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A Decade of Defence Reforms Under Modi

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Editor



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Editor's Note

Kartik Bommakanti

Military reforms have been a long pending requirement for post-Independence India. Under the Narendra Modi government in the past decade, crucial decisions were made in the defence reform front. These reforms—which are yet to be fully implemented and are undergoing refinement—will have a significant impact on the way the Indian armed forces synergise cooperation in training, conduct joint exercises, use resources efficiently, and forge combined arms cooperation to effectively execute warfighting missions. India's defence procurement and industry have also been the target of reforms under the Modi government in the last ten years; some progress is now visible.

Yet defence reforms have their demands and face multiple challenges. As it is in a democracy, India's armed services follow the “ideal” Huntingtonian model imbued with a strong corporate identity subordinate to civilian control and have little impact on the survival of the civilian leaders or their political future.¹ Under this model, military services have little bargaining power vis-à-vis the state; at most, the military can define its role and express its interests. Fundamentally, according to Huntington, the military—which includes all the service branches—can influence decisions made by civilians without coercion.²

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Consistent with this model to which India generally conforms, the latest round of defence reforms under Modi have been influenced by one or more of the three services. For instance, the Modi government's move to establish Integrated Theatre Commands (ITCs) has come under resistance from the Indian Air Force (IAF), which refuses to subordinate its assets and personnel to the ITC commander, who may be from the Indian Army (IA) or the Indian Navy (IN) for reasons related to the IAF's "meagre" assets and the "indivisibility of airpower" to the extent that the IAF deems that its operational functions cannot be discretely divided into "strategic, tactical, or defensive".³ The Modi government has found the IAF's case to be persuasive and appears to have conceded to its plea. Similarly, the IA is reviewing the Agniveer scheme, introduced in 2022 as a key part of the government's defence reform to reduce personnel costs incurred by the IA and the other services. Such a review would involve raising the retention limit of 25 percent of recruits following their four-year stint⁴ to possibly 50 percent. Although the review is yet to be completed, the Agniveer scheme appears set to undergo some change, but not abandonment.

This Special Report offers a timely analysis of the state of defence reforms under the Modi government.

Manoj Joshi opens the report with an essay that recounts the history of defence reforms in India post-Independence. *Atul Kumar*, in his chapter, shows the impact of the People's Liberation Army (PLA) higher command reforms on India. This is followed by an essay authored by *Laxman Kumar Behera*, which analyses the slew of reforms implemented by the Modi government that have had an impact on India's defence procurement and defence ecosystem.

In the fourth chapter, *Anushka Saxena* explores the Higher Defence Organisation (HDO) reforms under the Modi government with the establishment of the Chief of Defence Staff (CDS) and Department of Military Affairs (DMA), and moving towards creation of Integrated Theatre Commands (ITCs). *Prateek Tripathi* then offers an assessment of current efforts by the Indian armed services to integrate frontier technologies such as Artificial Intelligence (AI), Quantum Technology (QT), communications technologies such as 5G

and 6G, and unmanned technological systems. Last but not least, *Amrita Jash* provides an analysis of how the Modi government has tackled the challenge of strengthening the military's human resource, with a focus on the Agniveer scheme introduced in 2022 and the effort to open more doors for women in the armed services.

In a nutshell, India in the past decade has made headway in the area of defence reforms. Yet challenges and constraints remain, and time will tell whether the reforms introduced by the Modi government have succeeded in their aims. Defence reforms are a dynamic and ongoing process and, given the stakes, will require both sustained political will and discipline to ensure concrete outcomes.

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Since Independence, the Unfinished Business of Defence Reforms

Manoj Joshi

Defence reform has been an ongoing process in India, its emphasis changing over time. At Independence, it was about adjusting the military to the democratic civilian structures. Even before the British had left, Nehru, as head of the interim government, had kept the Commander-in-Chief (C-in-C) out of the Cabinet and insisted that all military communications be routed to the Cabinet through civilian officials of the Ministry of Defence. The intention was to keep the armed forces subordinate to civilian authority. In 1955, the C-in-C designation was dropped and the three Service chiefs were designated ‘Chiefs of Staff’.

In 1961, through the President’s enunciation of the Allocation of Business Rules (AOBR) and the Transaction of Business Rules (TOBR), the three Services were designated as ‘attached offices’ of the Ministry of Defence, keeping the task of formulating military policy firmly with the Minister of Defence and his civilian ministry.

More reforms were carried out in the Army in the wake of the war with China in 1962. In essence, however, it retained its system of being organised in battalions, brigades, divisions, and corps, which were distributed across five geographical commands—the eastern, western, northern, southern, and central; a south-western command would be created later.

In the 1970s and 1980s there was considerable thinking on the need to modernise the Army’s organisation and doctrine. Many of these ideas eventually led to what is called the Army Plan 2000. This envisaged a massive mechanisation effort that would see almost the entire Army being reorganised into the Strike Corps, the Reorganised Army Plains Infantry Divisions (RAPIDS), and the Reorganised Army Mountain Infantry Divisions (RAMIDS). The effort failed, however, amid India’s economic travails and the collapse, in 1991, of the Soviet Union, which was expected to provide much of the equipment.¹

Shortly after the nuclear tests of May 1998, the government set up the National Security Council headed by a National Security Advisor (NSA). The Council was assisted by a secretariat, a committee of senior government officials, and an advisory board comprising individuals outside of government. Subsequently, in 2003, the NSA also became the head of the executive council of the nuclear command authority, whose executive function rested with the Strategic Forces Command.²

The Kargil war of 1999 led to India's most serious reform effort until then—following the Group of Ministers (GOM) report of February 2001—which recommended the appointment of a Chief of Defence Staff (CDS). The implementation of the measure was, however, postponed. Another report in July 2012 by the Naresh Chandra Committee also approved the idea of a CDS by another name—i.e., 'permanent Chairman' of the Chiefs of Staff Committee.

