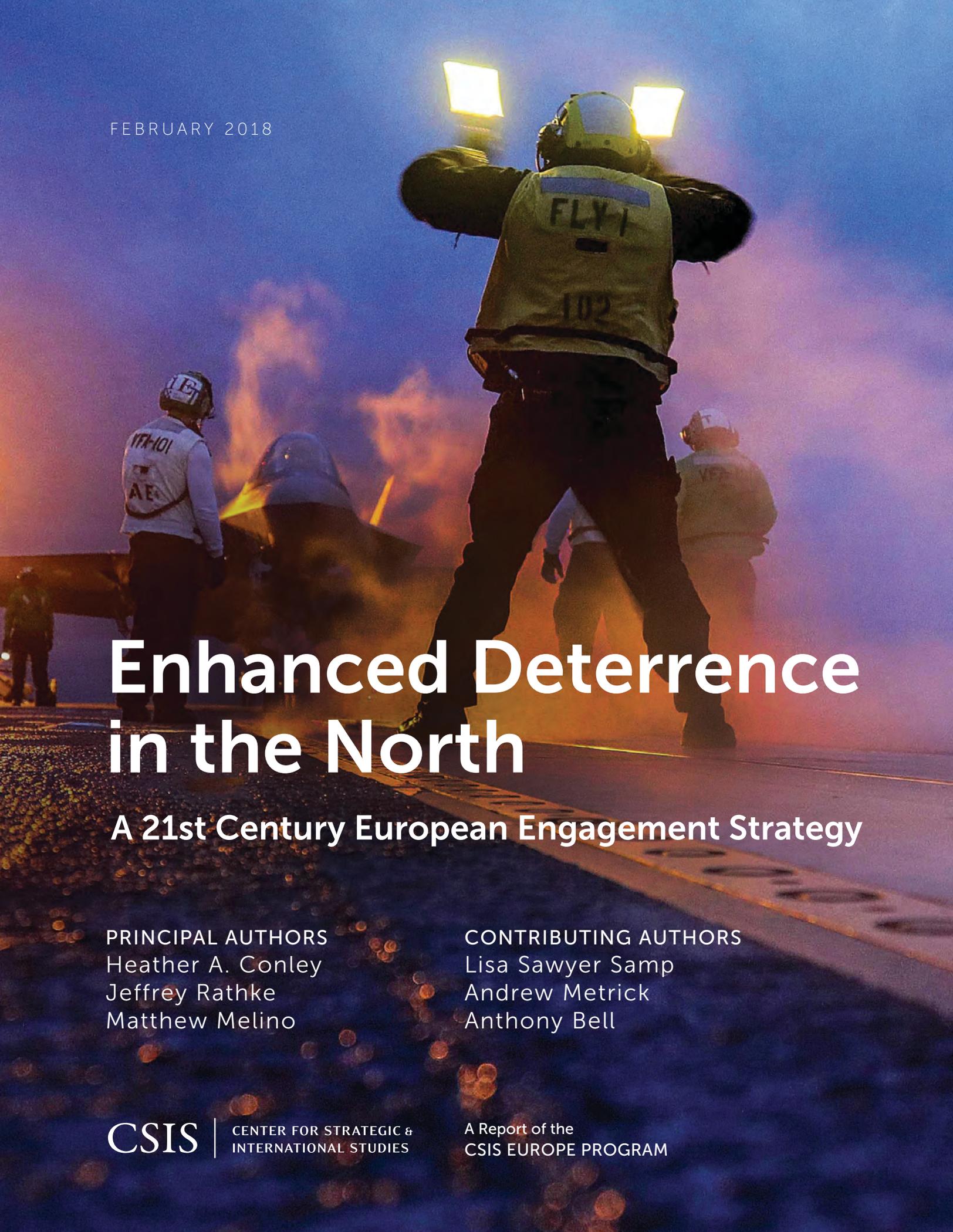


FEBRUARY 2018



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A 21st Century European Engagement Strategy

PRINCIPAL AUTHORS

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Matthew Melino

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Acknowledgments

When putting forward a new concept such as a new security and defense regional posture for northern Europe, our ambition was to push the conceptual envelope while ensuring that our ideas and recommendations were practical and actionable.

There exists a wealth of information and analysis related to the security challenges in northern Europe following Russia's illegal annexation of Crimea and incursion into the Donbas, yet there are few new conceptual frameworks that combine analysis of Russian military capabilities for the next decade with a detailed analysis of the complex web of bilateral, trilateral, and multilateral regional cooperative security arrangements (Finland and Sweden; Finland, Sweden, and the United States; Nordic cooperation; Nordic-Baltic-United States cooperation; NATO and NATO enhanced opportunity partner cooperation; and EU defense cooperation). We sought to more broadly define the geographic understanding of northern Europe as one which stretches from Barents to Baltic Seas to the North Atlantic, and to boldly propose a new security architecture for this wider region—the Enhanced Deterrence in the North or EDN.

The CSIS Europe Program wishes to thank a number of insightful colleagues who were instrumental in producing this report. The talents of the CSIS family are on full display throughout this report with the enthusiastic participation of our International Security Program colleagues, particularly Kathleen H. Hicks, Lisa Sawyer Samp, Andrew Hunter, Thomas Karako, Andrew Metrick, and Anthony Bell as well as research interns Nick Conlon and Eric Jacobson. The larger transatlantic think-tank family was also engaged in this report. We are very grateful to our colleagues at the Finnish Institute for International Affairs, including its director Teija Tiilikainen, and our colleagues at the German Marshall Fund-Brussels office, specifically Ian Lesser who graciously partnered with CSIS to cohost two workshops that helped bring regional experts and officials together to clarify Russia's military modernization efforts, to discuss the region's existing security relationships, and to sharpen our thinking of the region's long-term security needs. The authors would like to profusely thank many officials from the Swedish Ministry of Foreign Affairs, the Swedish Ministry of Defense, the Finnish Ministry of Foreign Affairs, the Finnish Ministry of Defense, and Norwegian officials who generously

gave their time and insights during a myriad of meetings and interviews which further informed our thinking. To them, the security challenges we outline in this report are real, everyday challenges, and they bring clarity of thought and urgency to the issue set.

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Executive Summary

In the nearly 25 years since the collapse of the Soviet Union, northern Europe's security environment has been characterized as stable, predictable, and benign. The post-Cold War era redrew northern Europe's bilateral, regional, and multilateral security boundaries and stimulated new institutional and cooperative development in the 1990s. Finland and Sweden became members of NATO's Partnership for Peace (PfP) Initiative in 1994 and the Euro-Atlantic Partnership Council in 1997. The two countries also joined the European Union in 1995. Bilateral security mentoring relationships developed between the Nordic countries and the three Baltic States. The United States developed the Northern Europe Initiative (NEI) in 1998 as a new form of regional engagement that included the Nordic and Baltic States as well as Poland, Germany, and Russia. The European Union created the Northern Dimension in 1999 to bring together EU Nordic members and non-EU members as well as Russia to discuss a wide-ranging set of cooperative activities. The Council of the Baltic States was created in 1992 to promote regional identity, safety and security, and the Barents Euro-Arctic Council and the Barents Regional Council followed in 1993. The Nordic countries themselves experimented with forms of closer security and defense cooperation beginning with Nordic Armaments Cooperation (NORDAC) in 1994 and Nordic Coordinated Arrangement for Military Peace Support (NORDCAPS) in 1997.

By the early 2000s, northern Europe experienced a significant solidification of Euro-Atlantic institutional arrangements. The three Baltic States became members of NATO and the European Union in 2004, Baltic Air Policing was established, formal Nordic defense cooperation was solidified in 2009 with the creation of Nordic Defense Cooperation (NORDEF), and Nordic-Baltic cooperation was enshrined in the Nordic-Baltic 8 (NB8), with the United States invited to join in an 8+1 format in 2003. The impact of these new arrangements was a shift in security focus from territorial and regional defense to a post-Cold War emphasis on out-of-area stabilization operations (e.g., missions in Bosnia and in Kosovo) and interventions at strategic distance (such as Afghanistan and Iraq).

Institutional creativity continued to gain momentum in the region. In 2011, the United Kingdom initiated a gathering of the 12-nation Northern Group, which includes the NB8 as well as the United

Kingdom, Germany, the Netherlands, and Poland. Although Finland and Sweden remained outside of NATO and formally nonaligned, they have cultivated closer relations with NATO. Two successive NATO secretaries general are from northern Europe (former Danish prime minister Anders Fogh Rasmussen and current secretary general and former Norwegian prime minister Jens Stoltenberg) and understand the region's security needs intimately. Yet during these two decades, as the benign security environment became a perpetual assumption, territorial defense capacities atrophied and new security arrangements were deemed sufficient, masking deficiencies that lay hidden by two decades of European comity.

Russia's 2014 illegal annexation of Crimea combined with significant improvements in Russia's modernization of its armed forces and its rapid mobilization patterns shredded the assumption and unmasked the deficiencies. As northern Europe's security landscape shifted dramatically over a very short time period, what was laid bare was two decades of strategic neglect and significant spending reductions to northern European armed forces. Russia began to probe and test the region's military readiness and capabilities by repeatedly violating northern Europe's airspace and conducting maritime incursions into territorial waters. Russian snap regional exercises were performed without notification. At the historic 2014 NATO Wales Summit, NATO took dramatic steps to reposition and strengthen its land forces and airpower on its eastern flank in the Baltic States and Poland, but this had the unintended consequence of heightening non-NATO members Sweden and Finland's security vulnerabilities. Moreover, regional Russian military exercises reinforce the complexity and integration of Russian land, air, and naval forces over a wide geographic expanse including the Barents Sea and North Atlantic in addition to the Baltic Sea. The existing network of regional and European security arrangements was exposed as a patchwork of overlapping security relationships without a consistent logic or unifying strategic purpose. Interim and ad hoc measures were taken, such as enhancing U.S. bilateral and trilateral military and security cooperation with Sweden and Finland, as well as the exponential growth of Sweden and Finland's bilateral defense cooperation. But are these measures sufficient to provide the necessary deterrence and effective defense measures in response to an increasingly unstable security environment?

A RENEWED THREAT: RUSSIAN MILITARY MODERNIZATION

The military challenge Russia poses to its northern European neighbors has evolved significantly since 2008, largely as the result of Russia's poor military performance during the 2008 Georgia War. Changes to military doctrine include the recognition of the West as a powerful competitor, a rival, and the source of future military threats, leading to a greater emphasis on hard power, territorial protection, and guarding against outside intervention. Russian political and military leaders continue to rely on nuclear forces but also place great emphasis on developing armed forces capable of conducting rapid operations that are shorter and more limited in nature with leaner, more effective forces in four domains: land, air, sea, and cyber/information, as well as in four key capability areas: long-range precision strike, integrated air and missile defense, cyber and electronic warfare, and nuclear forces.

The poor performance of Russia's land forces in the Georgia War laid bare the failures of Russia's post-Soviet military reforms. It also provided the impetus for a new set of reforms dubbed the "New Look." As a continental power, Russia has always placed its ground forces as first among equals. These reforms are credited with revitalizing Russia's ground forces. Russia's newest main battle tank, the T-14 Armata, possesses a state-of-the-art active protection system (APS) among other capabilities that are of particular interest to Western militaries. An additional hallmark of Russia's land power is the strength of its artillery forces. Paired with modern technologies such as tactical UAVs for aerial reconnaissance and extensive electronic jamming capabilities, Russian forces have employed their artillery with devastating effects in eastern Ukraine—a cautionary tale for the Baltic States and their northern European neighbors.

Russian air superiority capabilities are also improving. The Russian Air Force currently employs a mixture of modern variants of the MIG-29 and Su-27 along with newer MIG-35s and Su-35s, which represent upgraded fourth-generation fighter aircraft. Russia is also working to develop a fifth-generation fighter—the Su-57—which seeks to compete with the U.S. F-22 Raptor and the F-35 Joint Strike Fighter, and poses formidable threats to U.S. and NATO aircraft. Russian aircraft also maintain strong capabilities for air-to-air combat within visual range (WVR). Its advantage in WVR is based on its widespread adoption of intelligence, surveillance, reconnaissance, and targeting (ISRT) capabilities, and an excellent short-range air-to-air missile (AAM), the R-73, that could provide Russian pilots with an advantage in close air-to-air engagements. Repeated airspace violations in the region and slow responses from northern European nations show the gravity of this growing air threat.

Russia's Navy, and especially its submarine force, is arguably the most advanced, competent, and well-trained component of the Russian military. The modern Russian Navy is built on the foundation of modernized naval combatants from the Soviet era, and was frequently deployed in support of Russian combat operations in Syria. Their use in the Middle East revealed a new element of Russian naval power—the widespread deployment of land-attack cruise missiles. Russia's submarine fleet maintains a core of nuclear-powered attack submarines (SSNs) that can carry a large payload of land-attack cruise missiles—an increasingly used component of Russian undersea capabilities. Russia also operates a small number of nuclear-powered special mission submarines capable of diving to tremendous depths and interfering with undersea infrastructure including pipelines and undersea cables. Aggressive undersea activity increasingly threatens the strategic Greenland-Iceland-United Kingdom (GIUK) gap as well as undersea cables on the Baltic seabed.

Recent combat operations in Syria have demonstrated Russia's considerable advances in long-range strike weapons. This includes air- and sea-launched cruise missiles such as the Kh-555, Kh-101, and 3M14 Kalibr; a short-range ground-launched cruise missile (GLCM), the 9M723 Iskander-K; and an advanced short-range ballistic missile (SRBM), the 9M723 Iskander-M. Russia is also believed to have developed and deployed a long-range land-based cruise missile, the SSC-8/0M729, which U.S. officials have determined to be in violation of the 1987 Intermediate-Range Nuclear Forces (INF) Treaty.¹ The Russian Navy has also launched the 3M14 Kalibr,

1. Michael R. Gordon, "Russia Has Deployed Missile Barred by Treaty, U.S. General Tells Congress," *New York Times*, March 8, 2017, https://www.nytimes.com/2017/03/08/us/politics/russia-inf-missile-treaty.html?_r=0.

a sea-launched land-attack cruise missile whose range would allow Russia to strike targets in much of northern and northeastern Europe using naval assets in the Norwegian Sea, the White Sea, the Black Sea, and the Eastern Mediterranean. In sum, Russia's precision strike capabilities pose a formidable threat.

