. Yet, policy reports in Washington read the same numbers in a different language.

Open Models, Soft Power, and the Spectrum of U.S.-China Artificial Intelligence Competition (SRC-PDF-C004), published by CSET in 2026, transposes this leaderboard into a map of soft power. This is the moment when download counts are translated into the coordinates of a nation's influence. The popularity of a code is treated as an index of national power. The wall between commercial and security indicators disappears on the spot.

The grammar of technological hegemony refers to the rules of this translation. It is a grammar in which models, semiconductors, and open source shift from industrial terms to security terms. U.S.-China Hegemonic Competition and the Artificial Intelligence Arms Race (SRC-PDF-023), published by SAND, diagnoses that great powers are captivated by technological determinism. It is the belief that superiority in any single technology will determine the future international order and the outcome of wars.

This belief makes one read technological development directly as a competition for national power. Upon this foundation grows the form of the techno-security state, which binds economic development and national security into one body. Market achievements and military superiority are placed on the same scale. A Chinese paper (SRC-PDF-012) published by the Institute of International and Strategic Studies at Peking University views national security capability itself as something that is produced.

It takes the perspective that great power competition, the evolution of science and technology, and Military-Civil Fusion (MCF) are changing that mode of production. Both sides of the Pacific are reaching the same conclusion in different languages. The boundary between the words that deal with technology and the words that deal with weapons blurs together.

The term securitization points to this process of shifting. It is a trend that declares issues once in the realms of the market and academia as existential threats, thereby justifying extraordinary measures in place of peacetime rules. Once a certain technology is defined in the language of security, export controls, investment reviews, and access denials turn from exceptions into the norm. The debate shifts its stage from market efficiency to national survival.

Models, semiconductors, and open source have each, in turn, become targets of securitization under this grammar. We will examine one by one how these three have changed into the language of security.

The first target is the artificial intelligence model. China's AI Capacity Building and Security Threats (SRC-PDF-020), published in 2022 by the Institute for East Asian Studies at Sogang University, reports that the Chinese leadership has defined artificial intelligence as a new type of military strike

capability (新型军事打击力量). It is a definition that skips directly from the position of economic engine to that of military capability. AI models are treated as intangible, asymmetric forces.

The very act of a country building up its AI and big data capabilities for reasons of defense and commerce is read as a threat by its adversary. This is because those capabilities are seen as something that can transfer to command and control or the kill chain at any moment. From this structure, the cyber security dilemma emerges. It is a loop where preparations for defense stimulate the adversary's defense, and that reaction in turn amplifies anxiety.

The data ecosystem that private companies like Baidu, Alibaba, and Tencent build up in gear with the government is itself translated into a national security asset. It is read as the foundation for seizing information superiority in wartime. The same report introduces that the U.S. House Armed Services Committee proposed military AI development modeled after the Manhattan Project, which built the atomic bomb.

This proposal, which overlays the memory of the atomic bomb onto artificial intelligence, elevates technological competition to a matter of survival. PayPal founder Peter Thiel has said that AI itself is a military technology. It was a warning that one cannot distinguish whether a project running in China is for civilian or military use. It is a signal that the language of security has covered even civilian code without exception.

The second target is semiconductors. If the software known as a model is a weapon, the computing device that runs it corresponds to the physical battlefield. The equation that computing power equals firepower lies beneath it. The U.S.

Commerce Department’s Bureau of Industry and Security (BIS) treats semiconductors not as trade commodities but as instruments of control. Twice, in October 2022 and October 2023, the United States rolled out export controls aimed at the supply chain heading into China’s AI industry. The net of control grew tighter with each round. The targets are divided into three branches.

High Bandwidth Memory (HBM) required for running AI is one branch. Semiconductor Manufacturing Equipment (SME) used to make advanced logic chips and memory is another. The expansion of the Foreign Direct Product (FDP) Rule, which binds products made outside the U.S. if they contain even a fraction of American technology, is the final branch. Control soon breeds decoupling.

China perceives this as a crisis aimed at its survival. It sets up a new whole-of-nation system that pools the country's resources and pushes for self-reliance under the slogan of independent and controllable (自主可控). However, there are still mixed views on how far those achievements have come. Suspicions have emerged that the DeepSeek model was trained on restricted Nvidia chips and entered People's Liberation Army (PLA) institutions for non-combat missions.

Yet, this remains at the stage of raised suspicions rather than confirmed facts. The grammar surrounding semiconductors takes the shape of a cat-and-mouse espionage war.

The third target twists the grammar even more strangely. It is open source, which releases code to the world for free. Public code, once a symbol of free collaboration among developers and academic

exchange, is now treated as a tool for projecting influence. The leaderboard seen earlier is the material evidence.

Alibaba’s Qwen series has formed an ecosystem of over a hundred thousand derivative models on Hugging Face. DeepSeek’s models were released bearing the permissive MIT license. The C004 report listed its usage cost at one twenty-eighth of the American Anthropic models. Low cost becomes the threshold that pulls the world's developers into the Chinese ecosystem.

China calls the monopoly of Western closed models a hegemony and puts forward openness as its justification. The flow of distributing open models to developing countries becomes a conduit for soft power. The hand that hands out code turns into the hand that grasps technological standards and the flow of information. It is a competition for standards wearing the face of openness.

Open source is also used as a channel to bypass control. Observers call this flow a distillation cascade. A few research institutes access the application programming interfaces of American frontier models and extract their capabilities. Companies like DeepSeek build innovation on top of that and release the model weights to the world.

Other companies, including Zhipu, immediately take those results and use them in their own systems. It is a structure where the innovation pipeline, which used to lean on American technology, transforms into transfers between Chinese companies. Observers call this a self-sustaining security loop. It means that the flow, which began by borrowing American technology, has now closed into a self-turning circuit.

The argument that export controls cannot stop internal innovation follows closely behind. The United States has also moved to respond. The Trump administration’s AI Action Plan contained the logic that America must lead the global ecosystem by putting superior open models at the forefront. Openness has been elevated into the language of national defense and national strategy.

These three branches do not converge into a single conclusion. The verdict on whether the United States or China is ahead in artificial intelligence diverges depending on the evaluation criteria. This book does not nail down the victory to one side. What is confirmed is the change in grammar. It is the fact that the words exchanged over models, chips, and code have shifted from the language of industry to the language of security.

An analysis released by CSIS in 2026 (SRC-WEB-D001) pointed out that artificial intelligence heightens the risk of escalating crises between the U.S. and China, and that the two leaders must address it. The language of security leaves little room to step back. When one begins to speak in the grammar of weapons, the room for misunderstanding grows as well. Only after learning this grammar can one read why the organizations and budgets, which will be covered in the next chapter, are structured the way they are.

