ISSUE BRIEF

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THE IMPACT OF 5TH GENERATION WARFARE ON POWER DYNAMICS AND ARMS CONTROL: ASSESSING THE ROLE OF AI IN MODERN MILITARY STRATEGIES

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Rapid technological developments have created more complex and multi-dimensional power dynamics in the 5th generation warfare. Various states are involved in an intensified competition for strategic dominance, as they want to expand their range of capabilities encompassing both conventional and non-conventional means. Strategic dominance has become more and more competitive as states deploy an increased number of capabilities to compete with one another, due to which the competition between major powers has also been escalated. In addition to traditional military warfare, the arms race now includes emerging technologies as well as in 5th generation warfare.[1] The ongoing development of AI militarization will present multiple challenges that extend beyond security concerns, as countries worldwide seek to develop Autonomous Weapons Systems (AWS). The strategic environment and the nature of warfare have undergone a significant transformation in recent years because of the increased advancement of AI.[2] It has shown how major powers are competing in the offensive realist paradigm in order to develop themselves with AI capabilities and how other states

1 James Johnson, "Artificial Intelligence, Drone Swarming and Escalation Risks in Future Warfare," *The RUSI Journal* 165, no. 2 (February 23, 2020): 26–36, https://doi.org/10.1080/03071847.2020.1752026.

2 Eric Schmidt, "AI, Great Power Competition & National Security," *Daedalus* 151, no. 2 (May 1, 2022): 288–98, https://doi.org/10.1162/daed_a_01916.

are compelled to further improve their security. A new division has emerged between states that are developed in AI capabilities and those that are not, and this will create an uncertainty in geopolitics thus contributing towards intensified arms race.[3]

The U.S. Department of Defence has launched an artificial intelligence strategy to enhance its military capabilities, operational efficiency, and national security. The Joint Enterprise Defence Infrastructure (JEDI)[4] and Project Maven seek to develop a unified cloud computing framework for all branches of the military, while over the next five years "the Defence Advanced Research Projects Agency (DARPA)" will dedicate up to $2 billion to research on AI weapons.[5] To project its military power in the South China Sea, the U.S. has to rely on the distant shores of Japan or South Korea. The AI-powered, advanced unmanned system makes up for that operational limitation. However, despite having an upper hand in unmanned weaponry in the South China Sea, the U.S. Navy struggles against China's robust Anti-access and Anti Denial (A2/AD) capabilities. In addition to the A2/AD system, China's variety of radars, sensors, mine placements, and unmanned maritime vehicles challenges the U.S. Navy's unmanned underwater vehicles (UUS) for surveillance, monitoring, and mapping.[6]

Additionally, China has made investments in radar and signal intelligence (SIGINT) capabilities on the Spratly and Paracel Islands in the South China Sea, enhancing its existing SIGINT collection network. With the help of its A2/AD system, the Chinese Navy can successfully thwart the activities of its adversaries while simultaneously driving them away from its effective ranges. Furthermore, China's A2/AD strategy allows them to control the region by forcing their rivals to operate away from the protected region through the development of cruise and ballistic missiles defence systems. The U.S. Navy's AWS surveillance applied research programme seeks to address these challenges by investing in technological advancements in surveillance systems.[7] The programme's investment in

3 Stoddard, Jill. 2024. "When It Comes to Responsible and Safe AI, a Global Divide Is Emerging." IPI Global Observatory. June 25, 2024. https://theglobalobservatory.org/2024/04/when-it-comes-to-responsible-and-safe-ai-a-global-divide-is-emerging/.

4 B.A. Kish et al., "Demonstration of the JEDI System on Joint STARS," *Proceedings, IEEE Aerospace Conference* 5 (2002): 5-2537-5–2543, https://doi.org/10.1109/AERO.2002.1035434.