Russia has also developed a robust system of air and missile defense capabilities, leveraging its technological strength in surface-to-air missiles. Russia's focus on air and missile defense has increased given the subsequent development of U.S. and NATO airpower and long-range precision strike. There is considerable concern regarding the S-400 system, which is multifaceted and designed to defeat multiple aspects of the U.S. precision strike complex. Russia also maintains more mobile systems operated by ground forces, including the S-300V, Buk, and Tor systems. While not as capable as the S-400, they enhance Russian air defense, challenge any potential attacking air force, and reinforce Russian A2/AD capabilities around the Baltic Sea.

Russia's nonkinetic operations in the information, cyberspace, and electromagnetic domains are extensive and effective. While not decisive on their own, the integration of these tools with kinetic operations enhances confusion, paralyzes rapid decisionmaking, stokes public and political unrest, and supports more accommodative policy stances toward Russian interests or undermines Western and democratic narratives. Northern and eastern Europe are repeatedly experiencing such operations, as evidenced by the first cyber attack by Russia toward a NATO country (Estonia) in 2007 and 2008. NATO and Western militaries are especially susceptible to these types of attacks due to the networked nature of their military equipment. Russia has also used electronic means to target sensors and networks to reduce its technological disadvantages. The recent Zapad 2017 exercise displayed Russia's jamming capabilities, which can interfere with a range of military and civilian communication systems.

Russia retains a large nuclear arsenal that is treaty limited at parity levels with the U.S. nuclear force through the New Strategic Arms Reduction Treaty (New START). Russia is undergoing a comprehensive modernization of its delivery systems that would reemphasize multiple independent reentry vehicles (MIRVs) in its nuclear force structure. This includes the development of a new heavy ICBM. These updates are likely in response to concerns over the United States and NATO's European-based ballistic missile defense in Romania (2016) and Poland (2018). A 2013 exercise in which the Russian air force reportedly conducted a mock nuclear strike against an unprepared Sweden raised concern across the region. While Russia's 2014 military doctrine sets a high threshold for nuclear employment, Russian forces continue to exercise the use of limited theater nuclear weapons which must be taken seriously by the West.

CURRENT WEB OF RELATIONS

Northern Europe appears to be in a perpetual state of constructing complex security and defense relationships—bilateral, regional, and multilateral—which underscores an underlying inadequacy of and lack of confidence in existing structures of pluses (5+3, 8+1, etc.) and to overcome the regional Article 5 commitment gap which Sweden and Finland represent. Thus, the security deficiencies are particularly acute for Sweden and Finland.

To address these deficiencies, intensified defense cooperation between Finland and Sweden is considered the first line of shared defense and is arguably the core of an envisioned larger web of security that includes bilateral and trilateral relations with the United States, Nordic Defense Cooperation (NORDEFECO), Nordic-Baltic defense cooperation, EU membership, the Northern Group, and partnership with NATO. In May 2013, Finland and Sweden signed an Action Plan for Deepened Defense Cooperation, which aims to improve security and develop ways to utilize resources during a period of diminishing defense budgets. A joint final report prepared by both armed forces at the end of February 2015 identified areas of cooperation and called for the development of a bilateral standing Naval Task Force—the Swedish-Finnish Naval Task Group (SFNTG), an increased level of interoperability between air forces, and the development of a combined Finnish-Swedish Brigade Framework. It is important to note that the two countries have not signed a bilateral defense treaty or security guarantee, nor does this appear to be likely in the near future.

The second layer in the web is the bilateral defense relationships Finland and Sweden have with the United States, and the trilateral security relationship they have recently instituted. Both Finland and Sweden emphasize the critical role the United States plays as a security guarantor in the region and have prioritized closer defense ties through bilateral and multilateral tracks. Bilaterally, both nations have signed formal agreements to strengthen defense cooperation and interoperability in 2016. Trilaterally (United States-Sweden-Finland), relations have strengthened through mechanisms such as the U.S.-Nordic Leaders Summit, U.S.-Nordic Defense Dialogue, and the Nordic-Baltic Eight+1 (Nordic, Baltic, and the United States).

The third layer of defense cooperation is strong regional security relations. In addition to deepening bilateral relations, Finland and Sweden have also cultivated ties with NATO members Norway, Denmark, Iceland, Poland, and the United Kingdom. Greater defense cooperation occurs through NORDEFECO, the Northern Group, and most recently the UK-led Joint Expeditionary Force (JEF). These mechanisms offer platforms to strengthen national defense, explore common synergies, plan and execute military exercises, and promote interoperability in the face of shared security challenges. NORDEFECO promotes the development of capabilities including armaments and logistics, as well as planning and execution of exercises such as the biennial Arctic Challenge Exercise. The Northern Group offers a more informal defense forum for consultation on common threats. The JEF, when operational in 2018, will offer a new dimension and flexibility to address security challenges.

The highest level of defense cooperation in northern Europe occurs at the multilateral level, specifically with NATO and the European Union. Of all the links that make up the northern European security network, NATO is the most powerful and simultaneously the most politically sensitive organization inside Finland and Sweden. NATO's PfP, Planning and Review Process (PARP), and Enhanced Opportunities Partners (EOP) program, among others, have allowed Finland and Sweden to build their defense capabilities, improve their interoperability with NATO, and enter a 29+2 format for sharing threat assessments and improving situational awareness. The European Union is also a potential productive avenue for Finland and Sweden to address security challenges through the EU Common Security and Defense Policy (CSDP) and its ambitious Security Union proposal

and Defense Fund. The European Union's solidarity clause, under Article 222 of the Lisbon Treaty as well as Article 42(7), are mechanisms that could be utilized should an external or internal actor threaten Finland's or Sweden's security.

AN ENHANCED DETERRENCE IN THE NORTH (EDN)

The web of security structures and relationships in northern Europe has evolved but remains inadequate for the long-term security challenge posed by Russia. Based upon the assumption that neither Sweden nor Finland will join NATO, we propose a more streamlined, efficient, and effective approach, which we call an Enhanced Deterrence in the North (EDN). Like NATO's Enhanced Forward Presence (eFP) on its northeastern flank and the Tailored Forward Presence (TFP) in the Black Sea, the Enhanced Deterrence in the North seeks to: widen the area of operations to include the Barents and Baltic Seas as well as the North Atlantic; strengthen regional deterrence and reinforcement strategies; bridge and streamline existing security relationships; and address crucial capability gaps, while ensuring long-term U.S. security engagement in the region. The EDN concept would build upon NATO's land forces component (eFP), strengthen expeditionary force capabilities, and develop stronger regional air and maritime defense (as opposed to policing) capabilities.

An Enhanced Deterrence in the North requires first and foremost sustained diplomatic engagement and a streamlined dialogue for security and defense cooperation with a significant role to play by the United States in framing and propelling these discussions in cooperation with Finnish and Swedish defense leaders. Structurally, EDN will combine the bilateral, trilateral, and multilateral efforts centered on the enhancement of specific defense structures, forces, planning, and posture in the region in the air, land, and maritime domains, as well as enhanced and integrated intelligence, surveillance, and reconnaissance (ISR), and command and control (C2) arrangements encased in regional security and defense dialogue.

EDN COMMAND AND CONTROL

An effective EDN also requires updated command and control (C2) and planning capacities. NATO's C2 in the region is divided among component commands for land, air, and maritime, which share responsibility with two Joint Forces Commands. While these C2 structures are well integrated, there remain gaps in C2 specifically for northern Europe. Regionally focused headquarters for maritime operations, such as in the North Atlantic, Barents, and Baltic Seas, were eliminated during the post-Cold War period, leaving NATO with a relatively small Maritime Command in the United Kingdom (MARCOM).² Furthermore, the U.S. maritime focus has shifted south, as evidenced by the move of the headquarters of U.S. Naval Forces—Europe (NAVEUR) from the United Kingdom to Naples, Italy, and a reduction in U.S. maritime forces permanently based in

2. Magnus Nordenman, "Back to the North: The Future of the German Navy in the New European Security Environment," Atlantic Council, April 2017, http://www.atlanticcouncil.org/images/publications/Back_to_the_North_web_0406.pdf.

Europe.³ A third NATO Joint Command—a “North Atlantic Command”—should be located at MARCOM and led by the United Kingdom (with a reestablished United States 2nd Fleet, which was disestablished in 2011). The North Atlantic Command should have responsibility for contingency planning related to the region and should incorporate officers from Sweden and Finland to facilitate practical collaboration in preparing for possible defense scenarios (short of a mutual defense guarantee).

EDN AIR

The most important and immediate regional security enhancement is the need to transition from an air policing to an air defense posture. Russia’s growing capabilities, including cruise and short-range ballistic missiles, and its repeated airspace violations demand a strengthening of regional capabilities to include the following:

- *Establishing a Common Air Picture:* Building on the November 2017 NORDEFCO Memorandum of Understanding on Nordic Cooperation for Air Surveillance Information Exchange, this exchange must be integrated with existing NATO structures. The NATO EOP and its Partnership Interoperability Initiative provide a framework for discussions with NATO on the basis of existing standards for integrating data from a variety of national sensors.
- *Transition NATO Baltic and Icelandic Air Policing to Northern European Air Defense:* Sweden and Denmark signed a defense agreement in 2016 allowing for peacetime air basing access. Finland and Sweden have also conducted training and exercises with deployed NATO air defense aircraft in Iceland as part of Iceland’s air policing operations since 2014.
 - *Enhance Regional Basing Agreements* to ensure that regional aircraft have complete access to upgraded airfields and to widen air defense capabilities beyond the Šiauliai Air Base in Lithuania and Ämari Air Base in Estonia.
 - *Integrate Regional Short- and Medium-Range Air Defense Systems and Related Sensors:* Sweden has recently decided to upgrade its air defense with the Patriot system; Poland and the United States have signed an MOU for the purchase of eight Patriot batteries. Integrating these systems with Baltic assets including future medium-range Norwegian Advanced Surface-to-Air Missile Systems (NASAMS) to be acquired by Lithuania will enhance regional air defense.
- *Unmanned Aircraft Systems (UAS)* should be incorporated into defense planning and as a complement to NATO’s Alliance Ground Surveillance (AGS) system.

EDN MARITIME

Russia’s coercive capabilities in northern Europe rely heavily on maritime (particularly undersea) operations. A recent increase in submarine activity in the Baltic Sea and the North Atlantic has

3. Ibid.

underscored the underinvestment by NATO members and Sweden and Finland in antisubmarine warfare (ASW) capabilities since the end of the Cold War.⁴ There is a need to better integrate national and NATO platforms, sensors, and personnel in a coordinated manner. Our recommendations include:

- EDN Maritime will revitalize regional ASW capabilities to reclaim NATO and its partners' undersea advantage. ASW should be a key focus during Trident Juncture 2018, a major NATO exercise.
- The ASW campaign must concentrate on ensuring the North Atlantic sea lines of communication remain open and unfettered by controlling the GIUK gap. The return of U.S. rotational presence at Keflavik, Iceland will be a centerpiece of the EDN Maritime strategy along with the return of a NATO Atlantic Command, which will ensure greater maritime patrol and monitoring of Russian activity in the GIUK gap and in the Barents Sea. In addition to increasing tracking ability, a renewed presence would enhance readiness and help secure critical infrastructure including undersea cables and pipelines.
- Germany should enhance its role through the Baltic Maritime Component Command (BMCC) as a maritime framework nation to encourage Baltic Sea nations to develop unmanned vehicles (UVs) and to improve efforts to monitor vital undersea infrastructure and as a bridge to EU defense capabilities and investments.
- Advance a greater sense of cooperation between coast guards and navies to enhance Baltic, Barents, and North Atlantic Maritime Domain Awareness (MDA) and achieve the greatest possible degree of common operating picture by creating a Northern Group subgroup of the North Atlantic Coast Guard Forum.

EDN LAND

NATO's Enhanced Forward Presence (eFP) and the rapid-reaction Very High Readiness Joint Task Force (VJTF) are conceived as a tripwire forward presence in the form of strengthened land forces along the eastern flank, which provide time to rapidly deploy reinforcements. Additional elements would improve deterrence and defense capabilities in the region. They include:

- Integrate the U.S. Marine rotational force (approximately 330 marines) in Norway and the UK-led Joint Expeditionary Force (JEF), which will become operational in 2018, into a region-wide effort. This should involve training and exercises, particularly cold-weather exercising, and build multinational connections and interoperability across the boundaries of organizations such as NATO and the European Union.
- Incorporate Swedish and Finnish land forces in NATO battalions in the Baltic States and place Swedish and Finnish officers at Brunssum.

4. Kathleen H. Hicks et al., *Undersea Warfare in Northern Europe* (Washington, DC: CSIS, July 2016), https://csis-prod.s3.amazonaws.com/s3fs-public/publication/160721_Hicks_UnderseaWarfare_Web.pdf.

- The United States should return to its pre-2012 four-brigade presence force posture in Europe⁵ or at a minimum make permanent the armored U.S. brigade that currently rotates from the United States to Europe. This will achieve greater flexibility and faster U.S. response in a crisis.
- EDN Land Component must be an early adopter of enhanced NATO-EU cooperation to ensure the logistical and infrastructure investments are made to facilitate the rapid movement, overflight, and basing essential to a reinforcement strategy (what some have called a “military Schengen”) and to conventional deterrence. In the event of a rapid deterioration in the European security environment, the United States and allied response forces would currently be impeded not only by external challenges posed by Russia but also the procedural and logistical deficiencies involved in transiting across alliance territory.

EDN DEFENSE DIALOGUE

Enhancing defense and security cooperation in northern Europe requires high-level political understanding, common assessment of indications and warnings (I&W) such as Russia’s violation of the INF Treaty, and frequent practice in rapid decisionmaking. It should also discuss shared regional approaches to issues such as arms control and nonproliferation. We encourage this all-encompassing Defense Dialogue to occur at the 12-nation Northern Group level but with opportunities to dynamically engage bilaterally between Finland and Sweden; trilaterally among the United States, Finland, and Sweden; and regionally through NORDEFCO and the Nordic-Baltic Group with observer participation from NATO and the European Union.

5. Kathleen H. Hicks et al., *Evaluating Future U.S. Army Force Posture in Europe: Phase II Report* (Washington, DC: CSIS, June 2016), https://csis-prod.s3.amazonaws.com/s3fs-public/publication/160712_Samp_ArmyForcePostureEurope_Web.pdf.