This grammar possesses a directionality that is hard to reverse. Once an issue has been translated into the language of security, reverting it back into the language of the market takes a far greater force. A proposal to lift export controls sounds like words advising disarmament, and an argument to simply call open source a venue for collaboration is read as a request to lower one's guard. The structure of

semiconductor controls drawn by SRC-PDF-C006 shows that character.

The moment the Bureau of Industry and Security defines semiconductors as a means to deter military modernization and human rights abuses, those measures are placed on the scale of security policy, not the scale of trade policy. When the scale changes, the cost of undoing it rises as well.

The hard-to-reverse grammar firmly tightens the loop of the security dilemma. The cycle where preparations for defense invite the adversary's preparations, and that reaction amplifies the initial anxiety, is exactly the structure seen earlier in AI models. However, this cycle connects as one across models, semiconductors, and open source. America's semiconductor controls invite China's struggle for independent and controllable tech, and that struggle opens a detour through the distillation cascade and open source distribution, and that detour in turn invites America's elevation of open models.

It is a structure where the three branches give birth to each other's next moves. The side that calls a move a defense and the side that reads it as a threat are facing the same board.

The danger of grammar grows at the point where the precision of words drops. The passage where Peter Thiel said one cannot distinguish whether a project running in China is for civilian or military use exposes this unreadability as it is. When it is indistinguishable whether a certain code is a product of commerce or a preparation for a weapon, the adversary assumes the safer side and raises the level of defense. As safe assumptions pile up, the room for misjudgment piles up along with them.

The scene where suspicions surrounding the training path and deployment of the DeepSeek model mix with confirmed facts shows that precariousness. If the language of security arrives before the grounds solidify, the debate takes place not at the site of fact-checking but at the site of survival.

The attitude of this book in reading this grammar is not the judgment of a contest but the observation of a translation. Instead of nailing down who is ahead, it follows the rules by which words of industry change into words of security, and the costs of reversal that those rules produce.

## 2. Normative Competition

In December 2021, at the Sixth Review Conference of the UN Convention on Certain Conventional Weapons (CCW), the Chinese delegation submitted a document. The title was the Position Paper on Regulating Military Applications of Artificial Intelligence. The original Chinese text read 中国关于规范人工智能军事应用的立场文件. The document laid out eight demands before the international community. At its very beginning was a sentence opposing the pursuit of military superiority through artificial intelligence technology.

A check aimed at the United States had changed into the sentences of a norm. This scene shows that the competition between the two nations has shifted beyond comparing weapon performance to a quarrel over norms. The United States and China are deeply immersed in technological determinism, believing that artificial intelligence will determine the future order and the outcome of wars. Therefore, they wage a diplomatic and technological war together to establish their own safety

standards and ethical norms as the international standard.

Just a few years prior, China was far removed from such positions. China had little experience fighting large-scale military operations overseas. Thus, it lacked institutionalized legal frameworks like cyber rules of engagement or the Tallinn Manual to apply to the battlefield. Because of the aggressiveness and operational advantages of autonomous weapons, it was unwilling to accept binding norms. The attitude changed as the competition for technological hegemony deepened.

In July 2018, Fu Ying, spokesperson for the National People's Congress, urged that China must take the lead in building norms to prevent the threats of artificial intelligence. The Artificial Intelligence Development White Paper released the same year contained a phrase about avoiding an AI arms race among nations. A country that used to reject norms had turned its direction toward creating them. The eight demands of 2021 were the resulting product of that shift.

Across the ocean, the United States plunged into the same competition in a different language. The U.S. Department of Defense defined the technological improvements of China and Russia as threats eating away at its own military superiority. In February 2020, the Department of Defense announced its AI ethical principles.

They were five principles: responsibility, equitability, traceability, reliability, and governability. The Defense Department bound together industry, academia, and allies with the Joint Artificial Intelligence Center (JAIC) as the axis. It was a strategic move to push American ethical standards to become the norms for global military AI. Both nations put ethics and safety at the forefront, but the places those words pointed to were different.

The point where the words are the same but the meanings clash becomes stark in the word safety. Looking at an analysis by EU DisinfoLab, even when the two nations agreed in talks that their artificial intelligence adheres to international safety standards, the definitions of safety spoken by both sides were at odds with each other. Strategic ambiguity lies in between. Chinese authorities create and enforce independent safety standards that domestic laboratories must follow when training models.

The problem lies in the fact that the yardstick for what is unsafe differs greatly from the universal standards of the West. The Cyberspace Administration of China (CAC, 国家互联网信息办公室) selected and approved a list of questions to test the safety of models. The purpose of this list was not the protection of human rights or universal values. The focus was set on filtering out answers that run counter to the Communist Party's political narrative and regime stability.

Experts warn that from the perspective of international standards, such control-type safety criteria can ironically produce unsafe results. China strikes a posture that it will lead global artificial intelligence governance. Beneath it lies a calculation to expand its own strategic agenda to the world rather than universal ethics.

The stage of competition shifts from declarations to code. The CSET report points out the way China uses open source as a lever to spread norms. While Western companies like Anthropic and OpenAI chose the path of keeping their code closed, China conversely opened the doors. The DeepSeek model was attached with the MIT license, known for its permissiveness.

Alibaba's Qwen model was opened entirely. As a result, an ecosystem of over a hundred thousand derivative models grew on platforms like Hugging Face. In July 2025, China released the Global Artificial Intelligence Governance Action Plan. While criticizing the closed nature of the West as a hegemonic tendency, it sprinkled cheaper and faster Chinese-made models across developing countries.

This strategy does not stop at handing over software. It is a soft power strategy seeking to spread technological standards imbued with the Communist Party's values and data processing methods into global norms. This is a scene where normative competition has seeped from diplomatic declarations into the developer ecosystem.

In the spaces where norms are empty or clash with one another, the security dilemma grows. The analysis by the Institute for East Asian Studies at Sogang University points out that China defines artificial intelligence not as a technology but as a new type of military strike capability (新型军事打击力量) and is dragging it into intelligentized warfare. The security dilemma is a phenomenon where, under a state of anarchy, one country's defensive measures are read as a threat by another, inviting an arms race. Artificial intelligence magnifies this dilemma.

PayPal founder Peter Thiel has said that AI itself is a military technology, warning that it is difficult to separate civilian projects from military projects in China. The very act of China raising its artificial intelligence for reasons of defense or commerce is read as a military threat by the United States. The nature of a technology where the boundary between offense and defense is blurred invites the adversary's overreaction. As long as norms fail to clear away this ambiguity, even investments for defense hasten the opponent's arming.