A key recommendation of the GOM in 2001 had been to create a tri-Service Andaman & Nicobar Command to deal with the security of these eastern islands at the head of the strategic Malacca Straits. The GOM also created a new Integrated Defence Staff setup to prepare for the appointment of a CDS. In addition, it created the

tri-service Defence Intelligence Agency aimed at centralising the electronic intelligence assets of the three services.³ Another tri-service Strategic Forces Command came up in early 2003, knowledge of which became public following a press release from the government about its nuclear weapons policy.⁴

India's poor experience of the military mobilisation against Pakistan following the December 2001 attack on Parliament—called Operation Parakram, which was so slow that Pakistan had time to counter-mobilise—convinced the Army that a new offensive doctrine was needed. Called Cold Start, this was developed by 2004, and aimed at smaller-scale, swift and decisive conventional operations against Pakistan.⁵

The Modi Era

It was only in 2019 that Prime Minister Narendra Modi finally cut the proverbial Gordian Knot and declared that he would appoint a CDS for the Indian military. This was accompanied by the creation of a Department of Military Affairs (DMA) and an alteration of the AOB to bring the military into the Department of Defence.

Along with the appointment of the CDS and creation of the DMA, the Modi government has also undertaken other reform measures which could yet prove to be transformative. Anchored in the 2020 Defence Acquisition Procedure (DAP), these are aimed at creating an Indian defence industrial eco-system. New outfits like the Innovations for Defence Excellence (iDEX) and the Defence Innovation Organisation (DIO) have been created to encourage start-ups and micro, small and medium enterprises (MSMEs) to promote defence industrialisation.

This has paved the way for the entry of private sector players into India's defence industry, hitherto the preserve of public sector units and ordnance factories. Both incentives and deterrents are also being provided to start-ups and academia to respond to specific challenges relating to defence industries. The negative incentives include an outright ban on thousands of items which used to be imported. Structural reforms are now envisaged in the Defence Research and Development Organisation (DRDO) which will further aid the emergence of an Indian defence industrial base, complete with research and development (R&D), design and development capabilities.

In 2018 the army began to speak of reorganisation, of breaking up its traditional 'battalion-brigade-division-corps' into Integrated Battle Groups (IBGs) that would be larger than a brigade (which has 3,000 personnel), but smaller than a division (with 12,000-15,000). It began to implement the process in 2022.⁶

As of 2024, two phases of the reorganisation have been completed. The first was a pilot involving the IX Corps headquartered in Yol, Himachal Pradesh, which created two IBGs. In the second, the 17 Strike Corps in Panagarh, West Bengal set up five.⁷ The Army will now seek sanction from the government to go ahead with the third phase which will make IBGs its basic combat unit.

Another notable change has been in the domain of human resource planning. Aware of the enormous strain on the defence budget due to the growing defence pension bill, the government has devised the Agnipath scheme to enable short-term recruitment of personnel called Agniveers (Fire Warriors) for all three services. However, there are concerns that the four-year tour of

duty that the Agniveer is offered is, first, much too limited to offer fully trained personnel to the Services, especially the technologically demanding Air Force and Navy. Furthermore, only 25 percent of these recruits are retained for longer terms with pensions, leaving the rest to be accommodated in jobs elsewhere, which are not guaranteed.

In a 2020 paper, defence expert Arzan Tarapore noted that even as India modifies its orthodox offensive doctrine, which centred on large army formations, the changed environment has raised other challenges. These include the nuclear issue and China's military modernisation, which threatens it in the Indian Ocean and other domains such as space and cyberspace. These are making new demands on the military's organisation, training, and doctrine.⁸

The creation of a Defence Cyber Agency and a Defence Space Agency signal the government's sensitivity to these challenges. Perhaps the most ambitious reform—the reorganisation of the military into theatre commands—remains a work in progress, delayed by the unfortunate passing of

the first CDS, General Bipin Rawat, in December 2021. His successor, General Anil Chauhan, has moved to clinch the issue around three theatre commands—a Maritime Command, as well as a China-facing Northern Command and a Pakistan-facing Western Command.⁹ The expectation is that there will be further movement in the coming days under the new government.

An important element of India's defence design and development planning is the emerging partnership with the United States. In 2023, the two sides undertook an Initiative for Critical and Emerging Technologies (iCET) to harness the public and private sectors along with startups and academic institutions to give a fillip to defence R&D, design, and development.¹⁰

Xi's PLA Higher Commands Reforms: Impact on India

Atul Kumar

On 31 December 2015, China's President Xi Jinping announced reforms in the People's Liberation Army (PLA). These reforms focused on restructuring the higher command to enhance the PLA's combat performance and sought to foster jointness and interoperability by implementing the Joint Warfare Doctrine.¹ This article examines these reforms and the subsequent development of interoperability and joint operational capabilities that were the primary objectives of the reshuffle. It also explores the enhancement of China's combat capabilities and its impact on the regional security architecture.

The 2015-16 Reforms

The PLA initiated its restructuring in September 2015 with the demobilisation of 300,000 troops, reducing the PLA's strength to 2 million. In its 11th round of troop reductions since 1954, those from non-combat formations or units equipped with outdated weaponry were demobilised.² Before the year ended, Xi established a distinct service

headquarters for the PLA Ground Force and elevated the PLA Rocket Force to a full theatre-grade service. He also created two independent deputy-theatre-grade uniformed arms: the PLA Strategic Support Force, tasked with information and space-warfare functions, and a Joint Logistics Support Force to consolidate logistics-related functions.³

In January 2016, the Central Military Commission (CMC) disbanded the existing four PLA General Departments and established 15 new agencies to assume their functions and roles under its direct command.⁴ China's seven military regional commands were further restructured into five battle-zone commands later designated as theatre commands.⁵ Additionally, the PLA Ground Force's 18 Group Armies were reduced to 13, streamlining the structure to better adhere to joint-warfare principles.

The CMC undertook additional measures to streamline the PLA's Chain of Command, introducing separate three-tier operational and administrative chains, each serving distinct yet complementary functions.⁶ The new setup, termed the 'Leadership and Management System' (LMS) and the 'Joint Operational Command System' (JOCS), mirrors the dual administrative and operational chains of command of the United States Armed Forces.⁷ The PLA's management chain of command includes the CMC, individual services, and their component units at theatre commands and focuses on recruitment, training, administration, lifecycle management, and support functions. Conversely, the operational chain of command runs directly from the CMC to theatre commands and their component joint task forces on the ground, with minimal administrative involvement.

