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INTRODUCTION

Chairman Reed, Ranking Member Inhofe, and members of the committee, thank you for the invitation to provide the Defense Intelligence Agency's (DIA's) assessment of the global security environment and to address the threats confronting the Nation.

Strategic competition is intensifying because China, Russia, Iran, and North Korea have become more confident in the force modernization they have undertaken for years and perceive more opportunity to advance their ambitions. Both China and Russia perceive that the United States is a nation in decline and use that view as a pretext for advancing their authoritarian models and executing their global ambitions.

The United States faces challenges from competitors who have and are developing new capabilities intended to challenge, limit, or exceed U.S. military advantage. These state and nonstate actors are selectively putting those capabilities into play globally and regionally. The threats those capabilities pose span all warfighting domains—maritime, land, air/air defense, electronic warfare (EW), cyberspace, information, and space/counterspace. They include more lethal ballistic and cruise missiles, growing nuclear stockpiles, modernized conventional forces, and a range of gray zone measures such as ambiguous unconventional forces, foreign proxies, information manipulation, cyberattacks, and economic coercion. Such gray zone measures are below traditional combat thresholds and often afford plausible deniability, but they enable actors to wage campaigns of aggression.

Today, strategic competitors and other challengers are advancing beyond gray zone measures and exerting increasing military pressure on neighboring states. Russia has invaded Ukraine, China is threatening Taiwan, and Iran—through its partners and proxies—threatens neighbors in the Middle East and U.S. forces, while enriching uranium to new levels. North Korea continues to threaten South Korea, Japan, and the United States with nuclear-capable ballistic missiles of increased range and lethality.

Violent extremist organizations (VEOs) have experienced significant losses, however, the terrorist threat persists.

The security landscape in Afghanistan has changed. The United States faces a variety of security challenges in South Asia following the Taliban takeover of Kabul as regional dynamics shift. Since the withdrawal of U.S. forces in Afghanistan, countries like China, Russia, and Iran are working to damage U.S. credibility internationally and engage with the Taliban to pursue or develop outcomes favorable to their interests and ambitions.

Rapidly evolving technology, advances in special materials, high-performance computing, robotics, artificial intelligence (AI), and biotechnology will augment our adversaries' military capabilities, and pose additional challenges. China and Russia, in particular, are pressing ahead with advances in space and counterspace capabilities and using cyberspace to increase their operational reach into U.S. infrastructure. They continue to exploit the COVID-19 environment and conduct information warfare to undermine Western governments and compel economic and political outcomes in their favor.

Globally, COVID-19 will continue to threaten health and stability, and climate change will increasingly alter our operating environment. We must remain vigilant to protect our interests and those of our allies.

DIA officers fulfill the critical mission of providing strategic, operational, and tactical Defense Intelligence to our warfighters, defense planners, policymakers, and the acquisition community. The foundational intelligence that DIA, our colleagues across the Defense Intelligence Enterprise, and our allies and foreign partners provide on foreign military capabilities helps to translate national policy into executable military action and to inform the joint force.

I am privileged to lead DIA. My hope in this hearing is to help Congress and the Nation better understand the challenges we face and to support this committee in identifying opportunities to respond to these challenges. Thank you for your continued confidence. Your support is vital to DIA.

CHINA

China remains our pacing security challenge and has long viewed the United States as a strategic competitor. China is capable of combining its economic, diplomatic, military, and technological power to mount a sustained challenge to a stable and open international system. In a 2017 speech to the Chinese Communist Party (CCP) Congress, President Xi Jinping laid out two People's Liberation Army (PLA) modernization goals: to complete PLA modernization by 2035 and to transform the PLA into a military on par with the United States military by 2049. The PLA has already fielded sophisticated weapons and platforms in every warfare domain, instituted major organizational reforms to enhance joint operations, and improved its combat readiness. As a result, it is nearing the status of a global competitor to the United States and is a credible peer competitor in the region. These developments, along with future capabilities, are designed to provide options for China to dissuade, deter, or, if ordered, defeat U.S. and allied intervention during a large-scale, theater campaign such as a war over Taiwan. The PLA can conduct long-range precision strikes across domains, is demonstrating more sophisticated counterspace and cyber capabilities, and is accelerating the large-scale expansion of the PLA's nuclear forces. The accrual of China's national power, including military power, sets the conditions for Beijing to fully assert its preferences on a global scale. Its national strategy to achieve a broad range of developmental goals to establish China as a great power by 2049 is closely integrated with its ambition to make the PLA a military at least as strong as that of the United States.

In 2020, the CCP added a new milestone of 2027 for PLA modernization. This milestone is broadly understood as strengthening joint capabilities; modernizing PLA command, control, computer,

intelligence, and information systems; and expanding the PLA use of AI and other advanced technologies. These advances would give the PLA an improved ability to execute a number of military operations, including the invasion of Taiwan.

In 2022, President Xi Jinping will have an opportunity to demonstrate his consolidation of power in the CCP and set the conditions for his legacy among the CCP's most revered leaders. In late 2022, the CCP will hold its Party Congress where he will almost certainly be reappointed as General Secretary of the CCP and Chairman of the Central Military Commission for his third 5-year term. He will also almost certainly gain a third term as president of China at the spring 2023 National People's Congress because that body removed presidential term limits in 2018.

China's Military Capabilities

With a force that totals approximately 2 million personnel, the PLA is modernizing its capabilities and improving its proficiencies across all warfare domains so it can conduct a range of land, air, maritime, space, counterspace, electronic warfare, and cyber operations as a joint force. The PLA's evolving capabilities and concepts continue to strengthen its ability to fight and win regional wars against the United States, its allies, and partners, coerce Taiwan and rival claimants in territorial disputes, counter an intervention by a third party in a conflict along China's periphery, and project power globally.

The PLA Army has approximately 975,000 active-duty personnel in combat units. Last year, the Army accelerated its training and fielding of equipment from the already fast pace of recent years. The Army also strove to increase the realism of its training.

The PLA Navy is the largest navy in the world, with an overall battle force of approximately 355 ships and submarines, including more than 145 major surface combatants. The Navy largely comprises modern multirole platforms. In the near term, the Navy will have the capability to conduct long-range precision strikes against land targets from its submarine and surface combatants with land-attack cruise

missiles, notably enhancing China's global power-projection capabilities. China is also enhancing its antisubmarine warfare inventory and training to protect the Navy's aircraft carriers and ballistic missile submarines.

The PLA Air Force and Navy constitute the largest aviation force in the region and the third largest in the world, with over 2,800 total aircraft (not including trainer variants or unmanned aerial vehicles (UAVs)) of which approximately 2,250 are combat aircraft (including fighters, strategic bombers, tactical bombers, and multimission tactical and attack aircraft). In October 2019, China signaled the return of the airborne leg of its nuclear triad after the Air Force publicly revealed the H-6N as its first nuclear-capable bomber with air-to-air refueling capabilities.

The PLA Rocket Force organizes, staffs, trains, equips, and operates China's strategic land-based nuclear and conventional missile forces, and its associated support forces and missile bases. The PLA is developing new intercontinental ballistic missiles (ICBMs) that will significantly improve its nuclear-capable missile forces and will require increased nuclear warhead production for multiple independently targetable reentry vehicle capabilities and general force growth. China is constructing at least three solid-propellant ICBM fields, which will cumulatively contain hundreds of new ICBM silos. The Rocket Force also continues to grow its inventory of road-mobile DF-26 intermediate-range ballistic missiles (IRBMs), which are able to conduct both conventional and nuclear precision strikes against ground targets as well as conventional strikes against naval targets. For regional strikes, the Rocket Force began to field its first operational hypersonic weapons system, the DF-17 hypersonic glide vehicle (HGV)-capable medium-range ballistic missile (MRBM).

China's Nuclear Modernization Efforts

During the next decade, China plans to modernize, diversify, and expand its nuclear forces. China is expanding the number of its land-, sea-, and air-based nuclear delivery platforms and constructing the

infrastructure necessary to support this major expansion of its nuclear forces. They are supporting this expansion by increasing their capacity to produce and separate plutonium and constructing fast breeder reactors and reprocessing facilities. China likely intends to have about 1,000 deliverable warheads by the end of the decade and has probably already established a nascent nuclear triad with the development of a nuclear-capable air-launched ballistic missile and improve ground- and sea-based nuclear capabilities. The PLA intends to increase the peacetime readiness of its nuclear forces by moving to a launch-on-warning posture with an expanded silo-based force.

Other WMD

China probably has the technical expertise to weaponize chemical and biological agents and numerous conventional weapon systems that could be adapted to deliver these agents. China has consistently claimed that it has never researched, produced, or had biological weapons. However, China has engaged in potential dual-use biological activities—some of which raise concerns regarding its compliance with the Biological Weapons Convention (BWC)—and maintains sufficient biotechnology infrastructure to produce certain biological agents or toxins on a large scale. China has declared that it once operated a small offensive chemical weapons program. Although China maintains the program was dismantled, its chemical infrastructure is sufficient to research, develop, and procure some chemical agents on a large scale.

China's Approach to Taiwan

Although China publicly advocates for peaceful unification with Taiwan, it has never renounced the use of military force. China has a range of military options to coerce Taiwan, including increasing military presence operations, an air and maritime blockade, seizure of Taiwan's smaller outlying islands, and a full-scale amphibious invasion of Taiwan itself. Beijing appears willing to defer the use of military force as long as it considers that unification with Taiwan can be negotiated and that the costs of conflict

outweigh the benefits. Beijing argues that its credible threat of force is essential to maintaining the conditions for political progress on its terms and preventing Taiwan from moving toward independence. While Beijing has not announced a timetable for unification with Taiwan, it has increased both rhetoric and military activity around Taiwan over the past three years. In January 2019, President Xi Jinping publicly reiterated China's longstanding refusal to renounce the use of force to resolve the Taiwan issue and staked China's position for peaceful unification under the model of "one country, two systems." In January 2022, the Vice President of Beijing's Association for Relations across the Taiwan Straits stated the CCP would provide guidance on Taiwan policy for the next five years at this fall's Party Congress.

Since late 2020, the PLA has increased military pressure on Taiwan with frequent military flights into Taiwan's air defense identification zone (ADIZ). The largest set of flights to date occurred on 4 October 2021; the Taiwan Defense Ministry claimed that a record 56 Chinese military aircraft, including fighter jets, antisubmarine warfare planes, and bombers crossed Taiwan's ADIZ in a single day. This year, China continues regularly crossing Taiwan's ADIZ and flew as many as 39 aircraft into Taiwan's ADIZ on 24 January 2022. Chinese officials justify these shows of force as reactions to a perceived deepening of U.S.-Taiwan cooperation.

China's Global Military Activities

Beijing wants its armed forces to take a more active role in advancing its foreign policy, highlighting the increasingly global character that Beijing ascribes to its military power. Chinese leaders have tasked the PLA to develop the capability to project power outside its borders and immediate periphery to secure China's growing overseas interests and advance its foreign policy goals. China is seeking to establish a more robust overseas logistics and basing infrastructure to allow the PLA to project and sustain military power at greater distances. Beyond its base in Djibouti, the PLA is pursuing additional military facilities to support naval, air, ground, cyber, and space power projection, including on Africa's Atlantic Ocean,

Indian Ocean, Red Sea, and Mediterranean Sea coasts and other locations in the Middle East, Asia, and the Pacific. In March, China and the Solomon Islands agreed to a draft security agreement that may allow deployment of Chinese police and military units to assist with internal stability. The draft also allows for replenishment of Chinese naval ships, but there is no indication that a larger military basing arrangement is part of the agreement.

China is the world's fifth-largest arms supplier and has sold UAVs to Saudi Arabia and the UAE, and co-produced fighter aircraft and submarines with Pakistan. The growth of China's global economic footprint, through programs like the Belt and Road Initiative (BRI), makes its interests increasingly vulnerable to domestic political transitions in countries participating in BRI, regional instability, transnational threats, natural disaster, and disease and climate threats. Some BRI projects create potential military advantages to protect China's growing interests, such as the PLA gaining access to selected foreign ports to pre-position the necessary logistics support needed to sustain naval deployments in waters as distant as the Indian Ocean, Mediterranean Sea, and Atlantic Ocean to protect its growing interests. BRI lending has slowed down significantly since its estimated peak from 2016 to 2017, in part because China has gradually shifted away from hard-infrastructure loans toward technology-focused investments.

China has increased activities and engagement in the Arctic region since gaining observer status in the Arctic Council in 2013. In January 2018, China published its first Arctic strategy that promoted a "Polar Silk Road" and declared China to be a "near-Arctic state." Later that year, China launched its second icebreaking research vessel, the *Xue Long 2*, which has since conducted both Arctic and Antarctic expeditions in 2020 and 2021 respectively.

Chinese-Russian Defense Relationship

China and Russia's strategic alignment continues to grow, as demonstrated by the Xi-Putin meeting ahead of the Winter Olympics. During the visit, the leaders signed a package of 15 bilateral agreements and issued a joint statement opposing a range of Western international security initiatives, including the U.S. Indo-Pacific Strategy and the Australia-U.S.-United Kingdom trilateral partnership. It further condemned NATO's "cold war mentality," and called for "non-interference in the internal affairs of other states."

This alignment has continued despite Russia's latest invasion of Ukraine. China is closely managing its messaging on the conflict, generally backing Russia's characterization as a conflict ultimately caused by U.S.-driven NATO expansion and disregard for Russia's security interests. China abstained from the United Nations General Assembly resolution condemning the renewed invasion of Ukraine, and was one of 24 countries to vote against Russia's expulsion from the United Nations Human Rights Council. However, Beijing has been reluctant to fully back Russia, likely in order to preserve its own economic relations with Europe and the U.S. No doubt, China is also keenly observing how the Russian campaign is conducted and how combat against determined resistance unfolds.