Introduction

The end of the post–Cold War period in Europe, defined most starkly by Russia’s 2014 annexation of Crimea and its intervention in eastern Ukraine, requires new approaches to ensuring security in northern Europe, including the Baltic Sea region. Twenty-five years of relative calm and predictability in relations between Russia and the West enabled European governments to largely neglect their military capabilities for territorial defense. European security initiatives during this time focused mainly on stabilization operations (e.g., missions in Bosnia and in Kosovo) and on interventions at strategic distance (such as Afghanistan and Iraq). Russia’s intense focus on military modernization over the past decade and its increasing use of force to achieve foreign policy aims has catalyzed its resurgence as a military power. As a result, the European security order established after the fall of the Berlin Wall is endangered, and European nations need greater efforts to deter Russia at a time when their military capabilities have diminished compared to the Cold War. The Baltic Sea and North Atlantic regions have returned as a geostrategic focal point.

The rediscovery of defense in northern Europe also highlights seams in Western security structures that have always existed. Sweden and Finland are not members of the North Atlantic Treaty Organization (NATO) and remain formally nonaligned, but they have cultivated closer relations with NATO and they share many security interests. The European Union, of which Finland and Sweden have been members since 1995, has expanded its defense ambitions in recent years: the 2007 Lisbon Treaty includes mutual defense and solidarity clauses,¹ the 2016 EU Global Strategy identifies a need for “full spectrum defense capabilities” to “guarantee Europe’s safety,”² and most recently, an initiative for permanent structured cooperation on defense (PESCO). Additionally, a variety of regional and European security arrangements, each worthy in its own way, has evolved to address particular needs at specific times: northern Europe is now a patchwork of overlapping

1. Articles 42(7) and 222 of the Treaty on European Union, <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:C:2016:202:FULL&from=EN>.

2. “From Vision to Action,” section 4 in *Shared Vision, Common Action: A Stronger Europe* (n.p.: European External Action Service, 2016), https://europa.eu/globalstrategy/sites/globalstrategy/files/regions/files/eugs_review_web_0.pdf.

security relationships without a consistent logic or unifying strategic purpose. Promoting an effective defense across the region now is a compelling need.

To state one key premise at the start that will be on the mind of the reader: this study does not address the possibility of Swedish and/or Finnish accession to NATO. The reason is twofold: there has been much persuasive scholarly work on that topic already,³ and as a practical matter, the political impediments to joining NATO are significant and unique in each country. Therefore, we attempt in this study to focus on measures that can be implemented in current circumstances, rather than on NATO accession, which would address many of these security challenges but which is uncertain in the short to medium term.

U.S. bilateral relationships are a central element in the approach to regional security. For decades during the Cold War, there was intense security and political engagement with three Nordic NATO members (Denmark, Iceland, and Norway) and a more cautious approach toward Sweden and Finland due to both countries' unique forms of nonalignment.

The collapse of the Soviet Union and the dissolution of the Warsaw Pact stimulated new institutional and cooperative development in northern Europe. At a time of reduced tensions with Russia and amid efforts to create a Europe "whole and free,"⁴ Finland and Sweden both became members of NATO's Partnership for Peace (PfP) Initiative in 1994 and joined the European Union in 1995. During this time frame, bilateral security mentoring relationships also were developed between the Nordic countries and the three Baltic States. New regional approaches blossomed as well: the United States launched the Northern Europe Initiative (NEI) in 1997 as a new form of regional engagement that included the Nordic and Baltic States as well as Poland, Germany, and Russia. The European Union created the Northern Dimension in 1999 to bring together EU Nordic members and non-EU members (including Russia) to discuss a wide-ranging set of cooperative activities. The Nordic countries themselves began to experiment with forms of closer security and defense cooperation beginning with Nordic Armaments Cooperation (NOR-DAC) in 1994, and Nordic Coordinated Arrangement for Military Peace Support (NORDCAPS) in 1997.

The experimentation of the 1990s led to significant new institutional arrangements in the region. Today, Estonia, Latvia, and Lithuania have been members of NATO and the European Union for over a decade. Formal Nordic defense cooperation was solidified in 2009 with the creation of Nordic Defense Cooperation (NORDEFECO). Nordic-Baltic cooperation in foreign policy was the subject of the new format of 8 (NB8), and the United States launched with the NB8 the Enhanced Partnership in Northern Europe (e-PINE) in 2003. The United Kingdom initiated the gathering of the "Northern Group" defense ministers, including the NB8 as well as Germany, the Netherlands, and Poland, in 2010. Each of these initiatives has reflected a desire to strengthen coordination among like-minded countries and achieve greater security across Alliance and non-Alliance members.

3. Ministry of Foreign Affairs of Finland, "The Effects of Finland's Possible NATO Membership: An Assessment," April 2016, <http://formin.finland.fi/public/default.aspx?contentid=345685>.

4. President George H. W. Bush, "Remarks to the Citizens in Mainz, Federal Republic of Germany," American Presidency Project, May 31, 1989, <http://www.presidency.ucsb.edu/ws/?pid=17085>.

These cooperative patterns of behavior evolved in a benign security environment, a situation that no longer obtains. Following Russia's annexation of Crimea, its military incursion into eastern Ukraine, its substantial military modernization efforts, its heightened undersea activity in the North Atlantic and Baltic Sea, its repeated regional airspace and alleged maritime violations, and its nuclear saber-rattling toward several neighbors, the region's security environment has dramatically worsened. In response, NATO has implemented strengthened security measures through its Readiness Action Plan (RAP), the creation of the Very High Readiness Joint Task Force (VJTF), and the deployment of the Enhanced Forward Presence (eFP) in Poland and the Baltic States. NATO also has given new priority to its security relationships with Sweden and Finland and created a format that brought together the 28 members of NATO along with Sweden and Finland at the 2016 Warsaw NATO Summit in a 28+2 format when discussing issues related to Baltic Sea regional security. Finland and Sweden participate in many NATO exercises, and they have concluded Host Nation Support Agreements with the alliance. The United States has similarly strengthened its security relationships with both Sweden and Finland, concluding bilateral defense cooperation agreements with both countries. At the same time, the UK decision to leave the European Union has spurred greater uncertainty about the European Union's future, along with calls from leading members such as Germany and France for greater defense cooperation within the European Union.

As northern Europe and the transatlantic community seek to respond to the threats from Russia, it is essential to acknowledge that the lack of a clear institutional framework is a strategic liability. The proliferating formats for security engagement and dialogue result in a diffusion of focus, and the effect is less than the sum of their parts. It is therefore vital that the United States and its partners in the region rethink their approach.

The Post–Cold War Era

The collapse of the Soviet Union ushered in a new era for northern Europe from political and defense standpoints. Sweden and Finland began to integrate themselves into European institutions, joining the European Union and becoming closer partners with NATO. Their defense policies followed different paths, however: Sweden’s defense spending between 1990 and 2016 decreased by 18 percent (in inflation-adjusted dollar terms),¹ dropping from 2.39 percent of GDP to 1.04 percent.² Finland’s defense spending in the same period increased by 40 percent,³ declining slightly as a proportion of GDP, from 1.51 percent to 1.37 percent.⁴ Both nations participated in international military operations in Europe and elsewhere, but Finland preserved a greater portion of its capacity for territorial defense and maintained conscription as the basis of a “total defense” policy, while the Swedish armed forces shrank and shifted their focus.⁵

However, two inflection points have stunted this trend and brought a renewed focus to territorial defense in northern Europe—Russia’s 2008 invasion of Georgia and Russia’s 2014 annexation of Ukraine’s Crimean Peninsula and intervention in eastern Ukraine. Both incidents reflected an increasing Russian readiness to challenge the European security order that dated back to the Helsinki Final Act of 1975 and that was reaffirmed by Russia itself in the post–Cold War era. Both

1. Stockholm International Peace Research Institute (SIPRI), “Military Expenditure by Country, in Constant (2015) US\$ M, 1988–1996,” 2017, <https://www.sipri.org/sites/default/files/Milex-constant-2015-USD.pdf>.

2. World Bank, “Military Expenditure (% of GDP): Sweden,” 2017, <https://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS?locations=SE>.

3. SIPRI, “Military Expenditure by Country.”

4. World Bank, “Military Expenditure (% of GDP): Finland,” October 31, 2017, <https://data.worldbank.org/indicator/MS.MIL.XPND.GD.ZS?locations=FI>.

5. Gordon F. Sander, “Is Sweden’s Military Too Small Even for Its Peacemaking Ways?,” *Christian Science Monitor*, July 2, 2015, <https://www.csmonitor.com/World/Europe/2015/0702/Is-Sweden-s-military-too-small-even-for-its-peacemaking-ways>.

events raised considerable concern among Western countries about the ability of European and transatlantic institutions to deter and resist Russian attempts to subvert and ultimately overturn the fundamentals of European security while carving out a sphere of influence across much of the former Soviet Union.⁶ This new Russian assertiveness has highlighted the need to strengthen deterrence and defense.

6. Kathleen H. Hicks et al., *Recalibrating U.S. Strategy toward Russia: A New Time for Choosing* (Washington, DC: CSIS, March 2017), 17–18, https://csis-prod.s3.amazonaws.com/s3fs-public/publication/170329_Hicks_USStrategyTowardRussia_Web.pdf?PHeYffp2ZLh9ZiFy7s99TukdFvRdWRLX.

Russia's Military Forces: Emerging Threats and Capabilities

The military threat that Russia poses to its neighbors and the West has evolved significantly over the past five years. Rather than representing a fundamental break with the past, these advances are steeped in historic Russian thinking on the nature of warfare and the development and employment of military forces. Historically, Russia prepared its armed forces to fight lengthy, large-scale conventional conflicts against major European land powers. The Soviet Union paid considerable attention to the development of robust ground forces, advanced air defense systems, and powerful ballistic missiles intended to offset the technological advantages held by the United States and its NATO allies. While these core tenets of Russian military power remain, in recent years, Russian political and military leaders have placed greater emphasis on developing armed forces able to effectively conduct operations that are shorter and more limited in nature. Russia's assessment of its poor military performance during the 2008 Georgia War spurred a range of reforms and investments designed to create forces that are leaner, more effective, and ultimately more employable for limited conflicts. The results of these efforts are evidenced in Russia's operations in Crimea, the Donbas, and Syria.

Recent Russian military operations have focused primarily on achieving political objectives through the heavy use of deniable forces, information operations, and other asymmetric tools. Moscow has exploited the inherent ambiguity surrounding the use of these nontraditional military tools to achieve its political goals at minimal cost and risk. Russia's active employment of its asymmetric war-fighting capabilities in recent operations, however, has not occurred in isolation from its formidable conventional and nuclear capabilities. Rather, Russia has successfully underpinned these operations with its rapidly improving conventional capabilities in key areas such as advanced air defenses, electronic warfare, and long-range precision strike that comprise its anti-access/area-denial (A2/AD) toolkit. These capabilities have generally offered Russia a strong conventional deterrent to escalation or outside military challenges. Furthermore, Moscow has repeatedly leveraged its nuclear forces through saber-rattling to intimidate its neighbors and complicate the West's responses to its military operations.

The following section explores the steps that Russia has taken to improve its military strength in the context of northern European security. It focuses on seven specific capability areas critical to this region: ground forces, air superiority, maritime forces, long-range precision strike, integrated air and missile defense, cyber and electronic warfare, and nuclear forces.

GROUND FORCES

Russian ground forces have historically had a land force structure composed of heavy armored formations that relied on a system of mobilization, manned largely by conscripts, and equipped with combat systems that were relatively simple and cheap while providing considerable military utility. Since the collapse of the Soviet Union, Russia's land forces have struggled with a range of challenges including low unit manning levels, inadequate training, poor maintenance, and a lack of modern combat systems. The dismal performance of Russian ground forces in the 2008 Georgia War painfully laid bare the failures of Russia's post-Soviet military reforms. The Georgia War finally provided Moscow with the impetus to push through a reform agenda with teeth. Dubbed the "New Look" reforms, these efforts created a more agile command and control structure; increased the scale, frequency, and intensity of exercises to improve unit readiness; made large investments in modern equipment; and placed a strong emphasis on professionalizing the ranks.

While the New Look reforms are generally viewed as having led to significant improvements in Russia's armed forces—and in particular revitalizing its ground forces—the efforts have not enjoyed total success. Russian ground forces remain hindered by a lack of professional personnel in the ranks and rely heavily on one-year conscripts and short-term contract soldiers. Moreover, Russia's aspirational goals have clashed with its fiscal realities. Even in an era of rising defense budgets, Russia has struggled with the enormous costs of modernizing its ground forces' massive equipment inventories, the higher costs of maintaining units at heightened readiness levels, and the higher personnel costs that come with professional soldiers vis-à-vis conscripts.

On the hardware front, Russia has found it difficult to replace its Soviet-era combat systems with modern systems in adequate numbers. Russia's newest main battle tank, the T-14 Armata, possesses extremely impressive capabilities and has drawn considerable attention from Western militaries. For example, among the T-14's more advanced systems is a state-of-the-art active protection system (APS) designed to neutralize the latest Western antitank guided missiles (ATGMs).¹ However, Russia's original plans to acquire 2,300 T-14s, have proven unaffordable given its considerable per unit cost. Moscow now plans to procure as few as 100 T-14s by 2020.² Instead of major replacement programs, Russia is increasingly opting toward making incremental improvements to Soviet-era platforms. Russian ground forces are likely to continue to rely largely on modernized Soviet-era

1. Jonathan Marcus, "Should Russia's New Armata T-14 Tanks Worry NATO?," BBC News, May 30, 2017, <http://www.bbc.com/news/world-europe-40083641>.

2. Dave Majumdar, "Russia Just Announced How Many Deadly T-14 Armata Tanks It Will Build," *National Interest*, August 28, 2017, <http://nationalinterest.org/blog/the-buzz/russia-just-announced-how-many-deadly-t-14-armata-tanks-it-22085>.

tanks such as the T-72B3. This venerable design is being improved with an APS system and advanced Relikt explosive reactive armor (ERA). More recently, Russia announced a modernization scheme for its troubled fleet of T-80 main battle tanks, further dimming the future of the T-14.