The seeds of misjudgment also lie in the uncertainty of the technology. When artificial intelligence is mounted onto weapon systems or command and control, a black box emerges where even developers find it difficult to retrace what data and criteria were used to issue a strike command. China tries to build proprietary algorithms with vast domestic data, but if a commander leans too much on the machine's judgment in the absence of real combat data, it can lead to fatal flaws. The phenomenon of the information cocoon, which lets only limited information flow through, narrows the commander's field of vision.

AI hallucinations that fabricate nonexistent targets blind those eyes in moments of crisis. At the end of it lie irreversible misjudgments and accidental clashes.

There are also voices questioning the very act of calling this whole situation an arms race. Research addressing the US-China hegemonic rivalry and the artificial intelligence military competition draws on the arguments of Roff (2019) and Scharre (2021). They view artificial intelligence not as a specific weapon like a missile or a tank, but as a general-purpose technology (GPT) that permeates electronics and computer networks overall. The point is that imposing the framework of an arms race on such a technology is inherently flawed.

Nevertheless, policymakers in both countries, driven by the fear of falling behind, lean on technological determinism and push forward with preemptive and offensive investments. The paradox that competition fronting norms instead elevates the risk of misjudgment leads to the next question of

this chapter.

The essence of normative competition lies not in the superiority of weapons, but in seizing the position to write the rules first. This is also why the United States, championing five ethical principles, has united allies, industry, and academia around the Joint Artificial Intelligence Center. When a nation's own standards are solidified as the world's grammar, rival nations are placed in a position where they must operate within rules written by others. The distance between the days when China looked at Western legal frameworks like the Tallinn Manual from the outside, and today, when it has directly submitted eight demands to a UN review conference, illustrates the magnitude of this struggle for position. The calculation that writing norms holds greater power than rejecting them is what has changed that attitude.

The difficulty is that both countries are targeting the same position. The United States pushes accountability and controllability as global standards, while China attempts to expand safety standards approved by its Cyberspace Administration of China under the name of international governance. Because the two standards do not overlap, the moment either side accepts the other's rules, it effectively acknowledges its own subordination. This is why norms diverge into blocs rather than converging into consensus.

When developing countries adopt cheaper and faster Chinese-made models, it is hard to see them as taking in only software. They are also taking in the data processing methods and the Chinese Communist Party's political narratives embedded within them. It is a structure where the hand that writes the rules becomes the hand that grasps the world's standards.

Therefore, in this competition, the fear of falling behind outpaces judgment. Policymakers who mistake a general-purpose technology for a specific weapon rush to establish their own standards before the adversary solidifies the rules first. Haste leaves no time to intricately refine the rules. The anxiety to establish norms fails to fill the normative void, instead only accelerating the speed of armaments, and within that void, the space for misunderstandings to grow widens.

The choices of developing countries become the counterweight in this competition. Where Western companies have kept their code closed, China attached a permissive MIT License to DeepSeek and entirely opened Alibaba's Qwen, scattering over a hundred thousand derivative models across the world. Cheap and easily accessible models are offers hard to refuse for countries with tight budgets. However, it is hard to see the countries accepting those models as taking in only software. They are also taking in the safety standards imbued during the training phase, namely the yardstick of question lists approved by the Cyberspace Administration of China.

The hand that determines what to filter out as a dangerous answer has already taken root inside the model. Norms are engraved into the model's weights before they are written into declarations. China's gesture of opening doors to the Global South while calling Western closedness a hegemonic tendency cannot be read solely as the virtue of openness. Folded within it is a calculation to solidify its data processing methods and political narratives as the world's defaults.

In this area, the discrepancy in the word "safety" turns into an actual risk. Answers that international standards consider dangerous are judged safe by China's yardstick, and answers that China's yardstick

filters out are viewed by international standards as expressions of universal values. When two yardsticks collide within a single model, a country that places that model onto its command and control systems takes on a black box, making it difficult to trace which standard dictated the orders. If the mismatch of norms overlaps with the algorithm's black box, the basis of judgment a commander can lean on is obscured twofold. The strategic ambiguity of a setting where both sides agreed to maintain safety in talks can spill over into a misjudgment on the battlefield, pulling the trigger under different rules.

Therefore, this competition leaves a void first before determining a winner. As long as both countries push their respective grammars as global standards without those grammars converging, a gray area remains between them, unreachable by any rules. The anxiety of mistaking a general-purpose technology for a specific weapon widens that gray area rather than filling it, and in every widened space, the gaps for misunderstandings to take root multiply.

## 3. Questions for the Korean Reader

Opening the screen of a paper published by the Institute for East Asian Studies at Sogang University, an unfamiliar stipulation catches the eye. It is researcher Kim Jin-yong's description that the Xi Jinping leadership has nailed down artificial intelligence as a new type of military strike capability (新型军事打击力量). This reads artificial intelligence not as a type of weapon, but as a power that changes the nature of a strike. The question this single line poses to the Korean reader is clear.

One needs the eyes to distinguish whether to read that sentence as a signal of threat or to filter it out as inflated fear. This section is intended to be used in sharpening those eyes.

The first signal to read is the reality of the cyber security dilemma. Even if China scales up artificial intelligence and big data under the pretext of regime maintenance and defense, the United States and neighboring countries perceive that those capabilities could shift to command and control or lethal strikes at any time. It is a structure where investments for defense appear to the adversary as preparations for attack. The South Korean government has already responded to this structure institutionally.

It established the National Strategic Technology Nurturing Plan to block sensitive research and technologies from leaking to non-allied countries. The National Research and Development Innovation Act, created in 2020 and revised in 2022, placed the duty of security education and supervision upon researchers. This is a movement to tie technological sovereignty and research security into a single ecosystem. Embedded here is an attitude of asking where to draw the institutional defense lines, rather than vaguely fearing the threats.

The next signal is the homework that the People's Liberation Army (PLA)'s doctrinal shift poses to the South Korean military. Cha Jung-mi's research points out that the Chinese army is breaking away from a focus on continental defense and mechanization, turning its direction toward unmanned operations and artificial intelligence-based intelligentization systems. The United States also pushed back by establishing the Army Futures Command and an Artificial Intelligence Task Force. Both

countries have accelerated their military innovation, citing the other's threat as justification.