In step with the larger partnership, Beijing's defense relationship with Moscow has also strengthened. Throughout the COVID-19 pandemic, China and Russia maintained frequent high-level communication and stressed close strategic cooperation on global security and health issues. For 3 of the past 4 years, the PLA has participated in Russia's strategic command and staff exercise. Although China did not participate in Russia's 2021 strategic exercise, which was focused in western Russia, Beijing, for the first time, invited the Russian military to participate in a strategic campaign exercise in northwest China. China and Russia likely perceive further cooperation between the two militaries, including joint defense technology development, exercises, and other military modernization initiatives as advantageous to

their respective interests. Despite continued military cooperation, China and Russia have denied any intent to enter into a formal alliance, apparently viewing the strategic effects of their current cooperation as sufficient to accomplish their goals.

China's Regional Relations

Tensions with India along the Line of Actual Control (LAC) continued in 2021, although no new significant confrontations took place. In February 2021, China asserted through its state-owned outlets that 4 PLA soldiers died during the June 2020 skirmish with India that also resulted in the death of 20 Indian soldiers. Despite agreements to disengage in spring 2021, both sides maintain troops along the LAC as corps commander-level negotiations have progressed slowly.

In 2021, Chinese and North Korean political and military diplomacy continued to be hampered by the COVID-19 pandemic. North Korea's forced isolation ceased almost all trade and people-to-people exchanges across the border, and the North Korean regime's paranoia about the risks of COVID-19 has prevented Chinese-North Korean diplomatic exchanges. China's objectives for the Korean Peninsula include stability, denuclearization, and the absence of U.S. forces near China's border. China's focus on maintaining stability on the Korean Peninsula involves preventing North Korea's collapse and military conflict on the peninsula.

Concerns about instability in Afghanistan probably are leading China to expand diplomatic engagement with the Taliban. On 25 October 2021, Chinese Foreign Minister Wang Yi met with senior Taliban officials in Doha, Qatar, marking the first high-level meeting between the two since the U.S. withdrawal from Afghanistan. Beijing cautiously proceeded with high-level meetings with the Taliban, probably to avoid the appearance of granting the Taliban de facto recognition.

China continues to pursue its maritime claims in the East and South China Seas, and in 2021, Beijing enacted a Coast Guard Law that included expansive language on jurisdiction and use-of-force

authorities. The dispute between China and Japan over the Senkaku Islands and overlapping exclusive economic zone and continental shelf claims persists with no progress toward resolution. Japan remains concerned about the persistent presence of Chinese Coast Guard ships and fishing vessels in disputed East China Sea waters and rejects China's claim of sovereignty.

In the South China Sea, China claims sovereignty over the Spratly and Paracel Islands and other land features within its ambiguous self-proclaimed "dashed line." Its claims are disputed in whole or part by Brunei, the Philippines, Malaysia, and Vietnam. Beijing continues to employ the Navy, Coast Guard, and its maritime militia to patrol the region and harass the oil and gas exploration operations of rival claimants. In response to China's continued assertive actions against foreign fishing ships, Indonesia, Malaysia, the Philippines, and Vietnam publicly reject Beijing's claims and invoke international law in support of their maritime sovereign rights.

China's Defense Economics

In 2022, China announced a 7-percent increase from its 2021 annual defense budget, continuing more than 20 years of annual defense spending increases and sustaining its position as the second-largest military spender in the world. China's published military budget omits several major categories of expenditures and its actual military-related spending is higher than what it states in its official budget.

China's economic development supports its military modernization through the resources of its growing national industrial and technological base, the availability of funding for larger defense budgets, and deliberate party-led initiatives such as Made in China 2025 and China Standards 2035. In documents detailing the 14th 5-Year Plan (2021 to 2025), Chinese planners announced a shift to a new development concept they call "dual circulation." Dual circulation is focused on accelerating domestic consumption as a driver of economic growth, shifting consumption to higher-end manufacturing, and creating breakthroughs in key technologies along critical high-end global supply chains. It also places

emphasis on mutually reinforcing foreign investment in key technologies to provide the capital and technology necessary to advance domestic technological innovation in support of China's security and development objectives.

China pursues its military-civil fusion (MCF) development strategy to blend its economic, social, and security development strategies to build an integrated national strategic system and capabilities to support its national rejuvenation goals. The MCF strategy includes objectives to develop and acquire advanced dual-use technology for military purposes, deepen reform of the national defense science and technology industries, and serve a broader purpose by strengthening all of China's instruments of national power.

This year, Chinese leaders will be focused on the upcoming Party Congress and almost certain continuation of Xi Jinping's leadership for a third term. In the wake of last year's 100th anniversary of the founding of the Chinese Communist Party and this year's Olympics, Beijing probably will attempt to portray China as an increasingly powerful, stable, and prosperous state, while trying to manage an increasingly complex regional and global security environment and avoid any blame for COVID-19. While holding the CCP up to the Chinese populace as the primary driver for China's success, Chinese leaders probably will continue to address a number of security priorities including the growing competition with the United States, fallout from Russia's renewed invasion of Ukraine, pressuring Taiwan to unify with the mainland, solidifying its position in disputed regions, and increasing its ability to protect Chinese interests abroad.

RUSSIA

Russia's latest invasion of Ukraine clearly signals the re-emergence of a more hostile and militaristic Russia that seeks to overturn the U.S.-led rules based post-Cold War international order, expand its control over the former Soviet empire, and reclaim what it regards as its rightful position on the world

stage. Russia's military capabilities have been used to violate not only the sovereignty and territorial integrity of Ukraine, they pose an existential threat to U.S. national security and that of our allies.

Russia's military strength allows Moscow to challenge U.S. global standing and undermine our democracy as it seeks to shape a new world order that is more favorable to its interests and consistent with its authoritarian model.

Leadership Views and Goals

Russia views the United States and NATO as the primary threats to its national security and geopolitical ambitions, and Moscow has sought to develop a modern, capable military designed to counter perceived threats and achieve its objectives in this new era of great-power competition. Russia views a powerful, survivable nuclear force as the foundation of its national security, and its modernized general purpose forces as critical to meet any conventional military threat and project Russian power abroad. Russia's initial losses in Ukraine probably undermine the goals for its general purpose forces as originally envisioned by Russian leadership.

At the same time, Russia continues to develop a diverse toolkit of indirect actions such as information confrontation, private military companies, and other covert actions that are designed to weaken the United States and its allies, coerce and threaten its neighbors, and influence or subvert political and diplomatic decisionmaking processes. These tactics are tailored to take advantage of Russian strengths and exploit U.S. vulnerabilities and have allowed Russia to compete effectively in international politics well above its relative power. Russia has taken on an increasingly alarmist view of NATO's presence along its borders, claiming the alliance uses operations and deployments near Russia to stage long-range strike platforms to test its defenses, and threaten a decapitating first strike. In the past year, Russia has publicly expanded its claim that NATO is encroaching on its borders, messaging that it needs security guarantees and regards any NATO presence in countries Moscow considers within its sphere of

influence, such as Ukraine, to be unacceptable. Russia is now engaged in direct military action against Ukraine, employing the majority of its conventional ground forces, ground- and air-launched missile attacks, and some of its naval forces to prevent what it undoubtedly sees as a major political-military catastrophe, a Ukraine more deeply aligned with NATO.

Russia's Military Capabilities

Russia is modernizing its military forces across all services. President Vladimir Putin continues to tout the development of fifth-generation fighters, state-of-the-art air and coastal defense missile systems, new surface vessels and submarines, advanced tanks, modernized artillery, and improved military command and control (C2) and logistics. Russia's modernization is intended to ensure Russia can field a military capable of engaging in the full spectrum of warfare to deter or defeat a wide scope of threats. Initial setbacks in Ukraine challenge some of Putin's narrative, notably regarding the effectiveness of Russian ground-based systems and C2 in a contested environment.

Russia continues to improve capabilities for its Ground Forces, Airborne Forces, and coastal troops. It is upgrading main battle tanks (MBTs) and introducing new MBTs, artillery, and multiple rocket launchers to its arsenal. Russia has also steadily increased its number of battalion tactical groups (BTGs)—the Ground Force's primary maneuver element. In 2021, Russia's Defense Minister claimed its force structure could generate 168 BTGs, which is a 75-percent increase from the 96 BTGs it claimed it could generate in 2016. Setbacks from the initial phase of Russia's renewed invasion of Ukraine may require several years for Russia to replace equipment and personnel to return to this force generation level.

Russia is also in the process of restructuring its Ground Forces located near its borders with NATO countries, and it added upwards of 20 new units or divisions in the Western Military District by the end of 2021. However, reports of undermanned Russian formations in the initial days of the invasion suggest

that many of these units have yet to achieve full combat capability, and given losses in Ukraine, will probably face significant problems doing so.

Russia's Aerospace Forces (VKS) have steadily modernized, adding more fourth-generation aircraft, modern strategic and tactical surface-to-air missiles (SAMs), new radars and UAVs, and increased training and pilot proficiency. Russia's VKS modernization combined with combat operations in Syria have improved its capability to conduct close air support, sustainment, C4ISR, precision strike and interdiction in limited operations, but deficiencies in Russia's air operations in Ukraine suggest improved capabilities and training may not yet have been promulgated across the force. New and upgraded SAMs and radars have increased Russia's over-the-horizon target fidelity and its capability to identify and respond to activity approaching Russia's borders.

For Russia's general purpose forces navy, Moscow has fielded the ultra-quiet, cruise-missile carrying Severodvinsk II class SSGN *Kazan*—accepted into service in 2020—and SSGN *Novosibirsk*, which Russia's Pacific Fleet service will likely accept within the coming months to provide a new platform capable of threatening North America from the Pacific Ocean. Russia is also making significant progress fielding hypersonic weapons and announced in November, after successfully completing testing, that the Tsirkon hypersonic antiship missile would enter into service in 2022.

Russia's Nuclear Modernization Efforts

As of November 2021, Russia claims to have upgraded 86-percent of its nuclear triad and is developing several novel nuclear-capable systems designed to overcome ballistic missile defense systems and ensure that Russia can credibly inflict unacceptable damage on the West. Russia is developing new ballistic missile submarines, arming its heavy bombers with high-precision cruise missiles, and developing more capable ICBMs. Russia has also already fielded some of the novel weapons systems announced by President Putin in 2018, including an ICBM-launched hypersonic glide vehicle and an air-

launched ballistic missile. A new, recently tested, heavy ICBM, a transoceanic torpedo, and an intercontinental cruise missile—all nuclear armed—may be fielded later this decade. Russian Long-Range Aviation has remained active and is on track to receive new Tu-160 Blackjack bombers and upgrade existing platforms to deliver advanced hypersonic and precision-strike weapons at intercontinental ranges.

Russia is also making progress in modernizing its conventional and nuclear C2 capabilities. In November 2020, President Putin highlighted the impending completion of a new and highly survivable command center that can withstand attacks by nuclear forces. During Russia’s 2020 and 2021 annual capstone military exercises, Moscow demonstrated an improved ability to pair reconnaissance and conventional strike systems to increase lethality. However, Russia’s performance in Ukraine demonstrates that it has struggled to apply these concepts and systems—at scale—in real-world, conventional force operations.

Nuclear Policy and Arms Control

Russia views nuclear weapons as primarily for deterrence but maintains the right to use such weapons in response to what it views as an existential threat. Russian military and deterrence doctrine consistently outlines the conditions under which Moscow would consider using nuclear weapons, which include existential threats of hypersonic missiles, weapons of mass destruction, or massed conventional strikes to the Russian homeland or its allies. In late February, following a large Russian strategic forces exercise and Russia’s invasion of Ukraine, President Putin ordered his military leadership to put the deterrence forces of the Russian army on “special combat duty,” a term appearing to refer to heightened preparations designed to ensure a quick transition to higher alert status should the situation call for it. Putin stated this was in response to “leading NATO nations” making aggressive statements about Russia. This order and other recent comments by Russian leaders highlighting Russia’s nuclear arsenal are likely intended to intimidate. They also reflect Moscow’s openly espoused doctrinal views on the use of

tactical, non-strategic nuclear weapons to compel an adversary into pursuing an off-ramp or negotiations that may result in termination of the conflict on terms favorable to Russia, or deter the entry of other participants when the offensive progress of Russia's conventional forces looks like it might be reversed or the conflict becomes protracted. Recurring public statements reiterating Russia's nuclear capabilities and use doctrine—in defense of the Russian homeland and its allies—probably signal Moscow's perception that the West is escalating its involvement in Ukraine and attempt to influence countries to limit or refrain from direct support to Ukraine.

Russia has a mixed record on arms control compliance, violating treaties it sees as overly constraining and adhering to those aligned with its strategic interests. In January 2021, Russia and the United States agreed to extend the New START Treaty. Russia adheres to New START's central limits and verification regimes because the treaty allows Moscow to maintain relative strategic nuclear parity with the United States, constrain U.S. nuclear force growth, and avoid a more costly arms race. By contrast, Russia continues to support the SSC-8 ground-launched, theater range, nuclear-capable cruise missile program that prompted the U.S. Government to conclude Moscow was in violation of the Intermediate Range Nuclear Forces (INF) Treaty. Russia also formally withdrew from the Open Skies Treaty in December 2021. In future negotiations, Russia may attempt to use the development of systems such as the Kinzhal hypersonic, maneuvering, dual-capable, air-launched ballistic missile; the Burevestnik nuclear powered, nuclear-armed cruise missile; or counterspace weapons as leverage to gain concessions from the United States and NATO.

Russia almost certainly maintains biological and chemical weapon programs. Since 1992, Russia's BWC Confidence-Building Measure (CBM) submissions have remained incomplete and misleading. It only partially acknowledges the former Soviet Union program, maintains its secrecy efforts, and has not provided sufficient evidence that key biological and chemical weapon program activities have been dismantled. The United States is unable to certify that Russia has met its obligations for providing

complete declarations of its chemical weapons production and development facilities, and its stockpile. Furthermore, the United States Government asserts that Russia is not in compliance with its obligations under the Chemical Weapons Convention (CWC) in part because of its use of a nerve agent—referred to as Novichok—in the attempted assassination of former Russian Main Intelligence Directorate (GRU) intelligence officer Sergey Skripal and his daughter in March 2018. In August 2020, Russian Federal Security Service (FSB) officers also used a Novichok nerve agent to poison Russian opposition leader, Aleksey Navalnyy.

