

# China's Rising Missile and Naval Capabilities in the Indo-Pacific Region

## Security Implications for India and Its Allies

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China's military rise is a stepping stone toward China's dream for global power, which inevitably poses a security threat to nations in the Indo-Pacific region.<sup>1</sup> This study uses the theoretical base of structural realism's component of "offensive realism and defensive realism."<sup>2</sup> China's doctrine of "off-shore waters defense" with "open seas protection" enhances its comprehensive defense, counterattack, and deterrence capabilities near its territory and overseas maritime domain. However, China's naval modernization, establishing overseas naval base, and militarization of ports represents security threats to countries in the Indo-Pacific region.

China's military deployments in the South China Sea (SCS) and its missile capabilities pose security threats to India's mainland and maritime security in the Indo-Pacific region. China's energy requirements rely on the import of oil and natural gas through the Indian Ocean and Eastern Siberia–Pacific Ocean (ESPO) pipelines from Russia, but Beijing's major energy transportation and maritime trade route transits through the Indian Ocean region. Therefore, to protect sea lines of communication (SLOC), China has established ports across the Indo-Pacific in addition to its overseas naval base in Djibouti.

China's Belt and Road Initiative (BRI) provides benefits to the countries along its route. Additionally, the initiative fulfills Beijing's global trade ambitions and energy requirements and supports China's establishment of overseas military bases. To generate maritime connectivity, over the last decade China financed 35 ports around the world, out of which 14 ports are located throughout the Indian Ocean region and three ports are in the Pacific Ocean.<sup>3</sup> More than 85 percent of China's oil import is transported across the Indian Navy–guarded Indian Ocean and passes through the Straits of Malacca. China's Maritime Silk Road (MSR) mainly involves the SCS region and the Indian Ocean region. China needs to protect its SLOCs across these regions.

To build a powerful navy for the protection of seaborne transportation, strategic passageway for energy supplies, and exploitation of resources in international waters, the People's Liberation Army Navy (PLAN) has pursued a rigorous re-

gime of modernization.<sup>4</sup> India's maritime influence in Indian Ocean region starts from the Gulf of Aden to the Straits of Malacca. To gain parity in the region, China has established an overseas military base in Djibouti and developed a port in Hambantota, Sri Lanka. China also developed the port of Kuantan port on the east coast of Malaysia, which connects the SCS and the Indian Ocean. These ports and overseas military bases are strategically located on the sea lane of the MSR, encroaching upon India's maritime domain. This causes greater strategic deterrence for India's maritime security in the Indian Ocean.

### **China's Defense and Offensive Capability to Secure the Maritime Silk Road in the Indo-Pacific Region**

The state of advancements in technology is the vital point of offense as well as defence for attrition and strengthening China's security. To secure its global trade and exploit energy resources, Beijing is building its military's offensive and defensive powers in the Indo-Pacific region and expanding its blue water naval might. Hence, China is determined to increase its number of nuclear-powered submarines, ballistic missile launch submarines (SSBN), aircraft carriers, surface combat ships, intercontinental ballistic missiles (ICBM), medium-range ballistic missiles (MRBM), and combat aircraft to strengthen its comprehensive security in the Indo-Pacific region. This section investigates Chinese deployments in the SCS and its arms capabilities that deter New Delhi and India's allies in the Indo-Pacific region.

The militarization of artificial islands in the natural resource-rich SCS through the establishment of air force bases and naval dockyards in the Spratly Islands (Subi Reef, Fiery Cross Reef, and Mischief Reef) and Paracels (Woody Island) pose security threats to neighboring countries in the region. In May 2016, the PLAN conducted extensive naval deployments in the SCS, Western Pacific, and in the eastern Indian Ocean. Also, a PLAN task force conducted maritime interdiction training in the Indian Ocean region.<sup>5</sup> In December 2016, the PLAN's first aircraft carrier, *Liaoning*, conducted a task-group integration training exercise in the SCS region. To increase maritime capability, China commissioned a domestically designed and produced aircraft carrier, the *Shandong*, which entered service in 2019.<sup>6</sup> Additionally, the PLAN's first nuclear-powered aircraft carrier will likely enter service by 2025.<sup>7</sup> This latter aircraft carrier will greatly enhance China's naval capability for blue water naval operations, strengthening its maritime defense power to protect its MSR initiatives in the Indo-Pacific and Arctic regions. Eventually, China plans to field four aircraft carriers into PLAN service by 2030, with an advanced electromagnetic catapult to launch aircraft from the carrier