The CMC also introduced detailed guidelines, manuals, and regulations to ensure jointness in command and control, planning, force construction, training, and operations. They highlight the military strategy in alignment with the concept of the 'Local Wars Under Informatised Conditions'.^a

Joint Warfare Developments in the PLA

The separation of command and management chains enables theatre commands and services to concentrate on their specific domains—i.e., operations and force building. Accordingly, operational command receives the requisite attention.⁸

As of 2024, the PLA has completed the first phase of military modernisation. The entire military was fully mechanised by 2020, achieving the initial milestone in the centenary goal set for 2027.⁹ The CMC has also allocated sufficient resources to allow services to cultivate their distinct domain specialisations and train their units in domain-specific combat techniques.¹⁰ To achieve further efficiency, the PLA divided its Strategic Support Force into three independent arms: the Aerospace Force, the Cyberspace Force, and the Information Support Force.¹¹ The PLA has also introduced jointness and interoperability at every level and conducted unit- and force-level exercises to hone its skills in joint operations. The top military leadership has maintained a sustained focus on this aspect, with Xi consistently

a Mao Zedong established China's official military doctrine, known as the "People's War", which remained the PLA's guiding principle throughout his lifetime. Following Mao's death and the setbacks in Vietnam, the PLA sought to modernise the doctrine as "People's War under modern conditions" without explicitly deviating from Mao's principles. Subsequently, in response to the conflicts in the Middle East and Afghanistan, Chinese leadership further revised the doctrine, first to "Local Wars under high-tech conditions" and later to "Local Wars under informatized conditions." These modifications reflect the evolving emphasis on technology and organisational reforms expected within the PLA.

underscoring the PLA's integrated development towards becoming a mechanised, informatised, and intelligent armed force.¹²

Existing Problems

The PLA continues to face challenges in implementing jointness, especially due to resistance against the doctrine. The PLA Army, in particular, is cautious about relinquishing control over its predominant functions to its sister services, despite the Navy and Air Force bolstering their capabilities to attain parity with the ground force.¹³

Corruption within the PLA poses another obstacle. As part of Xi Jinping's anti-corruption campaigns, thousands of generals were investigated and, between 2013 and 2015, 242 senior military officers, including 82 generals were meted punishment.¹⁴ This widespread corruption has also eroded trust between Chinese Communist Party officials and senior PLA leaders. Several factions in the PLA have been dismantled, while new ones are emerging under Xi's guidance. Multiple previously sidelined military leaders have been appointed as service chiefs of the PLA Army, Navy, and Air Force. These factors have resulted in fake and flawed procurements, moonlighting, and sham or token exercises, that pose recurrent problems for the PLA.¹⁵ On the one hand, Xi has consolidated his influence in the PLA by appointing his preferred candidates as chiefs.¹⁶ On the other hand, resentment among

superseded generals and general dissatisfaction with civilian interference in military affairs has created a volatile situation.

Consequently, interoperability in the PLA remains elusive. While interoperability has improved due to enhanced systemic architecture and communication capabilities, the effectiveness of interconnection and intercommunication within the PLA hinges on equipment standardisation, which remains a challenge. Multiple systems and weapons platforms from various manufacturers, each with different standards, pose logistical and support-management complications and cause operational difficulties.

Additionally, there is a prevalence of "princelings" within the higher defence echelons of the PLA, which raises concerns regarding the influence of family connections, relaxed promotion criteria, and the lack of professionalism in the PLA. Princelings often command the loyalty of their parents' units which, while strengthening intra-unit relationships, can impede reforms and perpetuate nepotism, creating further opportunities for corruption.¹⁷

The successful implementation of the Joint Warfare Doctrine must contend with these challenges within the PLA. However, its successful implementation will enhance the PLA's combat capabilities.

Impact on India

As a revisionist power, China has sought to transform the international security structure to align with its regional hegemonic ambitions. Therefore, a robust Chinese military is essential, and the Joint Warfare Doctrine is poised to play a pivotal role in this context. However, the bolstered capabilities of the PLA in terms of joint operations and long-range power projection could heighten tensions with India.

China's escalating military prowess has already manifested in increased belligerence in its neighbourhood, driven by expanding economic and strategic interests. Chinese Navy and Air Force are augmenting their long-range force multipliers, including refuellers, transporters, and supply and logistics facilitators. This augmentation, coupled with China's logistics bases in Djibouti and Chinese-owned or managed ports in the Indian Ocean and neighbouring seas, could alter the regional security architecture. In such a scenario, India's access to regional markets and national security, already under threat from the north and west, would be increasingly at risk, especially from the south and east. India needs to undertake higher-command reforms to enhance its combat capabilities and bolster its long-range power projection profile to address the evolving challenges posed by China.

Defence Procurement: Reforms, Effectiveness, and Challenges

Laxman Kumar Behera

In its first two terms, the Modi government introduced multiple reforms aimed at improving India's defence preparedness. A key focus has been defence procurement, which is linked to the 'Make in India' initiative and the *Atmanirbhar Bharat Abhiyan*. This chapter examines the effectiveness of key defence procurement reforms of the past ten years and identifies two key challenges that the new government needs to address to further streamline the acquisition apparatus and boost indigenisation.

Defence Procurement Reforms

In its first two terms, the Modi government adopted a twin approach to reforms in India's defence procurement system.¹ The reforms have been carried out both within the capital procurement manual—known as the Defence

Acquisition Procedure (DAP, formerly the Defence Procurement Procedure or DPP)—and beyond. The manual, which provides overall acquisition guidance and assigns responsibility to various authorities for the procurement of arms for the Indian armed forces, has been amended several times to make it more industry friendly, deepen the indigenisation drive, and speed up the decision-making process.

Two years after the Modi government first came to power, the Ministry of Defence (MoD) released the DPP in 2016.² The revision was preceded by the constitution of a high-level committee that recommended measures to align procurement procedures with the government's 'Make in India' initiative. In line with the committee's recommendations, the DPP-2016 emphasised indigenisation by giving primacy to the domestic industry over foreign contractors.