Threats to Ukraine and the other Soviet Union Successor States

Russia is determined to restore a sphere of influence over Ukraine and the other states of the former Soviet Union which is a key driver for Russia's military aggression against Ukraine. Intent on bringing Kyiv back into its orbit, Russia launched a multi-axis, combined arms invasion of Ukraine, dedicating the vast majority of its conventional forces for seizing large swaths of Ukrainian territory and replacing the government in Kyiv. Having met greater than anticipated resistance from Ukraine and relatively high losses in the initial phases of the conflict, Moscow has shifted focus to eastern Ukraine, where it appears to be prioritizing defeating Ukrainian forces in the Donbas. It is not clear if Russia has given up on its goal of forcing Kyiv to submit to its influence for the long term. Stiff Ukrainian resistance is leading Russia to resort to more indiscriminate and brutal methods that are destroying cities, infrastructure, and increasing civilian deaths.

Russia's success in Ukraine, or lack thereof, probably will impact its ability to wield stronger influence over other Soviet successor states. The Kremlin likely calculates that a victory over Ukraine will compel most of the Soviet successor states to align themselves more closely with Moscow, but a military setback for Russia or a lengthy drawn-out campaign in Ukraine probably will have the opposite effect.

Regardless of the outcome in Ukraine, the Kremlin remains sensitive to what it perceives as Western regime change efforts in Belarus and continues to press Belarusian President Aleksandr Lukashenko to integrate more deeply with Russia. Lukashenko's approval for Russia to use Belarus as a staging ground for Russian troops to invade Ukraine signals his willingness to concede to Russia's demands. In Central Asia, Moscow is also trying to exploit the U.S. withdrawal from Afghanistan and Central Asian concerns about a potential spillover of Afghan-based instability into the region to convince these states to expand their political-military cooperation with Russia. In January, Moscow demonstrated such cooperation and its role in the region by sending Collective Security Treaty Organization (CSTO) member troops into Kazakhstan on the request of Kazakh leadership to quell domestic protests.

Russia-China Ties

Russia continues to deepen its ties to China in an effort to curtail U.S. power and influence. Relations between Moscow and Beijing are probably their deepest since any time before the Sino-Soviet split. Both countries coordinate on high-priority geopolitical issues to maximize their power and influence while bilateral military cooperation continues to evolve—punctuated by a growing number of combined military exercises. In 2018, Moscow included the Chinese military in its largest annual exercise, VOSTOK-2018, for the first time. Since then, China has participated in two other Russian capstone exercises, conducted three combined bomber patrols over the Sea of Japan, and circumnavigated Japan together in October 2021, marking their first combined maritime patrol. China and Russia designated 2021 as a year of scientific and technological cooperation between the two countries, including areas such as: nuclear, energy, biotechnology, and robotics. However, there are indications Ukraine-related sanctions are affecting research programs between the two.

The January Xi-Putin meeting, which resulted in 15 bilateral agreements and a joint statement opposing Western international security initiatives, probably reflects Putin's intent to blunt the force of Western

sanctions and strengthen the voice both countries use to espouse anti-western narratives. Moscow probably views Beijing as its most capable geopolitical partner, an alternative financial clearinghouse, and a key ally at the United Nations to undercut Western messaging and offset the harshest impact of sanctions. The extent to which China will help Russia mitigate the effects of sanctions as Russia's economy declines further is not clear. However, Putin probably views his relationship with Xi as critical to alleviating the departure of credit card companies, creating a viable alternative to SWIFT, signing further energy deals, and leveraging Chinese technology. China also abstained from the United Nations General Assembly resolution in March that condemned Russia's invasion of Ukraine.

An Increasingly Assertive Actor Abroad

Russia continues to pursue its national security interests and geopolitical ambitions aggressively across the globe, acting from a position of increased confidence and emboldened by its perception that the United States is in a period of decline. Russia is steadily expanding its international profile, increasing its engagement with select countries in Asia, the Middle East, Africa, and Latin America and is working to diminish U.S. influence around the globe. The Kremlin is seeking to establish military bases and air and naval access agreements with states in these regions to enhance its power projection capabilities and increase its regional influence. In April, 24 countries—including China—voted against Russia's expulsion from the United Nations Human Rights Council when signs of likely Russian atrocities emerged from Russia's full-scale invasion of Ukraine in 2022. Another 58 countries abstained from the vote, indicating the continued effects of Russia's influence efforts.

The Kremlin's engagement with Pyongyang centers on the preservation of regional stability and promotion of Russia's status on the peninsula. Russia has advocated for a comprehensive and negotiated settlement and opposes the use of force. Moscow agreed to UN sanctions against Pyongyang in 2017; however, Moscow sometimes skirts compliance issues because of business interests and a fear

of destabilizing the North Korean regime. In addition, Russia coordinates its North Korea-related diplomacy with China, including a bilateral “Road Map” for peace, an initiative since 2017 that has aimed to reduce tensions on the Peninsula through a dual-track approach to advance denuclearization and establish a peace mechanism.

In the Middle East, Moscow continues to provide Syria with military, diplomatic, and economic support, while seeking to broker an end to the Asad regime’s international isolation and lobbying for economic aid to assist in Syria’s reconstruction. The Kremlin likely calculates this support along with its military presence in Syria will ensure its sway over the Asad regime, cement Moscow’s status as Syria’s preeminent foreign partner, and bolster Russian regional influence and power projection capability. Russia and Turkey continue to downplay their disagreements and compartmentalize their divergent foreign policy objectives in Syria and elsewhere in the region.

Russia also continues to expand its involvement in Africa, highlighted by the activities of Russian oligarch Yevgeniy Prigozhin and his private military company Vagner. Vagner has conducted combat operations in the Central African Republic since 2017, Libya since 2019, and deployed to Mali in December 2021. More broadly, Russia uses arms sales, training, and bilateral defense agreements to establish lasting relationships on the continent. To enhance its power-projection capabilities and increase its regional advantage, Moscow continues to pursue military bases and air and naval access agreements in Africa, such as the planned naval logistics facility in Sudan.

In Latin America, Moscow is focused largely on strengthening military ties with its traditional partners Cuba, Nicaragua, and Venezuela, offering training, arms sales, and weapons maintenance support. Russia has also threatened to increase its military presence in the region in response to U.S. support for Ukraine. Moscow continues to support disputed Venezuelan President Nicolas Maduro with military and economic assistance, largely to protect its economic investments and thwart perceived efforts to

remove President Maduro from power. Russia's engagement with other Latin American governments remains minimal, but the Kremlin is open to opportunities for more extensive engagement.

Russia views the Arctic as a security and economic priority, seeking to exploit Arctic natural resources and develop the Northern Sea Route as a major international shipping lane. Russia is refurbishing Soviet-era airfields and radar installations, constructing new ports and search and rescue centers, and building up its fleet of conventionally- and nuclear-powered icebreakers. Russia is also expanding its network of air and coastal defense missile systems to strengthen its antiaccess/area-denial capabilities in the region. In May 2021, Russia assumed the two-year rotating Chairmanship of the Arctic Council, an association of the eight Arctic nations intended to preserve the Arctic as a zone of peace and constructive cooperation. Russia intends to use the platform to attract investment in its Arctic projects and defend its national interests.

Looking ahead, Russia will continue to pose a multifaceted threat to U.S. national security and its ability to lead and shape international developments while Russia's invasion of Ukraine will have immediate and long-term consequences for European security and stability.

Protracted occupation of parts of Ukrainian territory threatens to sap Russian military manpower and reduce its modernized weapons arsenal, while economic sanctions will probably throw Russia into prolonged economic depression and diplomatic isolation that will threaten its ability to produce modern precision-guided munitions. As this war and its consequences slowly weaken Russian conventional strength, Russia likely will increasingly rely on its nuclear deterrent to signal the West and project strength to its internal and external audiences.

Russia's brutal aggression in Ukraine is reviving fears of a more imperial and militaristic Russia, prompting requests from NATO allies for assurances that U.S. security guarantees will be honored. U.S. partners in the former Soviet Union will also look to the United States for signs that they are not being

abandoned while adjusting their policies to coexist with a stronger and more emboldened Russia. Russian military modernization efforts will progress even as initial timelines for some programs may have to adjust to likely new economic realities, and Moscow will continue to blend traditional displays of military might with other coercive political, economic, cyber, and information confrontation measures to achieve its geopolitical interests, delineate its redlines, and compel the United States to take its concerns more seriously. Moreover, U.S. efforts to undermine Russia's goals in Ukraine, combined with its perception that the United States is a nation in decline, could prompt Russia to engage in more aggressive actions not only in Ukraine itself, but also more broadly in its perceived confrontation with the West.

IRAN

Iran is the primary state challenger to U.S. interests in the Middle East because of its increasingly sophisticated military capabilities, broad proxy and partner networks, and demonstrated willingness to use force against U.S. and partner forces. Iran's national security strategy aims to ensure the continuity of clerical rule, maintain internal stability, secure its position as a dominant regional power, and achieve economic prosperity. Tehran employs a complex set of diplomatic, military, and security capabilities, including unconventional forces that recruit and train partners and proxies to achieve its objectives and conventional forces that can impose high costs on adversaries. Tehran probably calibrates its attacks to pressure adversaries and proportionally retaliate for real or perceived transgressions against Iran, while attempting to prevent escalation to full-scale conflict. Iranian officials continue to perceive that they have not sufficiently retaliated for the 8 January 2020 death of former Islamic Revolutionary Guard Corps-Qods Force (IRGC-QF) Commander Qasem Soleimani, and probably are planning covert actions against U.S. officials to retaliate for his death while attempting to maintain plausible deniability and minimize escalation. Iran probably will continue to focus on unconventional attacks or minimally

deniable actions, such as cyberoperations, rather than overt conventional retaliation to counter Western pressure.

Iranian Military Capabilities

Iran's conventional military strategy is based on deterrence and retaliation. If deterrence fails, Iran probably would seek to demonstrate strength by striking its adversaries. Iran fields the region's largest arsenal of UAVs and missiles and has increasingly relied on UAVS, likely because they are inexpensive, versatile, and Iran probably believes they sometimes allow for plausible deniability. Iran has emphasized improving UAV accuracy, lethality, and over-the-horizon capabilities. Iran also proliferates UAV equipment and training to proxy and partner networks, which provides Tehran a deniable means of attacking U.S. and partner interests throughout the Middle East.

Iran routinely uses its naval forces to monitor U.S. and allied naval operations off its coast—including near the Strait of Hormuz—and occasionally engages in dangerous and unprofessional interactions. Since 2019, Iran's naval forces have become more brazen and have seized, sabotaged, and attacked merchant ships in the region—in some cases retaliating for Israeli and allied activities.

Some Iranian missiles are able to strike targets 2,000 kilometers from Iran's borders, and it has demonstrated the willingness to use them. Iran continues to increase the accuracy and lethality of its ballistic missile force, including short-range ballistic missiles (SRBMs) with increasing range and antiship capability and MRBMs with accuracy and warhead improvements. Since at least 2016, Iran has unveiled antiship cruise missiles launched from aircraft and submarines, mobile air defense systems, and several land-attack cruise missiles that fly at low altitudes and can attack a target from multiple directions, complicating missile defense. Iran continues to develop space launch vehicles with boosters that could be capable of ICBM ranges if configured for that purpose. Tehran also aspires to build, launch, and

operate satellites and has attempted to place several experimental satellites into orbit—including the successful April 2020 and March 2022 launches of Iran's first military reconnaissance satellites.

Iran is a party to the CWC and BWC. However, since 2018, the United States Government has found Iran to be noncompliant with its CWC obligations due to its failure to declare its chemical weapons transfers and complete list of riot control agents (RCAs), and failure to submit a complete list of chemical weapons production facilities. The United States Government is also concerned that Iran is pursuing pharmaceutical-based agents for offensive purposes.

In 2021, Iran conducted arms sales negotiations with Russia, China, and North Korea. These negotiations probably reflect Iran's military modernization priorities—missile, naval, UAV, and air defense forces—but Tehran also may pursue more robust air power and EW capabilities based on lessons learned from recent conflicts.

Iran's Regional Military Activities

Regionally, Tehran continues to provide advisory, financial, and materiel support to partner and proxy networks in Iraq, Lebanon, Syria, and Yemen to build strategic depth, facilitate attacks against United States' and its regional partners' interests, and guarantee Iran's long-term regional influence. Tehran has leveraged its relationships to attack the continued U.S. presence in the region and is attempting to force a U.S. military drawdown. Esmail Ghani, the IRGC-QF commander, has advanced the regional lines of effort he inherited in January 2020 from his predecessor, Qasem Soleimani.

In 2021, Iran began using more aggressive measures and novel tactics—including targeting Israeli-associated commercial shipping—as part of a new strategy to counter Israel. Tehran has increasingly relied on UAVs to fulfill this strategy and has conducted or enabled at least six UAV attacks against Israeli interests in the past year. Iran also seeks to prevent Israel from normalizing its relations with Arab states, combining threats from its proxies and partners with diplomatic outreach.

In Iraq, Iran seeks to ensure that Iranian-aligned Shia militia groups maintain military and political influence. Iran has improved militia capabilities and increased their operational independence. In 2021, Iraqi militias used Iranian-provided one-way UAVs to attack U.S. targets for the first time and have modulated subsequent attacks based on political circumstances. Iran has directed temporary pauses in militia attacks to manage escalation and improve the militias' political prospects in response to Iraq's October 2021 elections. Militias conducted multiple UAV and indirect fire attacks on U.S. forces in January to increase pressure on the United States to withdraw.

In Lebanon, Tehran works with Lebanese Hizballah—its most important and capable substate partner—to project power and bolster regional Shia militants' capabilities. Iran acts as Hizballah's primary patron, and their strategic interests rarely diverge.