deck.<sup>8</sup> China is significantly ahead of India's aircraft carrier program; although, India's three aircraft carriers currently under construction will probably come into operation roughly the same time as China's new carrier are slated to roll out for the PLAN.

To protect natural resources and promote Beijing's stance on the many maritime territorial dispute with China's neighbors in the SCS, the PLAN deployed more naval forces in the South Sea fleet equipped with Jin-class SSBNs, Shang I-class nuclear attack submarines, and missile patrol craft, when compared to its North and East Sea fleets.<sup>9</sup> Also, the PLAN categorizes its theater missile defense (TMD) as a layered maritime defensive system to provide offensive and defensive security challenges in the East China Sea and SCS regions. Beijing's defensive layer ranges from 540 to 1,000 Nautical miles (nm), which covers Japan, the SCS, the Philippines, Brunei, and the Straits of Malacca strait. These regions are patrolled by submarines and occasionally engaged by anti-ship ballistic missiles for long-range maritime strike in this region to strengthen China's antiaccess/area denial (A2/AD) capability in the SCS region.<sup>10</sup>

As part of China's military exercises and practice of militarizing islands in the SCS, the People's Liberation Army Air Force (PLAAF) landed a H-6K nuclear-capable, long-range strategic bomber on Woody Island.<sup>11</sup> This bomber carries six electro-optic or infrared imaging guided air-launched cruise missiles capable of precision striking.<sup>12</sup> The H-6K's strike range is enhanced from the base 3,500 km-range to a heightened 5,000 km-range by the incorporation of the CJ-20 air-launched Land-Attack Cruise Missile (LACM) for conventional/nuclear strike. From the SCS, the CJ-20 is capable of reaching Singapore, Thailand, the Philippines, Vietnam, Indonesia, and Malaysia in the first island chain. The missile plays a vital role for China in the SCS region, as it helps to overcome refueling of combat aircraft from its nearest air bases from outposts in the SCS. It also strengthens the offensive capability of China through the air without flying over air defence identification zones (ADIZ) of other countries; thus, avoiding the need for authorization of overflight rights and evading missile defense systems, such as Vietnam's Russian-made surface-to-air S-300 anti-aircraft missile system. Additionally, China's man-made islands in the SCS equipped with DF-15 short-range ballistic missiles, HQ-9B surface-to-air missiles, and a ground-launched variant of the YJ-12B missile, which, along with H-6K strategic bomber, pose significant threats to India's maritime trade with Association of Southeast Asian Nations (ASEAN) countries across the region.

To strike highly secured and military significant targets, China developed the DF-ZF hypersonic glide vehicle (HGV), through ballistic missile boosters. HGVs can pull-up after reentering the atmosphere and approach the target in a

relatively flat glide, lessening the time it can be detected, fired at, or reengaged if an initial attack fails. Gliding makes the weapon more maneuverable and extends its range. The People's Liberation Army Rocket Force (PLARF) tested the DF-17 MRBM for carrying the DF-ZF to deliver both conventional and nuclear payloads against targets. The DF-ZF is expected to become operational in 2020.<sup>13</sup> This weapon system is capable of reaching the Andaman Sea and Straits of Malacca, if it strategically operated from Hainan Island in China's southern theater command.<sup>14</sup> It could also reach Visakhapatnam and the Bay of Bengal region if it strategically operated from Xizang in China's Western theater command. THE HGV travels with hypersonic speed and could reach a maximum terminal velocity of Mach 10, which makes it challenging for conventional missile defense systems to intercept at the terminal phase of flight. With high impulse, it is capable of penetrating to intercept aircraft carriers or unmanned warships and ultimately destroy the targets accurately and quickly, before command and control, battle management, and communication (C2BMC) reacts to determine its optimized trajectory for target destination. This HGV will deter India's naval presence across the Indo-Pacific region.