It also made an attempt to shorten procurement timelines and increase the overall effectiveness of the procurement process. The DPP established a dedicated procurement category—Buy Indian (Indigenously Designed, Developed and Manufactured) or Buy (Indian-IDDMM)—which was accorded the highest priority among the procurement categories.³ This category was aimed at facilitating the domestic industry, particularly the private sector, to undertake the design, development, and manufacture of defence equipment—a role that was previously fulfilled by the Defence Research and Development Organisation (DRDO) and, to some extent, the Defence Public Sector Undertakings (DPSUs).

To enhance the role of the private sector in defence production, the DPP-2016 also simplified the ‘Make’ procedure^a and created space for new Strategic Partnership (SP) guidelines, which were separately released in 2017.⁴ The SP guidelines were aimed at allowing the private sector to manufacture big-ticket platforms—such as fighter aircraft, helicopters, submarines, and tanks/armoured vehicles—which were hitherto under the exclusive purview of the DPSUs and the Ordnance Factories (OFs).

Four years after the DPP-2016 was released, the government announced a revised manual in the form of the Defence Acquisition Procedure-2020 (DAP-2020)⁵ aimed at allowing the domestic industry to participate in arms contracts and promote indigenisation. Building on the DPP-2016, the DAP-2020 focused on higher levels of indigenisation in all domestic-industry-centric procurement categories and innovation through the participation of Indian industry, including startups and small and medium enterprises. It also paved the way for foreign companies to manufacture defence equipment in India by creating a new procurement category—Buy (Global-Manufacture in India).⁶ Other measures were also announced to reduce procurement timelines and enhance objectivity in the procurement process.^b

The government also undertook numerous measures outside the DPP’s purview to facilitate higher domestic defence production. These measures include the simplification of industrial licensing, the articulation of export promotion

a The ‘Make’ procedure, first articulated in DPP-2006 and since revised several times, is intended to facilitate the domestic industry, to undertake prototype development of defence equipment.

b Some of these measures include simplification of trial procedure, realistic setting of weapon specifications, and single stage accord of in-principle approval of procurement cases upto INR 5.0 billion, among others.

measures, an increase in foreign direct investment cap, the opening of testing and trial facilities for use by the private sector, the establishment of two defence industrial corridors, and a policy framework for the indigenisation of parts and components.

The crucial change outside the DPP's domain is the appointment of the Chief of Defence Staff (CDS) and the creation of a Department of Military Affairs (DMA) under the post. Though the primary task of the CDS/DMA is to promote jointness among the three services, the CDS is also responsible for promoting indigenisation. As of October 2023, the DMA has announced five positive lists of over 500 items that are reserved for procurement from domestic sources. As these items begin to be contracted and manufactured in the country, the landscape of the Indian defence industry is expected to change.

The Effectiveness of Defence Procurement Reforms

The streamlining of the defence procurement manual and other reforms have had a positive impact so far, especially on the domestic industry and with regard to procurement from domestic sources. The focus on indigenisation has resulted in defence production turnover increasing from INR 740.54 billion in 2016-17 to INR 1,086.84 billion

in 2023-24, with the government setting a target of INR 1,350 billion for 2023-24 and INR 3 trillion INR by 2028-29.⁷ The higher production has led to a greater share of the MoD's procurement budget being spent on the domestic industry. In 2023-24, the domestic share of procurement was raised to 75 percent, up from 58 percent in 2021-22.⁸ Buoyed by the industry's increasing capability, the government has approved a large pipeline of projects to be executed by the domestic industry in the coming years. In 2022-23, official approvals for the commencement of formal procurement amounted to INR 2,710 billion (approximately US\$32.5 billion), 99 percent of which was for the domestic industry.

Key Challenges

Despite the early success of these reforms, the Indian defence procurement apparatus faces several constraints that need to be addressed to make it more robust and further drive the indigenisation process. The biggest shortcoming of procurement systems is organisational decentralisation. Unlike in other countries, where acquisition is the responsibility of a single administrative head, in India, this responsibility is decentralised across stakeholders who answer to

different functional heads. Thus, acquisition tasks such as the formulation of equipment specifications, trial and evaluations, contracting, manufacturing, quality evaluation, and finance are handled by different entities that are largely independent in their functioning. This has resulted in a diffusion of responsibility and dilution of accountability, leading to delays and ad-hoc procurement. Past efforts to reform the current organisational structure, established in the early 2000s after the Kargil war, have failed due to turf wars.

Additionally, procurement functionaries—both civilians and officers in uniform—are not trained to discharge their acquisition functions optimally. Defence acquisition requires expertise in diverse fields such as engineering, contracting, global export control regime, and financial and contract management. The lack of professional expertise has often led to the improper assessment of requirements, deficiencies in the formulation of requirements, and poor contract management. Moreover, due to a lack of professional acumen, officials tend to refrain from taking timely

decisions, which affects defence preparedness. The new government needs to professionalise the acquisition cadre—either by constituting a separate cadre for procurement or through imparting thorough training both prior to and during service.

Conclusion

The reforms undertaken by the Modi government in the last ten years in the procurement manual and beyond have had a benign impact on India's defence industry and domestic procurement. It is time that the new government build on the measures already taken to provide a further boost. The centralisation of all procurement functions under one administrative head and the professionalisation of the acquisition cadre are two key reforms that need to be implemented to instill greater accountability in acquisition and reinforce the indigenisation process.

Higher Defence Organisation Reforms in India

Anushka Saxena

The concept of ‘revolution in military affairs’ (RMA)^a incorporates the integrated capabilities of the armed forces to create a unified fighting force. In India, these efforts have resulted in Higher Defence Organisation (HDO) reforms in the past decade, notably in the creation of the Chief of Defence Staff (CDS) post, envisioning Integrated Theatre Commands (ITCs), and incorporating ‘jointness’ efforts in the overall Indian military doctrine. With India’s national security interests being threatened by the highly integrated Chinese People’s Liberation Army (PLA), India’s HDO reforms are a step in the right direction. However, these reforms are not without challenges.