In Syria, Iran seeks to secure a lasting economic and military presence while deterring continued Israeli strikes on Iranian interests. During the past year, Tehran has demonstrated its willingness to target U.S. forces in Syria. Since 2019, Iranian-backed forces have conducted several rocket attacks against U.S. and coalition partners in Syria. In October 2021, Iranian forces in Syria struck U.S. forces with multiple UAVs in the most sophisticated attack against a U.S. military base in the country to date, reportedly in retaliation for an Israeli airstrike that used airspace near the At Tanf area.

In Yemen, Iran continues to support the Huthis with advisers and weapons to facilitate complex and long-range attacks against Saudi Arabia and United Arab Emirates (UAE) in order to pressure the Saudi-led coalition. In the past year, Iran supplied the Huthis with one of its most advanced one-way-attack UAVs, the Shahed-136, which provides Iran and the Huthis long-range strike capabilities. Following three UAV and missile attacks against the UAE in January, the Huthis have refocused their cross-border UAV and missile attacks on Saudi Arabia and maritime targets in the Red Sea. However as of 1 April, the United Nations brokered an informal truce for the Huthis and Saudi-led Coalition to cease all military

operations in Yemen for two months. The truce promised the temporary reopening of Al-Hudaydah port and Sanaa Airport, and the possibility of extending the truce into a more permanent ceasefire. The Huthis have not formally or publicly agreed to the truce, but as of 15 April both parties were still adhering to it despite accusations of violations. Separately on 7 April, following a Gulf Cooperation Council-hosted dialogue in Riyadh between Yemeni factions, Yemeni President Abd Rabuh Mansour Hadi announced the transfer of his authorities to a new Presidential Leadership Council (PLC). The PLC consists of eight leaders from different anti-Huthi Yemeni factions. Although the truce and creation of PLC demonstrates some progress towards a more permanent ceasefire, the Huthis probably still seek to improve their negotiating position through military operations and external attacks.

Iran has continued its regional activities despite the 2018 reimposition of sanctions pursuant to the U.S. exit from the Joint Comprehensive Plan of Action (JCPOA), which has impeded Tehran's access to traditional government funding streams, including oil exports. Iran has worked to circumvent sanctions, but currency depreciation, high inflation, and unemployment continue to plague its economy. Iran's 2022 defense budget is substantially larger than its previous five defense budgets, but fiscal constraints very likely will prevent it from fully funding its planned expenditures.

Tehran Nuclear Development Efforts

Tehran also has continued to reduce its adherence to the JCPOA to gain leverage in talks and revive the deal on terms favorable to Iran, including continued demands for sanctions relief. Tehran has halted some transparency measures for its nuclear program and enriched uranium up to 20- and 60-percent, beyond the JCPOA limit of 3.67-percent. Iran also has conducted research and development with advanced centrifuges beyond agreed limits and has produced small quantities of enriched uranium metal for the first time.

During the next year, Tehran probably will respond to U.S. and partner operations in a manner it determines is similar or proportional to avoid risking unmanageable escalation. Tehran's response probably would seek to demonstrate strength, reduce Western regional influence, and reestablish deterrence following repeated attacks on Iranian interests in Iran and Syria. Such responses probably will include deniable attacks, cyberoperations, or nuclear-related actions. Iran probably will seek to avoid escalation it expects would undermine JCPOA negotiations or impede its goal of compelling a U.S. withdrawal from the region.

NORTH KOREA

North Korea remains a serious challenge for the United States and its allies. North Korea has the capability of holding U.S. and allied forces at risk with missiles capable of carrying nuclear, chemical and biological payloads and its large conventional military. North Korean leader Kim Jong Un is committed to preserving his regime and the further development of military capabilities with destructive power and expanded reach. To this end, North Korea is modernizing and expanding its missile force to more accurately target U.S. and allied interests in the Asia-Pacific region and across the continental United States. Since early 2021, North Korea has tested several new systems, including a railborne missile launch capability, missiles it claims have an HGV payload, an SRBM, a submarine-launched ballistic missile (SLBM), a long-range cruise missile, and an ICBM. Since January 2022, North Korea tested eight missile systems including an IRBM, ICBMs, purported HGVs, cruise missiles, and multiple types of solid-propellant SRBMs, to showcase its commitment to advancing and diversifying its missile program. Pyongyang also continues to shift to solid-propellant missiles, allowing for more rapid employment than existing liquid-propellant missiles. In January 2021, Kim Jong Un announced plans to modernize North Korea's military over the next 5 years. Specific goals included developing multiple independently targetable reentry vehicles, an HGV, solid-propellant ICBMs, reconnaissance satellites, a nuclear-powered submarine, nuclear weapons with higher yields, and smaller and lighter nuclear weapons.

Pyongyang also remains committed to its nuclear-weapons program. North Korean leadership likely views expanding its strategic nuclear and missile deterrents as essential to ensuring regime security and enabling coercive military threats and actions.

Since ascending to power in 2011, Kim Jong Un has solidified his rule by raising the public prominence of his regime, installing a cadre of loyal military and political advisers, and bolstering control over the North Korean population—steps that Kim probably expects will enhance his legitimacy at home and abroad and ensure long-term regime security. Kim has reinforced the approach of his father and grandfather that focuses on maintaining repressive domestic controls to shield his regime from internal threats—including crackdowns on access to outside information, intensive ideological indoctrination, and enforcement through a pervasive security apparatus to counter external influences. Personnel shuffles, purges to enact sweeping policy changes, and public speeches justifying his policies have also allowed Kim to ensure elite support and reinforce fealty to him throughout his tenure. In January 2021, the Korean Workers' Party (KWP) elected to change Kim Jong Un's title from Chairman of the KWP to General Secretary of the party, a title also held by Kim Il Sung and Kim Jong Il.

North Korea's Military Capabilities

North Korea's military force has long been plagued by resource constraints and aging equipment and probably reduced training during the past year to prevent the spread of COVID-19. Despite these limitations, North Korea maintains a capable military of ground, air, navy, special operations, and missile forces. These forces are almost certainly postured to maintain a credible defense of its territory and execute lethal, limited objective attacks, but they are not able to support a sustained conflict or reunify the Korean Peninsula.

The Korean People's Army (KPA) Ground Forces remain the core of North Korea's military power and the primary means by which Pyongyang threatens Seoul. The KPA ground units comprise approximately

1,000,000 active-duty personnel and have thousands of long-range artillery and rocket systems arrayed along the demilitarized zone to be able to strike South Korea without warning. It is also developing more accurate multiple rocket launchers with ranges extending to South Korean and U.S. bases farther south on the peninsula.

North Korea's Air and Air Defense Forces consist of more than 900 combat aircraft and can fly strike missions against targets in South Korea with fighters, bombers, and possibly UAVs. It is developing or procuring a variety of UAVs, some of which have been used for reconnaissance missions over South Korea and could be equipped with rudimentary armaments. Its air defense forces maintain a dense network of integrated systems, providing overlapping, redundant territorial coverage.

The North Korean Navy is primarily a coastal defense force and is capable of conducting limited short-term offensive and defensive operations. It maintains one of the world's largest submarine forces. While most of its submarines are of older design, it launched a new ballistic missile submarine with a single launch tube in 2015, and tested a new SLBM in 2016 and another model in 2021, in an effort to build its naval deterrent.

North Korea's Strategic Force controls a wide selection of SRBMs, MRBMs, IRBMs, and ICBMs and has stated each represents a nuclear-capable class. North Korea's Strategic Force is one of the most rapidly modernizing elements of its national military, and if training and development are sustained and pursued consistently forcewide, it could become one of North Korea's most capable military arms. North Korea maintains robust chemical warfare (CW) and biological warfare (BW) capabilities. North Korea, which is not a member of the CWC, probably has a CW program with up to several thousand metric tons of CW agents and the capability to produce nerve, blister, blood, and choking agents. North Korea probably could employ CW agents by modifying a variety of conventional munitions, including artillery, rockets, and ballistic missiles as well as unconventional, targeted methods such as the use of a chemical

agent in the 2017 assassination of Kim's half-brother Kim Jong Nam. North Korea has a dedicated, national-level effort to develop BW capabilities and has developed, produced, and possibly weaponized BW agents. North Korea probably has the capability to produce sufficient quantities of biological agents for military purposes upon leadership demand. Though a signatory to the BWC, North Korea has failed to provide a BWC confidence building measure report since 1990.

North Korea's economy and logistics infrastructure support national defense considerations, but the systems are poorly constructed and deteriorating. While it has made recent progress on hydroelectric power and improving power generation, North Korea continues to experience chronic electricity shortages. As a country, it possesses extensive indigenous capability for defense industrial output but uses illicit foreign procurement for some components and technology. North Korea also continues to expand the world's largest and most fortified underground facility (UGF) program, estimated to consist of thousands of UGFs and bunkers that are designed to conceal and protect leadership, C2 assets, WMDs, ballistic missiles, military forces and assets, and defense industries.

North Korea continues to violate international sanctions by procuring dual-use goods for its WMD and missile programs, illicitly importing refined petroleum and exporting proscribed commodities—such as coal and military equipment—despite its extreme border restrictions. Since 2018, North Korea has acquired refined petroleum in excess of the amount allowed under United Nations Security Council (UNSC) resolutions through vessels using illicit ship-to-ship transfers and direct deliveries of petroleum using third-country tankers. Prior to the pandemic, evasion of sanctions stabilized North Korea's fuel supplies and prices; however, widespread shortages caused by the pandemic-driven border closures continue to affect price volatility and depletion of its stockpiles. Evading sanctions has also allowed a continued revenue flow that has historically funded its nuclear and ballistic missile programs. Pyongyang remains a willing supplier of conventional arms, military equipment, and missile technology, flouting UNSC sanctions to generate revenue from arms exports. North Korea uses intermediaries and front

companies to mask exports to the few arms buyers undeterred by international interdiction efforts, including Iran, Syria, and Uganda. We assess North Korea seeks to sell arms to Burma, considering North Korea's need for cash and Burma's limited arms trade options after the February coup.

North Korean Cyber Capabilities

North Korea possesses a sophisticated hacking program that supports the regime's goals of generating revenue and advancing its defense capabilities through cyberespionage while sidestepping sanctions. North Korea's cyberactors generate currency through criminal enterprises such as cryptocurrency theft, ransomware, and hacking-for-hire. Revenue from these operations probably supports weapons development and production and overall regime survivability. North Korea conducts cyberespionage globally against foreign officials, academics, and defense and aerospace industries, probably to gain insight into adversary capabilities and acquire information to aid Pyongyang's own weapons development. In addition, its cyberactors continue to collaborate with foreign cybercriminals, demonstrating an ability to use third-party accesses and resources to further North Korean cyber missions. North Korea maintains the ability to conduct disruptive and destructive cyberattacks.

North Korea's external engagements probably will remain stagnant in early 2022, and its relationships do not appear to contribute significantly to its defense establishment or to boost military readiness. International sanctions against North Korea probably dampened potential partner interest in expanding ties. Pyongyang's internal efforts, such as border tightening to mitigate the spread of COVID-19 and crackdowns to increase population control, probably also hindered foreign engagement in 2021. North Korea has signaled it may loosen some border restrictions in 2022 to address ongoing food insecurity and depressed economic conditions. Its only formal defense agreement is with China: the 1961 Sino-North Korean Treaty of Friendship, Cooperation, and Mutual Assistance. In October 2021, Kim Jong Un appeared to reinforce the importance of this agreement in a letter to his Chinese counterpart in which

he pledged support for China's fight against confrontational moves by hostile forces (presumably the United States). Russia, which provided substantial military assistance and equipment to North Korea during the Soviet Era, has largely curtailed its defense relationship with Pyongyang. North Korea probably sees Russia as less important than China as a regional partner.

We expect North Korea to continue its nuclear, missile, and military modernization efforts in 2022 as it emphasizes bolstering its strategic deterrence and countering the military capabilities of the U.S.–South Korean alliance. Kim Jong Un will likely use these developments to try to increase his leverage in any potential negotiations with the United States. North Korea will probably continue to justify its actions by using U.S. policy, South Korea's military modernization, and combined U.S.–South Korean military exercises as pretext to normalize North Korea's military advancements. To demonstrate North Korean strength and resolve, leadership could consider further missile testing of various ballistic and cruise missiles, conduct a cyberattack, or test another nuclear device. Such actions would probably also depend on North Korean leadership's calculation between developing military capabilities and seeking to apply pressure on the United States and South Korea to advance its political objectives. In addition, Kim Jong Un's calculation may also involve an expectation for significant diplomatic or economic backlash, particularly with ICBM or nuclear testing.

TERRORISM

Status of the Salafi Jihadist Movement

Twenty years after 9/11, the Salafi jihadist movement's unifying leaders are mostly dead, the threat to the United States homeland is much diminished and the movement's priorities are mainly local, probably preventing a return to its 2015 peak within the next 2 years. ISIS and al-Qa'ida, however, are able to inspire or enable opportunistic attacks against the United States and U.S. interests. Lone-actor attacks by Salafi jihadists, with little or no warning, are more likely to occur than directed attacks. Salafi jihadist group leaders who give high priority to directing attacks in the West, such as al-Qaida, probably

will need at least 1 to 2 years to conceptualize, develop, and execute complex plots. ISIS-Khorasan (ISIS-K) could develop a capability to attack the United States within the next year, if the group prioritizes such an attack. Salafi jihadist groups probably can accelerate the timeline of directed attacks in the West to as little as 4 to 6 months by pursuing plots that are simple to execute. Leadership intent probably is a more critical driver for initiating directed plots against the West than a terrorist group's control of territory or freedom of movement.