5 E. Lerner, "Technology and the Military: DOD's Darpa at 25," *IEEE Spectrum*, August 1, 1983, https://www.semanticscholar.org/paper/Technology-and-the-military%3A-DOD's-Darpa-at-25-Lerner/eb94bde082178f5ce960da9b423b5a462e124632.

6 Sumathy Permal, "China's Military Capability and Anti-Access Area-Denial Operations," *Maritime Affairs: Journal of the National Maritime Foundation of India* 10 (July 3, 2014): 16–32, https://doi.org/10.1080/09733159.2014.977598.

7 Nathan Leys, "Autonomous Weapon Systems and International Crises," *Strategic Studies Quarterly* 12, no. 1 (2018): 48–73.

technologies that "support the implementation of covert wide-area surveillance for a period of one day to six months." Utilising this surveillance programme, China could monitor the movement of foreign objects, monitor aerial activity, and evaluate the potential threats in its protected zones. The programme allows for the dissemination of covert signals and alerts in remote and hostile operational zones through the utilisation of underground stations or the deployment of automated sensors using passive sonar or other undetectable techniques.

Russia's Defence Ministry is investing heavily in artificial intelligence, machine learning, and robotics to enhance its military capabilities, particularly in urban terrain. In 2017, Russian President Vladimir Putin had asserted that the nation with the advanced technology of AI would dominate the world, and reports suggest that the Russian military employed AI-powered drones against Ukraine in 2022.[8]

The Indian government established the High-Level Defence AI Council (DAIC) in February 2019, tasked with addressing strategic military-industry partnerships, technology acquisition, data sharing, research papers, and patent acquisition. The Council aims to incorporate artificial intelligence (AI) into the Indian Armed Forces' defence strategy while also considering the use of AI for mechanised warfare, particularly for the Pakistan-centric Southwestern Command in Rajasthan.[9] The Chairman of Tata Sons is leading the creation of a special task force to explore the potential of AI in various domains, such as biological, cyber, and nuclear warfare. The task force is also exploring the potential of AI in cyber security. India is striving to enhance its military power using advanced artificial intelligence technologies to effectively tackle the obstacles of 5th generation warfare. Recently, the Army Training Command signed a Memorandum of Understanding with Rashtriya Raksha University (RRU) to establish a “Wargame Research and Development Centre (WARDEC) in New Delhi”.[10] Rajnath Singh, the defence minister, inaugurated the Defence India Startup Challenge. The objective of these initiatives is to provide economic assistance to startups, working on advanced technologies for military purposes.

The Indian Defence Minister also established the Artificial Intelligence Military Council in 2022, which administers the Defence AI Project Agency (DAIPA) that plays an important role in strategizing AI. Since 2018, the Foreign and Defence Ministers of India and U.S. have held the 2+2 dialogue

8 Marija Đorić and Vanja Glišin, “The Use of Artificial Intelligence in the Russo-Ukrainian War,” *Politika Nacionalne Bezbednosti* 25 (January 1, 2023): 59–76, https://doi.org/10.5937/pnb25-47369.

9 Aamna Rafiq, “Militarisation of Artificial Intelligence and Future of Arms Control in South Asia,” *Strategic Studies* 41, no. 2 (August 10, 2021): 49–63, https://doi.org/10.53532/ss.041.02.0050.

10 Edward Mottern et al., “Moving Technology Forward by Putting Robots to Work on Military Installations: Autonomous Warrior Transport On-base (AWTO),” 2016, https://www.semanticscholar.org/paper/Moving-Technology-Forward-by-Putting-Robots-to-Work-Mottern-Putney/4897c94c5146aaba0d8bf7ee0852343ccc4537b0.