Moving Closer to Jointness with the CDS Post

Established in December 2019 by Prime Minister Narendra Modi and the Cabinet Committee on Security (CCS), the post of CDS contributes to the vision of jointness in the Indian armed forces. The post of CDS—held by four-star General Anil Chauhan (Retd.) at the time of writing—acts as ‘first among equals’ with the Chiefs of Army, Air Force, and Navy Staff.¹ The CDS is mandated to serve as the nodal agent for enabling joint, tri-service combat capabilities, as the statutory secretary in-charge of the Department of Military

a ‘Revolution in Military Affairs’ is a concept first proposed in the writings of Soviet analysts between the 1970s and ‘80s. Although the initially proposed and accepted terminology was ‘Military Technical Revolution’, slowly, the more holistic term, ‘Revolution in Military Affairs’ came to be adopted in both Soviet and American writings on the evolving nature of warfighting. The core component of this ‘revolution’ in warfighting is the incorporation of military technologies and information warfare elements to create precise, non-lethal capabilities, and improved command and control battlefield networks. See: Steven Metz and James Kievit, “Strategy and the Revolution in Military Affairs: From Theory to Policy,” Strategic Studies Institute, US Army War College, June 27, 1995, <https://www.jstor.org/stable/resrep11727>.

Affairs (DMA) under the Ministry of Defence (MoD), as the Permanent Chairman of the Chiefs of Staff Committee (CoSM), and as a Principal Military Advisor to the Minister of Defence (at present, Rajnath Singh). In addition, the CDS is a member of the Defence Acquisition Council under the Defence Minister and a Military Adviser to the Nuclear Command Authority, chaired by the prime minister and the National Security Advisor (NSA). The CDS also decides on the financial priorities of the tri-services to minimise wasteful expenditure.

The CDS is not an operational commander and does not have the authority to conduct wartime mobilisation. The post is primarily responsible for fostering a culture of tri-service integration and interoperability, even as wartime decisions remain with the individual Chiefs of Staff of the three services. Regardless, the CDS's role of creating a joint doctrine for the Indian armed forces and overseeing its implementation gains importance in peacetime. The 2017 Indian Armed Forces Joint Doctrine,² developed when the CDS post did not exist, is now outdated. In this context, assigning the CDS to the role of Chiefs of Staff Committee (COSC) Chairman enables this official to integrate tri-service doctrines into a single new joint doctrine. However, the criteria for prioritisation requires the CDS to formulate responses to three strategic questions: what we are preparing for, who we are preparing to fight, and how we go about it.

To address these questions, it is crucial that the Department of Military Affairs (headed by the CDS), and not the Department of Defence, becomes the nodal agency for the preparation of Long Term Defence Planning (LTDP).³ In the LTDP process, inputs from the MoD and the National Security Council (of which the CDS is part) are imperative to realise civil-military integration. If the post of CDS was vacant, this would have been the joint responsibility of the Integrated Defence Staff Headquarters (HQ IDS) and the MoD. However, with the CDS in place, the HQ IDS functions under him to compile previous operational directives and intelligence and threat assessments from the defence minister and the three service chiefs, as well as to undertake contemporary LTDP. Prioritising budgeting proposals from the tri-services, which the HQ IDS has been unable to do by itself, is also a function that the CDS could exercise.^{4,5}

At a meeting of the COSC in June 2023, the incumbent CDS finalised⁴ a joint doctrine on the military aspects of cyber operations, which aims to achieve clarity on the integration of the tri-services to navigate the cybersecurity environment in India. A similar format must be applied to deliberate upon joint doctrines for missile forces

operations, space-based operations, electronic warfare operations, maritime operations (including aerial superiority at sea), and ground-based air defence, among other strategic areas of warfighting. The CDS is well suited to undertake such deliberations, given that he also heads the Defence Cyber Agency, the Defence Space Agency, and the Special Operations Agency.

ITCs: The Way Forward

In a May 2024 interview,⁶ Rajnath Singh pointed out that there can be no strict timeline for rolling out theatre commands in the Indian Armed Forces and that certain countries have taken over two decades to operationalise ITCs. However, an indefinite timeline is not beneficial. ITCs enable jointness, as is evident from the operations of the military forces of the United States (US) and China. From the experiences of these militaries, India's ITC model can be envisioned to fulfil a four-fold goal:

There must be at least five regional ITCs, with a principal operational direction assigned to each of them. One ITC each may be assigned to the northeastern and northwestern borders with China and Pakistan, respectively, whereas the other three ITCs may be deployed in the eastern, western, and southern regions of India, with HQs in Odisha, Maharashtra, and Tamil Nadu.

There must be a service headquarters within each ITC, with a single theatre commander having the authority to conduct joint training and wartime mobilisation. Theatre Commanders shall have peacetime authority to conduct joint combat training and preparedness exercises as well as the authority to mobilise tri-service resources in a unified manner.

There must be a combined arms brigades–arms battalions structure within each theatre to enable the interoperability of weapons systems and capabilities. Combined arms structures can be classified according to the weapons systems that they integrate: light Combined Arms Brigades include high-mobility, air-assault, mountain, and motorised, and medium and heavy CABs include wheeled and tracked armoured systems, respectively. Additional structures may include a special operations CAB and an integrated engineer and chemical defence CAB.

There must be support arms within the CDS-ITC structure to focus on jointness with respect to logistical requirements, nuclear force operations, cyber and information operations, and space-based operations.⁷ Institutions such as the Defence Cyber Agency and Defence Space Agency do not have the authority to conduct joint combat

preparations in emerging domains of warfare in an integrated manner in a single operational direction. Support arms for each such domain may be formulated under the authority of the CDS or as Deputy Branches under HQ IDS.

India's theaterisation efforts are impeded by the lack of a non-lapsable defence modernisation budget that can be utilised over the years, with continued contribution in each budget. Provisions for such a fund have been disallowed, with the government arguing⁸ that defence is already

the largest expenditure amongst the Central Ministries and defence expenditure as a definite percentage of Gross Domestic Product cannot be ensured because of competing priorities in a resource-crunched context. Therefore, despite the significance of theatre commands, the demands of theaterisation could remain yet unfulfilled.

The Application of Emerging Technologies in the Indian Armed Services

Prateek Tripathi

The imperative for the Indian military to adapt to emerging technologies cannot be understated, especially with the rapid progress in fields such as Artificial Intelligence (AI). Under the Modi administration, the Indian armed services have taken a number of measures to incorporate these technologies in the conduct of their affairs. These initiatives set an important precedent and lay the groundwork for the integration of emerging technologies across all levels of the Indian military.