Islamic State of Iraq and ash-Sham

In 2021, ISIS maintained 17 publicly recognized branches worldwide and claimed responsibility for attacks in dozens of countries. Earlier this year, ISIS emir Hajji Abdallah died during a U.S. military operation in Syria. ISIS retains a C2 structure that allows the group to withstand his death and preserve its ability to oversee local operations and its expanding global presence. In Iraq and Syria, the ISIS insurgency experienced setbacks during the past 2 years, in part because of its senior leadership losses; however, the group remains a substantial threat to security in these countries. ISIS is also seeing opportunities in Afghanistan, where the group has gained considerable personnel and resources since the Taliban takeover and been emboldened since its 26 August attack on Hamid Karzai International Airport in Kabul. Some prisoners freed from Afghan prisons last year have reintegrated into ISIS-K and serve in various leadership positions. If ISIS-K leaders give priority to external attacks, the group probably can use this influx of resources and personnel to develop the capability to attack the U.S. homeland within the next year, despite Taliban efforts to counter the group. The ISIS narrative continues to emphasize the group's attacks and regional expansion—especially in Africa—where ISIS branches have conducted attacks against Western targets and have partial territorial control. The group's continued growth in Africa will spread instability and increase the threat to U.S. interests on the continent.

Al-Qa'ida

Al-Qa'ida's capabilities have been significantly weakened; further, the group probably is on a declining global trajectory after years of organizational resilience and lacks leaders who have global jihadist appeal. The deaths of senior leaders, unfavorable operating environments, and sustained counterterrorism pressure have hurt the group during the past 2 years. Al-Qa'ida's Iran-based senior leaders oversee its global network and issue guidance to al-Qa'ida affiliates on media releases and strategy. In the newly Taliban-controlled Afghanistan, al-Qa'ida's capabilities are weak, and the group probably is focused on recovery while considering its strategy for the future. Al-Qa'ida leaders have called for obedience to the Taliban, which has publicly declared that Afghanistan will not be used for transnational attacks. If al-Qa'ida decides to reverse course, the group likely will require at least 1–2 years to rebuild its external operations capabilities in Afghanistan to mount an attack against the West, should it choose to prioritize external operations. Al-Qa'ida's regional affiliate in Afghanistan—al-Qa'ida in the Indian Subcontinent (AQIS)—struggles to conduct local attacks and is experiencing leadership losses. The group's future trajectory probably depends on the Taliban's restrictions. In 2021, al-Qa'ida made gains in Sub-Saharan Africa, where it now controls large swaths of Burkina Faso, Mali, and Somalia and is attempting to gain footing in littoral West Africa. Al-Qa'ida in the Arabian Peninsula has lost personnel and territory during the past 2 years to counterterrorism pressure and internal actions aimed at ferreting out suspected spies. In 2022, the group's global enterprise probably will continue to focus more on regional priorities in the Middle East, Africa, and Asia than on attacks in the West.

Lebanese Hizballah

Lebanese Hizballah's Islamic Jihad Organization (IJO)—the group's primary overseas attack unit—remains an integral element of Iran's threat network. Hizballah probably will direct an IJO attack in the homeland or against U.S. interests abroad only if Hizballah or Iran perceives a threat to the group's existence. Hizballah almost certainly will maintain the IJO to deter foreign aggression, particularly from

Israel and the United States. In 2022, the IJO will probably continue its focus on recruiting and training new members, refining its capabilities, and improving its operational security in Latin America, Africa, and Southeast Asia.

Racially/Ethnically Motivated Violent Extremists (RMVEs)

In the last decade, other violent extremist ideologies reemerged in the West, with sociopolitical factors and perceived grievances fueling transnational RMVE movements and probably driving RMVE attack strategies that threaten Western governments and civilians. Disrupted plots within the past 2 years include those against U.S. military personnel. RMVEs exploit the information environment by spreading extremist propaganda and proliferating conspiracy theories online to attract new members and strengthen the extremist identity of others with similar beliefs across the globe. RMVE movements have been seeking to recruit current and former military members with varying levels of success.

DISEASE AND CLIMATE THREATS

COVID-19 Pandemic

Since its onset, COVID-19 has killed over 6.2 million people across the globe. In the past year, there have been multiple COVID-19 waves, with the most recent—driven by the Omicron variant—just beginning to subside. During the next 6 months, countries or regions without sufficient non-pharmaceutical intervention practices—such as social distancing and mask wearing—or vaccine supplies probably will see the most dramatic waves.

Limited and fragmentary data has led the Intelligence Community (IC) to maintain multiple theories on the origin of COVID-19. Four elements and the National Intelligence Council assess with low confidence that the virus likely emerged from a natural interaction between an animal infected with the virus and a human; one IC element assesses with moderate confidence a laboratory origin is more likely and three

other IC elements are unable to arrive at either conclusion without additional information. All agencies agree the virus was not developed as a biological weapon and most agree that it was not genetically engineered. China continues to obscure all investigations into the origins of COVID-19 that would assist in making a definitive assessment, preventing the release of information such as data on early cases, access to potential host species, or documents from internal investigations—behavior indicative of a desire to keep COVID origins secret.

As of February, there were at least 337 candidate COVID-19 vaccines in clinical development worldwide, with at least 142 in human clinical trials. Russia’s Sputnik V COVID-19 vaccine has still not received World Health Organization prequalification; the review previously stalled because of missing data. Despite this, Russia has marketed Sputnik Light as a single-dose vaccine and more recently as a booster for other COVID-19 vaccines. Chinese vaccine manufacturers of Sinovac and Sinopharm vaccines have demonstrated 50-to 79-percent effectiveness in protecting individuals against severe COVID-19 symptoms but—compared to greater than 90-percent efficacy of mRNA vaccines—there have been cases of resurgence in some countries that have heavily relied on China’s vaccines.

The COVID-19 pandemic—especially new variant case surges, such as Omicron—has strained medical capabilities worldwide, prompting many nations to seek foreign medical assistance and deploy military medical assets to augment domestic responses. Medical personnel shortages have been a primary factor hindering worldwide COVID-19 responses, especially as the pandemic has caused widespread health care worker infections and deaths, burnout, and resignations. The emergence of novel respiratory viruses capable of causing sustained human-to-human transmission on multiple continents, like COVID-19 and its variants, continues to pose the greatest enduring infectious disease risk to U.S. personnel.

Climate Change

Climate change is an important factor in the current and future operating environment for the Joint Force, affecting foreign nations' internal stability and military capabilities. We assess that climate change will increasingly exacerbate risks to U.S. national security interests as physical impacts increase and geopolitical tensions mount about how to respond. The physical effects of climate change are likely to intensify cross-border geopolitical flashpoints, including a growing risk of conflict over cross-border migration and water, food, and mineral resources. We also assess the potential for instability and possibly internal conflict in developing countries will increase, in some cases creating additional demands on U.S. military resources—particularly for humanitarian assistance and disaster relief operations. Moreover, as climate change effects destabilize underdeveloped regions, Sunni terrorist groups probably will have more opportunities to advance their presence, recruitment, and operations. The most vulnerable countries in Africa, Asia, Latin America and the Caribbean, and the Middle East that are dealing with the physical effects of climate change will continue to request military and nonmilitary assistance from the United States to help manage and mitigate those issues.

REGIONAL SECURITY ISSUES

MIDDLE EAST

China and Russia will continue to challenge the United States for influence in the Middle East as the perception of waning U.S. engagement leads regional allies to seek alternatives to U.S. support to counter threats, particularly from Iran. Roughly half of Chinese oil and gas imports come through the Persian Gulf, and China also relies on sea lines of communication through the Suez Canal and Red Sea to maintain access to European markets. Beijing is particularly focused on building economic and diplomatic ties with key states, including UAE, Saudi Arabia, Iran, and Egypt. Russia has sought to build upon its success in Syria to expand its regional influence and serve as a geopolitical counterweight to the

United States in the Middle East, advertising itself as a reliable arms supplier, security partner, and mediator.

Iran and its regional allies, likewise perceiving a reduced U.S. commitment to the region, are emboldened to use military force to increase their influence and diminish U.S. influence. Traditional drivers of unrest—authoritarian leaders, insufficient economic opportunity, and corruption—remain and are compounded by terrorism, hybrid military threats, Iranian activity, and the persistent pandemic.

Syria

After more than a decade of civil war, Syria is beginning to reemerge from its international isolation as some Middle East, European, and Asian countries work toward closer diplomatic and economic ties with Damascus. This year's high-level engagements between Syria and China indicate an interest by both sides to enhance cooperation, particularly on counterterrorism efforts and Syria's reconstruction—despite uncertainty surrounding possible returns on Chinese economic investment. Economic and security cooperation between Damascus and Beijing is unlikely to supplant the Asad regime's reliance on Iran and Russia during the next 2–3 years.

Syria and its allies probably are best positioned to shape the conflict's trajectory in their favor during the next 12 months. Following the March 2020 cease-fire agreement, cease-fires around the country largely have held and military operations have waned, despite many areas of the country remaining outside the Asad regime's control. The frontlines are likely to remain mostly static for at least the next 6 months.

Syria probably will not resume a major offensive without explicit political and military support from Russia, judging from Syria's previous reluctance to engage directly with the Turkish military in sustained combat. Damascus is building relationships with local tribes in the east to foment unrest against the Syria Democratic Forces (SDF), undermine Kurdish-led governance, weaken the U.S. relationship with tribes, and conduct deniable attacks on the SDF and coalition forces. Syria's economic crisis has

degraded living conditions and fueled a low-level insurgency in regime-controlled southwest Syria, but sustained Iranian and Russian support probably will prevent the insurgency from posing an existential threat to Damascus.

The SDF relies on Russia and the United States to forestall additional Turkish operations and buy time to negotiate reconciliation terms with Damascus. Russia continues to exploit SDF vulnerabilities to gradually expand the Asad regime's presence in the northeast and strengthen Asad's leverage in future reconciliation negotiations.

The Syrian opposition almost certainly is incapable of threatening regime stability and instead seeks to defend its remaining territory in the north and support Turkey's objectives in Syria to maintain Ankara's support. Turkey's direct military support to the opposition during the past several years has solidified Ankara's control over the opposition.

Turkey's activities in northeastern Syria include restoring infrastructure, conducting patrols and road checks, clearing mines and IEDs, and conducting counterterrorism raids. Turkey blames the Kurdish People's Protection Unit (YPG) for conducting attacks in northeastern Syria targeting the Turkish-supported opposition and resulting in civilian casualties. Turkey views the YPG as the Syrian affiliate of the Kurdistan Workers' Party and an existential threat to Turkish internal and border security.

Russia almost certainly will maintain a long-term military and economic presence in Syria, affording it access to natural resources and continued use and expansion of its military presence, which enables its regional power projection capabilities. Moscow seeks to normalize relations between the international community and Damascus with the goal of encouraging outside investment and reconstruction efforts while mitigating the impact of U.S. sanctions on the Asad regime.

Iran remains committed to securing its strategic interests in Syria, including ensuring the stability of the Asad regime and preserving access to Levant-based partners and proxies, particularly Hizballah.

Hizballah's primary objectives in Syria are to maintain security along the Lebanon-Syria border, stage for a potential conflict with Israel, and preserve resupply nodes from Iran. Iranian-backed forces remain critical-force multipliers for proregime operations across Syria and for holding territory in the east. Iranian officials also intend to wield influence in postconflict Syria, particularly through reconstruction contracts and a permanent Iranian military presence.

Iraq

Iraq held early national elections in October 2021 and is currently going through the government formation process, which may take months. The Sadrists, led by Shia cleric Muqtada al-Sadr, are the largest political bloc—winning roughly 70 of the 329 seats in the Council of Representatives—and have sought to lead the government's formation process. However, as of early April, Sadr announced he was stepping back from government formation negotiations until after Ramadan. The Sadrist platform emphasizes Iraqi sovereignty and is focused heavily on removing foreign actors, reducing other Shia militias' domestic influence, diversifying foreign partnerships, and normalizing relations with the Arab world. Iran-backed Shia political parties performed poorly in the October 2021 elections and are seeking to retain their influence in Iraq's government by negotiating a power-sharing agreement with Sadr, who has stated his intention to form a majoritarian government that probably would exclude at least some Iran-backed parties. Since the election results were ratified in December, the Iran-backed political parties have sought to delay progress on government formation to provide additional time for negotiations. Iran-backed parties led protests against the election results from October to December 2021, which sparked a deadly clash with Iraqi security forces and led to an Iranian-backed militia using quadcopters to attack the prime minister's residence in the International Zone in early November 2021. The threat to U.S. and coalition forces from Iran-backed Shia militias remains high as militias continue to demand the withdrawal of U.S. forces from Iraq. In 2021, Shia militias began using one-way-attack UAVs

and armed quadcopters to target U.S., U.S. partner nation, and Iraqi government interests, demonstrating their capability and intent to employ advanced Iran-provided weapons. Shia militants considered 31 December 2021 to be a deadline for the withdrawal of U.S. troops and conducted seven UAV and indirect fire attacks in early January before pausing operations to focus on government formation. Iraqi militia leaders have publicly pointed to the U.S. withdrawal from Afghanistan as evidence that regular attacks against U.S. forces will catalyze a U.S. departure.

Iraqi security forces (ISF) probably will maintain counter-ISIS operations absent coalition support for at least 1 year, although coordination among the various ISF elements will be inconsistent, judging by the operations undertaken during this year. Throughout 2021, the ISF has demonstrated its ability to conduct effective counter-ISIS operations independently, but it still seeks support from coalition forces when its own capabilities are insufficient. In late 2021, the Kurdish Ministry of Peshmerga and the Iraqi Army continued plans to form and deploy two joint Iraqi-Peshmerga brigades to eliminate ISIS from the disputed areas near the Iraqi Kurdistan Region (IKR).

Finally, the Kurdistan Regional Government (KRG) almost certainly will continue to experience several systemic weaknesses, including Kurdish dynastic rule, challenges paying government salaries, and a bifurcated and partisan system of military C2. The KRG faces external security threats from Iran-backed militias and from ISIS as well as ongoing Turkish and Iranian strikes targeting opposition groups in the IKR. Since early 2021, the Kurdistan Democratic Party has accused Iran-backed Shia militias of carrying out several UAV and rocket attacks in the IKR, primarily near Erbil International Airport. Separately, last year, the second largest Kurdish party, the Patriotic Union of Kurdistan, went through a leadership struggle that risked armed conflicts between factions.

