

STATEMENT OF
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AND
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BEFORE THE
SENATE ARMED SERVICES COMMITTEE
SUBCOMMITTEE ON READINESS AND MANAGEMENT SUPPORT
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Chairman Sullivan, Ranking Member Kaine, and distinguished members of the Subcommittee: I am honored to appear before you today and to serve as the Commander of U.S. Northern Command (USNORTHCOM) and North American Aerospace Defense Command (NORAD). I would like to begin by thanking the Subcommittee for your steadfast support of our commands' shared homeland defense mission and for the opportunity to discuss the significant challenges associated with operating in the Arctic.

USNORTHCOM and NORAD are driven by a single unyielding priority: defending the homeland. In the years following the Cold War, our nation enjoyed the benefits of military dominance as well as geographic barriers that kept our homeland beyond the reach of most conventional threats. Our power projection capabilities and technological overmatch allowed us to fight forward, focusing our energy on the conduct of operations overseas.

However, our key adversaries watched and learned, invested in capabilities to offset our strengths while exploiting our weaknesses, and have demonstrated patterns of behavior that indicate they currently have the capability, capacity, and intent to hold our homeland at significant risk below the threshold of nuclear war. Eroding military advantage is undermining our ability to detect threats, defeat attacks, and therefore deter aggression against the homeland. This is emboldening competitors and adversaries to challenge us at home, holding at risk our people, our critical infrastructure, and our ability to project power forward.

The threats facing the United States and Canada are real and significant. The Arctic is no longer a fortress wall, and our oceans are no longer protective moats; they are now avenues of approach for advanced conventional weapons and the platforms that carry them. Our adversaries' capability to directly attack the homeland has leapt forward, and they are engaged in overt, concerted efforts to weaken our national technological, economic, and strategic advantage. To

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address this reality, our two distinct but complementary commands are taking significant, vigorous steps to ensure our homeland defense enterprise is ready to deter, detect, and defeat threats now and well into the future.

Throughout 2019, Russia continued to expand its military infrastructure in the Arctic. Throughout the year, Russia lengthened existing runways and built new ones at multiple airfields in the high north. In September, Russia deployed a Bastion coastal defense cruise missile unit to the Chukotka Peninsula, opposite the Bering Sea from Alaska, for a first-ever training launch from that region. The missile successfully struck a sea-based target more than 200 kilometers away, according to the Russian Defense Ministry. When deployed to the Russian northeast, this system has the capability not only to control access to the Arctic through the Bering Strait, but also to strike land targets in parts of Alaska with little to no warning.

Like the Russians, China also continues to invest heavily in the Arctic, determined to exploit the region's economic and strategic potential as a self-proclaimed "near Arctic" nation. In the last few years, Chinese survey vessels have conducted several deployments to the Bering and Chukchi Seas, providing familiarity and experience that could eventually translate to Chinese naval operations in the region.

The Arctic is the new frontline of our homeland defense as it provides our adversaries with a direct avenue of approach to the homeland and is representative of the changing strategic environment in our area of responsibility. More consistently navigable waters, mounting demand for natural resources, and Russia's military buildup in the region make the Arctic an immediate challenge for USNORTHCOM, NORAD, our northern allies, and our neighboring geographic combatant commands, U.S. European Command and U.S. Indo-Pacific Command.

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By fielding advanced, long-range cruise missiles—to include land attack missiles capable of striking the United States and Canada from Russian territory—and expanding its military presence in the region, Russia has left us with no choice but to improve our homeland defense capability and capacity. In the meantime, China has taken a number of incremental steps toward expanding its own Arctic presence. In turn, USNORTHCOM and NORAD are strengthening the four pillars of our defenses in the high north: domain awareness, communications, infrastructure improvement, and sustainable presence in our own Arctic territory.

I want reiterate my thanks to the subcommittee for your constant support as USNORTHCOM and NORAD have met our homeland defense challenges in the Arctic head-on. There are no easy solutions to the challenges presented by the extreme climate, terrain, and distances inherent in Arctic operations. However, due in no small measure to your continued attention and advocacy for our commands' requirements, we have seen significant attention, expertise, and resources brought to bear on the homeland defense mission in the Arctic from throughout the Department of Defense.

Over the last year, our commands have worked alongside the military Services and the Office of the Secretary of Defense to ensure that our warfighting requirements are met, with particular emphasis on improving joint domain awareness and communications. In order to reclaim our strategic advantage in the high north, it is critical that we improve our ability to detect and track surface vessels and aircraft in our Arctic approaches and establish more reliable secure communications for our joint force warfighters operating in the higher latitudes. This focus is now apparent in the 2019 DOD Arctic Strategy, which reflects my command priorities and makes it clear that DOD must defend the homeland against threats emanating from our northern approaches.

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As stated in the National Defense Strategy, a core Department of Defense objective is to ensure that common domains remain open and free. In pursuit of that objective, USNORTHCOM and NORAD are very proud of our work with allies and partners to improve our shared presence and interoperability in the region and update our information sharing agreements with our Arctic allies and partners. Of note in the last year, USNORTHCOM and NORAD leaders also conducted engagements with the Danish Joint Arctic Command in Greenland and joined the United Kingdom Ministry of Defense in direct staff talks. These collaborative efforts help to reaffirm our commitment to our international partners while enhancing USNORTHCOM and NORAD's defense capability.