In February 2018, the Department of Defence Production constituted a task force for the “Strategic Implementation of AI for National Security and Defence” to study the future use of AI in defence applications; the task force submitted its report in June 2018.¹ Based on its recommendations, the Defence AI Council (DAIC) and the Defence AI Project Agency (DAIPA) were

set up in 2019.² The DAIC provides guidance for the development of operating frameworks, policy-level changes, and structural support.³ DAIPA evolves and adopts standards for technology development and the delivery process for AI projects as well as reviewing the adoption plan of AI-led and AI-enabled systems and processes with user groups.⁴

The Ministry of Defence (MoD) has made an annual budgetary allocation of INR 1 billion to DAIPA for a period of five years from 2019 to support the agency in adopting AI projects, establishing AI-related infrastructure, and preparing AI-related data and capacity building.⁵ Each service has also earmarked INR 1 billion per year for the same period from their annual budgetary allocations for AI-specific application development.⁶ In July 2022, 75 newly developed AI technologies were launched during the first

ever “AI in Defence (AIDef)” symposium and exhibition organised by the MoD in New Delhi.⁷

In 2022, the Indian Air Force (IAF) established UDAAN (Unit for Digitisation, Automation, Artificial Intelligence and Application Networking) with the intent of using AI, and cyber and virtual reality to address its operational, logistical, and training needs, alongside opening a Centre of Excellence (CoE) for AI in Delhi under the unit.⁸ The Indian Navy, for its part, is integrating the use of automated technology such as the Integrated Platform Management System (IPMS) for its new-generation warships.⁹ It is also working towards creating a CoE at INS Valsura, where an AI and Big Data Analysis (BDA) laboratory was set up in 2020.¹⁰

The use of drones and unmanned aerial systems (UAS) has also seen significant growth. During the Army Day Parade on 15 January 2021, the Indian Army demonstrated its drone swarm capability with 75 indigenously designed and developed drones that executed an array of AI-enabled simulated offensive missions and close support tasks; the Army is in the process of inducting these systems into its mechanised forces.¹¹ There is a plan to procure India’s first combat drone called Tapas, developed by the Bengaluru-based Aeronautical Development Establishment, and drones such as the lightweight Switch are being employed for surveillance and reconnaissance.¹² Technology demonstrations on the use of unmanned ground vehicles (UGVs) have also taken place, and a tracked version of UGV—Mission Unmanned Tracked (MUNTRA), equipped with a 120-mm gun—is under development.¹³

The IAF is in the process of operationalising its own version of manned unmanned teaming (MUMT), where a combined group of manned and unmanned air vehicles undertake integrated missions.¹⁴ The Combat Air Teaming Systems (CATS) Warrior, developed under a public-private partnership (PPP) between Hindustan Aeronautics Limited (HAL) and Newspace R&D, a startup, will function alongside existing IAF manned platforms such as the Jaguar, Tejas, and Su-30 MKI.¹⁵

The Indian Navy has demonstrated the use of the Autonomous Fast Intercept Boat (AFIB), which has state-of-the-art communication systems, sensors, autonomous algorithms, and propulsion systems.¹⁶ The Navy also unveiled an unclassified version of its unmanned systems roadmap, the “Integrated Unmanned Road Map for Indian Navy”, during the second edition of the Naval Commanders’ Conference in October 2021.¹⁷

The armed forces are also exploring the use of quantum technology. Quantum communication depends on quantum key distribution (QKD) which, unlike traditional forms of encryption, is almost unbreakable, since any interception can be easily detected—a feature that makes it valuable for military applications. In February 2022, the Defence Research and Development Organisation (DRDO) and the Indian Institute of Technology (IIT)-Delhi demonstrated a QKD link over a distance of 100 kilometres between Prayagraj and Vindhyachal in Uttar Pradesh using existing commercial-grade fiber-optic

cables.¹⁸ The Indian Army has set up a Quantum Lab at the Military College of Telecommunication Engineering (MCTE) in Mhow, Madhya Pradesh, to undertake research in areas such as quantum computing, quantum communication, QKD, and post-quantum cryptography.¹⁹ The Indian Navy also initiated its foray into QKD technology by entering into an MoU with the Raman Research Institute in April 2023.²⁰

The Indian Army has recognised the importance of enhancements in communication and cybersecurity. It has established 5G labs, with the MCTE poised to be a 6G test bed.²¹ It has also collaborated with the Ministry of Electronics and Information Technology (MeitY) to develop military-grade 5G and 6G telecommunication applications.²² All three services are in the process of integrating Software Defined Radios (SDRs) to enable encrypted two-way communications.²³ Through its indigenous space programme, India has launched communication satellites to improve its military communications capabilities; GSAT-7, a Navy-specific communication satellite, was launched in 2013, and GSAT-7A for the IAF was launched in 2018.²⁴ The same year, the government established the Defence Cyber Agency and the Defence Space Agency to address threats from new domains.²⁵

The establishment of the Indian Army's Signals Technology Evaluation and Adaptation Group (STEAG) is the most recent and perhaps most ambitious application yet of emerging technologies in the armed services. STEAG is envisioned as an elite unit that will focus on nurturing and developing critical technology domains such as 5G and 6G networks, quantum technologies, AI, and machine learning.²⁶ The initiative aims to foster self-reliance in high-end communication technologies by bridging the gap between the armed services and industry and academia.²⁷

These efforts are not sufficient, however. The landscape of technology is evolving, and the Indian military will need to keep pace, especially amid the threats posed by its neighbours. China, in particular, is increasingly integrating emerging technologies into its military via its civil-military fusion strategy. The Indian armed forces have the opportunity to achieve something similar by adopting the tenets of 'Atmanirbhar Bharat' and 'Make in India'. It remains to be seen whether the armed forces will continue to build on the foundation built in the preceding decade. Meanwhile, the Indian Army has declared 2024 as the "Year of Technology Absorption", which is certainly a step in the right direction.²⁸

Strengthening Human Resource in the Indian Armed Forces: Focus on Youth and Women

Amrita Jash

In his address to the nation on India's 77th Independence Day in 2023, Prime Minister Narendra Modi highlighted the need for reforms in the armed forces.¹ These reforms, the PM said, include making the services "young and battle-ready". Human resource management (HRM) is a key to this goal. HRM in the armed forces involves preparing human resource forecasts, managing recruitment, screening prospective employees, analysing training needs, developing compensation systems, and managing performance appraisal, rewards, and recognition.²