ISIS in Iraq and Syria

In Iraq, ISIS maintained a steady pace of attacks during 2021, although at a slightly lower level than the year before. Coalition and Iraqi counterterrorism operations inflicted losses on several of the group's key leaders in Iraq, but its basic C2 structure remains intact. ISIS probably benefited from Shia militia attacks during the past year that forced the coalition to prioritize force protection, intermittently disrupting counter-ISIS operations. As in years past, ISIS has operated most freely in north-central Iraq where the mountainous terrain impedes effective counterterrorism operations by the ISF. Over the past year, ISIS has shown limited ability to conduct occasional high-profile attacks in Baghdad and been challenged to sustain such attacks. ISIS also has made targeted efforts to foment sectarian tension in Sunni-Shia communities, which the group believes will increase its popular support among Sunnis. Still, the group enjoys little overt popular support and relies mainly on coercion to obtain money, supplies, and access to populated areas.

In Syria, ISIS continues to operate as a clandestine insurgency with most of the group's activities and attacks occurring in the largely rural areas of central Syria, consisting of rudimentary hit-and-run style attacks on static checkpoints and frequently traversed highways. It remains capable of conducting sporadic, high-casualty attacks despite reduced attack levels this year, probably resulting from consistent counterterrorism operations from the U.S.-backed SDF, pro-regime forces, and rival extremist groups. To increase its ranks, ISIS has focused its efforts on smuggling ISIS-affiliated families from displaced person camps in northern Syria and freeing ISIS prisoners from SDF-run detention facilities. On 20 January, ISIS attacked Al-Hasakah detention facility and freed an undetermined number of its members, underscoring the importance the organization places on rebuilding its capabilities.

Yemen

In Yemen, the Huthis suffered military setbacks following UAE-backed Giants Brigades offensives in January that pushed Huthi frontlines back in Shabwah and southern Marib governorates. These operations prompted the Huthis to respond with a series of high-profile missile and UAV strikes on the UAE, the first since 2018. On 2 April, the Republic of Yemen Government and the Huthis agreed to a U.N. brokered truce, however as of late April, both sides were engaged in low-level operations in Marib governorate, highlighting the fragility of the truce and uncertainty in a more permanent ceasefire. Separately, the creation of the PLC on 7 April has sought to improve coordination and consolidate authority among the different factions in the anti-Huthi coalition. However, internal divisions, competing interests, and persistent humanitarian and economic issues will continue to weaken Saudi-led coalition cohesion.

Lebanon

Lebanon's economic and internal security crises very likely will worsen during the next year. Beirut has been unable to manage its sharply declining economy, sustain critical services, or address its underlying governance problems, which is eroding government legitimacy and driving increased crime and violence. Lebanese Armed Forces and other security forces have experienced a 90-percent reduction in the U.S. dollar value of their budgets, which has limited their ability to respond to security incidents, including increased sectarian violence. Hizballah has publicly blamed the economic crisis in Lebanon on U.S. sanctions, which it described as a "siege" against the country. It is watching for threats from domestic rivals, Israel, or the United States and is preparing to respond if its core interests are threatened. Ahead of elections, scheduled for 15 May, Hizballah is trying to maintain the political supremacy of its coalition in parliament while avoiding being drawn into sectarian violence with political rivals. Politicians probably

will spend months negotiating to form the new cabinet after elections, judging from past elections, which will limit the government's ability to enact the reforms needed to unlock international aid.

Egypt

Egypt remains focused on Ethiopia's progress toward the development and filling of the Grand Ethiopian Renaissance Dam (GERD), which Cairo views as an existential threat, as it depends on the Nile for approximately 97-percent of its water resources. Egypt will closely monitor the GERD's construction and continue to call upon the international community to intervene and secure a legally binding agreement for filling and operating the dam ahead of the next round of filling in summer 2022. Egypt has maintained its position for the use of diplomacy to settle the GERD dispute and will refrain from addressing the conflict in Ethiopia to preserve Cairo's good neighbor policy. In 2021, foreign terrorist organizations continued to conduct attacks in Egypt, and they almost certainly will remain active in 2022. Although attacks have decreased from the past 2 years, in 2022 terrorist attacks in Egypt have been concentrated in North Sinai, where the Egyptian Armed Forces are engaged in counterterrorism operations against ISIS-Sinai.

SOUTH ASIA

The U.S. retrograde from Afghanistan will have security reverberations globally, particularly in South Asia, as states seek to recalibrate relations, violent extremist organizations capitalize on reduced U.S. counterterrorism pressure, and the Taliban attracts U.S. adversaries as diplomatic partners. Meanwhile, the Taliban will struggle to avert a humanitarian catastrophe brought on by multiple simultaneous crises, including ongoing economic collapse, mass-scale displacement, severe drought, and a food crisis that puts 23 million Afghans at risk of extreme hunger or famine, according to the United Nations.

Afghanistan

Since capturing Kabul on 15 August, the Taliban has announced the formation of ministries and appointments to senior leadership positions. The Taliban's so-called caretaker cabinet comprises over 50 exclusively male and mostly-Taliban military officials, a small number of religious scholars, and non-Taliban members who were not part of the previous Afghan government. The Taliban is seeking the return of skilled Afghans to help with technical aspects of running the government. Despite public claims of amnesty for all Afghans, the Taliban has committed small-scale reprisal killings, violence, and intimidation against former Afghan National Defense and Security Forces (ANDSF) members and former Afghan government employees; however, we assess the reprisals are limited to the local level and not directed by Taliban senior leadership. Limited infighting at senior levels has emerged over power-sharing arrangements, but the Taliban likely will not fracture in the coming year.

The Taliban claims to be exercising oversight over foreign fighters and some VEO members in Afghanistan, primarily through its intelligence apparatus and activity restrictions that include living in areas approved by the Taliban and seeking permission to travel. The Taliban is opposed to ISIS-K and has targeted and arrested ISIS-K members believed responsible for attacks—although the Taliban has not been able to stop ISIS-K operational planning to prevent attacks. The Taliban seeks to portray that it is capable of delivering on counterterrorism assurances and providing nationwide security and likely will downplay the threat of ISIS-K in Afghanistan. During the next year, ISIS-K will focus attacks on sectarian, the Taliban, and infrastructure targets to destabilize the Taliban and expand its operations throughout Afghanistan.

The Taliban is pursuing closer relationships with regional states, including Russia, China, Uzbekistan, and Iran, but it probably will continue to prioritize independence over obtaining international recognition and aid. In October, Acting Deputy Prime Minister Mullah Abdul Ghani Berader met with Chinese

Foreign Minister Wang Yi to discuss humanitarian aid, sanctions relief, and China's security concerns. As of November, the Taliban had secured its removal from Russia's list of terrorist organizations and reached agreements with Iran and Pakistan to expand their economic and political relationships. In response to recently perceived threats from Tajikistan's support for the anti-Taliban resistance and other perceived interference the Taliban deployed forces to Afghanistan's northern border.

Our adversaries are seeking to capitalize on the U.S. withdrawal from Afghanistan through actions that attempt to erode U.S. credibility in the world. For example, immediately following the U.S. withdrawal from Afghanistan, Moscow amplified its messaging that the retrograde was a failure and that the United States is an unreliable partner and a declining power. Russia has used this moment to improve its regional position by claiming to enhance the capabilities of its bases in Kyrgyzstan and Tajikistan, holding regional exercises, and increasing its engagements with longstanding partners such as India. Similarly, Chinese officials and state media outlets used the U.S. withdrawal from Afghanistan as an opportunity to portray the United States as an unreliable partner and declining power since August. Tehran views the U.S. withdrawal as an opportunity to expand its influence in Afghanistan, but is also wary that instability could cause additional refugee flows into Iran and increase risks to Afghan minority communities it supports. Tehran is engaging with the Taliban to secure Iran's interests, which include expanding trade, securing the Iran-Afghan border, managing refugees, and countering ISIS-K.

Regional Security Impacts

As of late October, the Taliban was sending fighters, including specialized units, to secure Afghanistan's borders, and had met with Turkmenistan over increasing their respective border security efforts. As of December, Iran had hosted an additional 300,000 Afghan refugees since the Taliban takeover; combined, Pakistan and Iran host approximately 2.3 million Afghan refugees, most of whom arrived before 2021. In mid-November, India, Iran, Kyrgyzstan, Turkmenistan, Tajikistan, Kazakhstan,

Uzbekistan, and Russia met to discuss growing concerns about Afghanistan, border security and a possible refugee crisis. In October and November, Russia led CSTO exercises in Tajikistan along Dushanbe's border with Afghanistan, and in November, Kazakhstan and Uzbekistan participated in joint military exercises along Uzbekistan's border with Afghanistan.

Taliban Forces

As of November, Taliban fighters were using weapons, vehicles, and equipment left by former ANDSF units, including UH-60 and Mi-17 helicopters, and have demonstrated the capability to conduct ground operations and move troops with their very nascent air force capabilities. The Taliban has begun to professionalize its fighting forces, but there is almost no chance it will achieve a professional force within its 2-year goal.

In 2022, the Taliban likely will maintain control of Afghanistan through the use of force. The Taliban is likely to be focused on suppressing any internal unrest to secure its survival.

Pakistan

On 11 April, Shehbaz Sharif was elected as Pakistan's new prime minister after a no-confidence vote removed Prime Minister Imran Khan. In his first speech as prime minister, Sharif called for rebuilding the U.S.-Pakistan relationship and denounced Khan's conspiracy theory asserting that the U.S. orchestrated his removal. Sharif probably will give priority to addressing Pakistan's economy while deferring to the Army on security issues for at least the first 6 months of his term. Khan's removal almost certainly portends a period of political instability as the Sharif government transitions and as Pakistan prepares for elections due no later than August 2023. Pakistan currently views instability in Afghanistan as its most pressing concern and will likely prioritize preventing spillover into Pakistan in the next year and beyond. Although Pakistan has not formally recognized the Taliban, Islamabad seeks to maintain positive relations with them, and it is providing humanitarian assistance, international outreach, and

technical support to achieve this. Pakistan views the Taliban as a strategic asset, useful for securing its interests in Afghanistan. However, Islamabad's ability to shape Taliban behavior will probably diminish because the group no longer relies on its safehavens in Pakistan.

Pakistan remains vulnerable to attacks by a variety of anti-Pakistan militant groups, including Tehrik-e-Taliban Pakistan (TTP), ISIS-K, and Baloch separatists. Pakistan's military continues to execute operations against these militant groups and remains concerned about their ability to conduct small-scale attacks and occasional high-profile attacks inside the country. Since 2020, TTP has consolidated factions and increased its attack tempo. In November 2021, TTP agreed to a 1 month cease-fire with Pakistan, but announced it would not extend it further due to perceived Pakistani violations of the terms of the agreement. Fighting resumed in early December 2021, with dozens of deadly attacks, and probably will persist.

Islamabad's tense relationship with India will continue to drive Pakistan's defense policy. Pakistan's relations with India remain strained since a high-profile anti-India militant attack in the Union Territory of Kashmir in February 2019. New Delhi's August 2019 revocation of Kashmir's semiautonomous status added to these tensions. However, cross-border violence has decreased since February 2021, when both countries recommitted to a cease-fire. India and Pakistan have not made meaningful progress toward a long-lasting diplomatic solution since then.

Pakistan perceives nuclear weapons as key to its national survival, given India's nuclear arsenal and conventional force superiority. Pakistan very likely will continue to modernize and expand its nuclear capabilities by conducting training with its deployed weapons and developing new delivery systems in 2022.

China is Pakistan's primary source of military, economic, and diplomatic support. Islamabad has publicly supported China on its handling of the COVID-19 pandemic, treatment of Uyghur Muslims, and other

regional security issues. China is Pakistan's most important defense partner and largest supplier of military equipment. China has also invested an estimated \$46 billion in the China-Pakistan Economic Corridor—a series of infrastructure projects constituting the flagship of China's BRI.

During the next year, Pakistan is very likely to continue its focus on securing its interests in Afghanistan, while also seeking to expand its relationship with Beijing. Tensions with India probably will remain elevated.

India

Throughout 2021, New Delhi continued to implement foreign policy aimed at demonstrating India's role as a leading power and net provider of security in the Indian Ocean region. India seeks to promote prosperity and ensure stability in the Indo-Pacific region by seeking strategic partnerships to build influence through bilateral and multilateral mechanisms such as the Quadrilateral Security Dialogue and the Association of Southeast Asian Nations. New Delhi seeks to deepen intelligence and operational cooperation on cybersecurity, protect critical information infrastructure, prevent adversary manipulation of public opinion, and to create standards and norms that protect and secure data governance. Following the collapse of the Afghan government, New Delhi is increasingly concerned about potential attacks against India—empowered by a Taliban-controlled Afghanistan—by terrorist groups such as Lashkar-e-Tayyiba and Jaish-e-Mohammed. The evacuation of Indian personnel from Afghanistan degraded its resources to monitor potential threats and cultivate influence over regional stability.

Despite recommitting to the 2003 cease-fire, India remains postured to respond to perceived militant threats, and it has continued counterterrorism operations inside Indian-administered Kashmir.

Occasional skirmishes between Indian and Pakistani troops will continue, and a high-profile attack in India by Pakistan-based terrorists risks an Indian military response.

Chinese-Indian relations remain strained following the fatal clashes in summer 2020 between their respective forces along the Western sector of the disputed LAC. During 2021, both sides held multiple rounds of high-level diplomatic and military talks that resulted in a mutual pullback of forces from several standoff points. However, both sides maintain close to 50,000 troops along with artillery, tanks, and multiple rocket launchers, and both are building infrastructure along the LAC.