The same literature states that this competition serves as a major reference for South Korea's military innovation. This means that the picture of future warfare, connecting multi-domain sensors and attaching artificial intelligence decision support systems to the Kill Chain, is also placed before the South Korean military. However, restraint is needed in this area not to mix the stages of demonstration and organization with actual combat deployment. A shift in direction is confirmed, but completed deployment is a matter on a different level.

Another signal comes from code, not weapons. China put weight on an open-source strategy to bypass US export controls. Alibaba's Qwen overtook Meta's Llama to become the most downloaded model globally, spawning a derivative ecosystem of over 100,000 models. DeepSeek was opened with a permissive license, and reports note that this model touted costs 28 times lower than Anthropic's.

This openness does not stop at being a commercial issue. China calls the closedness of Western big tech hegemonism and uses its own models as tools of soft power, scattering them to the Global South and developers. One must read that political biases and informational guidance are loaded together within that code and can permeate South Korea's information ecosystem. The texture missed when dismissing the flood of cheap models as mere commercial news lies here.

Now, moving on to the fears that must be filtered out. Placed at the very front is the perspective that paints the US-China confrontation as an artificial intelligence arms race. It is hard to view artificial intelligence as a weapon possessing a predetermined destructive power like a missile or a tank. Researchers like Roff and Scharre view artificial intelligence as a general-purpose technology that spreads across electronics and computer networks entirely.

The point is that merely superimposing the framework of the Cold War nuclear competition is inherently a conceptual error. Sherman criticized that the winner-takes-all frame erases the interconnectedness of the two countries and the openness of innovation, only inviting overreactions. It is a warning that the urgency imparted by the term arms race rather clouds judgment.

The fear that follows is the illusion of the flawlessness of Chinese artificial intelligence. Full autonomy, where humans drop completely out of the decision loop, is something even Chinese military scholars themselves are wary of. This is because they acknowledge flaws in their own systems due to a lack of actual combat data. The phenomenon of an information cocoon, where a commander is trapped only in the information filtered by artificial intelligence and misses other threats, and hallucinations that fabricate nonexistent targets as facts, can lead to irreversible misjudgments.

Alongside this is the concern that censorship for regime maintenance narrows the model's answers, producing errors that gnaw at battlefield reasoning. The picture of a perfect machine commander conceals the fractures within it.

The final fear is the conflation of demonstration and actual combat use. It is a misreading that interprets prototype announcements or large-scale procurement notices as completed deployment. Georgetown University analysis reports that among the over 9,000 artificial intelligence procurement notices issued by the PLA between 2023 and 2024, it could not confirm cases applied to major weapon

systems. It means the scale is closer to short experiments and prototype production spanning three to six months.

Placed alongside this is the assessment that the US export controls on high-bandwidth memory and semiconductor equipment are imposing burdens of time and cost on China's frontline development. The fear that inflates partial demonstrations into complete military superiority must be folded away. Since conclusions on the gap of who is ahead diverge depending on the evaluation criteria, it is more accurate not to nail it down to one side.

Therefore, the question that Korean readers must ask is hard to see as the size of the threat. It is the act of asking which of our institutions, which units, and which laboratories that signal reaches. Whether to translate a single line of a stipulation into fear or into policy coordinates remains the share of the reader. The training of dividing the numbers and slogans on the screen into signals and noise, that training is the final urging this chapter leaves behind.

This training requires one more underlying picture. It is the fact that the United States and China both fit side-by-side into the framework of technological determinism, which directly links technological superiority to the victory or defeat in war, and the techno-security state, which makes science and technology the axis of security. China digs the path of technological self-reliance fronting a new-style whole-of-nation system, and the United States responds with the Army Futures Command and the Artificial Intelligence Task Force. Because the two countries reflect each other within the same framework, the slogans of one side return as the budgets and organizations of the other.

The Korean reader must place their own coordinates upon this feedback loop. When encountering a single line of stipulation, asking back which loop that statement came from is the first handle to separate signal from noise.

The places where the coordinates settle down differ for each of the three signals previously pointed out. The cyber security dilemma settles into research labs and laboratories. The defense lines drawn by the National Strategic Technology Nurturing Plan, and the duties of security education and supervision that the National Research and Development Innovation Act placed upon researchers, are the coordinates of that place. One must ask which doors of our laboratories this institution, seeking to bind technological sovereignty and research security into a single ecosystem, will lock and which doors it will open.

The transition to intelligentization settles into military units and organizations. The literature's point that the underlying picture of future warfare, connecting multi-domain sensors and artificial intelligence decision support systems to the Kill Chain, serves as a reference for the South Korean military, is the coordinate of that place. The soft power of open source settles into the information ecosystem. When cheaply opened models like Qwen and DeepSeek spread to the Global South and developers, the eyes to filter and read the political biases and informational guidance loaded in that code are the coordinates of that place.

The places for folding away exaggerated fears are divided in the same manner. The frame of the arms race is folded away in the conceptual place that views artificial intelligence as a general-purpose technology, not a missile. The illusion of flawlessness is folded away before the voices of Chinese

military scholars acknowledging the flaws of their own systems due to a lack of actual combat data, and before the vigilance that information cocoons and hallucinations can lead to misjudgments. The conflation of demonstration and actual combat is folded away in the place that scrutinizes the scale of over 9,000 procurement notices and the duration of three to six months, and weighs the burdens of time and cost left by export controls on semiconductor equipment and high-bandwidth memory.

The reason why looking at the same screen diverges into translating it as fear or translating it as coordinates is because one weighs the size of the threat first without deciding the position from which to read. If the position is decided first, the numbers and slogans on the screen change not into materials of fear, but into materials of policy heading toward institutions, units, and laboratories. Setting down the impatience to nail down the gap to one side, and keeping the sequence of asking which of our coordinates that signal reaches, is the attitude of reading that must be kept even after closing this chapter.

To attach the attitude of reading to one's body, one needs a yardstick to hold in one's hand. When encountering a sentence on the screen, asking three things in turn reveals the boundary between signal and noise. The first question is the layer of the source. One must distinguish whether those words are a slogan coming from a stipulation of the Xi Jinping leadership, a judgment coming from the analyses of researchers like Cha Jung-mi or Kim Jin-yong, or a confirmation coming from physical figures like Georgetown University's aggregation of procurement notices. Slogans, analyses, and figures cannot be read with the same weight.

The second question is the stage. It is the restraint of not conflating prototype production and three-to-six-month experiments with actual combat deployment, and separating a shift in direction from completed organization into different layers. The third question is the coordinate. It is the act of deciding first the place whether that signal reaches the laboratories protected by the National Research and Development Innovation Act, the units reorganizing the Kill Chain, or the information ecosystem into which Qwen and DeepSeek flow.