China deployed the DF-26 intermediate-range hypersonic ballistic missile for conventional or nuclear strike within the range of 4,023 km,<sup>15</sup> which is capable of a precision strike on surface combatants far from the Chinese coast. This weapon strengthens China's theater missile defense in the Pacific region. If this dual-use DF-26 is strategically operated from Hainan Island to attack land targets, it is capable of reaching the central region of India, the entire eastern coast of India, the Straits of Malacca, and Guam in the Pacific Ocean. China's advanced hyperspectral imaging satellite (able to scan the different nature of object using a wide band of the electromagnetic spectrum) with incorporation of command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) will support ballistic, cruise missiles, and antiship ballistic missiles (ASBM) for precision-strike on moving targets (aircraft carriers and surface combatants) in the Indo-Pacific region. To strengthen long-range offensive striking capabilities, China developed the strategic CSS-X-20/Dong Feng 41 (DF-41) ICBM with a range of 12,000km to 15,000 km. It is capable of carrying 10 multiple independent re-entry vehicles (MIRV) with a conventional or nuclear payload capacities of 2,500 kg. Its nuclear warheads can yield up to 150 Kiloton on each MIRV.<sup>16</sup> The DF-41 operated from China's Western theater command is capable of reaching the central part of India in less than five minutes or striking any location in India and the Indo-Pacific region. Furthermore, China is developing next-generation tactical nuclear weapons,<sup>17</sup> which are capable of devastating designated targets in the Indian Ocean littoral region.

## **PLAN Submarines and Surface Combat Capability to Protect MSR in the Indo-Pacific Region**

The PLAN modernized its Type-093 nuclear-powered attack submarines to carry YJ-18 submarine-launched antiship cruise missiles to countermeasure enemies' destroyers and missile threats. Additionally, China has deployed more PLAN submarines to patrol and secure its SLOCs. The PLAN currently has two Shang I-class (Type-093) SSNs, four Shang II-class attack submarines (Type-093A) with acoustic quietening technologies to reduce the noise for stealth mode of operation, and four Jin-class (Type-094) SSBNs. According to a United States Department of Defense report, the latter sub can carry 12 JL-2 nuclear-armed SLBMs and has a strike range of 7,400 km. With this striking range, the JL-2 is capable of reaching any location in India, Australia, and naval bases in the Indian Ocean region, as well as certain parts of Alaska.

Next, the PLAN's next-generation Type-096 SSBN will likely be commissioned in 2020 and is expected to be armed with next-generation JL-3 SLBMs. Thus, in 2020, the PLAN submarine inventory is expected to include 58 submarines, of which 48 are SSK-Diesel-electric power submarines and 10 are nuclear-powered submarines.<sup>18</sup> Compared to China, India has less than half the number of conventionally powered and nuclear-powered submarines. To avoid human errors and enhance faster response under crucial situations, China is developing artificial intelligence for navigation and combat-control actions for its submarines, aimed at making appropriate decisions without human intervention. By 2020, most of the PLAN's submarines will be armed with advanced long-range ASBMs.<sup>19</sup>

The PLAN has a plethora of surface combatants to patrol and protect its aircraft carriers, including Type-054A frigates; Type-056 and Type-056A corvettes; and Type-052B, Type 052C, and Type-052D destroyers. Nevertheless, to prove China's maritime superiority in the Indo-Pacific region, Beijing developed Asia's largest surface combat vessel: the Type-055 destroyer, a class of stealth guided missile destroyers designed for multimission roles, including area air defense and antisubmarine warfare capabilities surpassing previous Chinese surface combatants. At present, four Type-055 destroyers are in service. The PLAN has equipped these ships with 112 universal canister-based vertical launch missile modules to strike targets at various ranges from hundreds to thousands of kilometers, utilizing YJ-18 long-range ASCMs (with up to a 500 km-range to strike the target at supersonic velocity of Mach 3), HHQ-9 surface-to-air missiles (with a maximum 100 km-range), and CJ-10 land-attack cruise missiles (with target maximum range of 2,000 km), and torpedo-carrying antisubmarine missiles. To destroy the target in the