A hallmark of Russia's land power is the strength of its artillery forces. Russian military doctrine has long emphasized the importance of massed artillery. Paired with modern technologies such as tactical UAVs for aerial reconnaissance, Russian forces have employed their artillery with devastating effect during combat in eastern Ukraine. Unlike the United States, which only operates a single caliber of rocket artillery, Russian operates a host of rocket systems at the 122mm, 220mm, and 300mm calibers. In addition, Russia operates a large number of conventional tube artillery systems. The backbone of the Russian artillery force is the Msta 152mm artillery system, which comes in both self-propelled and towed variants. In the coming years, Russia plans to introduce the Koalitsiya self-propelled howitzer, which will be the longest-range conventional artillery system in the world.

AIR SUPERIORITY

Russian air superiority capabilities have seen considerable improvements over the past decade. However, the Russian Air Force, operates only a limited number of frontline combat aircraft—approximately 300—made up of a mixture of modern variants of the MIG-29 and Su-27, along with newer MIG-35s and Su-35s. While these aircraft are considered excellent representatives of the late development fourth-generation fighter aircraft, their ability to contest air superiority against the latest fifth-generation U.S. and NATO fighters is questionable. Russia is working toward developing its own fifth-generation fighter—the Su-57—which aims to compete with the U.S. F-22 Raptor, the F-35 Joint Strike Fighter, and the Chinese J-20. In addition to several major technical issues encountered in testing, the Su-57's prohibitive cost is limiting Russia's ability to acquire the aircraft in large numbers. The Russian Air Force only expects to order 12 aircraft by 2020.³ Given these challenges, it is likely that the Russian Air Force will continue to rely on the upgraded fourth-generation aircraft for the foreseeable future.

Although the latest generation of Russian aircraft poses formidable threats to U.S. and NATO aircraft, the majority of the Russian Air Force is less well equipped. When comparing frontline units, Russian forces do retain several advantages. Russian aircraft have superior capabilities for air-to-air combat within visual range (WVR). Russia's advantages in WVR combat is based around its widespread adoption of intelligence, surveillance, reconnaissance, and targeting (ISRT) capabilities, helmet-mounted cueing, and an excellent short-range air-to-air missile (AAM), the R-73. The integration of these capabilities would likely provide Russian pilots an edge in close air-to-air engagements even against the latest generation of U.S. fighter aircraft. Interestingly, European air forces have invested more heavily in WVR combat capabilities.

The Russian Air Force faces several major disadvantages in air superiority in beyond visual range (BVR) combat. First, while Russia has an excellent medium- to long-range air-to-air missile in the

3. Pavel Baev, "Russian Air Power Is Too Brittle for Brinkmanship," *PONARS Eurasia Policy Memo* No. 398, November 2015, <http://www.ponarseurasia.org/memo/russian-air-power-too-brittle-brinkmanship>.

R-77, its aircraft would face significant challenges detecting and engaging adversary stealth fighters such as the F-22 or F-35 before they would be engaged themselves. This disadvantage will only become more acute as more Western nations gain access to stealth fighter aircraft, particularly as the F-35 enters wider service in NATO air forces. Second, the United States and NATO train to fight in a networked air warfare concept, where they are supported by dedicated radar platforms such as the E-3 Sentry Airborne Warning and Control Systems (AWACS), which provides significant airspace awareness. Russia is attempting to develop similar capabilities, but it lags substantially behind Western systems. Turkey's shoot-down of a Russian Su-24 that had violated Turkish airspace in 2015 while operating in northern Syria calls into question Russian airspace awareness capabilities.⁴

PRECISION STRIKE

U.S. and NATO forces held a considerable advantage with regard to long-range precision strike capabilities during the Cold War. Russian military theorists and leaders have long been aware of the considerable military value these weapons possess. A major strain of recent Russian military thought has been focused on the utility of the conventional long-range precision strike capabilities fielded by the United States and certain allies such as the Tomahawk sea-launched cruise missile. Russia has focused on developing its own precision strike capabilities for several decades. Recent combat operations in Syria have allowed Russian forces to demonstrate their considerable advances in the development of long-range strike weapons. This has included air- and sea-launched cruise missiles including the Kh-555, Kh-101, and 3M14 Kalibr; a short-range ground-launched cruise missile (GLCM) in the 9M723 Iskander-K; and an advanced short-range ballistic missile (SRBM) in the 9M723 Iskander-M. To further enhance its long-range strike capabilities, Russia is believed to have developed and potentially deployed a long-range land-based cruise missile, the SSC-8/9M729, which U.S. officials have determined to be in violation of the range limitations on such weapons under the 1987 Intermediate-Range Nuclear Forces (INF) Treaty.⁵

The best known of Russia's long-range cruise missiles is the 3M14 Kalibr, a sea-launched land-attack cruise missile with a range of 800 to 1,500 miles.⁶ The Russian Navy has employed this weapon against targets in Syria on multiple occasions, launched from both surface vessels and submarines. In the context of Europe, this capability provides Russia the ability to strike targets in much of northern and northeastern Europe using naval assets in the Norwegian Sea, the White Sea, the Black Sea, and the eastern Mediterranean. The Kh-555 and the Kh-101 are conventionally armed air-launched cruise missiles (ALCMs) with ranges estimated to be more than 2,100 miles. At such ranges, these weapons could target almost anywhere in Europe from aircraft flying well within

4. Geoff Brown, "Turkey Shootdown: Russia Air Power Has Chinks, but Campaign Has Been Decisive," Lowy Institute, November 25, 2015, <https://www.lowyinstitute.org/the-interpreter/turkey-shootdown-russian-air-power-has-chinks-campaign-has-been-decisive>.

5. Michael R. Gordon, "Russia Has Deployed Missile Barred by Treaty, U.S. General Tells Congress," *New York Times*, March 8, 2017, https://www.nytimes.com/2017/03/08/us/politics/russia-inf-missile-treaty.html?_r=0.

6. CSIS Missile Defense Project, "Missile Threat: Kalibr," August 11, 2016, <http://missilethreat.csis.org/missile/kalibr/>.

Russian airspace.⁷ It should be noted that while Russia's cruise missiles are conventionally armed, they are all believed to be potentially capable of carrying a nuclear payload.

For shorter ranges, Russia operates the Iskander family of systems includes the Iskander-M SRBM and Iskander-K GLCM. Both systems comply with the INF Treaty limiting their ranges to approximately 300 miles.⁸ While generally perceived as conventional weapons, they may have the ability to mount a nuclear warhead. This capability and the associated ambiguity make these systems particularly concerning to NATO planners. In the past, Russia has deployed them to Kaliningrad on a rotational basis, usually in response to U.S. and NATO actions. In October 2016, Russia announced that it would permanently deploy Iskander to its eastern European exclave.⁹

Russia has also developed and potentially deployed the SSC-8/9M729, a GLCM with an estimated range of 1,200 miles.¹⁰ This weapon directly violates the INF Treaty. However, the United States has not, to date, strongly challenged Russia over its existence or deployment.¹¹ The development of a ground-based component of its nonnuclear strategic deterrence capability is likely partially due to structural reasons. Russia does not have the range of aerial and naval platforms enjoyed by the United States. Russian leaders have long argued that the INF Treaty therefore places it at a disadvantage because it allows the United States to field naval and aerial long-range strike systems that are not limited under the treaty but are deployable to European waters and skies. Russia is also deeply concerned by the U.S. deployment of AEGIS Ashore systems in Romania and Poland. The 9M729 can also be viewed as a response to these installations.¹²

Russia's evolving precision strike capabilities provide it with a nonnuclear strategic deterrence capability long considered conspicuously lacking and vital given U.S. capabilities. For example, the Kalibr, Kh-555, and Kh-101 allow Russian forces to hold at risk critical targets across Europe such as radar facilities, command and control locations, airfields, and seaports. This capability has the potential to dramatically complicate NATO's freedom of maneuver and access in Europe and elsewhere.

Although Russia's precision strike capabilities have emerged as a formidable threat in recent years, it is important to view its advancements with some caution. While Russia's precision strike assets have impressive ranges and can be employed on a variety of platforms, Russia lacks the ability to reliably strike dynamic targets such as mobile forces. Russia is still developing a reconnaissance strike complex comparable to that operated by the United States. This capability requires a large array of sensors that can locate, identify, and track a wide range of mobile targets.

7. CSIS Missile Defense Project, "Missile Threat: Kh-55," August 10, 2016, <https://missilethreat.csis.org/missile/kh-55/>.

8. CSIS Missile Defense Project, "Missile Threat: SS-26 (Iskander)," September 27, 2016, <http://missilethreat.csis.org/missile/ss-26-iskander/>.

9. Juliusz Sabak, "Missile Defence Base in Redzikowo Targeted by the Iskanders from the Kaliningrad Oblast," *Defense 24*, October 18, 2016, <http://www.defence24.com/473498,missile-defence-base-in-redzikowo-targeted-by-the-iskanders-from-the-kaliningrad-oblast#>.

10. Tom O'Connor, "U.S. Military Has 'No Defense' against Russian Nuclear Missiles, Top General Says," *Newsweek*, April 5, 2017, <http://www.newsweek.com/us-military-defense-russian-nuclear-missiles-general-579726>.

11. Gordon, "Russia Has Deployed Missile Barred by Treaty."

12. "Russia Says US Missile System Breaches Nuclear INF Treaty," *BBC News*, May 11, 2016, <http://www.bbc.com/news/world-europe-36269734>.

INTEGRATED AIR AND MISSILE DEFENSE

Russia has developed a robust system of air and missile defense capabilities to protect strategic installations and shield advancing ground forces. Surface-to-air missiles have long been an area of technological strength for Russia. Soviet forces relied heavily on a veritable abundance of static and mobile anti-air missile systems. This focus makes sense given NATO's heavy emphasis on airpower to offset the superior numbers of Soviet ground forces. In many ways, this has been the defining paradigm of the competition in military capability development between the West and Russia through the Cold War to today. Russia's focus on air and missile defenses has increased given the subsequent development of U.S. and NATO airpower and long-range precision strike. In particular, the maturation of U.S. long-range precision strike capabilities deeply unnerved many Russian military thinkers, officers, and policymakers. This unease has only been heightened by the U.S. withdrawal from the Anti-Ballistic Missile Treaty in 2001, the emergence of the Conventional Prompt Global Strike (CPGS) concept in the mid- to late 2000s, and the deployment of the U.S. AEGIS Ashore systems in central and eastern Europe in the mid-2010s.

Responsibility for Russia's Integrated Air and Missile Defense (IAMD) is largely divided across two services within the Russian armed forces. The Russian Aerospace Forces operate strategic air and missile defense capabilities including S-400/S-300 regiments and the A-135 antiballistic missile (ABM) system that is deployed around Moscow. The Russian Ground Forces operate mobile air and missile defense capabilities such as the S-300V, Buk, and Tor, which are designed to move with and support advancing ground forces. The Aerospace Forces and Ground Forces both operate short-range air defense systems, including the most modern Pantsyr-S1 system, which Russian forces have used to defend a variety of locations in Syria.

There has been considerable focus in Western media on the advanced capabilities of the S-400 system, the latest generation of Russia's strategic air defense. While the S-400 system is quite capable, it requires a number of radars to perform optimally. Moreover, the 400km range often associated with the S-400 is generally misunderstood, as this range refers to the absolute maximum range of one type of interceptor missile, the 40N6, that is associated with the system. The 40N6 has never been observed with an operational S-400 regiment. The observed family of interceptors for the S-400 are quite capable out to approximately 250 km and have claimed capabilities against a diverse set of targets including large aircraft, ballistic missiles, and low-flying cruise missiles. The S-400 complex can also receive targeting inputs from a wide array of sensors including those with claimed counter-stealth capabilities. Taken together, it is clear that the S-400 is a multifaceted system that is designed to defeat multiple aspects of the U.S. precision strike complex.

The S-400 is supposed to be superseded by the S-500 system in the next five to ten years. However, this program has been shrouded in secrecy and, given Russia's poor history of meeting development timelines, it may be delayed. The S-500 may not wholly replace the S-400 system, but rather may add new radars and interceptors that provide more robust antiballistic missile capabilities. Several analysts have suggested that the S-500 will augment or fully replace the existing A-135 ABM complex that defends Moscow.

While Russia's strategic air defenses receive considerable attention, there are a number of relatively capable and more mobile systems operated by the Russian ground forces. These include the S-300V, Buk, and Tor systems. Despite sharing nomenclature similar to the S-300/S-400 systems operated by the Russian Aerospace Forces and possessing similar capabilities, the S-300V is a fundamentally distinct complex with unique interceptors and radars. The components of the S-300V complex are also mounted on tracked chassis. The Buk and Tor systems are medium- and short-range systems that require far fewer components to operate. Some versions of the Buk and all of the Tor systems integrate the radar and the missile launcher on a single tracked platform. These systems are not as capable as the S-400 or S-300, but they further thicken Russian air defense capabilities and create further complications for an attacking air force.

MARITIME FORCES

The Russian Navy has represented something of a paradox since the dissolution of the Soviet Union. As a continental power, Russia has always placed its ground forces as first among equals. Despite this emphasis on ground forces, it is the Russian Navy, and especially its submarine force, that is arguably the most advanced, competent, and well-trained component of the entire Russian military. The Russian Navy of today has recovered relatively well from its post-Cold War malaise and is beginning to accept new classes of submarines and surface vessels into service. That said, the Russian Navy still faces considerable issues, especially in terms of the development of new large surface vessels and controlling the costs of its next generation of nuclear powered attack submarines (SSNs).

Before focusing on the material side of the Russian Navy, it is important to understand Russia's overarching naval strategy. The core tenets of this strategy have not changed since the Cold War. Starting from the 1950s, it was apparent that the Soviet Union would never match the United States in terms of naval combatants. Instead, the Soviet Navy embarked on a strategy of sea denial to counter NATO's ambition to control the sea in order to reinforce Europe and conduct strikes on the Soviet periphery. The strategy of sea denial led to the development of surface combatants with comparatively heavy antiship cruise missile armaments and an exceptionally large submarine fleet. Between 1945 and 1991, the Soviet Union would build over 650 submarines.¹³

The modern Russian Navy is built on the foundation of modernized naval combatants from the Soviet era. These vessels have seen considerable usage in support of Russian combat operation in Syria. Their use in support of the Syria operation has revealed a new element of Russian naval power, the widespread deployment of land-attack cruise missiles. The use of these weapons as part of the Syria campaign provides the Russian Navy a considerable land-attack capability. The emergence of this precision strike complex was discussed at length in a preceding section.