Passing through these three questions, even the same sentence yields a different texture in the hand. The stipulation of a new type of military strike capability transforms not into a scale weighing the size of the threat, but into coordinates asking back which doors of our laboratories to lock. The transition to intelligentization transforms not into a material of fear, but into a material of policy weighing which unit's organization to place multi-domain sensors and artificial intelligence decision support systems upon. The flood of cheaply opened models transforms not into commercial news, but into a homework assignment sharpening the eyes to filter and read the political biases and informational guidance loaded in that code.

The fears to be vigilant of are also folded away by the same yardstick. The frame of the arms race loses power in the conceptual place that views artificial intelligence as a general-purpose technology, not a missile. The illusion of flawlessness loses power before the voices of Chinese military scholars acknowledging the flaws of their own systems due to a lack of actual combat data, and before the vigilance that information cocoons and hallucinations can lead to misjudgments. The conflation of demonstration and actual combat loses power in the place that considers the aggregation confirming no cases of application to major weapon systems in over 9,000 procurement notices, and weighs the

burdens of time and cost left by export controls on high-bandwidth memory and semiconductor equipment.

The habit of keeping the three questions in sequence, that is the tool that remains in the hand even after closing this chapter. When setting down the impatience to nail down the gap to one side and asking the source, stage, and coordinate in turn, the numbers and slogans on the screen become not waves of fear, but markings on a map heading toward institutions, units, and laboratories. Whether to translate a single line of a stipulation into a threat or into a coordinate of policy diverges at the fingertips of the reader asking those three questions.

# Chapter 12. Appendix: Major Organizations and Official Channels

Let us begin with how to read public channels. When tracing the Chinese military technology system...

Let us begin with how to read public channels. When tracing the Chinese military technology system, one often encounters committees with similar names. The Science and Technology Commission of the Central Military Commission, the Central Science and Technology Commission, the Central Military-Civil Fusion Development Commission, and the Central National Security Commission appear all at once. The acronyms are short, but the underlying characters of the organizations are distinct.

Some are internal military organs; some are coordinating bodies of the Party Center; for others, State Council ministries serve as the actual administrative channels. Thus, judging the reality of an organization solely by a single website address can easily lead one astray.

This appendix is a guide to reduce such confusion. It gathers official websites, related public channels, locations, and functions verifiable through open-source internet materials. In many cases, internal military committees and Party Center coordinating bodies do not maintain independent websites like civilian ministries do. For these, I have noted "No independent website verified in public sources." For ministries, universities, and public institutions whose addresses are verified on official pages, I have included the specific addresses.

For internal military organs whose addresses are not verifiable on public official pages, I have listed only Beijing. This is to avoid cementing building names based on assumptions.

This list is not a directory of contacts. It is a map for determining which channels to examine first when reading public materials. The Ministry of National Defense website is the channel for verifying military announcements, and the China Military Online is the news portal of the People's Liberation Army (PLA). The Ministry of Science and Technology website is the State Council entrance necessary for understanding the administrative channel of the Central Science and Technology Commission.

The State Administration of Science, Technology and Industry for National Defense is the administrative face of the defense industry and military-civil fusion (MCF). The National Natural Science Foundation of China is the place to look when tracing the flow of basic research funding. Separating these pathways helps avoid the mistake of misreading the STC and the CSTC as the same organization.

## 1. Science and Technology Commission of the Central Military Commission (STC, 中央军事委员会科学技术委员会)

Official channel address: https://www.mod.gov.cn/gfbw/qwfb/jwkxjswyh/index.html Location: Beijing. No independent office address is verified on public official websites.

Description: The STC is an internal military organ related to science and technology under the Central Military Commission (CMC). The Ministry of National Defense website has a separate information disclosure section for the "CMC Science and Technology Commission." However, unlike general ministry websites, this section does not detail organizational charts, budgets, or specific projects. It is a channel centered on announcements and activity reports. Therefore, when looking at the STC, one

must divide it into two layers. One is its existence and activities verified through official announcements.

The other is the undisclosed realm, such as internal budgets, personnel, and projects. This is why, in the main text, I compared the STC to a Chinese version of DARPA but did not equate them. The existence of a website does not mean the organization is transparent. While a public channel exists, the details of its core projects rarely emerge.

## 2. Central Military Commission (CMC, 中央军事委员会)

Official channel address: https://www.mod.gov.cn/ Auxiliary channel address: https://www.81.cn/ Location: Beijing. Specific addresses of the military's supreme command and the locations of internal departments appear only in a limited capacity on public official channels.

Description: The CMC is the upper echelon of China's military command system. The Ministry of National Defense website is the channel for China's external military announcements, and China Military Online is the PLA news portal approved by the CMC. Rather than being administrative websites that directly operate the same organization, these two sites are public windows for verifying official military announcements and military news. Official announcements from subordinate organs such as the STC, the Equipment Development Department (EDD), and the Information Support Force also frequently appear through these two channels.

Therefore, when reading the CMC, one must not assume that the website represents the entirety of the organization's operations. The public portals are windows projecting the military's language outward; actual decision-making and internal deployment operate within a separate military system.

## 3. Equipment Development Department of the Central Military Commission (EDD, 中央军事委员会装备发展部)

Official channel address: https://www.mod.gov.cn/gfbw/qwfb/jwzbfzb/index.html Related procurement channel address: http://www.weain.mil.cn/ Military procurement public channel address: https://www.plap.mil.cn/ Location: Beijing. No independent office address for the EDD is verified on public official channels.

Description: The EDD emerged as the core axis for weapon equipment development and procurement functions following the dissolution of the General Armaments Department after 2015. The Ministry of National Defense website features an information disclosure section for the EDD, and the All-Military Weapon Equipment Procurement Information Network serves as the practical channel for equipment procurement and demand disclosure. This distinction is important. The EDD is an agency with internal military authority, whereas the procurement information network is a conduit for external research institutions and enterprises to check public procurement information.

In the process of translating research and development ideas into actual weapon systems, a division of labor emerges where the STC sets the direction and the EDD manages the threshold of procurement and equipping. The public URLs reveal only a fraction of that threshold.

## 4. Information Support Force (ISF, 中国人民解放军信息支援部队)

Official announcement channel address: https://www.mod.gov.cn/gfbw/xwfyr/ztjzh/16302133.html Auxiliary announcement channel address: https://www.81.cn/yw_208727/16302030.html Location: The 2024 establishment announcement and related events were held in Beijing. No independent website or permanent office address is verified on public official channels.

