

## **GIGA and ESIWA Workshop**

# ***“Geopolitics, militarisation and risk - a new case for Confidence Building Measures in the Indo-Pacific”***

**November 27-28, 2023, Berlin and online**

# **Workshop paper**

**Session 1: The impact of military modernisation, including new arms technologies, on Indo-Pacific stability**

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Co-funded by the  
European Union



# Military modernization and the impact on stability in the Indo-Pacific

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Peace and security in the Indo-Pacific region, especially in the Indian Ocean, depend heavily on the nuclear deterrent capabilities of China, India, Pakistan, and the USA. Several factors affect the strategic stability of the relations between these countries, including the development of conventional and nuclear weapons, asymmetry in the conventional weapon capabilities, and advancements in military technology.

## The impact of new technologies on strategic stability in the Indo-Pacific

The list of technologies that can be considered advanced or emerging includes high-precision munitions with long-range capabilities, space capabilities, autonomous systems, information warfare and cyber means, artificial intelligence, machine learning, 3D printing, and weapons based on new physical principles. While the term “emerging” may be partially correct, research and development in these areas have been ongoing for decades in some cases. Although some of these technologies have only recently emerged, many have been part of military programs and arsenals of leading countries for a long time.

The growing attention given to emerging technologies such as artificial intelligence, autonomous systems, and self-learning is justified for many reasons. These technologies have made significant progress in the last ten years due to increased computational resources, explosion of data, and innovative techniques such as deep learning.

Autonomous weapons make the war theatre more transparent and predictable. New autonomous systems are expected to enhance the existing capabilities of intelligence, surveillance, target acquisition, and reconnaissance (ISTAR). Using autonomous vessels for anti-submarine operations is a cost-effective solution that eliminates the risk of human casualties. Several countries, including the United States, Russia, China, and Japan, are developing advanced technologies for underwater drone (UUVs) communications. These drones help in identifying mines, locating enemy submarines, and conducting surveillance operations. Small states like Sri Lanka are very concerned about what happens at sea, where China is possibly looking for swarms, and India is focusing on developing UUVs. However, using UUVs and swarms from long distances would need a mothership as a delivery system, and the Indian Ocean is too vast. Submarine hunters might become more prevalent in the Indian Ocean, leading to a need for more surveillance drones.

Emerging technologies have a crucial role in various fields related to nuclear deterrence capabilities, such as ISTAR, early warning systems, air-space defence, ballistic missile defence, nuclear strike capabilities, command and control, protection systems for nuclear forces, human reliability programs, and training and exercise equipment.

The United States and the Soviet Union/Russia have used these emerging technologies for decades as part of their nuclear force-related systems. Launch-on-warning postures were developed to improve early warning and inform decision-makers to launch nuclear forces if

required. Currently, China is moving towards a launch-on-warning posture. Although nuclear command and control systems were never completely automated, certain missile defence systems had to be pre-authorized due to a lack of time for humans to respond. The need for speed, integration, and complexity has made it necessary to develop algorithmically and electronically based early warning systems.

The proliferation of missile technology and missiles goes hand in hand with developing regional missile defence systems. Due to the missile programs of countries like North Korea and China, there is a growing need for BMD systems in the Indo-Pacific. The United States is the key player in missile defence technology proliferation, either as a direct participant in establishing systems, a source of technologies, a partner in joint missile defence development programs, or a role model for other countries. Russia and China also have their independent BMD development programs.

This trend will shape long-term global military-technological development. It is hard to predict the competition between defensive and offensive weapons, but for U.S.-Russia strategic competition, offensive nuclear systems will remain a decisive factor, while the importance of defensive weapons will relatively increase. Even though China could neutralize missile defence by accelerating the buildup of its nuclear missile potential, the role of U.S. missile defence and Russia's Air-Space Forces in their strategic relations with China will also become more significant. The development of BMD systems in the context of regional conflicts can increase nuclear offensive capabilities. This, in turn, can make sides more likely to initiate pre-emptive strikes during crisis situations, leading to greater damage to both sides, especially if nuclear weapons are involved.

Although the adoption of AI in strategic weapons by the regional countries is at an early stage, it is worth considering its role in the escalation ladder. Military AI can potentially play a role at each level of the escalation ladder. Autonomous early warning and missile defence systems can help decision-makers assess the enemy's actions during times of disagreement and rivalry. The rapid deployment of dual-use autonomous offensive weapons would become a form of signal to the other side. During the combat phase, autonomous reconnaissance vehicles will support limited operations, while combat UAVs and crewless underwater vehicles will play a key role in offensive operations. At the stage of conventional war, the tasks of surveillance and offensive autonomous vehicles remain the same. At the same time, at this stage, the conflicting parties will rely more on missile attack warning systems and strategic management. Finally, early warning systems, missile defence, nuclear command and control, and autonomous components of the nuclear arsenal will be fully operational during the use of nuclear weapons.