For instance, under the Agnipath Yojana, which is a new HRM scheme for the armed forces approved by the Union Cabinet on 14 June 2022,³ selected youth, known as "Agniveers", will serve

in the Armed Forces for a period of four years.⁴ The scheme is designed to enable a "youthful and dynamic" profile of the armed forces.⁵ This recruitment policy aims to reduce the average age of personnel from 32 to 26 years, in line with the age profile of major armies worldwide, and reduce the expenditure for pensions.⁶ As of 2022, more than half of the annual defence budget is allocated for pensions, whereas less than 5 percent is earmarked for Research & Development (R&D); over 70 percent of the R&D budget is used for revenue expenditure (i.e., operating expenses), and 30 percent is spent on capital expenditure for the modernisation of the forces.⁷ From 2013-14 to 2022-23, pension expenditure increased by 163 percent, from INR 45,500 crore to INR 119,696 crore.⁸

In its first intake since 2022, the Army inducted 40,000 Agniveers in two batches, while the Navy and Air Force recruited around 2,700 and 3,000, respectively.⁹ With overall intake capped at 1.75 lakh till 2026, recruits are projected to increase from 46,000 in the first four years to 90,000 in the fifth year to 125,000 in the sixth year, resulting in Agniveers constituting half of the Army by 2030-32.¹⁰

The Agnipath scheme was revised in 2023 to make it more appealing for the youth: the upper age limit was extended to 23 years; the eligibility was expanded to include pre-skilled youth and ITI/polytechnic graduates in the technical category; and provisions introduced for special impetus to skilled candidates and those with vocational training, among others.¹¹ The scheme is expected to undergo further changes. Based on an internal survey of the three services, revisions are expected in two areas: increasing the retention rate of Agniveers from 25 percent to 60-70 percent for regular troops and around 75 percent for technical and specialist soldiers, and extending the tenure of Agniveers from the current four years to eight.¹² Despite what some regard as its revolutionary ambition, the Agnipath scheme has drawn criticism too. Some critics contend that the

plan could impact military professionalism, affect the ethos and fighting spirit of the forces, and possibly lead to the militarisation of civil society;¹³ others are of the view that the scheme creates a “lesser” cadre of soldiers, who work on the same tasks as those with full commission, but with lesser pay, benefits, and prospects for their future, after their service.¹⁴

Gender inclusivity is another area of focus, as women have historically had limited representation in the armed forces.^{a,15} To encourage greater representation, in 2021, the government inducted women for the first time under the “personnel below officer rank” (PBOR) in the Corps of Military Police^b—with the target of inducting 1,700 women in a phased manner, in batches of 100 women per year.^c In 2021, after 61 weeks of training, the first 100 women in Other Ranks were inducted into the Indian Army, while another 100 women soldiers^d joined the ranks through Agnipath.¹⁶

a In his written response to a question on the “status of women” in the Rajya Sabha, Raksha Rajya Mantri Dr. Subhash Bhamre noted that women constitute 3.8 percent of the Army, 13 percent of the Air Force, and 6 percent of the Navy. See: <https://pib.gov.in/Pressreleaseshare.aspx?PRID=1558892>

b The responsibilities of those appointed in PBOR include investigation of offences such as rape, molestation and theft; military operations where the army needs police assistance; assistance in evacuation of villages during cross-border hostilities; crowd control of refugees comprising women and children; frisking of women during cordon-and-search operations (mostly in Jammu and Kashmir); and ceremonial as well as policing duties; and in addition the PBOR personnel will also man prisoner-of-war camps in conflict situations.

c The induction of women has commenced from 2020. The first batch of 100 women in Other Ranks passed out in first week of May 2021, after completion of 61 weeks of training; and another 100 women soldiers have been inducted through the Agnipath Scheme.

d 100 vacancies each for women have been catered for in Agnipath Scheme for the Recruiting Years 2022-23 and 2023-24.

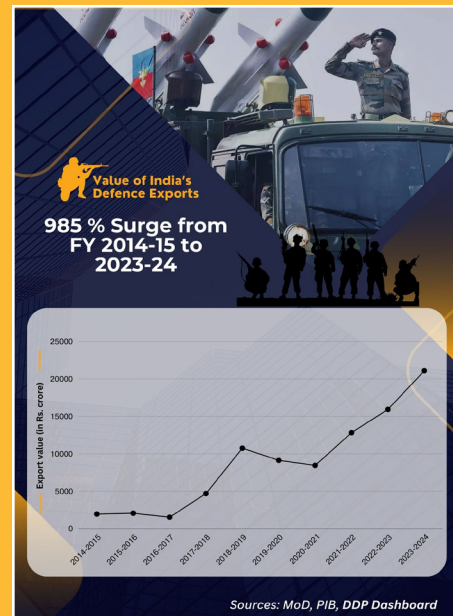
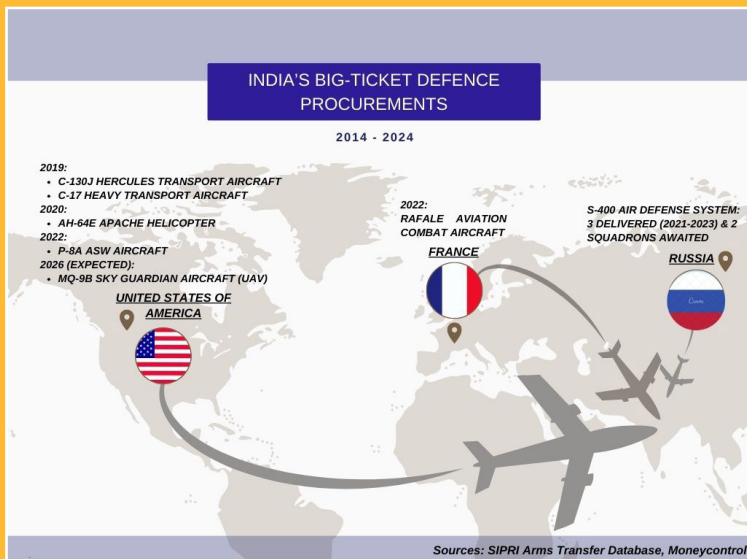
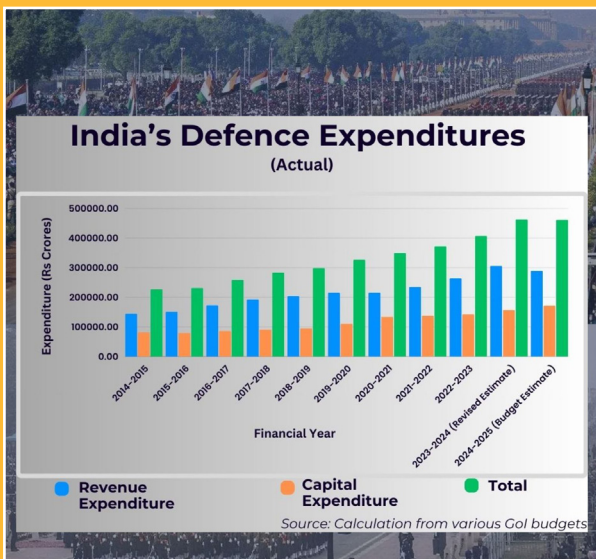
To further enhance inclusivity, all three services of the armed forces have adopted enabling policies that include granting permanent commissions for women officers, who were previously recruited through Short Service Commission (SSC); opening entry for women candidates in the National Defence Academy (NDA), which was previously limited to male cadets; and enrolling women as Agniveers under the Agnipath scheme. The first four batches of women cadets began training in the NDA in various months from July 2022 to January 2024.¹⁷ The Army is scheduled to carry out 96 recruitment rallies across the country in the fiscal year 2024-25, of which 11 will be exclusively for the selection of women Agniveers into the Corps of the Military Police.¹⁸ Additionally, the government has approved a proposal that entitles women soldiers, sailors, and air warriors to the same leave terms on “maternity, child care and child adoption” as female officers in the three services.^{e,19}