range of 100 nautical miles, China is looking to incorporate electromagnetic rail guns into warships to fire the warheads with the hypersonic velocity of Mach 7, enabling them to destroy targets with high momentum at a longer distance. This hypersonic naval gun will likely be fielded on the Type-055A destroyer, which is expected to enter service by 2025.<sup>20</sup> To compete with global maritime powers, China has announced plans to build 500 warships by 2030,<sup>21</sup> this could elevate the PLAN to be the strongest naval power in Indo-Pacific region.

Though China's neighbors are increasing their A2/AD capabilities,<sup>22</sup> China keeping pace with its commitment to develop advanced military technologies. The PLAN is improving its over-the-horizon (OTH) radar,<sup>23</sup> which uses low-frequency electromagnetic waves to reflect off the ionosphere and travel over a long distance beyond the horizon with less attenuation to detect long-range targets. OTH radar can support China's early warning systems. Additionally, the PLAN is developing reconnaissance satellites, which are capable of locating the target over thousands of kilometers and support China's long-range precision strike of targets from its mainland. Development of the DN-3 exo-atmospheric HGV hit-to-kill missile interceptor, real-time surveillance capabilities, reconnaissance, cruise missiles, PL-15 long-range air-to-air missile, ASBMs, multi-kilowatt fiber optic strategic laser weapons, new-generation surface combatants, and microwave weapons strengthen China's A2/AD capability to defend threats from neighboring regions.

In addition to the aforementioned defense technology developments, China is committed to developing quantum information technology for unhackable data transfer in cyberspace for secure communications. In August 2016, China launched the world's first quantum satellite: the Quantum Experiments at Space Scale (QUESS).<sup>24</sup> The following year, China successfully carried out the first communication by using quantum encrypted messages with entangled photons for secure communication. This pioneering work led to the building of the world's first quantum network between Beijing and Shanghai for secure communication. Quantum encryption ensures that efforts to tamper with communications are instantly known by sender and receiver alike, using quantum key distribution, and alters the content of the message being sent. China aims to build its quantum key distribution for quantum communication network by 2020 and for global communication by 2030.<sup>25</sup> Additionally, QUESS will be a useful to perform space-scale tests on photon teleportation experiments, establishing quantum networks at space-scale to transfer entangled photons for unhackable secure communication around the globe. Chinese defense agencies will probably implement these developments in advanced quantum technology in the Strategic Support Force

(SSF), combat control, ballistic missile defense (to identify the nature of war-heads), and maritime navigation for naval ships.

### **Stealth Breaking Quantum Technological Capabilities of China**

By overcoming the challenge of decoherence of entangled photons in the turbulent atmosphere over a long distance, China can construct “quantum radar” to locate stealth objects at great distances—potentially thousands of kilometers.<sup>26</sup> Quantum radar can unmask stealth fighter aircraft and stealth missiles at long ranges, essentially rendering stealth technology obsolete, including “cyber stealth” that causes virtual disappearance of aircraft in radar by an onboard sophisticated software program that nullifies the image of aircraft in the opponent radar network systems.

### **China’s Indo-Pacific Maritime Strategy in Sri Lanka**

Sino-Sri Lankan defense relations were established during the presidency of Mahinda Rajapaksa. From Beijing’s perspective, the Liberation Tigers of Tamil Eelam (LTTE) terrorist organization was a potential threat and hindrance to China’s future investments in Sri Lanka. Additionally, the LTTE’s sea control capability irked China. In April 2007, Sri Lanka signed an agreement with China to purchase the 37.6 million USD worth of weapons,<sup>27</sup> including Jian fighter jets, anti-aircraft guns, and 3D surveillance radars.<sup>28</sup> In the final years of the island’s civil war, China delivered weapons to warehouses in Galle, on the southern coast of Sri Lanka. These were immediately distributed to battlefields in the northeastern part of the island to support the Sri Lankan military.<sup>29</sup> China granted 1564 million Sri Lankan Rupees to construct an auditorium at the Sri Lanka Military Academy at Diyathalawa.<sup>30</sup> In addition, Sri Lanka procured six MA-60 aircraft from China, worth of 105.4 million USD.<sup>31</sup>