annually to enhance strategic partnership.[11] During these dialogues, they have emphasized increasing mutual collaboration in areas related to defence, such as cyber security, space technology, artificial intelligence, and cyberspace training and exercises. The Indian Ministry of Defence developed an artificial intelligence roadmap for each Defence Public Sector Undertaking (DPSU), outlining 61 projects specifically directed toward the defence sector. The defence public sector undertaking has completed 26 out of these 61 projects.[12] The integration of AI into India's military strategy has vastly enhanced the country's conventional and nuclear arsenals' synergy. Although this development shows a significant progression in India's defensive capabilities, it also presents potential hazards of misinterpretation and misunderstanding, specifically concerning its relations with Pakistan. An unintended escalation could gravely threaten the region's nuclear stability. India's incorporation of AI into military strategy alters the deterrence dynamics of South Asia as a whole. According to the Land Warfare Doctrine 2018, the prospect of India incorporating AI technology into the military sector is evident, which shows that India is using new strategies to combine traditional and non-traditional warfare, increasingly involving the use of AI.

The traditional mechanism of warfare has undergone a transformation as countries seek to integrate AI into their military strategies in response to advancements in emerging technologies[13]. Despite certain technological advancements, Pakistan's is trying to advance in AI but lacking behind due to several factors, including limited economic resources, data, and AI experts. There is a likelihood that India could potentially exploit its advantage in artificial intelligence to cause instability in the region.[14] The Ministry of Information Technology and Telecommunication of Pakistan published a draft on “National Artificial Intelligence policy document” in May 2023, aiming to integrate advanced technologies and establish Pakistan as a competitive force in the 4th industrial revolution. However, the objectives of the document need to be more specific[15] and the policy lacks utilisation of AI in conventional and non-conventional weaponization. The Pakistan Air Force (PAF) has established the Centre of Artificial Intelligence and Computing (CENTAIC) under the National Aerospace Science and

11 Rajagopalan, Rajeswari Pillai. 2023. “India-US 2+2 Strategic Dialogue Keeps Indo-Pacific in Focus.” The Diplomat, November 21, 2023. https://thediplomat.com/2023/11/india-us-22-strategic-dialogue-keeps-indo-pacific-in-focus/.

12 “AI ROADMAP FOR DEFENCE PSUS: 61 PROJECTS IDENTIFIED" - Business Guardian, March 29, 2022, https://business.thedailyguardian.com/tech/ai-roadmap-for-defence-psus-61-projects-identified/.

13 James Johnson, “Deterrence in the Age of Artificial Intelligence & Autonomy: A Paradigm Shift in Nuclear Deterrence Theory and Practice?,” *Defense & Security Analysis* 36, no. 4 (October 1, 2020): 422–48, https://doi.org/10.1080/14751798.2020.1857911.

14 Shaza Arif, “Emerging Trends of Artificial Intelligence in South Asia and Its Implications for Pakistan,” *NUST Journal of International Peace & Stability*, July 25, 2019, 55–66, https://doi.org/10.37540/njips.v2i2.31.

15 Dr. Aneel Salman, “Policy-Analysis_Decoding-AI-Policy-2023.Pdf,” accessed June 12, 2024, https://ipripak.org/wp-content/uploads/2023/07/Policy-Analysis_Decoding-AI-Policy-2023.pdf.

Technology Park (NASTP) to further develop the use of AI in warfare.[16] Former Chief of Air Staff (CAS) Air Chief Marshal Mujahid Anwar Khan said in an official statement that CENTAIC was a milestone in the development of AI capacity in both the military and civil domains.[17] Pakistan cannot overlook the advancements in 5th generation warfare and emerging AI trends, particularly in South Asia. To counter India's aggressive intent to militarise AI, it is imperative that Pakistan prioritise its AI strategy by increasing the budget allocation for AI research and integrating AI clauses into its national security policy.

16 S. Khalil, "CENTAIC's Transformation Under PAF NASTP – Second To None," May 10, 2024, https://secondtonone.com.pk/2024/05/10/centaics-transformation-under-paf-nastp/.

17 Zohaib Altaf Javed Nimrah, "The Militarization of AI in South Asia," South Asian Voices, January 17, 2024, https://southasianvoices.org/sec-c-pk-r-militarization-of-ai-01-16-2024/.