This culminated in the deployment of Russia's only aircraft carrier to the region during late summer 2016. This deployment perfectly illustrates the uneven quality of the current Russian Navy.

13. Norman Polmar and Kenneth J. Moore, *Cold War Submarines: The Design and Construction of U.S. and Soviet Submarines* (Washington, DC: Brassey's, 2004), xiv.

The *Admiral Kuznetsov* has minimal actual combat power, but is rather more of a symbolic vessel. Russia's smaller surface combatants, especially its new corvettes, are impressive vessels capable of carrying a relatively large number of cruise missiles. Russia has struggled more with the development of new, large surface combatants. For example, the *Admiral Gorshkov*-class frigates, designed to replace a wide range of vessels, have faced considerable issues with their air defense systems.¹⁴ In addition, the production of these ships has been delayed considerably as Russia rushes to replace their Ukrainian-built gas turbine engines.

Russia's submarine fleet has seen successful developments but still faces issues. Russia maintains a core of excellent SSNs from the Soviet period. In addition, the new *Severodvinsk*-class SSNs are believed to nearly equal U.S. vessels in terms of performance.¹⁵ They can also carry a large payload of land-attack cruise missiles. This capability is becoming a major component of Russian undersea capabilities. All of the newly constructed *Kilo*-class diesel submarines (SSKs), based largely in the Black Sea, have demonstrated the ability to mount these weapons. Despite these improvements, Russian undersea forces are not without issue. The *Severodvinsk*-class vessels have been delayed and are exceptionally expensive. On the SSK front, Russia has achieved considerable success with the updated *Kilo* class but has to date failed in the development of a next-generation SSK equipped with air independent propulsion.

While this report will not deal with the modernization of the Russian ballistic missile force, it is important to consider another, often overlooked component of the Russian submarine fleet. Russia operates the largest fleet of special mission submarines in the world. Information about these vessels is sparse. What is known is that Russia operates a number of small, nuclear-powered special mission submarines with the ability to dive to tremendous depths. These vessels can be transported to their targets on a small number of converted ballistic and guided missile submarines. These vessels could be used to emplace seabed sensors or to interfere with undersea infrastructure, including pipelines and undersea cables. Such activities fit well into overall Russian concepts of operation.

In addition, the Russian Navy maintains a relatively robust amphibious warfare capability; a considerable amount of this capability is based in the Baltic Sea. This includes medium to large landing ships and dedicated naval infantry. While Russian amphibious capabilities do not match those operated by the United States, they do provide considerable capability in restricted seas such as the Black and Baltic Seas. Russian naval infantry are perceived to have a higher state of readiness and training, more akin to the venerable Russian Airborne than conventional Russian ground forces. This perception is reinforced by the relatively large numbers of Russian naval infantry observed in Syria and Eastern Ukraine.¹⁶

14. Dmitry Gorenburg, "Russia's Answer to the AEGIS Missile Defense System Is in Big Trouble," *National Interest*, July 29, 2016, <http://nationalinterest.org/blog/the-buzz/russias-answer-the-aegis-missile-defense-system-big-trouble-17199>.

15. Kathleen H. Hicks, Andrew Metrick, Lisa Sawyer Samp, and Kathleen Weinberger, *Undersea Warfare in Northern Europe* (Washington, DC: CSIS, July 2016), https://csis-prod.s3.amazonaws.com/s3fs-public/publication/160721_Hicks_UnderseaWarfare_Web.pdf.

16. Franz-Stefan Gady, "How the West Underestimated Russia's Military Power," *Diplomat*, October 17, 2015, <https://thediplomat.com/2015/10/how-the-west-underestimated-russias-military-power/>.

INFORMATION AND CYBER OPERATIONS/ELECTRONIC WARFARE

The Russian military takes a holistic and continuous view of nonkinetic operations in the information, cyberspace, and electromagnetic domains. This view is best captured by retired Major General Charis Saifetdinov, who wrote that the Russian military should prepare to undertake information operations in both peace and wartime, with these operations being an integral part of broader military campaigns conducted across the spectrum of conflict.¹⁷ Information operations can be broadly defined as the distribution of false or misleading information through a variety of media. These efforts are designed either to support Russian narratives or to undermine narratives that are counter to Russian interests. It is important to note that information operations are unlikely to be decisive on their own. However, they do play a vital role in shaping the environment and can dramatically increase the amount of uncertainty in adversary decisionmaking processes.

This uncertainty provides considerable military utility, as evidenced during Russia's illegal annexation of Crimea. The most prominent examples include "fake news" stories hyped during the 2016 U.S. and 2017 French presidential elections through suspicious Facebook and Twitter accounts, with backing from Kremlin-supported media organizations RT and Sputnik News. These operations are the most concerning because they strike at the core of Western democracies and the ideal of the open exchange of information.

For the purpose of this section, cyberspace operations do not include information operations that utilize the cyber domain. Instead, they include a wide range of technical means that can disrupt, degrade, or outright disable a target computer network. Cyberspace operations also include capabilities to exfiltrate data from protected networks. Discussing cyberspace capabilities can be quite difficult because similar attack vectors can be used for widely divergent end purposes. For example, a given zero-day exploit could be used to break into a secure network and extract classified information. That same zero-day may be used to inject malicious code into a network's backbone, crippling the network. Understanding cyberspace operations is further hindered by the inherent difficulties surrounding attribution in this domain. While attribution is often possible for state-level actors with prodigious resources, these attributions usually are not widely disseminated due to their reliance on a host of highly classified capabilities.

Over the past two decades, Russia has demonstrated significant interest—and arguably success—in a wide range of cyberspace operations. This most prominent include Russian directed cyberattacks against a range of Estonian targets in 2007 and 2008 as well as Russian hacking activities that targeted the Democratic National Committee in the spring of 2016.¹⁸ These activities portend the future use of cyberspace operations by Russian forces. They will be integrated into larger political and military operations in order to achieve maximum effect. However, it is important to note that Russia likely retains a core of advanced capabilities that can target military tactical and

17. K. I. Saifetdinov, "Informatsionnoe protivoborstvo v voennoi sfere," *Voennaia mysl* 7 (2014): 38–41.

18. Ian Traynor, "Russia Accused of Unleashing Cyberwar to Disable Estonia," *Guardian*, May 16, 2007, <https://www.theguardian.com/world/2007/may/17/topstories3.russia>; John Markoff, "Before the Gunfire Cyberattacks," *New York Times*, August 12, 2008, <http://www.nytimes.com/2008/08/13/technology/13cyber.html>.

strategic networks. Such capabilities are especially concerning due to the networked nature of Western militaries and the potentially asymmetric effects of such activities.

Russian operations in the cyber and information domains blur the line between military and non-military activities. Electronic warfare (EW) is more firmly in the military domain. However, it will be used to achieve similar effects, namely to reduce an adversary's confidence in sensors and networks. Historically, Russia has emphasized electronic warfare to offset the significant emphasis the United States and NATO place on high-technology systems. Russia's modern EW capabilities are specifically designed to defeat the kinds of reconnaissance and precision strike complexes operated by NATO allies. Russia has recognized both the considerable power and the vulnerabilities of long-range precision strike capabilities enabled by tactical data networks, persistent ISR platforms, and space-based position, navigation, and timing (PNT) capabilities. This was demonstrated in eastern Ukraine, where Russian tactical EW assets jammed Ukrainian PNT systems, hindered wireless communication, and wreaked havoc on radar-fused artillery shells.

At the strategic level, Russia is believed to operate several large systems with impressive capabilities against both radar surveillance systems and battlefield networks. These powerful jamming capabilities were also exercised during the recent Zapad exercise in 2017, with reports that these systems interfered with a range of military and civilian communication systems throughout the region. Russia's considerable investments in electronic warfare are concerning as Western forces have largely focused EW investments on countering a range of low-end threats faced in combat operations in Afghanistan and Iraq. NATO forces have become unaccustomed to operating in a contested EW environment, and they lack the capabilities to respond in kind.¹⁹

NUCLEAR FORCES

Russia retains a large nuclear arsenal that is treaty limited at parity levels with the U.S. nuclear force. Under the New START Treaty, both states are limited to 800 deployed ICBMs and SLBMs and 1,550 total warheads. The treaty does not address the 1,800 to 2,000 Russian tactical nuclear weapons.²⁰ Russia is currently undertaking a comprehensive modernization of its delivery systems. As part of these upgrades, Russia appears to be reemphasizing multiple independent reentry vehicles (MIRVs) in its nuclear force structure. This includes the development of a new heavy ICBM and an upgraded version of the RS-12M1 Topol-M road-mobile ICBM, the RS-24 Yars. These changes are likely in response to Russian concerns over the development of U.S. ballistic missile defense. Furthermore, Russia appears to be developing a light ICBM, the RS-26 Rubezh, which, in certain configurations, violates the 1987 INF Treaty.²¹

19. Hicks et al., *Undersea Warfare in Northern Europe*.

20. Dave Majumdar, "Everything You Need to Know: Russia's 'Tactical' Nuclear Weapons," *National Interest*, October 5, 2017, <http://nationalinterest.org/blog/the-buzz/everything-you-need-know-russias-tactical-nuclear-weapons-22607>.

21. Mark B. Schneider, "The Nuclear Posture Review and the Future of the INF Treaty," *RealClear Defense*, August 8, 2017, https://www.realcleardefense.com/articles/2017/08/08/the_nuclear_posture_review_and_the_future_of_the_inf_treaty_111994.html.

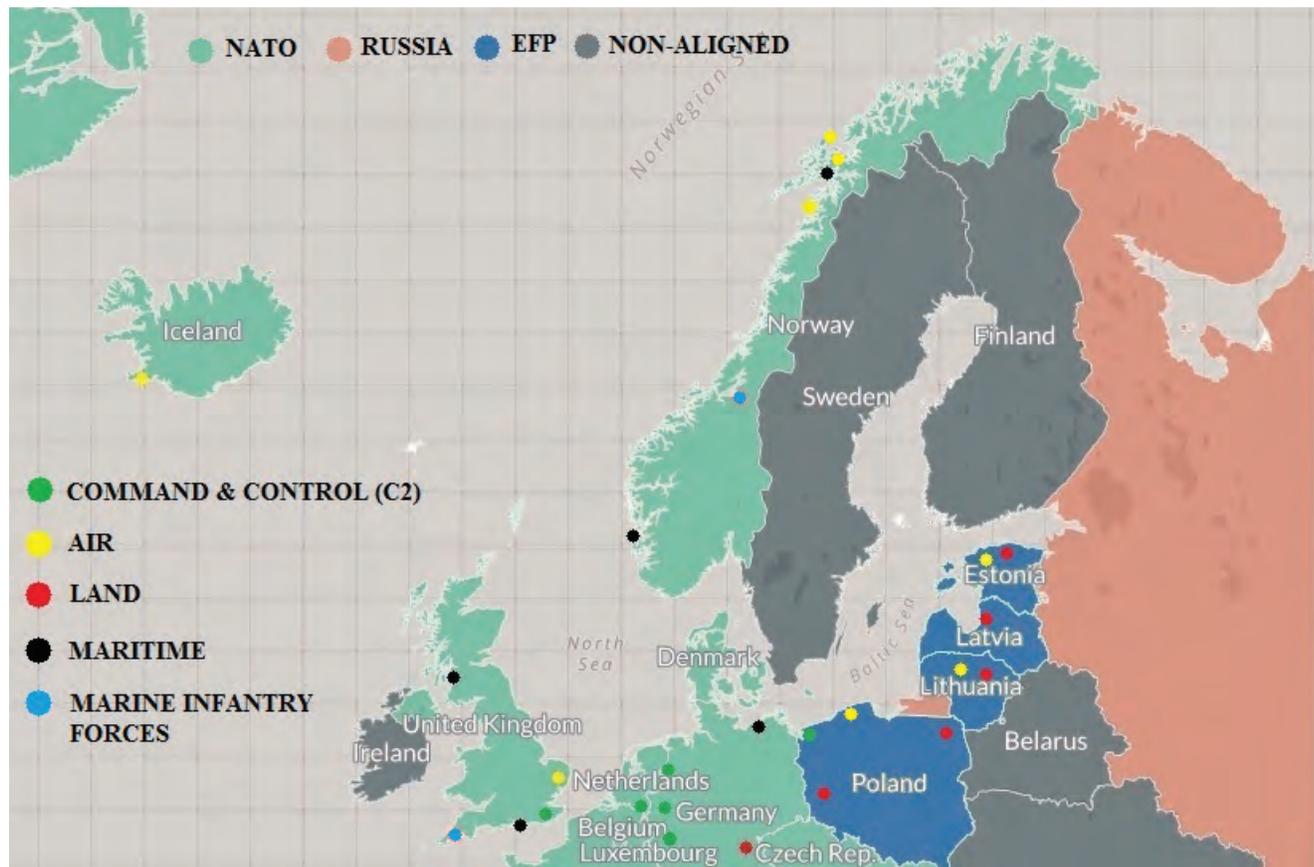
Russian nuclear strategy is designed to constrain an adversary's decision space at the onset of a conflict as well as during any potential hostilities. Formally, Russia's 2014 military doctrine sets a high threshold for nuclear employment against nuclear attacks or conventional attacks where the survival of the Russian state is threatened.²² The primary use of nuclear weapons is to prevent the outbreak of warfare; however, a secondary use of nuclear weapons is to prevent ongoing conflicts from escalating. This is perhaps the most worrying to Western policymakers, as it may be used as a counter-intervention tool against a NATO response to Russian aggression. There have been suggestions that Russia's nuclear messaging during the Ukrainian crisis was a form of this application.²³ Given the centrality of nuclear weapons in Russian security strategy and the substantial capital investments in these capabilities, it is clear that Russia will continue to rely heavily on nuclear arms to achieve its political and military objectives.

22. "Military Doctrine of the Russian Federation," *Offiziere*, August 2015, <https://www.offiziere.ch/wp-content/uploads-001/2015/08/Russia-s-2014-Military-Doctrine.pdf>.