When the civil war persisted in Sri Lanka, the United States declared the LTTE as a deadly terrorist organization, hoping to curb its terrorist attacks and strangle its global criminal network.<sup>32</sup> The United States provided more military equipment to improve Sri Lanka’s maritime security against the LTTE, including sophisticated maritime radar and training Sri Lankan soldiers counterterrorism tactics in Sri Lanka.<sup>33</sup> However, according to Beijing, it was China’s aid that led to the annihilation of LTTE and secured China a position for preferred partnership in future investments. China influenced Sri Lanka through infrastructure development projects, offering economic “support” in the form of loans, which instead of helping the island rebuild on a stable financial foundation, seduced Sri Lankan leaders into a “debt trap.” Then, when the Sri Lankan government was

unable to make payments, China took over its assets to establish its MSR infrastructure project in Sri Lanka.

The construction of the Hambantota port commenced in 2008. By 2010, Beijing had invested 1.5 billion USD in the project. In December 2017, Sri Lanka, unable to make its payments on the port, handed over the Hambantota Port to China for 99 years. Additionally, Sri Lanka allowed China to construct special economic zones. The strategic location of this port is only a few nautical miles from the main sea lane of the MSR in the Indian Ocean, which connects the Straits of Malacca to China. Sri Lanka decided to move its Southern Naval command to Hambantota Port to protect its special economic zone in the southern province of Sri Lanka.<sup>34</sup> Though, currently, it is used as commercial port, in the future, the Hambantota port could act as a naval dockyard for China in the Indian Ocean. This would give China an easy means to move its fleet in the Indian Ocean very near to India's sphere of influence in the southern part of India, posing a serious security threat to southeastern India. Moreover, another Sino–Sri Lankan venture, the Colombo Port City Project (CPCP) would be a transit trade hub for China in the Indo-Pacific region, and once again poses a serious debt trap for the island.

### **China's Indo-Pacific Strategy in Pakistan**

China is developing a China–Pakistan Economic Corridor (CPEC) as a BRI infrastructure development project. India has long objected to the CPEC, as a portion of the project's route passes through Pakistan-occupied Kashmir.

Additionally, China has built the largest deepwater seaport at Gwadar, Pakistan, as a part of the SLOCs for the MSR. To contain China, India built Chahabar Port in Iran on the Gulf of Oman, as part of an India–Iran–Afghanistan partnership. To secure the Gwadar port, China decided to build an overseas naval base in Jiwani, near Gwadar port, in Pakistan's Balochistan province. The strategic location of this naval base places it near both Chahabar and Gwadar.

Aside from the development of infrastructure projects in Pakistan, China provides conventional weapons, including warships, fighters, short-range missiles, and diesel submarines to Pakistan, which serves to contain India, China's giant competitor on the Asian continent. China sold Pakistan 48 units of Wing Loong II medium-altitude long-endurance multirole drones, which are designed to carry air-to-surface missiles and laser-guided bombs.<sup>35</sup> This multirole drone can be utilized for combat and surveillance operations against India. Additionally, China provides military support to Pakistan to maintain regional strategic stability,<sup>36</sup> which protects China's strategic plan in Pakistan for its BRI project. India tested the nuclear-capable Agni-V ICBM, which has a strike range of 5,000 km and is capable of reaching the Chinese mainland. To deter India's mis-



sile development, China provides technical assistance to Pakistan for its missile development programs.