These policies aim to enhance battle preparedness by maintaining a youthful profile and promoting gender inclusivity, irrespective of rank. However, the challenge lies in drawing qualified recruits who are not just qualitatively and technologically superior but also have specialised skill sets. In this regard, the challenges are primarily concerned with apprehensions about achieving military effectiveness, professionalism, and combat readiness. ORF

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At a Glance



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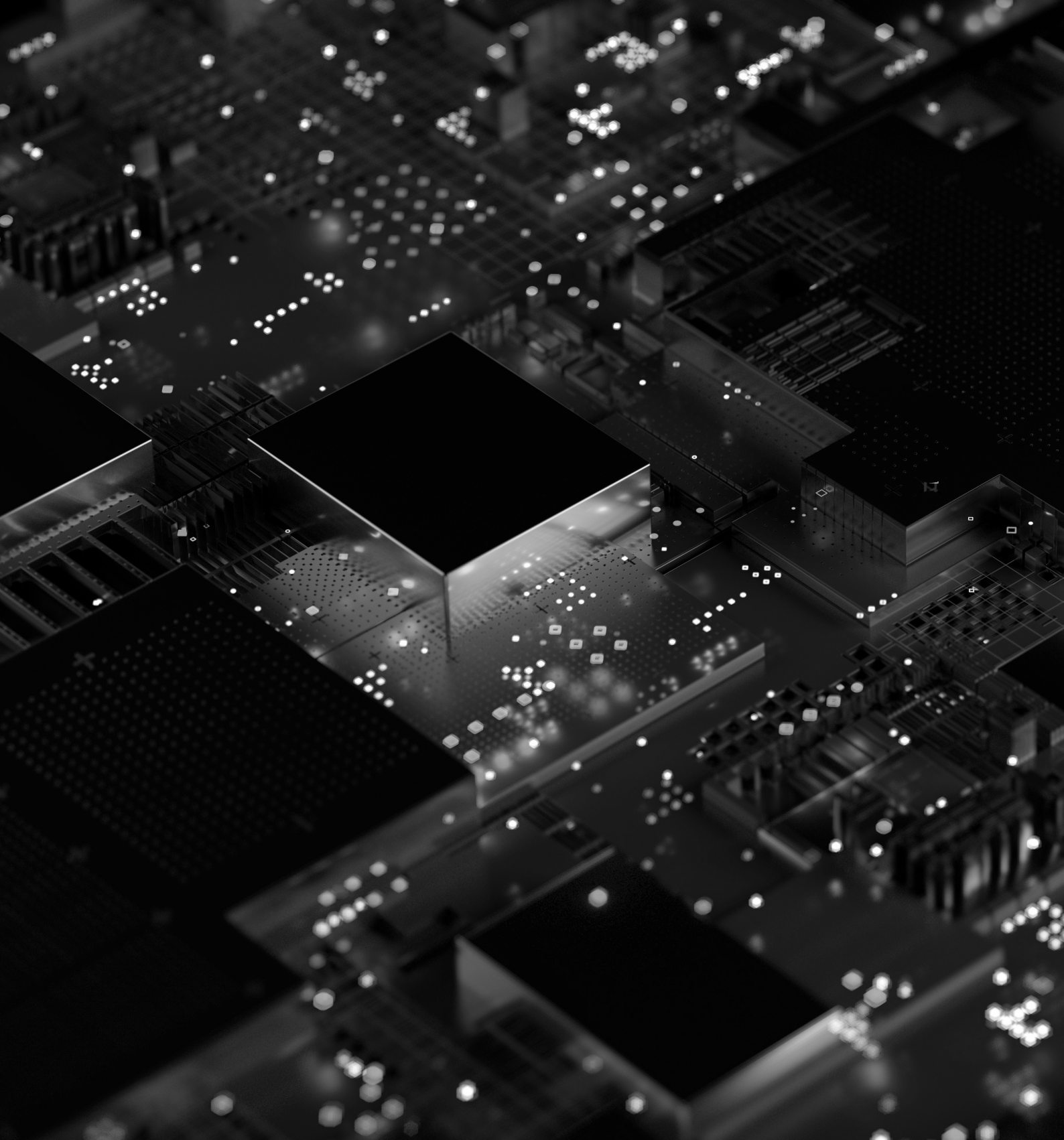
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