We are leveraging the on-the-ground experience and expertise of our warfighters in USNORTHCOM's Alaska Command along with leaders, planners, and combatants from USINDOPACOM and USEUCOM as we prepare for ARCTIC EDGE 20—the nation's premier Arctic exercise. ARCTIC EDGE 20 will take full advantage of the unsurpassed capabilities of the Joint Pacific Alaska Range Complex (JPARC) and allow us to test our capability to fight, communicate, and win in the harsh terrain and climate of the high north. I am personally placing significant emphasis on this important exercise, as the lessons we learn from ARCTIC EDGE 20 will play an important role in validating the requirements that will allow us to deter, detect, and defeat potential adversaries along the front line of our nation's defenses.

Our adversaries have the ability to threaten our homeland in multiple domains and from numerous avenues of approach—and our commands are especially focused on improving our ability to defend our northern approaches. We cannot deter what we cannot defeat, and we cannot defeat that which we cannot detect. In order to effectively defend the homeland, USNORTHCOM and NORAD have developed a Homeland Defense Design (HDD) consisting

of three main elements: a layered sensing grid for domain awareness, an adaptive architecture for joint all-domain command and control (JADC2), and new defeat mechanisms for advanced threats. These three elements are vital to deterring and defeating advanced threats to the homeland, and USNORTHCOM and NORAD are moving with a sense of profound urgency to bring these capabilities into the fight.

Our need to improve our domain awareness begins with developing and integrating advanced sensors capable of detecting and tracking threats no matter where they originate. These sensors must be able to detect, track, and discriminate advanced cruise missiles, ballistic missiles, hypersonics, and small unmanned aerial systems at the full ranges from which they are employed. The sensors must also detect and track the platforms—aircraft, ships, and submarines—that carry those weapons. A robust and resilient space layer is increasingly critical to provide the earliest possible detection and fidelity of data required.

Stovepiped transmission of data from non-compatible sensors presents a significant impediment to our ability to defend against advanced threats. To overcome this issue, we need a robust architecture for JADC2 to effectively gather data from a myriad of sensors across all domains and share it seamlessly. The architecture must facilitate rapid data fusion, processing, and analytics to feed decision makers at all levels with accurate, decision-quality information at the speed of relevance. Data from any sensor should feed any defeat mechanism, and rapid data fusion and analysis should provide faster, more precise solutions to all shooters. This architecture will facilitate high-tempo decision cycles for agile, resilient, redundant, and joint command and control. By leveraging a cloud architecture, big data analytics, edge computing, artificial intelligence, and machine learning, this network should sense a threat from one node and engage it precisely and expeditiously from another across vast distances and across all domains.

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Finally, we require new defeat mechanisms for advance threat systems—to include the advanced cruise missiles capable of striking the homeland from launch boxes in the Arctic. As adversary threat systems, employment doctrine, and operational competencies become more numerous, multi-modal, and complex, our current defeat mechanisms will become increasingly challenged. Additionally, the cost ratio of adversary threat missiles to our missile defeat mechanisms is not in our favor. We must flip the cost ratio back in our favor with deep magazine, rapid fire, and low-cost defeat mechanisms.

While these capabilities will play a critical role throughout the USNORTHCOM and NORAD areas of responsibility, they will be especially vital in our northern approaches. As diminishing Arctic ice creates opportunities for increased international commercial and military presence, our adversaries will continue their efforts to exploit the vast distances and inherent complexity of operating in the high north. Our commands are working closely with tech and defense industry partners to rapidly overcome our most pressing challenges in the region.

Specifically, our commands are collaborating with large and small companies from the commercial tech sector in order to leverage emerging technologies and digital-age approaches with potential homeland defense applications. Under this iterative approach, our commands and our commercial partners have developed a common understanding of our shared challenges and opportunities over time. In turn, we are allowing our nation's innovators to apply their expertise and propose advanced, innovative solutions using new but proven technology that can be rapidly incorporated into the homeland defense ecosystem in order to improve our domain awareness, JADC2 architecture, and defeat mechanisms.

We are also adapting and evolving how we work with traditional U.S. defense industry. Rather than prescribing specific materiel solutions to the challenges facing our commands,

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USNORTHCOM and NORAD are engaged in ongoing two-way dialogue with defense industry innovators to share our perspective on the changing strategic environment, emerging threats to the homeland, and operational requirements. We are working with our industry partners to ensure they understand our specific challenges and needs. In turn, our partners are identifying ways to bring new and existing systems into the homeland defense architecture and provide tailored solutions to our unique challenges.

This approach has already shown game-changing potential. Over the last several months, USNORTHCOM and NORAD have collaborated with the defense industry, commercial tech partners, and the military Services on successful field demonstrations of emerging sensor, information fusion, and satellite communications technologies. For example, the same technology that is capable of delivering high-speed internet and voice communications to remote indigenous communities for the first time has the clear potential to bridge some of the gaps in military communications in the same region. I am excited and encouraged by the results of these demonstrations, and we will continue to lead these experiments and to solicit innovative proposals from established defense industry and emerging tech partners.

There are no routine operations in the Arctic, but USNORTHCOM and NORAD are firmly committed to defending our homeland. Thanks in no small measure to your support, the innovative spirit of our industry and interagency partners, and the deep commitment of the men and women I am proud to lead, I have no doubt that we will continue to deter and defeat the threats facing our homeland—to include those originating in the Arctic. We Have the Watch.