Pakistan is engaged in developing MIRVs and, in January 2017, successfully conducted its first test launch of its nuclear-capable Ababeel surface-to-surface MRBM with MIRV. To identify the missile, high-quality imaging optics are essential for gathering visual information of missile from its launch to different phases of flight and reentry of warhead into the atmosphere. This optical tracking system with an integrated telescope will track the MIRV at a different phase of flight and trace the trajectory of the terminal phase projection of its warheads.<sup>37</sup> The tracking system is an essential component to accelerate the missile development program to support Pakistan's program. China sold optical tracking and measurement systems to Pakistan that were developed by the Chinese Academy of Sciences' Institute of Optics and Electronics. China's assistance will accelerate Pakistan's missile developments, which inevitably raise security threats to India and help Pakistan to monitor India's space defense programs.

### **North Korea's Missile Threats in the Indo-Pacific Region**

In addition to China's rising missile threat, Sino-North Korea relations also threaten regional stability in the Indo-Pacific. Although, Beijing condemns Pyongyang's nuclear arms and missile tests, both countries maintain diplomatic relations under strain. China calls for lifting international sanctions on North Korea to avoid the collapse of Kim Jong-un's regime,<sup>38</sup> because China's investments in the Korean Peninsula depend on North Korea, Pyongyang's political and economic stability is an important concern for China. In addition, North Korea's financial requirements depends on Beijing's aid. Beyond this, both countries want to deter the US presence in the Korean Peninsula. The US military's demoployment of the Terminal High Altitude Area Defense (THAAD) ballistic missile interceptor in South Korea hinders North Korea and Beijing's ballistic missile tests.<sup>38</sup> Beijing's goal in leveraging its influence in North Korea is for a quid pro quo to weaken US alliance in this region. On May 2017, North Korea successfully tested its Hwasong-12 mobile intermediate-range ballistic missile (IRBM), which has a maximum strike range of 4,500 km.<sup>39</sup> When fully operational, this missile will have the capability of reaching northeastern India, the northern part of the Bay of Bengal, and the western entrance to the Straits of Malacca if it is strategically operated from South Hwanghae Province in western North Korea. Furthermore, North Korea developed long-range nuclear-capable missiles, testing two Hwasong-14 (KN-20) ICBMs in July 2017, which traveled on highly lofted trajectories that over the Sea of Japan, east of North Korea.<sup>40</sup> These ICBMs have a strike range of 10,000 km, enabling Pyongyang to strike

India and as far away as Hawaii, including the US Pacific Missile Range Facility, Barking Sands. North Korea's commitment to developing long-range nuclear-capable missiles and IRBMs pose security threats to the countries and military assets in the Indo-Pacific Region.

### **Are India–Indonesia Bilateral Relations a Game Changer in Indo-Pacific Region?**

On 29–30 May 2018, Indian Prime Minister Narendra Modi visited Indonesia. During his visit, Modi and Indonesian president Joko Widodo discussed the views of two countries regarding maritime cooperation for promotion of peace, and economic development (including defense manufacturing) in the Indo-Pacific. The bilateral relationship between these two countries and the creation of a naval base for India at Sabang Island represent a significant strategic deterrent and vulnerable choke point to China in the Straits of Malacca.<sup>41</sup> Sabang lies at a strategic location near the straits, meaning Chinese vessels would have to pass through Indian Navy–controlled waters in the Andaman Islands.

Sabang's port is ideal for military vessels, including submarines, serving as a naval dockyard for India and Indonesia to establish a combined naval base in this region.<sup>42</sup> India's naval base in the Andaman Islands and maritime involvement in Sabang Port will create a vulnerable choke point for China to access the western approach to the Straits of Malacca in the Indian Ocean, potentially forcing China to seek alternate sea lanes of transportation for its trade and energy requirements. One alternative might be the proposed Kra Canal in Thailand, which, if realized, would connect the Gulf of Thailand with the Andaman Sea.

### **Conclusion**

China's commitment to develop new naval, avionics, missiles, direct energy weapons, artificial intelligence technologies and advanced materials for state-of-art technology and quantum communications will raise China's comprehensive (land, air, maritime forces, and cyber space) defense capabilities and further Beijing's intent to become a global superpower. The advances also strengthen China's abilities to protect its SLOCs in the Indo-Pacific region and expand its blue water naval capabilities—including aircraft carriers, nuclear-powered submarines, and SSBNs—and improve its global trade and hunt for energy resources.