Description: The Information Support Force is a new strategic arm established on April 19, 2024. Ministry of National Defense announcements describe this force as a key support element that comprehensively underpins the construction and operation of network information systems. Simultaneously, the designation of the Strategic Support Force disappeared, and the Military Aerospace Force, the Cyberspace Force, the Information Support Force, and the Joint Logistics Support Force were placed in a new alignment. This force must be read through announcements rather than a website.

When creating a new force, the Chinese military does not immediately disclose its detailed organization or station locations. What is verifiable from public materials is the time of establishment, its position within the command system, and expressions of its mission. The Information Support Force should be viewed as an axis connecting battlefield data, networks, and command assurance.

## 5. Strategic Support Force (SSF, 中国人民解放军战略支援部队)

Related public channel address: https://www.mod.gov.cn/ Auxiliary channel address: https://www.81.cn/ Location: No independent website or current office address is verified on public official channels.

Description: The Strategic Support Force was established in 2015, taking on the role of integrating forces in new domains such as cyber, space, and electronic warfare. With the creation of the Information Support Force in 2024, however, the designation of the Strategic Support Force disappeared from public announcements, and related functions were redeployed within the new structure of military arms. Therefore, when describing the SSF today, it should be treated as a stage in organizational restructuring history rather than a present-tense organization. Its public channels are past articles from the Ministry of National Defense and China Military Online.

Approaching it by searching for an independent website will instead create an optical illusion. The SSF is an organization that must be read through its vanished designation and newly deployed functions, rather than through remaining websites.

## 6. Academy of Military Sciences of the Chinese People's Liberation Army (AMS, 中国人民解放军军事科学院)

Related public channel address: https://yz.chsi.com.cn/ Auxiliary channel address: https://www.mod.gov.cn/ Location: Beijing. While contact addresses around Haidian District in Beijing appear in public graduate student recruitment materials, an independent website for the entire institution and an official address for the headquarters are not verified through a stable public website.

Description: The AMS is a military research institution directly under the CMC. Military theory, war design, military technology, evaluation and standards, and military medicine research are connected to this place. The channels found on the public internet differ from general university websites. Graduate student recruitment information, articles from the Ministry of National Defense and China Military Online, and recruitment pages on the government education system serve as the main entrances.

Although this institution is not a committee like the STC, it cannot be omitted when interpreting China's military technology ecosystem. This is because it is the knowledge base that underpins the military's long-term research agenda and the military application of science and technology. Readers must also remember the fact that public materials are thin.

## 7. National University of Defense Technology of the Chinese People's Liberation Army (NUDT, 中国人民解放军国防科技大学)

Official website address: https://www.nudt.edu.cn/ Location: 109 Deya Road, Kaifu District, Changsha City, Hunan Province. This address is verified on the school's recruitment website and graduate student recruitment guides.

Description: The NUDT is a military university directly under the CMC. It is connected to fields such as supercomputing, artificial intelligence, electronic science, systems engineering, aerospace, and ocean and meteorology. If the STC is the organ that coordinates research direction and military demand, the NUDT is the education and research site where the talent and research outcomes to support that demand emerge. Similar to a general university website, its official website displays faculties, colleges, recruitment, and research activities.

However, due to its nature as a military university, not all research is made public. While one can read its strengths through public papers, recruitment information, and college introductions, restraint is needed to avoid assuming military internal projects outright.

## 8. Central Science and Technology Commission (CSTC, 中央科技委员会)

Related channel address: https://www.most.gov.cn/ Institutional basis verification channel: https://www.news.cn/2023-03/07/c_1129419102.htm Location: No independent office address is verified on public official channels. The structure is described such that the reorganized Ministry of Science and Technology handles the administrative functions.

Description: The CSTC is a different organization from the STC. If the STC is a military science and technology organ under the CMC, the CSTC is a science and technology coordinating body at the Party Center level. Explanations of the 2023 State Council institutional restructuring stated that the Ministry of Science and Technology would be reorganized and that the reorganized ministry would assume the administrative functions of the Central Science and Technology Commission. Therefore, when searching for public materials, rather than looking for an independent CSTC website, one must look at the Ministry of Science and Technology website alongside institutional restructuring documents.

This distinction is central throughout the book. The STC and CSTC have similar acronyms, but one is a technical command organ within the CMC, and the other is a top-level coordinating apparatus for Party and State science and technology policy.

## 9. Ministry of Science and Technology (MOST, 科学技术部)

Official website address: https://www.most.gov.cn/ Location: 15B Fuxing Road, Haidian District, Beijing. Verified on the agency introduction page of the Ministry of Science and Technology.

Description: The Ministry of Science and Technology is the State Council ministry one must look at first to understand the public administrative channel of the Central Science and Technology Commission. After the 2023 reorganization, the Ministry of Science and Technology more distinctly assumed macro functions such as national strategic science and technology capabilities, the whole-of-nation system, basic research and national laboratories, science and technology evaluation, and international cooperation. Certain functions related to high-tech industrialization and science and technology parks were transferred to the Ministry of Industry and Information Technology. The Ministry of Science and Technology website provides a glance at policy documents, normative documents, department introductions, and public notices. It does not display the CSTC directly, but it is the entrance for checking through which ministry working documents descend when the CSTC acts.

## 10. National Natural Science Foundation of China (NSFC, 国家自然科学基金委员会)

Official website address: https://www.nsfc.gov.cn/ Location: 83 Shuangqing Road, Haidian District, Beijing. Verified at the bottom of the website and in department introductions.

Description: The NSFC is the core channel for tracing the flow of basic research funding in China. Explanations of the 2023 institutional restructuring stated that the National Natural Science Foundation of China would remain under the management of the Ministry of Science and Technology. In China's military-civil fusion system, it is hard to view basic research as operating entirely separated from military technology. The connection between the NSFC and the STC mentioned in the main text must also be read in this context.

However, what is visible on the NSFC website is merely a list of public research grants and academic disciplines. How internal military demands seep into research topics cannot be readily concluded from public materials alone. One must methodically examine public project titles, joint funds, and materials from the Department of Interdisciplinary Sciences.

## 11. Ministry of Industry and Information Technology (MIIT, 工业和信息化部)

Official website address: https://www.miit.gov.cn/ Location: 13 West Chang'an Avenue, Beijing, China. Verified at the bottom of the Ministry of Industry and Information Technology's public page.