23. Dave Johnson, *Nuclear Weapons in Russia's Approach to Conflict* (Paris: Fondation pour la recherche stratégique, November 2016), <https://www.frstrategie.org/web/documents/publications/recherches-et-documents/2016/201606.pdf>; Jacek Durkalec, *Nuclear-Backed Little Green Men: Nuclear Messaging in the Ukraine Crisis* (Warsaw: Polish Institute of International Affairs, July 2015), <https://www.files.ethz.ch/isn/193514/Nuclear%20Backed%20%E2%80%9CLittle%20Green%20Men%E2%80%9D%20Nuclear%20Messaging%20in%20the%20Ukraine%20Crisis.pdf>.

The Current Web of Regional Security Relations

Figure 4.1. Selected NATO, Multinational, or National Military Facilities



Source: Ian Williams, "The Russia-NATO A2AD Environment," CSIS MissileThreat, January 3, 2017, <https://missilethreat.csis.org/russia-nato-a2ad-environment/>.

BILATERAL

Northern Europe has in the past 25 years built an ever more complex web of security and defense relationships—bilateral, regional, and international, which is testimony to the continual perceived inadequacy of existing structures to guarantee security within existing resources. Finland and Sweden have approached relationship-building in tandem—their bilateral defense relationship, trilateral relations with the United States, EU membership, the establishment of NORDEFECO, and partnership with NATO. These efforts have been mostly by design, though the unilateral decision by Stockholm in 1990 to seek EU membership forced Helsinki to follow suit, a cautionary lesson about the limits of informal mutual dependence that persists in Finland’s political consciousness.

The first layer in the growing web of security and defense relations is the bilateral relationship between Finland and Sweden. The purpose of this military cooperation is, as Swedish prime minister Lofven put it, “operative cooperation beyond peacetime.” This is a new and more intense relationship, which both sides have been careful not to define as an alliance, but which is open-ended, with no other potential cooperation ruled out.¹ The two countries have cooperated for many years, but defense cooperation has intensified, particularly in recent years. In May 2013, Sweden and Finland signed an Action Plan for Deepened Defense Cooperation. The plan sought to address two shared political challenges simultaneously—first, improving security, and second, developing ways to utilize resources during a period of diminishing defense budgets. In line with the plan’s provisions, the two countries’ armed forces delivered a joint final report at the end of February 2015,² identifying feasible cooperation areas and proposing specific measures for their implementation.³ It specifically called for the development of a bilateral standing Naval Task Group, the Swedish-Finnish Naval Task Group (SFNTG), scheduled to have full operational capability by 2023; an increased level of interoperability between air forces, with the capacity for joint operations, common base operations, and common command and control (C2) capability; and the development of a combined Finnish-Swedish Brigade Framework.⁴ The two countries have also developed unique amphibious capabilities through the Swedish-Finnish Amphibious Task Unit (SWEFIN-ATU), which tested its readiness and offensive capabilities during the NATO-led BALTOPS 2015 exercise. High-level discussions have also touched on the sharing of military infrastructure, exchanging intelligence, common defense tasks such as air patrols, and joint equipment procurements.⁵ However, it is important to note that the

1. Rene Nyberg, “Finland and Sweden and Security in the Baltic Sea Region” (remarks at Polish Institute of International Affairs, Warsaw, June 12, 2017), <http://www.anselm.fi/finland-sweden-security-baltic-sea-region/>.

2. Swedish Ministry of Defence, “Final Reports on Deepened Defence Cooperation between Finland and Sweden,” May 19, 2015, <http://www.government.se/49baf3/globalassets/government/dokument/forsvarsdepartementet/final-reports-on-deepened-defence-cooperation-between-finland-och-sweden.pdf>.

3. Tobias Etzold and Christian Opitz, “Between Military Non-Alignment and Integration: Finland and Sweden in Search of a New Security Strategy,” German Institute for International and Security Affairs, April 2015, https://www.swp-berlin.org/fileadmin/contents/products/comments/2015C25_etz_opt.pdf.

4. Government Offices of Sweden, “Defence Cooperation between Finland and Sweden,” May 19, 2015, <http://www.government.se/government-policy/defence/defence-cooperation-between-finland-and-sweden/>.

5. “Sweden, Finland Stress Defense Cooperation ahead of Russian Visit,” *DefenseNews*, June 24, 2016, <https://www.defensenews.com/global/europe/2016/06/24/sweden-finland-stress-defense-cooperation-ahead-of-russian-visit/>.

two have yet to, nor is there any ambition to, sign a bilateral defense treaty or any guarantee that one would come to the other's defense in the event of a territorial attack.

Recognizing the deficiencies in both defense budgets and capabilities, which have atrophied over the years, the bilateral relationship between Finland and Sweden is arguably the most significant in the overall web of security. It serves as a basis and the groundwork for many of the multilateral security mechanisms in the region.

TRILATERAL

The second layer in the web of security relations is the bilateral relationships Finland and Sweden have with the United States and the trilateral grouping that they have recently instituted. Both Nordic countries are open about the critical role the United States plays as a security guarantor in the region, and they have prioritized closer ties. The goal of expanding relations is to keep the United States engaged in European and Nordic defense issues. To do so, Finland and Sweden have pursued a bilateral track and a multilateral track including mechanisms such as U.S.-Nordic Leaders Summit, U.S.-Nordic Defense Dialogue, and NATO.

Broadly speaking, bilateral defense relations between the United States and Finland are similar to those between the United States and Sweden. Both bilateral relations have intensified in recent years due to Russia's increasingly destabilizing actions in the Baltic Sea and North Atlantic regions. In June 2016, the United States and Sweden signed a Statement of Intent, a wide-ranging document that seeks to strengthen cooperation on interoperability, training and exercises, armament cooperation, research and development, and operations.⁶ Finland followed suit shortly thereafter, signing a bilateral defense cooperation pact with the United States in October 2016. The pact calls for closer cooperation through continued joint air, land, and sea military drills. It also deepens ties through information exchange and joint research and development in areas including cyber defense and training.⁷ Closer bilateral defense relations also promote political dialogue, intelligence sharing, and other forms of practical cooperation. This is separate from NATO's efforts to address challenges in the Baltic Sea region, but U.S. national engagement naturally complements NATO's role.⁸

Trilateral relations have also strengthened through multilateral formats such as the U.S.-Nordic Leaders Summit. During the most recent installment, which took place in May 2016, heads of state/government from Finland, Sweden, Denmark, Norway, and Iceland discussed the importance of cooperative security and defense measures.⁹ This reinforces efforts to bridge existing

6. Megan Eckstein, "U.S., Sweden Sign Agreement to Collaborate on Anti-Sub, Anti-Air R&D, Exercises," *USNI News*, June 8, 2016, https://news.usni.org/2016/06/08/sweden_us_agreement.

7. Jari Tanner, "Finland, US to Deepen Military Ties through Pact," *Associated Press News*, October 7, 2016, <https://apnews.com/967782b6c665467f9ac096a84bec17d9/finland-us-deepen-military-ties-through-pact>.

8. Carl Hvenmark Nilsson, "The Baltic Region's Security Gap: Understanding Why U.S.-Swedish Military Cooperation Is Key," *CSIS Commentary*, June 7, 2016, <https://www.csis.org/analysis/baltic-region%E2%80%99s-security-gap-understanding-why-us-swedish-military-cooperation-key>.

9. White House Office of the Press Secretary, "U.S.-Nordic Leaders' Summit Joint Statement," press release, May 13, 2016, <https://obamawhitehouse.archives.gov/the-press-office/2016/05/13/us-nordic-leaders-summit-joint-statement>.

institutional gaps without adding new operational structures that might complicate relations. This builds on then-president Obama's launching in 2013 of a U.S.-Nordic Security Dialogue, which meets annually to discuss opportunities for enhanced collaboration on regional and global security issues.

REGIONAL

Enhanced regional ties are the third layer of defense cooperation. In addition to deepening bilateral relations, Finland and Sweden have also cultivated ties with Norway, Denmark, Iceland, and the United Kingdom—all of which are NATO allies. Greater defense cooperation has played out through several mechanisms including Nordic Defense Cooperation (NORDEFECO), the Northern Group, and most recently, the UK-led Joint Expeditionary Force (JEF).

A central component of the Nordic security structure is NORDEFECO. Established in 2009, the body offers a platform for Nordic countries to strengthen national defense, explore common synergies, and facilitate efficient common solutions.¹⁰ To do so, members engage in cooperative studies including research, development, and testing; develop capabilities including armaments and logistics; invest in human capital through education and training; and improve cooperation through planning and execution of exercises.¹¹ NORDEFECO provides the framework for the biennial Arctic Challenge exercise, which focuses on cross-border air training and which was held most recently in May–June 2017. The exercise involves use of high-north airfields in Sweden, Finland, and Norway, and provides a valuable opportunity to enhance interoperability. Eight non-Nordic participants, including the United States, United Kingdom, France, and Germany all participated in the 2017 exercise, gaining experience in regional operations.¹² The shortcoming of NORDEFECO, however, is the lack of a binding security guarantee. The fact that most members of NORDEFECO are also members of NATO further complicates its role in preparing for contingencies such as military aggression. This limits the organization's operational role: the Nordic states are unlikely to take collective defense action under the NORDEFECO banner, but the grouping provides a means for improving the ability of its members to cooperate effectively in a contingency.

The Northern Group, established in 2010 by the United Kingdom, is an informal defense forum that brings the Nordic countries together with the United Kingdom, Poland, Germany, the Netherlands, and the Baltic States, essentially encompassing the Baltic and North Seas and the Greenland-Iceland-UK (GIUK) gap. The consultative group meets at the defense minister level to discuss common threats and security issues across northern Europe and the Baltic Sea region. The

10. Nordic Defence Cooperation (NORDEFECO), "The Basics about NORDEFECO," <http://www.nordefco.org/the-basics-about-nordefco>.

11. Leo Michel, "Finland, Sweden, and NATO: From 'Virtual' to Formal Allies?," *INSS Strategic Forum* 265, February 2011, 4, <http://ndupress.ndu.edu/Portals/68/Documents/stratforum/SF-265.pdf>.

12. Finnish Defence Forces, "Flight Detachments and Air Bases in Arctic Challenge Exercise 17," press release, April, 5, 2017, http://puolustusvoimat.fi/en/article/-/asset_publisher/1951206/arctic-challenge-exercise-17-lentotoimintaharjoituksen-lentavat-joukot-ja-tukikohdat.

Northern Group provides an avenue for defense policy discussions involving Finland and Sweden with key members of the NATO alliance directly active in the region.

A relatively new regionally focused initiative to promote operational cooperation against security threats is the UK-led JEF.¹³ The JEF was originally agreed to in 2015 and will achieve full operational capability in 2018. It is a high-readiness joint force consisting of up to 10,000 personnel able to respond to a variety of contingencies, from humanitarian to combat operations. Finland and Sweden joined the body in June 2017, and the JEF now includes the Netherlands and the United Kingdom, along with the Nordic and Baltic countries (except Iceland, which has no military forces of its own).¹⁴ The JEF does not constitute a military alliance, but the initiative enhances practical ties and interoperability for Finland and Sweden with many of the NATO members most active in the region, and thus constitutes a new component to the web of security mechanisms. The body's northern European focus signals a possible new approach to security in the Arctic, a region where Russia is dramatically expanding its military infrastructure and operational activity. This dynamic naturally demands a level of integration with Finland and Sweden, further assimilating the two Nordic countries with one of Europe's strongest militaries, and in doing so, advancing interoperability along NATO standards. The initiative is not NATO-led despite the United Kingdom being a member of the Alliance. This makes Finnish and Swedish participation less controversial domestically. As JEF becomes operational, it has the potential to develop connections with other bodies and fill gaps in the security architecture in northern Europe, including through participation in larger regional exercises, whether in an EU, NATO, or national context.

Greater regional cooperation has been displayed through multiple military exercises, including Cold Response, Arctic Challenge, and most recently Aurora. Cold Response, the Norwegian armed forces' biennial main winter exercise, last occurred during February and March 2016 and included 15,000 soldiers from 14 nations. The goal was to practice and enhance interoperability and joint action in land, air, and sea theaters. Arctic Challenge, which took place in May 2017, is a biennial rotating air exercise between the three northernmost air bases in the Nordic countries, Bodø (Norway), Luleå (Sweden), and Rovaniemi (Finland). The most recent installment was led by the Finnish Air Force and included more than 100 aircraft representing 11 nations. The unique cross-border airspace makes Arctic Challenge an important training ground for increasing interoperability between Nordic and other participating nations.¹⁵ Most recently, Sweden hosted Aurora, its largest military exercise in 23 years. A total of 19,000 personnel from the Swedish armed forces along with units from numerous other countries participated. Similar to Cold Response and Arctic Challenge, Aurora was conducted across multiple theaters and was aimed at increasing military transparency between partner nations, while also improving interoperability, exchange of information, and sharing of military infrastructure.

13. UK Ministry of Defence, "The Joint Expeditionary Force," June 2017.

14. Dan Anderson, "Finland Joins British-Led Military Force," *Helsinki Times*, July 3, 2017, <http://www.helsinkitimes.fi/149-finland/14865-finland-joins-british-led-military-force.html>.

15. Thomas Nilsen, "Arctic Challenge 2017 Set for Take Off," *Barents Observer*, May 16, 2017, <https://thebarentsobserver.com/en/security/2017/05/arctic-challenge-2017-set-take>.

MULTILATERALS

NATO

NATO maintains a variety of initiatives designed to pool resources and to increase cooperation. Projects cover a wide range of efforts addressing critical capability requirements from cyber defense to ballistic missile defense, intelligence sharing, and reconnaissance, among others.¹⁶ The ultimate goal is to encourage joint development, acquisition, and operation among allies. As national defense budgets have stagnated or decreased until recent years, greater coordination among individual nations and through institutions such as the European Union has been key for enhancing security in Northern Europe.