Besides weapons developments, China's military strategy in other countries, particularly in Sri Lanka and Pakistan, also plays a vital role in deterring its adversaries in the region. To strengthen India's maritime security, it is necessary to analyze China's strategy in Sri Lanka and Pakistan. In the future, the strategic loca-

tion of these two countries supports China's ability to project immediate offense force against India, greatly deterring India's security strategy in Asia and the Indian Ocean region. North Korea's threat in the Indo-Pacific is also a great concern for the United States, its allies, and friends.

The rise of China as a superpower will govern the geo-economics and geopolitics of the BRI in the Indo-Pacific. Thus, it is necessary for other actors in the region to seek balance for the trade and military power in the region to assure a free-and-open Indo-Pacific region.

### **Security Implications and Policy Prescriptions**

The eastern part of India is prone to be highly insecure due to its proximity to China's strategic launch locations and missile capabilities, specifically China's new HGV, which is capable of reaching vital Indian naval assets in Visakhapatnam and air force assets in Hyderabad. The DF-26 is also capable of reaching any portion of India's eastern coast—as is the JL-2, which could launch from anywhere in Chinese waters. China's surveillance activity in the South Pacific from its optical tracing system in Vanuatu, Beijing's ensnaring of Sri Lanka and control of that island's ports, and the PLAN's increasing maritime activity in the Indian Ocean endangers southeastern India.

India's naval capability should be increased in eastern and southeastern of India to deter the Chinese maritime threat. Doing so will also ensure the maritime security of the Bay of Bengal region. The Eastern Naval Command at Visakhapatnam is insufficient to protect the entire eastern coast of India. We suggest the establishment of an additional naval command at Chennai and two new naval-air bases in that eastern naval command to confront Chinese threats to Chittagong Port in Bangladesh, Sittwe Port in Myanmar, and the future Kra Canal region. The exiting Indian Air Force training base at Kodiyakarai should be upgraded to a Naval Air Base, as it is a strategically important location for containing Sri Lanka's Palaly Military Base formerly Jaffna International Airport, which was recently converted to a Sri Lankan Air Force base. Other naval-air bases would be appropriately located between Thoothukudi and Kanyakumari in the Indian state of Tamil Nadu to confront tactical multidirectional attack and undermine the first-strike capability of China. Also, the Ministry of Defense must strengthen INS Parundu naval air base at Uchipuli, (Tamil Nadu), and Thanjavur Air Force Station (Tamil Nadu) to thwart the growing Chinese presence near the Sri Lankan island of Katchatheevu and Northern Province of Sri Lanka. To deter China's maritime strategy in Thailand, India must establish a combined naval base with Thailand in Surat Thani province to strengthen India's future maritime security and to choke the PLAN's fleet in the Indian Ocean region.

It is appropriate to establish integrated three-layer missile defense in the north-eastern and southeastern parts of India to strengthen missile defense against security threats from the Chinese mainland, South Pacific, and Indian Ocean. We also call for the establishment of a multitier missile defense along with direct energy weapons in northern India to deter missile threats from China's western theater command. These latter measures will also defend the Eastern Naval Command and northern part of the Bay of Bengal from the threat of China's new HGV.

China's advanced ballistic missile technology challenges India's ability protect its land and maritime domains. It is appropriate to incorporate Indian navy battleships with free-electron lasers to defend against existing and future ballistic missile threats.

To deter against China's stealth-breaking Quantum technology, India's stealth aircraft must be improved—possibly through the use of multicolor entangled photon cloaking with additional quantum-state processes—to attain air superiority over China in the Indo-Pacific.

To deter China in Sri Lanka, we propose establishing joint air force bases in Trincomalee and Batticaloa, creating greater defense cooperation between Indian and Sri Lankan Air Forces and weaning the island from its dependence on China and Pakistan. Moreover, India and the United States must put diplomatic pressure on Colombo to reach a federal solution to the island's prolonged ethnoreligious conflict.

Finally, we argue for the need to develop an architecture of comprehensive security not just for balancing but collective security measures for maintaining order and security in the Indo-Pacific region by India and its allies. 🌐

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