Description: The Ministry of Industry and Information Technology is a State Council ministry handling industrial policy, information and communications, manufacturing, and electronic information industries. During the reorganization of the Ministry of Science and Technology in 2023, some functions related to high-tech industrialization, national indigenous innovation demonstration zones, national high-tech industrial development zones, and technology markets were moved over to this body. The reason the MIIT is important in a book on military technology is that it links to the State Administration of Science, Technology and Industry for National Defense—one axis of defense administration—and also serves as a window for observing civilian advanced manufacturing and information and communications industries. Policies on chips, communications, the industrial internet, smart manufacturing, and software touch upon the underlying infrastructure of military-civil fusion. The public website is the first screen for checking changes in industrial policies, statistics, and announcements.

## 12. Central Military-Civil Fusion Development Commission (CMCFDC, 中央军民融合发展委员会)

Official reporting channel address: https://cpc.people.com.cn/n1/2017/0620/c64094-29351822.html Related Ministry of National Defense reporting channel address: https://www.mod.gov.cn/gfbw/qwfb/4823758.html Location: Beijing. No independent website or office address is verified on public official channels.

Description: The Central Military-Civil Fusion Development Commission is a Party Center-level military-civil fusion coordinating body launched in 2017. Public reports show the trajectory: Xi Jinping acts as director, and at the first plenary session, the commission deliberated on commission rules, office rules, and opinions on establishing local military-civil fusion organs. This commission is less a ministry that directly executes projects and more a command board pushing the military, civilian industry, universities, local governments, and defense administration in a single direction. Therefore, meeting reports and notices hold greater importance than a website. When civilian events and projects sporting the name "military-civil fusion" mushroomed, the fact that the commission's office issued a notice to standardize related activities can also be verified through these channels.

## 13. State Administration of Science, Technology and Industry for National Defense (SASTIND, 国家国防科技工业局)

Official website address: https://www.sastind.gov.cn/ Location: 8A Fucheng Road, Haidian District, Beijing. Verified at the bottom of the website and in agency introductions.

Description: SASTIND is the administrative management agency for the national defense science and technology industry. Its website explains that the agency organizes and coordinates major matters related to the research and production of weapon equipment in the fields of nuclear, aerospace, aviation, shipbuilding, ordnance, and electronics, and is responsible for building core military industrial capabilities. If the STC handles internal military technology demand and direction, and the EDD manages equipment development and procurement, SASTIND is the gateway for defense industry administration on the State Council side. When looking at military-civil fusion, omitting SASTIND leaves the industrial half empty. The public website gathers policy laws and regulations, administrative licensing, announcements, subordinate agencies, and links to military industrial groups.

## 14. Office of the Central Cyberspace Affairs Commission, Cyberspace Administration of China (CAC, 中央网络安全和信息化委员会办公室, 国家互联网信息办公室)

Official website address: https://www.cac.gov.cn/ Contact page address: https://www.cac.gov.cn/2023-06/09/c_1687955953217584.htm Location: The contact address for the editorial department of China Cyberspace is publicly listed as 15 Fucheng Road, Haidian District, Beijing. The specific address of the commission itself is subject to separate limits on disclosure.

Description: The CAC is an agency directly connected to the management of internet content, data, algorithms, and generative artificial intelligence services. The reason the CAC is important in a book on military technology is not solely because of combat forces. It is because the control of civilian artificial intelligence models and data builds the outer fence for the military technology ecosystem. Registration of generative artificial intelligence services, algorithmic recommendations, cross-border

data transfers, and cybersecurity reviews are all related to the technological accumulation of civilian enterprises. If military-civil fusion is the conduit that pulls civilian technology into the military system, the CAC is the window demonstrating in what information environment that civilian technology grows, and what censorship and safety standards it undergoes.

## 15. Central National Security Commission (CNSC, 中央国家安全委员会)

The official news window address is https://www.mps.gov.cn/n2253534/n2253535/c4767394/content.html. The auxiliary news window address is https://politics.people.com.cn/n1/2023/0530/c1024-40002443.html. Location: Beijing. An independent website and detailed office address cannot be confirmed through public official channels.

Description: The Central National Security Commission (CNSC) is not a science and technology commission, but it must be examined together when understanding the upper echelon of the security decision-making system during the Xi Jinping era. Reports of its first meeting in 2014 emphasized that the CNSC serves as a platform for establishing a national security system and strategy. Reports of the first meeting of the 20th CNSC in 2023 emphasized a complex national security environment and the renewal of systemic capabilities. No independent public website can be confirmed for this commission.

Therefore, readers must read the policy direction of this organization through meeting reports, the National Security Law, and Party Central Committee documents. Science, technology, and military innovation are elevated from industrial issues to national security issues, and at that point, they connect with the CNSC.

## 16. China Military Online (中国军网) and the Ministry of National Defense Website

The address for China Military Online is https://www.81.cn/. The address for the Ministry of National Defense website is https://www.mod.gov.cn/. Location: Both sites serve as online windows for public military information. The reporting authority and operating entity are more important than a physical office address.

Description: China Military Online is introduced as a news portal of the People's Liberation Army (PLA) approved by the Central Military Commission (CMC). The Ministry of National Defense website is a window that broadcasts authoritative information on China's national defense and military development to the outside world. When internal military organizations lack independent websites, actual verification begins at these two locations. Reports on the activities of the Science and Technology Commission (STC), announcements by the Equipment Development Department (EDD), the establishment of the Information Support Force, and explanations regarding military

reorganization typically pass through these channels.

When researching Chinese military organizations, merely searching for "organization name + website" as one would for civilian organizations leaves many blanks. Instead, it is better to browse the Ministry of National Defense's authoritative releases, Ministry of National Defense press conferences, and the prominent news and specialized pages of China Military Online together.

## 17. All-Military Weapon and Equipment Procurement Information Network and the Military Procurement Network

The address for the All-Military Weapon and Equipment Procurement Information Network is http://www.weain.mil.cn/. The address for the Military Procurement Network is https://www.plap.mil.cn/. Location: These are online procurement windows. The public procurement information and the scope of announcements are more crucial than the organization's location.

Description: The All-Military Weapon and Equipment Procurement Information Network serves as an information window for weapons and equipment procurement connected to the Equipment Development Department (EDD). Ministry of National Defense reports also mention this site's address. The Military Procurement Network is a separate public window showing military procurement announcements, demands, and results. These two sites do not reveal the internal policies of organizations like the STC.

Instead, one can confirm what technical demands are issued in the form of public procurement. This is useful when looking at keywords such as drones, software, sensors, communications, simulations, and data processing. However, a public procurement announcement does not mean actual deployment on the battlefield. Announcement, prototype, testing, equipment integration, and actual combat operation are distinct phases.