Of all the links that make up the northern European security network, NATO is the most powerful and simultaneously the most politically sensitive inside Finland and Sweden. Debate surrounding Finnish and Swedish membership has intensified in recent years in connection with the deteriorating regional security situation, but it is unclear what the outcome will be. Regardless of the membership issue, relations between the two Nordic states and the military alliance have become more robust and increasingly practical. They include a range of initiatives spanning education and training, and defense reform. Momentum toward greater cooperation began in 1994 when Finland and Sweden joined NATO's Partnership for Peace (PfP). PfP offered the opportunity to develop an individual relationship with NATO, allowing Finland and Sweden to choose their priorities for cooperation and the level and pace of progress.¹⁷ Programs through which PfP members can enhance cooperation and improve interoperability are wide-ranging and include such issues as defense reform, defense policy and planning, education and training, and military-to-military cooperation, among others.¹⁸ Finland and Sweden also participate in NATO's Planning and Review Process (PARP), which aims to provide a structured approach for enhancing interoperability and capabilities of partner forces that are best able to cooperate alongside NATO allies for multinational training, exercises, or operations.¹⁹ The value in these bodies is that they provide a greater sense of transparency into NATO ambitions, planning, and force goals. This not only improves Finland's and Sweden's defense planning abilities; it also helps frame national defense decisions in ways that encourage a high degree of interoperability with NATO forces.²⁰ But these arrangements fall short of any security guarantee and do not provide for NATO to plan with Sweden or Finland for a conflict; this means that Finland and Sweden in their national defense planning decisions cannot assume NATO support in a crisis, which forces both nations to make difficult choices about acquiring and maintaining capabilities without being able to depend on the Alliance with which they have so many shared interests.

16. North Atlantic Treaty Organization (NATO), "Smart Defence," February 20, 2017, http://www.nato.int/cps/ua/natohq/topics_84268.htm.

17. NATO, "Partnership for Peace Programme," June 7, 2017, http://www.nato.int/cps/ic/natohq/topics_50349.htm.

18. Ibid.

19. NATO, "Partnership for Peace Planning and Review Process," November 5, 2014, http://www.nato.int/cps/ic/natohq/topics_68277.htm.

20. Michel, "Finland, Sweden, and NATO," 7.

In 2014, Finland and Sweden took relations with NATO to a more advanced level, becoming two of five inaugural Enhanced Opportunities Partners (EOP). EOP is a component of the Partnership Interoperability Initiative (PII), which was launched at the Wales Summit in 2014. The EOP program allows Finland and Sweden greater access to the day-to-day work of the Alliance, including matters that impact interoperability such as command and control systems, education and training, exercises, and logistics.²¹ In addition to their involvement in NATO planning and logistics, Finland and Sweden have also integrated themselves into operational components of the Alliance including the NATO Response Force (NRF) and its Strategic Airlift Capability.

NRF was launched in 2002 and provides the Alliance with a highly ready and technologically advanced fighting force. It is a multinational force made up of land, air, maritime, and Special Operations Forces (SOF) that can be deployed within 60 days.²² The forces are contributed by a NATO nation for one year and, with approval from NATO allies, can be reinforced by partner nations. Finland joined the NRF in 2008 and has participated in the supplementary activities pool every year since 2012. A Finnish Air Force unit rotated to the NRF in 2014, and this year the Finnish Navy committed a mine countermeasure vessel, while the Army added a chemical, biological, radiological, and nuclear (CBRN) special unit.²³ Furthermore, the International Readiness Unit of the Finnish Air Force is currently training to take over the NRF for the 2018 calendar year. The Readiness Unit consists of four F/A-18 Hornet multirole fighters and up to 250 personnel.²⁴ Lapland Air Command is responsible for training the unit, which could engage in various types of air-to-air operations including no-fly-zone surveillance, protection of vital targets against air threats, and protection and escorting of air operations. Training also has a ground focus and includes such issues as leadership, planning, use and maintenance of equipment, and individual soldiers' skills.²⁵ In 2013, and in the lead-up to NATO's Steadfast Jazz exercise, Sweden announced that it would also join the NRF. After receiving approval, Sweden offered to reinforce the next four rotations with aircraft, ships, and land forces.²⁶

Finland and Sweden are also members of the NATO Strategic Airlift Capability, a consortium that also includes 10 NATO members. The initiative set out to acquire, manage, support, and operate three Boeing C-17 aircraft to provide NATO and partners with strategic airlift capabilities.²⁷ These capabilities improve the Alliance's ability to rapidly deploy troops and cargo across the globe and come at a reduced cost due to the pooling of resources.

Since 2013, Russian military aircraft have increasingly tested the boundaries of countries' airspace in the region. The most dramatic incident occurred in 2013, when the Russian Air Force crossed

21. NATO, "Partnership Interoperability Initiative," June 7, 2017, http://www.nato.int/cps/ic/natohq/topics_132726.htm.

22. NATO, "NATO Response Force," January 16, 2017, http://www.nato.int/cps/en/natohq/topics_49755.htm.

23. Finnish Air Force, "The Air Force Is Getting Prepared for the 2018 NRF Rotation," March, 15, 2017, http://ilmavoimat.fi/en/article/-/asset_publisher/ilmavoimat-valmistautuu-vuoden-2018-valmiusvuoroon.

24. Ibid.

25. Ibid.

26. NATO, "Sweden to Join NATO Response Force and Exercise Steadfast Jazz," October 14, 2013, http://www.nato.int/cps/en/natolive/news_104086.htm.

27. NATO, "Strategic Airlift Capability (SAC)," September 7, 2015, http://www.nato.int/cps/en/natohq/topics_50105.htm.

the Gulf of Finland and carried out a mock nuclear attack against Sweden; further violations of Swedish airspace occurred the next year, and Russia has violated the Baltic States' airspace on multiple occasions. This raises the need for greater coordination to protect airspace against increasingly reckless Russian actions. Finland and Sweden have found ways to engage with NATO aircraft carrying out air policing missions in the Baltic States and in Iceland to this end. While Stockholm and Helsinki have not volunteered to patrol NATO airspace as part of these missions, they have taken advantage of the proximity of NATO fighter aircraft to conduct air training and exercises with them, which contributes to regional security and the ability of all countries concerned to respond individually and collectively to threats to their airspace.

The most recent example of closer ties between the nonaligned Nordic states and NATO is the Finnish Center of Excellence. In early October, Finnish president Sauli Niinistö and Prime Minister Juha Sipilä, along with European Union high representative Federica Mogherini and NATO secretary general Jens Stoltenberg, officially opened a European Center of Excellence for Countering Hybrid Threats in Helsinki. The Center's mission is to monitor and respond to hybrid challenges, cyber defense, and security in the Baltic Sea, among others. While not official members of the Center, NATO and the European Union participate in the Center's activities.²⁸ Countering hybrid threats is a common theme between NATO and the European Union, and an area through which further cooperation can be developed. Drawing on the expertise not only from government agencies but also from nongovernment experts, the Center will greatly enhance joint efforts to combat hybrid threats.

Finland and Sweden have also participated in several NATO missions. Both were involved in NATO's Implementation Force (IFOR) in Bosnia-Herzegovina, which sought to implement the military aspects of the Dayton Peace Agreements. It was later transformed into a Stabilization Force (SFOR) to establish a conducive environment for reconstruction in the aftermath of the war. Finland and Sweden also contributed soldiers to NATO's Kosovo Force (KFOR). In the aftermath of the terrorist attacks of 9/11, Finland and Sweden joined the International Security Assistance Force (ISAF) in Afghanistan in 2002. Both contributed troops, and Sweden was the only non-NATO European country to lead a Provincial Reconstruction Team (PRT) in northern Afghanistan. More recently, Sweden sent fighter jets to enforce the no-fly zone and provide tactical air reconnaissance over Libya during NATO's Operation Unified Protector, Stockholm's first combat deployment in decades.²⁹

There is notable value in Finnish and Swedish participation in NATO missions. First, it builds their already high credibility as defense partners. Second, it tests defense capabilities as well as providing insight into the need for modernized equipment, which could ultimately lead to greater cooperation on future exercises. And as a result it improves their interoperability with Europe's most powerful militaries, a condition required for future crisis management or territorial defense missions.

Deeper cooperation with NATO serves as another vital forum to enhance relations with the United States. Finnish and Swedish relationships with NATO represent the most important multilateral

28. NATO, "NATO Welcomes Opening of European Centre for Countering Hybrid Threats," April 11, 2017, http://www.nato.int/cps/en/natohq/news_143143.htm.

29. Karl P. Mueller, ed., *Precision and Purpose: Airpower in the Libyan Civil War* (Santa Monica, CA: RAND, 2015), https://www.rand.org/content/dam/rand/pubs/research_reports/RR600/RR676/RAND_RR676.pdf.

track, because the United States has made it clear that it regards NATO as its preferred forum for security cooperation with Europe. Finland and Sweden also recognize the Alliance's role in promoting intra-European cooperation on a wide range of military and political-military issues, but they view the Alliance's transatlantic dimension as its critical and long-term advantage—especially as an ultimate guarantor of European security in the event of an emerging threat from Russia.³⁰ In May 2016, Finnish foreign minister Timo Soini emphasized this point during a speech in which he explained, "The support of the United States has facilitated Finland's and Sweden's strong NATO partnership. Through this, interoperability will be maintained, national defense developed, and a dialogue conducted on the security of the region to create a common understanding of the situation."³¹ Over the past three decades, the United States has helped facilitate growing relations between the nonaligned Nordic states and the Alliance, leading to their involvement in NATO programs including PfP, EOP, and Host Nation Support.

The European Union

The European Union has proven to be a key means for Sweden and Finland to address many nontraditional security threats, including immigration, energy security, transportation, and, environmental change, among others. The European Union has also built structures and established the capacity to take on increased responsibilities in the areas of crisis management operations and development of civilian and military crisis management capabilities.³² Both Sweden and Finland support and contribute to the EU Common Security and Defense Policy (CSDP) and its numerous military and civilian operations. Sweden has provided land forces to EU-led military operations in the Democratic Republic of the Congo, Chad, and Bosnia-Herzegovina. Sweden also serves as lead nation for the European Union's Nordic Battlegroup, which is a rapid-reaction force designed to arrive at the site of a crisis within 10 days of a political decision.³³ Finland is also an active participant in the Nordic and German-Dutch Battlegroups, providing 300 soldiers within the rotating system. Finland also contributed a minesweeper to the European Union's antipiracy operation, Atalanta. Support for CSDP is buttressed by the fact that former supreme commanders Gustav Hågglund (Finland) and Håkan Syrén (Sweden) have headed the European Union's Military Committee.³⁴

While Sweden and Finland still remain officially nonaligned, their membership in the European Union provides additional support in the face of security challenges. The solidarity clause, under Article 222 of the Lisbon Treaty, calls for the European Union to act and provide mutual assistance in the event of a natural disaster, man-made disaster, or terrorist attack, in addition to calling for the mobilization of military instruments if necessary. The other solidarity clause in the Lisbon

30. Michel, "Finland, Sweden, and NATO," 5.

31. Timo Soini, "Finland's Relationship with the U.S. Is Cornerstone of Our Foreign Policy" (remarks by minister of foreign affairs of Finland at the Embassy of Finland, Washington, DC, May 18, 2016), <http://www.finland.org/Public/default.aspx?contentid=346548&culture=en-US>.

32. Michel, "Finland, Sweden, and NATO," 3.

33. Swedish Armed Forces, "Nordic Battlegroup NBG15," <http://www.forsvarsmakten.se/en/archived-pages/about/our-mission-in-sweden-and-abroad/international-activities-and-operations/nordic-battle-group/>.

34. Gunilla Herolf, *European Security Policy: Nordic and Northern Strategies* (Berlin: Friedrich Ebert Stiftung, June 2013), 6, <http://library.fes.de/pdf-files/id/10140.pdf>.

Treaty, Article 42.7, places the “obligation of aid and assistance by all the means in their power” on the individual states.³⁵ This article was first invoked after the 2015 terrorist attacks in Paris. While not a formal military alliance, Finnish and Swedish officials highlight the two solidarity clauses as a form of security guarantee should an external or internal actor threaten Finland’s or Sweden’s security.

There are limits, however, to the assurance EU membership brings to Finland and Sweden. The European Union’s growing security role does not have a significant territorial defense component, and is focused on crisis management and response outside EU territory. Even the proposals for an expanded European defense policy do not include a focus on northern Europe, although the EU Defense Fund could provide financial support for capability development and acquisition.

A more robust vision for the European Union as a security guarantor has recently been promoted by French and German politicians. French president Emmanuel Macron outlined his proposal during a recent speech in which he called for the European Union to have an “autonomous capacity for action” through a joint military force. He also advocated for a shared defense budget, a European Defense Fund, and a common defense policy.³⁶ Such developments would allow Europe to act autonomously in the face of an imminent security threat, but in a manner that would be complementary to NATO. Macron’s attempt to reinvigorate European defense initiatives brings to light several past initiatives that have struggled to spur momentum—including Eurocorps and EU battle-groups, which have either never or only sparingly been deployed. Germany has expressed its support for these new initiatives. To an extent, the Germans have advanced European defense integration through their partnerships with neighbors. In February, German defense minister Ursula von der Leyen, along with her counterparts from Romania and the Czech Republic, announced deepened defense ties that would result in greater integration between their armies—a step Germany has also taken with the Netherlands and France. Romania and the Czech Republic would each contribute a brigade to a German-led multinational division. While this is a positive step in enhancing Europe’s collective ability to address security concerns in the north, further discussion needs to be elevated and perhaps complementary to the work already being done by NATO.

DEFENSE INDUSTRY RELATIONS

The defense industrial capacity of Finland and Sweden is an additional component of the political and security relations of northern Europe. Finnish and Swedish defense companies have increasingly sought greater ties with foreign firms, presenting opportunities for greater economic growth and material cooperation.

Finland, despite its smaller size, maintains a highly skilled and competent defense industry that has emphasized regional and international cooperation in its major procurement programs. Finland has around 100 significant companies in the defense sector, most of which are small- and

35. “What Is Article 42.7 of the Lisbon Treaty?,” *Politico*, November 17, 2015, <https://www.politico.eu/article/what-is-article-42-7-of-the-lisbon-french-government-terrorist-attacks-paris-treaty/>.