New Delhi is pursuing an extensive military modernization effort encompassing air, ground, naval, and strategic nuclear forces with an emphasis on domestic defense production. India is taking steps to establish Integrated Theater Commands that will improve its joint capability among its three military services. Since 2019, Prime Minister Narendra Modi has given priority to strengthening the country's economy by expanding its domestic defense industry, including establishing a negative import list to curtail defense purchases from foreign suppliers. India's longstanding defense relationship with Russia remains strong, holding their first "2+2" format talks in December—a joint foreign and defense ministerial that India previously only held with the United States, Japan, and Australia. India has maintained a neutral stance on Russia's invasion of Ukraine and continues to call for peace.

As of October 2021, India's military was seeking to procure advanced surveillance systems to better safeguard India's land and sea borders and boost its offensive and defensive cyber capabilities. In December, India received its initial delivery of the Russian S-400 air defense system, and it intends to operate the system to defend against Pakistani and Chinese threats by June 2022. India continued to develop its own hypersonic, ballistic, cruise, and air defense missile capabilities, conducting multiple tests in 2021. India has a growing number of satellites in orbit, and it is expanding its use of space assets, likely pursuing offensive space capabilities.

Burma

Since the February 2021 military coup, Burma remained in a state of emergency and growing civil unrest, which we expect to continue this year. The military junta arrested senior National League for Democracy leaders President Win Myint and State Counselor Aung San Suu Kyi, who currently face convictions on charges of alleged corruption, bribery, and election fraud to bar them from future political office. Since spring 2021, civil disobedience protests have evolved into an increasingly aggressive, multifront, armed resistance of rural and urban militias who seek the end of military rule. These groups, in varying levels of collaboration with the popular shadow government, join numerous ethnic armed groups operating within Burma, adding complexity to decades of internal conflicts. Beijing has visibly embraced the regime, offering some support in international organizations and resuming infrastructure projects it had previously pursued with the civilian-led government.

The military regime almost certainly will manipulate conditions to ensure it remains in power to prevent a return to civilian-led, democratically elected government in prospective August 2023 elections. In the next year, Burma's internal conflicts between the regime, resistance factions, and ethnic armed groups likely will continue as the regime and the armed civilian resistance remain entrenched and are unwilling to negotiate.

AFRICA

Many African nations continue to struggle with internal and external pressures driven by political instability, food instability, economic downturns, and expanding domestic insecurity. Internal and regional conflicts expanded in several African regions and countries in 2021—most notably in East Africa. Terrorism remains an active destabilizing influence with al-Qa'ida-affiliated terrorist groups and ISIS gaining influence and in many cases territorial control in the Sahel, Mozambique, Nigeria, Somalia, and elsewhere on the continent.

African states have engaged with a variety of foreign actors, including China and Russia, largely out of a pragmatic desire to maximize assistance and diversify foreign support. African leaders' security challenges provide China and Russia opportunities to expand their influence across the continent. China is the largest trading partner of all African states combined, and economic downturns throughout the continent in 2021 drove increased African receptivity to Chinese political, security, and economic engagement to offset budget shortfalls and deliver tangible infrastructure and economic results. Growing security cooperation between China and African states is rooted in requirements for security assistance to counter various threats such as extremists, pirates, illicit traffickers, and state and nonstate adversaries. Many African nations are also receptive to Russia's outreach as a security partner and tend to purchase Russian arms because they are relatively inexpensive, arrive quickly, and are not subject to extensive vetting and end-use monitoring. Since 2014, Russia has signed at least 19 military cooperation deals in Sub-Saharan Africa for training and cooperation in counterterrorism, peacekeeping, and counterpiracy operations. In addition, some African governments turn to Russian private military companies to receive training for their forces, to augment security operations, or to enhance their security. African responses to Russia's invasion of Ukraine vary on a country-by-country basis, but countries such as the Central African Republic and Mali remain willing to work with Russia and Russian private military companies.

North Africa

Libya's rival factions have remained deadlocked in central Libya since June 2020, when the eastern-based Libyan National Army (LNA) retreated from its military campaign to capture Tripoli. A cease-fire between the LNA and Tripoli-based Government of National Unity (GNU), codified in October 2020, remains in place. The LNA and GNU have made progress toward easing tensions through the Joint Military Commission, which includes five military representatives from each side, but they have not made significant progress toward achieving military unification or removing foreign military forces in the

country. The presidential election scheduled for 24 December 2021 and parliamentary elections planned for February 2022 were postponed indefinitely, primarily because the presidential candidates included controversial Libyans in leadership roles or with ties to the former Qadhafi regime. In February and March, the eastern Libya-based parliament purported to elect the leadership of a new government that aims to replace the GNU.

Turkey has advocated for free, fair, and credible elections in Libya. Ankara maintains Turkish forces and Syrian proxies in Libya and says it is in favor of a measured withdrawal of its proxies but is seeking Russian private military company Vagner to withdraw first. Ankara has also resisted calls for Turkish forces to withdraw alongside other foreign forces because it maintains the Turkish presence falls under bilateral agreements with the legitimate government of Libya. Moscow seeks to secure arms sales, oil agreements, and military access by building a defense relationship with Libya. Since 2019, Vagner has supported the LNA, with aircraft and air defense equipment provided by the Russian Defense Ministry. Moscow is balancing its military support to the LNA with diplomatic outreach to the GNU, probably to secure Russian interests regardless of the future structure of the Libyan state.

Since November 2020, Morocco's military has been engaged in low-intensity fighting in Western Sahara against Algeria-backed Polisario insurgents, who demand a referendum on the territory's status overseen by the United Nations Mission for the Referendum in Western Sahara. Algeria cut diplomatic relations with Morocco in August 2021 and tensions have since increased. In early November a Moroccan UAV strike killed three Algerians, and shortly thereafter, Morocco signed a security cooperation agreement with Israel.

In July 2021, Tunisian President Kais Saied invoked an emergency constitutional measure to suspend parliament and dismiss the prime minister. Saied defended this measure as necessary to end the political standoff and address socioeconomic concerns. He appointed a prime minister in October,

dissolved parliament in March, and plans to hold a referendum on a new constitution in July and parliamentary elections in December 2022.

West Africa and the Sahel

Terrorist threats in West Africa continue to expand throughout the Sahel and Lake Chad Basin as security forces struggle to make counterterrorism gains while addressing competing sources of internal political and social instability. The January 2022 coup d'état in Burkina Faso is the latest in a series of destabilizing events in the region and underscores the tumultuous and fragile state of some West Africa governments, which are already struggling to adapt to increasing threats. The al-Qa'ida-affiliated group Jamaat Nusrat al-Islam wal-Muslimin continues to increase attacks in Sahelian states, especially Burkina Faso and Mali, and to threaten littoral countries, while ISIS-Sahel is focused on rebuilding itself in Niger after leadership losses and setbacks in 2020 and 2021. ISIS-West Africa mostly defeated Boko Haram in 2021, incorporating many former Boko Haram fighters in the process and allowing the group to expand its area of influence and continue attacks on regional security forces in the Lake Chad Basin.

In February 2022, France announced its intent to withdraw its forces from Mali and reposition its Sahel counterterrorism mission to Niger. During the past year, regional security efforts, such as the G5 Sahel Joint Force and the Multinational Joint Task Force in the Lake Chad Basin, have made little progress curbing terrorist activity and expansion because of resource constraints and operational shortcomings. These shortcomings and the longstanding instability in the region present opportunities for China and Russia to increase influence through expanded foreign military sales, counterterrorism training, and other security assistance initiatives. In December 2021, Vagner personnel deployed to Mali—ostensibly at the behest of Mali's transitional government to conduct security operations. This presence has the potential to disrupt ongoing counterterrorism and stabilization efforts in the region.

East Africa

During the past year, East Africa has experienced heightened instability because of the conflict in Ethiopia, a military takeover in Sudan, political tensions in Somalia, and a sustained terrorist threat from al-Shabaab and ISIS groups. Conflict in Ethiopia continues. In late 2021, Tigrayan forces advanced toward Addis Ababa, threatening the federal government, worsening a humanitarian crisis, and elevating the risk of wider ethnic violence, but have since retreated. The crisis threatens to spill over into neighboring countries as Ethiopia's longstanding tensions with Egypt and Sudan over the GERD, Eritrea's military involvement in the Tigray conflict, and an unresolved border dispute between Ethiopia and Sudan present potential flashpoints. In Sudan, a military takeover of the government in October 2021 disrupted political progress the country had made following the establishment of a civilian-led transitional government and rescission by the United States of its designation as a State Sponsor of Terror. Postponed presidential elections in Somalia have raised political tensions in the country, which at times has led to fighting between armed groups in Mogadishu and distracted from the counterterrorism fight against al-Shabaab.

Al-Shabaab remains the primary terrorist threat in the region, and the group continues to exploit the security vacuum caused by undergovernance, internal political tensions, and the slow progress of establishing Somali security forces. Al-Shabaab operates as a shadow government in the areas it controls, while continuing to attack security forces and civilians, and deliberately targeting U.S. and Western personnel and interests in the region. The much smaller ISIS-Somalia primarily operates from the Golis Mountains area of Puntland, using IEDs and assassinations to target Somali and Puntland government and security forces and civilian targets.

Central and Southern Africa

The Central Africa region faced heightened violence and an expanding regional terrorist threat during the past year, which jeopardizes fragile humanitarian, economic, and political situations. In the Central

African Republic, government forces and Russian private military contractors regularly commit human rights violations and abuses while fighting antigovernment armed groups. In the Democratic Republic of the Congo (DRC), ISIS-DRC's increasing violence against government and UN security forces and civilians is driving a humanitarian crisis and risks spreading primarily into Uganda, which experienced five ISIS-DRC attacks between October and November 2021.

In 2021, most countries in southern Africa experienced economic turmoil because of the effects of the COVID-19 pandemic, which exacerbated instability and constrained counterterrorism capacity. In Mozambique, ISIS-Mozambique expanded operations, conducting deadly attacks and temporarily taking terrain that threatened Western economic interests in the oil-rich province of Cabo Delgado. Maputo requested Rwanda and the Southern African Development Community deploy security forces in July and the European Union sent a training mission in November. In South Africa, ISIS elements have used the country as a conduit for illicit financial transactions. In July, South Africa deployed 25,000 troops—the most deployed domestically since 1994—in response to unrest because of inequality and the jailing of former President Jacob Zuma on corruption charges. In Zimbabwe, the political system and economy grew more fragile, as President Emmerson Dambudzo Mnangagwa failed to implement promised reforms.

LATIN AMERICA

Latin American countries continue to face a number of stressors that stretch their security forces' capabilities. These stressors include COVID-19 issues, contracting economies, expanding transnational organized criminal networks, rising violent crime rates, and food insecurity, all of which contribute to increased levels of migration and instability. Cuba, Venezuela, and Nicaragua maintain autocratic structures and reject calls for democratic participation in governance. The resulting instability has enabled China and Russia to make inroads into the region through offers of medical, economic, and military assistance. Beijing and Moscow probably will seek to expand this influence by continuing offers

of aid and support to address the region's myriad issues while taking advantage of corruption and nepotism to expand their influence in governing structures.

Venezuela

Disputed President Nicolas Maduro's regime continues its firm grip on all domestic institutions—including the military—despite a 15-percent approval rating and an economy that has shrunk 75-percent during his tenure. The opposition has been unable to organize a large-scale antiregime protest since 2019. Opposition political parties are considering new leadership after failing to unseat the regime in 3 years. Venezuelan military leaders remain steadfast in their support for Maduro with active duty or retired officers holding a third of his cabinet positions. Security forces, however, almost certainly will struggle to confront various internal threats such as urban gangs and foreign illegal armed groups, including elements of the Revolutionary Armed Forces of Colombia dissidents. Venezuela's worsening humanitarian conditions likely will spur continued migration from the country. Since 2014, more than 5 million people have left Venezuela and the UN projects an additional 3 million will leave in the next year.

Cuba

The Cuban regime uses its security forces and cyber capabilities to quell dissent, while relying on foreign partnerships—including those with China and Russia—for military and economic support. Havana is very likely receptive to increased political, economic, and military cooperation with Moscow and Beijing because of concerns about perceived threats to the Miguel Diaz-Canel administration. Russia is Cuba's military partner of choice and Havana has accepted loans from Moscow to maintain Soviet-era military equipment. Havana's relations with Beijing are mostly economic, with some bilateral professional exchanges and military training support.

Transnational Crime

Criminal networks will continue to challenge Latin American governance. The COVID-19 pandemic exacerbated security challenges as criminal actors exploited overburdened security forces and soaring

unemployment. Despite short-term operational disruptions caused by the pandemic, criminal groups have adjusted and been able to resume near pre-pandemic operational levels. Chinese, Russian, and Iranian actors, some of whom are government-sponsored, routinely conduct illicit financial activities in the region. Mexican transnational criminal organizations (TCOs) produce and traffic illicit drugs that dominate the U.S. market. From October 2019 through September 2021, fentanyl seizures by volume at the U.S. Southwest Border increased more than 130-percent, surpassing heroin for the first time. In 2021, nearly 20 million counterfeit pills were seized in the United States, an increase of over 800-percent since 2019. Colombian-origin cocaine supplies most of the U.S. market, primarily trafficked by Mexican TCOs. Bogota is almost certainly going to try to build on its October 2021 capture of Gulf Clan leader Dario Antonio Usuga, the country's most wanted drug trafficker, as a means to reduce drug flows. Violence from longstanding disputes between rival organizations over drug trafficking routes and other illicit revenue sources will continue to challenge Colombian security forces.

Refugees and Immigration

Fragile economic, security, political, and environmental conditions will remain the enduring factors driving regional migration. A mix of military, paramilitary and police forces—especially those in Mexico and northern Central America—have added personnel to their ranks during the past year to address associated security needs. Since January, other factors, such as increasing xenophobia throughout the region against migrants, loosened COVID-19–related border and movement restrictions, perceptions of a more permissive U.S. immigration policy, and better job opportunities have contributed to above-average migration levels. From October 2020 to October 2021, there were more than 1.73 million migrants encountered at the southwest U.S. Border, a 278-percent increase from 2020 and a 77-percent increase from 2019. Citizens from El Salvador, Guatemala, and Honduras experience severe poverty, insecurity, worsening food security, and some of the highest violent crime rates in the world. Since January 2020, migration from countries other than Mexico and northern Central America—largely from

Brazil, Cuba, Ecuador, Haiti, Nicaragua, and Venezuela—has contributed to higher migrant encounter levels, a trend that probably will continue through 2022.