## 18. China Electronics Technology Group Corporation (CETC, 中国电子科技集团有限公司)

The official website address is https://www.cetc.com.cn/. Location: Beijing. On the public official website, the group introduction and business scope are prioritized over the detailed address of the group headquarters.

Description: CETC is a central enterprise that frequently appears in China's military-industrial electronics and network information systems. The official website introduces the company as a key state-owned backbone enterprise directly managed by the central government, emphasizing its research and development system in the electronic information field and its technological status in military-industrial electronics and network information fields. Although not directly subordinated to the STC or the EDD, it is a company frequently encountered when examining the ecosystem of military electronics, radar, communications, command and control, and cyber and electronic warfare.

From the perspective of Military-Civil Fusion (MCF), it can be read as a representative example of a corporate network linking civilian industries and military demands. The public website allows confirmation of affiliates, products, innovation achievements, and social responsibility reports.

## 19. China Aerospace Science and Technology Corporation (CASC, 中国航天科技集团有限公司)

The official website address is https://www.spacechina.com/. Location: No. 16 Fucheng Road, Haidian District, Beijing. This is confirmed on the official "Contact" page and in the company introduction.

Description: CASC is a central enterprise associated with China's space development, strategic and tactical missiles, satellites, manned spaceflight, and deep space exploration. The official introduction lists the research and production of carrier rockets, various satellites, manned spacecraft, cargo spacecraft, deep space probes, space stations, strategic and tactical missiles, and unmanned systems. If the STC looks at the direction of advanced national defense research and the EDD handles equipment integration, central enterprises like CASC are a pillar of actual research, design, and manufacturing capabilities. When space, hypersonics, reconnaissance and communication satellites, and missile systems appear in the text, this corporate group must be viewed alongside them. The public website prominently features civil space and major national projects, but their underlying military applications must be cross-checked with separate materials.

## 20. China Aerospace Science and Industry Corporation (CASIC, 中国航天科工集团有限公司)

The official website address is http://www.casic.com.cn/. Location: Beijing. Public materials frequently mention the Beijing headquarters and the Aerospace Science and Industry Tower, but the official website's accessibility and the disclosure of detailed addresses can vary depending on the time.

Description: CASIC is a central enterprise connected to air defense, missiles, aircraft, and space and information technology. The State-owned Assets Supervision and Administration Commission (SASAC) and various public materials introduce this company as a core central enterprise in the aerospace and defense sectors. However, browsing the official website can sometimes be unstable depending on the connection environment. Therefore, when verifying this organization, it is safer to review the official website address alongside SASAC, the military-industrial group links of the State Administration of Science, Technology and Industry for National Defense (SASTIND), and corporate disclosure materials. Although not an organization directly on the same tier as the STC, it is a name that is never left out when examining where national defense technology translates into actual industrial capability.

## 21. The Search Sequence Readers Should Remember

For internal military organizations, first seek official announcements on the Ministry of National Defense website and China Military Online. The STC, the EDD, the Information Support Force, and the Strategic Support Force fall into this category. For Party Central Committee coordinating bodies, seek meeting reports and the ministries in charge of affairs rather than independent websites. The Central Science and Technology Commission (CSTC) is first verified through the Ministry of Science and Technology (MOST); the Central Military-Civil Fusion Development Commission (CMCFDC) through People's Daily Online and Ministry of National Defense reports; and the CNSC through reports from the Ministry of Public Security, People's Daily Online, and Xinhua News Agency.

For State Council ministries and public institutions, look at their official websites and organization introduction pages. MOST, the Ministry of Industry and Information Technology (MIIT), the National Natural Science Foundation of China (NSFC), SASTIND, and the Cyberspace Administration of China (CAC) fall into this category. For universities and enterprises, look at their official websites, but do not conclude the nature of military-related projects based solely on public introductions. The National University of Defense Technology (NUDT), the Academy of Military Sciences (AMS), CETC, CASC, and CASIC belong to this category.

The reason this sequence is necessary is that Chinese organizational names do not trace a straight line from top to bottom. Commissions set the direction, ministries handle administrative affairs, internal military departments manage equipment and organization, and universities and enterprises produce talent and technology. Organizations without websites are not necessarily weak in power. Organizations with publicly disclosed addresses are not necessarily more transparent.

Public windows demonstrate differences in methods of disclosure rather than the size of power. Readers must first discern that difference.

## 22. Standards for Reading URLs and Addresses

The addresses and URLs in this appendix were written based on contents verified on the public web as of July 14, 2026, Korea Standard Time. Chinese institutional websites undergo frequent reorganizations and access restrictions. Even for the same organization, the English name, the Chinese abbreviation, the Party organization name, the State Council ministry name, and the internal military name often diverge. Therefore, rather than trusting a single URL, I have cross-checked authoritative releases from the Ministry of National Defense, articles on China Military Online, ministry organization introductions, official websites of central enterprises, and reports from Xinhua News Agency and the People's Daily.

Addresses must be read with greater caution. For entities where the organization introduction or contact page is relatively clear, such as MOST, MIIT, NSFC, SASTIND, NUDT, and CASC, the specific location is recorded. For entities with a strong commission character and no verifiable independent

website, such as the STC, CMCFDC, and CNSC, the location stops at the level of "Beijing." For organizations where public channels are scattered across graduate school recruitment pages or press releases, such as the AMS, I have not concluded a separate official website. Forcing a blank space to be filled is more harmful to the reader.

China's military science and technology system operates through the overlapping of leading organs, internal military departments, State Council ministries, central enterprises, universities, and research institutes. Organizations with public websites display the surface of administration and public relations. Organizations without public websites reveal themselves through the traces of press releases, meeting minutes, appointment articles, and procurement announcements. Distinguishing this difference makes the position of the STC mentioned in the main text much clearer.

The STC is neither a research institute, an enterprise, nor a university. Nor is it a public relations organization prominently displayed on a public organizational chart. It is a command window that allows one to read what terms the military uses for future technology, where it assigns work, and at what stage it draws in industries and universities.

Should the reader wish to re-verify this material later, it is better to search for the formal Chinese name first. For instance, search for "中央军委科学技术委员会" and then attach words like "国防部权威发布" (Ministry of National Defense Authoritative Release), "中国军网" (China Military Online), "装备发展部" (Equipment Development Department), or "军民融合" (Military-Civil Fusion). If only English abbreviations are entered, American reports and think tank articles may appear first, pushing official Chinese announcements further down. For this reason, the notation in this book places the formal Chinese name alongside the English abbreviation. Only by being able to trace Chinese organizations back using their Chinese names can the reader avoid being trapped within translated explanations.

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