However, two aspects of military AI pose immediate risks to strategic stability in the Indo-Pacific. Firstly, given the early stage of development of autonomous surveillance, early warning, and missile defence systems, there is a high risk of false alarms. Erroneous messages from these systems of a country located close to the enemy can be considered reliable and lead to response actions through the preventive use of nuclear forces. Secondly, the development of dual-use autonomous platforms by one country may cause another to fear a surprise nuclear attack if the first deploys such platforms in attack-prone areas. While the emergence of military AI has destabilizing potential, it can also reduce nuclear risks. For example, satellite imagery and remote sensing of the earth using AI can help China, India, and Pakistan correctly interpret each other's actions. These technologies can help prevent unintentional escalation.

## The impact of military conflict in Europe on the military modernization in the Indo-Pacific region

The recent military conflict between Russia and Ukraine has raised concerns regarding potential changes in the defence and security policies of numerous nations. The Stockholm International Peace Research Institute (SIPRI) has reported a steady increase in global military spending over recent years, with the 2021 budget exceeding \$2 trillion for the first time.

Leading this trend are the United States, China, India, and Russia. These nations have increased their military budgets in response to perceived and real threats from adversaries, prompting similar responses from others. Before February 24th, it was difficult to discern whether these weapons programs were preparing for a large-scale military conflict or arms race comparable to the Cold War. However, the situation has shifted in the aftermath of recent events.

Besides political tensions between Russia and the West, China and the United States, and India and Pakistan, technological challenges have also contributed to the rise in military spending. Most countries still rely on platforms developed during the Cold War era, and the collapse of the Soviet Union necessitated a comprehensive overhaul of military doctrines and operational plans. The emphasis now is on the use of precision weapons, special operations forces, and deep information integration.

The Russian so-called "special operation" has significant impact on the military development plans of various countries. Military-political circles in countries like India and China have been able to witness the effectiveness or non-effectiveness of Russian and Ukrainian weapons through their many years of military-technical cooperation with Moscow and Kyiv.

There are three lessons that decision-makers worldwide can learn from the Ukrainian conflict. The first and foremost lesson is that weapons should no longer be used as a means of deterring potential enemies but as battlefield weapons. This applies to missile systems that are capable of carrying both conventional and nuclear warheads. Russia's Kinzhal, Iskander, and Kalibr missile systems were used to attack targets in Ukrainian territory, indicating a lowered threshold for the use of force. As a result, countries will focus more on high-combat readiness units within their armed forces, including those responsible for strategic systems.

The second lesson is that command and control are crucial in modern and future armed conflicts. Issues in this area can lead to unintentional attacks on civilians and non-military targets, high loss of military personnel and equipment, and interruptions in supplies.

The third lesson relates to the importance of limiting access to information about the structure of defense budgets. In countries where there is civilian control over the military sphere, the process of closing access to such information will proceed more slowly than in countries where such control is weak. Journalists and researchers can use modern technologies, including open-source intelligence, to obtain data. This creates a conflict between the government's policy of secrecy and the public's efforts to learn more about the spending of military programs.

The consequences of the war between Russia and Ukraine will have a profound impact on defence policy and military development globally. In negative scenarios, where violence

continues for a prolonged period, there may be a full-fledged arms race and varying degrees of militarization of economies.

## Conclusion

A closer look at the complicated relationship between China, India, and Pakistan shows that strategic stability in the region is becoming increasingly challenging. The combination of advanced technologies, long-term technological solutions, and mutual influence of the strategic and sub-strategic, regional, and extra-regional, nuclear and conventional levels further complicates the matter.

It is important to note that China maintains a high level of uncertainty by refusing to disclose the details of its nuclear arsenal. At the same time, India and Pakistan do not publish their nuclear doctrines or disclose the quantitative parameters of their nuclear arsenals. However, the political will expressed by representatives from China, India, and Pakistan has limited the variety of escalation scenarios involving these countries. Pakistan's interim government head, Shehbaz Sharif, put forward a peace initiative in 2022 to eliminate conflicts with India. He has repeatedly called for dialogue with India for the sake of peace. It is too early to say whether this approach is a long-term strategy. The interim government will have a chance to demonstrate its commitment to its stated goals of ensuring a peaceful neighbourhood if it can hold onto power in the elections scheduled for fall 2023.