Chinese and Russian Presence

During the past year, China modestly increased its security presence and influence in the region. Chinese technology firms dominate the Safe City market in Latin America, and China also enhanced its ties with countries in the region by sending COVID-19 vaccines and medical supplies. Many regional militaries still view the United States as the security partner of choice, but they are receptive to increasing Chinese engagement—especially those receiving donated Chinese equipment and free military education. Russia values its security engagement and influence in Latin America with its historical partners—Cuba, Nicaragua, and Venezuela—while maintaining broad regional outreach through bilateral relationships and international fora. Russia has delivered humanitarian aid to Cuba and supports Cuban maintenance of its Soviet-era military equipment. Russian President Vladimir Putin has overseen the deepening of security ties with Managua, and several Nicaraguan laws passed prior to the November elections appear to be modeled after Russian statutes that have been used to suppress dissent. In January, Russia’s deputy foreign minister suggested that Russia was open to deploying military infrastructure to Venezuela or Cuba amid tensions with Ukraine. Other Russian officials claimed that Venezuela was prepared to provide Moscow unspecified military-technical assistance in the event Russian-U.S. relations were to deteriorate.

TRANSNATIONAL THREATS

CYBERSPACE

Cyberspace has emerged as an inseparable and indispensable element of modern great-power competition. What nations once achieved through traditional tools of national power, such as diplomacy, informational means, military force, and economic pressure, can now be gained through malicious software programs and hacking tools. Adversaries are probing and exploiting our military and

intelligence networks, conducting sustained targeting of social media to manipulate personnel and monitor movement of U.S. forces, and attempting to compromise the U.S. defense-industrial networks to steal weapon systems technology, while criminals are conducting cyberattacks against U.S. critical infrastructure. Russia will probably use artificial intelligence to develop autonomous cyber capabilities to optimize offensive cyberoperations and automate social media operations designed to exacerbate social divides. The 2021 ransomware attacks by Russian cybercriminals, including several that targeted the U.S. oil and food industry, exemplifies the potential danger to U.S. critical infrastructure. Our adversaries undoubtedly noted the impact on U.S. oil production and distribution and the ensuing psychological effects they had on the U.S. public. Additionally, our adversaries have taken note of Russian government and non-state cyberactors conducting destructive and disruptive cyberattacks against Ukrainian critical infrastructure and communications with some—albeit limited—success during the invasion of Ukraine. Ukrainian and non-state cyberactors have also conducted cyberattacks and information operations against Russia, revealing how nations with powerful militaries can remain vulnerable to cyberattacks from smaller adversaries. China has developed a cyber capability against U.S. critical oil and natural energy infrastructure, and is concentrating on improving its information systems and cyberwarfare capabilities by leveraging emerging technologies such as big data, AI, and 5G telecommunications. Effective integration of data obtained through intrusions of U.S. information systems and networks and those of its allies and partners could provide China with timely insights that yield intelligence and military advantage. The PLA's emphasis on an integrated approach to using advanced technologies in the cyber domain could improve its ability to conduct cyberspace operations in the near term. The PLA believes modern warfare—as a confrontation between complex systems—demands the ability to implement joint operations across all warfare domains, including cyberspace. China and Russia also have agreements to increase cyber capabilities of other countries creating the potential for new threat platforms in the future.

SPACE AND COUNTERSPACE

China and Russia are intent on undercutting U.S. global space leadership, and Iran and North Korea will continue using EW to deny or degrade U.S. space-based communications and navigation.

China's rapidly growing space program is second only to the United States in numbers of operational satellites, both civilian and military. Beijing is strengthening its science and technology sector and international relationships, and it is modernizing its military through advances in space systems and space-related R&D. China seeks space superiority through its steadily advancing space and counterspace programs to support its military objectives and overall national security goals. China publicly advocates for the peaceful use of space and for agreements at the United Nations on the nonweaponization of space while it continues to improve its counterspace weapons. In addition to improvements in counterspace technology, Beijing has enacted military reforms to integrate cyberspace, space, and EW into joint military operations. China's 2007 antisatellite (ASAT) missile test destroyed a defunct weather satellite, indicating the PLA's ability to target low Earth orbit (LEO) and potentially even geosynchronous Earth orbit satellites. China is developing other sophisticated space-based capabilities like the Shijian-17—a satellite with robotic arm technology that is potentially capable of grappling other satellites—and multiple ground-based laser systems that are capable of blinding or damaging satellites. China very likely is also developing a variety of satellite jammers to disrupt targeted satellites. Since at least 2006, China's government-affiliated academic community began investigating aspects associated with space-based kinetic weapons—a class of weapon used to attack ground, sea, or air targets from orbit.

Russia derives a considerable amount of national pride as a longstanding space power and considers itself deserving of international leadership on any space issue. Moscow considers U.S. dependency on space to enable power projection as a vulnerability it can exploit during a conflict, and it has concluded that gaining and maintaining supremacy in space has a decisive impact on the outcome of future conflicts. Russia also is developing and has fielded counterspace weapon systems—including several

ground-based lasers—that can deny, damage, and defeat U.S. space-based systems to reduce U.S. military effectiveness and control conflict escalation if deterrence fails. In November, Russia successfully launched a Nudol ASAT missile and destroyed a Soviet-era satellite—creating nearly 1,700 pieces of trackable debris and tens of thousands of pieces of lethal but nontrackable debris. This debris will endanger the spacecraft of all nations in LEO for years to come and may endanger the lives of astronauts and cosmonauts on the International Space Station and China's Tiangong space station.

North Korea and Iran have nascent space programs supporting civilian and military goals, with both nations experiencing limited success in placing earth-observation satellites into LEO using largely unreliable space launch vehicles. The development of space launch vehicles probably has a secondary purpose of testing ballistic missile technology under the guise of peaceful use of space as such testing produces data applicable to the development of long-range and multistage ballistic missiles, including ICBMs. In January 2021, North Korean state-owned media announced Pyongyang is conducting full-scale aerospace work, with Kim Jong Un claiming North Korea had designed a military reconnaissance satellite to launch in the near future. Iran has successfully launched two military satellites. In addition, Iran's Project 505 space program probably is an attempt to remedy prior launch failures by buying an imagery satellite system from Russia; however, this system is not yet in orbit.

North Korea and Iran recognize the value of military space, and they will attempt to deny adversary use of space during a conflict. Pyongyang has conducted GPS and communications jamming, and Tehran publicly acknowledges its capabilities to do the same—with Iran possibly contributing to the proliferation of jamming equipment. North Korean cyberactors have conducted numerous cyberoperations against foreign partner and U.S. Government networks, including against aerospace industry and space enterprises, which could enable North Korean weapon and space system development and procurement programs through technology theft.

NUCLEAR WEAPONS

The number of states with nuclear weapons has grown since the end of the Cold War, and countries with mature nuclear weapons programs are increasing the stockpile and/or the capabilities of weapons in their programs. All of these countries are modernizing their legacy stockpiles by incorporating advanced technologies to penetrate or avoid missile defense systems. Countries are also developing nuclear weapons with smaller yields, improved precision, and increased range for military or coercive use on the battlefield.

Russia and China probably will significantly expand their nuclear warhead stockpiles during the next decade. The anticipated expansion in Russia's stockpile is primarily driven by nonstrategic nuclear weapons growth. Russia probably has up to 2,000 nonstrategic nuclear warheads, in addition to approximately 1,450 deployed warheads on strategic systems covered by New START. Beijing accelerated its nuclear expansion. China will likely have about 1,000 deliverable nuclear warheads by 2030. Other nations such as Pakistan, North Korea, and India continue to advance their nuclear programs, although the programs are not as complex as in Russia and China.

Iran does not have a nuclear weapons program, but it is advancing its uranium enrichment program beyond prescribed JCPOA limits, shortening the time that Tehran would require to produce sufficient weapons-grade uranium for a single nuclear device—should Tehran decide to do so.

The proliferation of dual-use, WMD-applicable goods, knowledge, and technology will continue to present a direct threat to U.S. and allied interests by complicating U.S. force projection capabilities, countering Western missile defense systems, and improving adversarial targeting capabilities.

Specialized procurement networks acquire dual-use goods, materials, technologies, and expertise for WMD programs and delivery systems for countries of concern, such as China, Iran, North Korea,

Pakistan, and Russia. These networks remain resilient and adaptable in the face of a vast international framework of sanctions, export controls, and other prohibitions limiting the purchase or transfer of certain WMD-applicable goods to specific countries or entities. Such efforts directly support the advancement, development, expansion, and survivability of WMD capabilities around the world.

FOREIGN INTELLIGENCE

DoD faces an extremely sophisticated global foreign intelligence threat environment from an increasing number of state and nonstate actors that are becoming more complex and diverse and substantially threaten DoD personnel, information, operations, supply chains, technologies, and critical infrastructure. China, Russia, Iran, and North Korea compose the majority of these global threats, but the rapid development of globally available and affordable advanced technologies is accelerating the capabilities and numbers of state and nonstate actors posing intelligence threats to DoD interests. DoD and U.S. Government officials also continue to face reports of anomalous health incidents (AHIs)—often referred to in the press as Havana Syndrome—that are affecting the personal safety of officers and their families and U.S. Government missions. The IC has assessed that U.S. adversaries are not engaged in a sustained global campaign involving hundreds of incidents to harm or collect intelligence on U.S. personnel. We continue to investigate possible attribution for a subset of cases and analyze potential causal mechanisms. U.S. adversaries extensively use human intelligence and a wide variety of technical means to surveil DoD personnel and operations around the world. Their proliferation of some technologies—such as Safe City surveillance systems and facial recognition capabilities—can enable them to track and observe DoD personnel and activities, including in locations where U.S. adversaries do not maintain a physical presence.

U.S. adversaries have become adept at using multiple vectors to gain access to or manipulate the DoD supply chain to enable exploitation, sabotage, or subversion. These vectors include using foreign and U.S. laws and regulations to access proprietary or commercial data stored within national borders;

evading U.S. Government scrutiny by concealing companies' ties to foreign governments or intelligence services. U.S. adversaries also leverage third-party relationships among companies to conceal foreign entities' involvement in the supply chain and create opportunities for foreign intelligence entities to access or manipulate the DoD supply chain; and they exploit companies tied to foreign governments that pursue monopoly power in their industries to gain access to the DoD supply chain.

Russia, China, and Iran also use multiple avenues to collect on U.S. R&D of emerging and disruptive technologies, primarily to support their own domestic military R&D efforts, threatening to undermine the DoD's future advantages on global battlefields. In addition, U.S. adversaries use multiple methods to collect information on DoD critical infrastructure, which they almost certainly would target during a conflict to degrade DoD's ability to execute and sustain operations.

U.S. adversaries will use emerging technologies—such as AI, big data analytics, cloud computing, advanced unmanned and autonomous systems, Safe City surveillance systems, and wearable electronics—in ways that intend to substantially diminish U.S. advantage in multiple domains. The global proliferation of surveillance technologies, coupled with AI, will offer governments the ability to automate monitoring capabilities to surveil more people, more often. Deployment of 5G networking and Internet of Things advancements will further enable broad-based surveillance technologies, giving them the bandwidth and on-board analytic capabilities to quickly push greater amounts of higher quality sensor data.

ADVANCED TECHNOLOGY

Rapid technological advancement combined with a global society increasingly eager and willing to integrate new technologies into everyday life likely will drive the incorporation of technology into novel military capabilities faster than any other time in the modern era. With the exception of the United States, only China and Russia have the resources and strategic ambition to incorporate advanced

technologies throughout all domains and their forces intended for global deployment. Beijing and Moscow view the development of these technologies as a race in which leaders in a technical field could develop military capabilities faster than their adversaries do to gain the advantage.

China's science and technology (S&T) ecosystem is a multipronged, whole-of-government system that incorporates S&T development from both the commercial and military sectors. China's military-civil fusion strategy, which emphasizes the open sharing of S&T resources and transfer of technology between civilian and defense industries, blurs the distinction between these supply chains. The emergence of the civilian sector as a dominant player developing next generation technology very likely will continue, notably in fields where China has already reached peer or near-peer levels, such as AI, high-performance computing, quantum information sciences, and biotechnology. China aspires to be the world leader in emerging and disruptive technologies by 2035 to sustain its economic growth and develop military capabilities that outmatch those of the United States. Beijing's long-term strategy of rapid, indigenous S&T development of cutting-edge technology, combined with licit and illicit foreign technology acquisition, very likely has positioned China at the forefront of numerous scientific fields.

China's Brain Project is a state-sponsored initiative that seeks to enhance human-machine decisionmaking systems by combining computer-based AI and brain science. The PLA is pursuing related brain science research to enable warfighter enhancement through brain-computer interfaces, devices that directly connect the human brain to computers, and cognition enhancement research. PLA researchers pursue cognitive enhancement through use of pharmaceutical and brain stimulation technologies.

By contrast, Russia more narrowly focuses its research efforts on technologies to match, counter, or offset perceived advantages of the United States and other potential adversaries. Despite the Russian defense industry's massive size and Moscow's efforts to increase development of indigenous

capabilities, Russia is challenged both organizationally and technically to produce the high-tech subcomponents required for advanced weapons. These limitations likely stem from severe funding, resource, talent, and infrastructure constraints on the country's S&T sector, which will be further exacerbated by sanctions and export controls implemented following Russia's invasion of Ukraine.

CONCLUSION

The military environment is defined by rapid technological change, challenges from adversaries in every operating domain, and the impact on current readiness from the longest continuous stretch of armed conflict in our Nation's history. Defense Intelligence must focus on the entire spectrum of conflict and across all warfighting domains to detect and correctly characterize key foreign developments and inform our Defense decisionmakers with timely, relevant insight.