36. “France’s Macron Seeks Joint Defence Force under EU Reforms,” *BBC*, September 26, 2017, <http://www.bbc.com/news/world-europe-41403394>.

medium-sized enterprises focused on niche capabilities such as sensors, radars, optics, and other technologies. Many of these domestic companies are also being driven toward consolidation to remain competitive in the regional and international markets.³⁷

Looking ahead to the retirement of key capabilities and the anticipated major procurements of combat aircrafts and corvettes in the 2020s, the Finnish Ministry of Defense released a government resolution on “securing the Finnish defense technological and industrial base” in 2016.³⁸ While Finland recognizes that it will need to purchase major combat systems from foreign firms, it wants to capitalize on opportunities to spur domestic growth and jobs in the manufacturing and maintenance processes. As the competition between Boeing, Dassault Aviation, BAE Systems, Lockheed Martin, and Saab for Finland’s HX Fighter replacement program contract intensifies, Finland has identified four decision criteria: (1) the aircraft’s military capability; (2) security of supply and industrial participation; (3) life-cycle costs; and (4) the security and defense policy effect of the acquisition.³⁹ In May 2017, Finland signed a contract with its domestic Rauma Marine Constructions shipyard to design four multirole corvettes for the Squadron 2020 program, which will present more opportunities for both regional cooperation and the growth of Finland’s defense sector in the next decade.⁴⁰

Whereas Finland is dependent on access to global markets—specifically the United States and European suppliers—Sweden has a defense industry that is largely able to fulfill the modest requirements of the Swedish Armed Forces. Sweden continues to domestically produce many of its major combat systems including fighter aircraft, surface combatants, and diesel-electric attack submarines.

Since the end of the Cold War, Sweden’s dwindling military budget, advances in defense technologies, and an increasingly competitive international defense trade have driven the country’s defense sector toward greater consolidation and privatization. Saab AB and BAE Systems Hägglunds have emerged as the country’s two largest defense firms. These dynamics—which similarly transformed the United States and European defense sectors—led Sweden to embrace strategic collaborations with foreign firms and, in certain cases, multinational ventures. While multinational collaborations in certain areas have been successful, these arrangements have occasionally led to tensions between the Swedish government and foreign-owned firms over defense requirements,

37. “Industry Consolidates as Nordic States Unify on Defense,” *DefenseNews*, November 11, 2016, <http://www.defensenews.com/articles/industry-consolidates-as-nordic-states-unify-on-defense>.

38. Finnish Ministry of Defense, “Securing the Finnish Defense Technological and Industrial Base,” 2016, https://www.defmin.fi/files/3403/PUTE_strategia_eng_010416.pdf.

39. “Industrial Value to Influence Finnish Fighter Competition Outcome,” *DefenseNews*, December 2, 2016, <http://www.defensenews.com/articles/industrial-value-to-influence-finnish-fighter-competition-outcome>; Finnish Ministry of Defense, “Requests for Quotation for the HX Programme Will Be Sent to All Candidates,” press release, April 24, 2017, https://www.defmin.fi/en/administrative_branch/strategic_capability_projects/hx_fighter_program/hx_programme_press_releases/requests_for_quotation_for_the_hx_programme_will_be_sent_to_all_candidates.8714.news.

40. “RMC to Design Multirole Corvettes for Finland’s Squadron 2020 Project,” *Naval Technology*, May 2, 2017, <http://www.naval-technology.com/news/newsfinnish-defence-forces-rmc-sign-design-contract-for-corvettes-of-squadron-2020-project-5801853>.

acquisitions processes, and Stockholm's strong preference for domestic production.⁴¹ The Swedish defense industry, moreover, is not entirely self-reliant. Domestically produced systems depend on global supply chains and imports of certain critical components—notably the turbofans for the Gripen's engines are imported from the United States. Sweden also relies on imports from the United States and Europe to provide certain capabilities not produced by domestic firms including precision-guided munitions, air-launched missiles, helicopters, and transport aircraft. Although Sweden's defense imports are quite modest in value, most of its imports in recent years have come from the United States, Germany, and France.⁴²

Continued collaboration, initiatives such as the EU's European Defense Fund and Permanent Structured Cooperation, as well as deepening ties within industry promote greater defense collaboration, pooling of resources, and interoperability among the nations of northern Europe and with the United States and NATO allies. One potential arena for enhanced cooperation is space. This realm offers new opportunities for both offensive and defensive capabilities. The development of space-based sensors could, for example, provide precision surveillance, detection, and tracking that can warn of adversary missile launch and use data to project impact points. Paired with land-based radars and other terrestrial assets, the ability to intercept warheads would significantly improve. Challenges to developing a space-based sensor layer accessible to the region exist, and the defense aspects of space are affected heavily by developments in the commercial space market. In the spirit of building a more integrated regional defense, policy deliberations should not be limited to current technologies and systems but also include future capabilities.

41. Oliver Gee, "Baffling Swedish Raid on German Sub Makers," *Local*, April 15, 2014, <https://www.thelocal.se/20140415/defence-expert-baffled-by-kockums-raid>.

42. SIPRI, "Arms Transfer: TIV of Arms Exports to Sweden, 2013–2016," 2017, http://armstrade.sipri.org/armstrade/html/export_values.php.

Forging a New Enhanced Deterrence in the North

The web of security structures and relationships in northern Europe has evolved but remains inadequate for the new challenges posed by Russia. We propose a new approach, an Enhanced Deterrence in the North (EDN), that bridges existing institutions and plugs crucial capability gaps, with U.S. leadership to ensure that the diverse defense initiatives yield increased effective regional security. U.S. leadership is needed to create political conditions and C2 architecture in which many technical interoperability questions can be resolved. An EDN would focus on the neglected air and maritime domains, and would also strengthen land-domain developments that are already underway. Our EDN proposals are based on several judgments that inform the recommendations and analysis. They include:

- Northern Europe is a single military theater encompassing the North Atlantic, North, Barents, and Baltic Seas. While it is tempting to segment this region and try to analyze its challenges in isolation, the security situation in this space is interlinked and requires a comprehensive view.
- Promoting security in the region is inconceivable without the involvement of Finland and Sweden in defense policy, contingency planning, force planning, interoperability, intelligence-surveillance-reconnaissance (ISR), and command and control.
- Membership of Finland and Sweden in NATO would help address many gaps in northern European security, but regional security recommendations cannot assume they will join NATO in the near term. NATO membership for each country is complicated by unique domestic political and historical factors.
- EU defense initiatives will gain momentum in the coming years. EU member states will increase defense spending and the European Union will devote significant resources to research, development, and acquisition of capabilities that could contribute to greater security in northern Europe.
- The European Union is a civilian actor with significant diplomatic, foreign policy, and economic capabilities. Efforts to build out the shared U.S.-EU capacity for coordinated diplomatic, economic, and civilian response will further complement an enhanced defense posture and must not be neglected.

- Finland’s and Sweden’s bilateral defense cooperation will continue to grow. Enhancing ties with other actors including the United States, Germany, Poland, the Northern Group, and NORDEFCO creates opportunities but also risks confusion over appropriate fora and could cause a diffusion of focus.

An Enhanced Deterrence in the North requires first and foremost political engagement and a framework for diplomatic and defense dialogue. Leadership from the United States will be essential in framing and propelling these discussions. Equally vital are signals from the region; Finnish and Swedish leaders understand best the threats to their core security interests and what measures are politically feasible in their respective societies. A combination of bilateral, trilateral, and institutional (NATO, EU) efforts can facilitate the growth of more effective defense structures, forces, planning, and posture in the region on the basis of shared security objectives. The NATO Enhanced Opportunities Partnership has a special role to play, and new initiatives such as the EU Defense Fund may be able to contribute to development and acquisition of needed capabilities.

ENHANCED DETERRENCE IN THE NORTH COMMAND AND CONTROL (C2)

An effective EDN requires effective command and control and planning capacity. NATO’s C2 in the region is divided among component commands for land (Izmir, Turkey), air (Ramstein, Germany), and maritime (Northwood, UK), which share responsibility with the two Joint Forces Commands (Naples, Italy and Brunssum, the Netherlands). The Multinational Corps Northeast (MNC-NE) in Szczecin, Poland, is subordinate to the Joint Forces Command in Brunssum and is responsible for the full range of joint military operations.¹

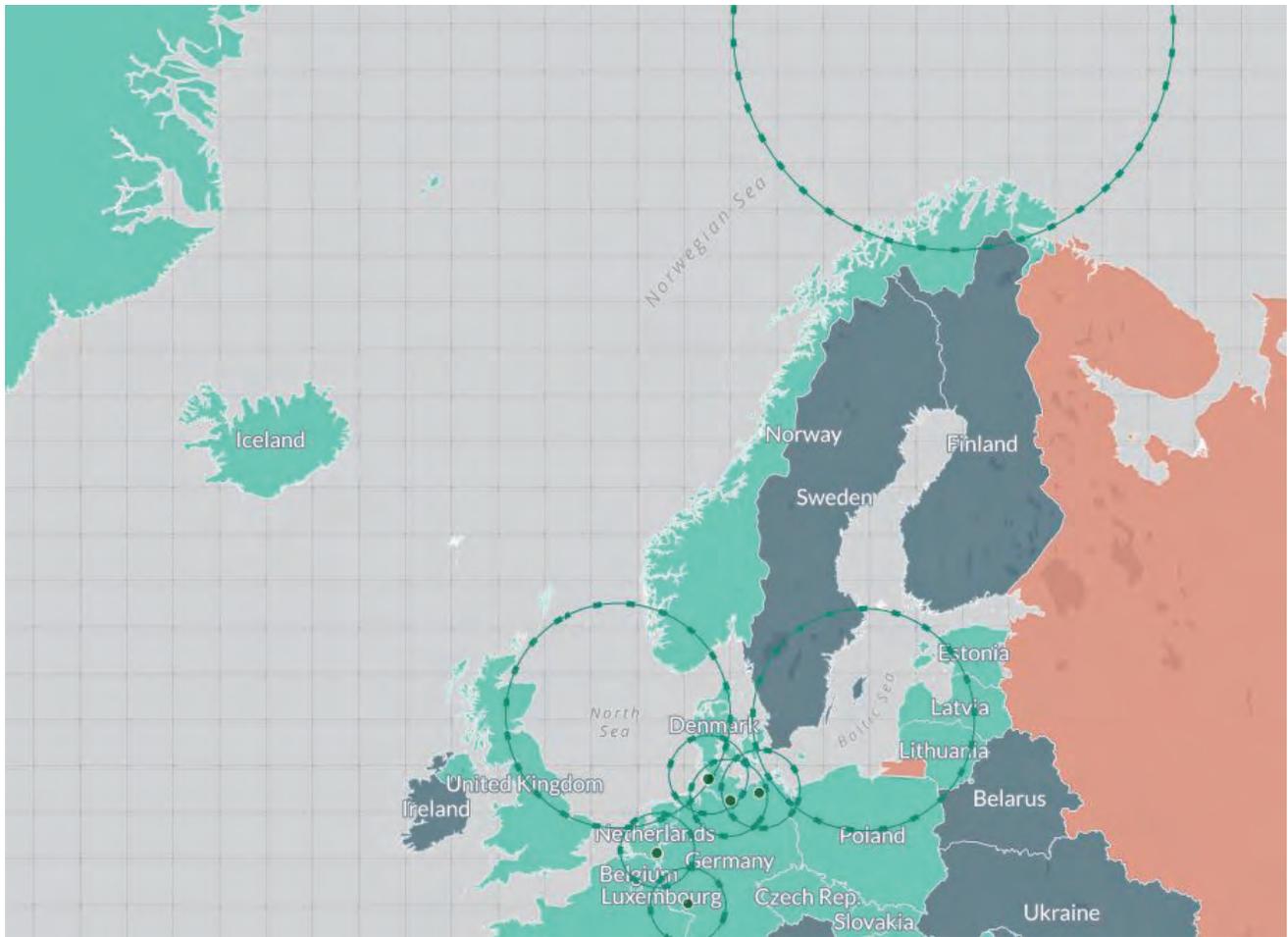
While these C2 structures are well integrated, there remain gaps in C2 for northern Europe. Regionally focused headquarters for maritime operations, such as in the North Atlantic and the Baltic Sea, were eliminated during the post–Cold War period, leaving NATO with a relatively small Maritime Command in the United Kingdom.² Furthermore, the U.S. maritime focus has shifted south, which is evidenced by the move of the headquarters of U.S. Naval Forces—Europe (NAVEUR) from the United Kingdom to Naples, Italy, and a reduction in U.S. maritime forces permanently based in Europe.³ We therefore recommend the creation of a third NATO Joint Command that focuses specifically on the new security threats and developing EDN in the North Atlantic and Baltic Sea. This new “North Atlantic Command” should be led by the United Kingdom and should include the reestablishment of the United States 2nd Fleet, which was disestablished in 2011. A strengthened U.S. maritime presence in this area should be supported by the funds Congress has provided through the European Deterrence Initiative. Jointness must be a central component to the EDN. The North Atlantic Command should have responsibility for contingency planning related to the

1. Allied Joint Force Command, “Multinational Corps Northeast,” <https://www.jfcbs.nato.int/operations/multinational-corps-northeast>.

2. Nordenman, “Back to the North.”

3. Ibid.

Figure 5.1. NATO Air and Missile Defense



Source: Ian Williams, "The Russia-NATO A2AD Environment," CSIS MissileThreat, January 3, 2017, <https://missilethreat.csis.org/russia-nato-a2ad-environment/>.

region and should incorporate officers from Sweden and Finland to facilitate practical collaboration, including cyber, in preparing for possible defense scenarios (short of a mutual defense guarantee). If necessary, such planning could be carried out on a United States-Finland-Sweden trilateral basis, rather than in a NATO context. Such planning would not constitute a security guarantee—which could only come with NATO membership—but would provide options for both sides to cooperate effectively in a crisis if they so decided. This step would further enhance deterrence in northern Europe by complicating Russian calculations about what sort of response it might face if it sought to coerce or take military action in the region.

EDN AIR

Air defense is arguably the weakest link on NATO's eastern flank and in the northern Europe security structure in light of Russia's growing capabilities, including cruise and short-range ballistic missiles, and its increasing airspace violations. Aircraft interceptions have increased near the Baltic

Sea following Russia's annexation of Crimea in 2014. That year NATO aircraft intercepted Russian military aircrafts 140 times. Interceptions increased to 160 in 2015 before decreasing to 110 in 2016. In 2013 NATO aircraft intercepted Russian aircrafts on only 43 occasions.⁴

Northern European countries have gained valuable practical experience through training, exercises, and operations, in national and NATO contexts, creating a high degree of interoperability. There is some limited sharing of air situation data with NATO by Sweden and Finland, but this is partial and incomplete.⁵ The lack of a common air picture among countries in the region is a critical gap; closing this gap would benefit the entire region. This requires both a political understanding and technical compatibility. The NORDEFECO Memorandum of Understanding on Nordic Cooperation for Air Surveillance Information Exchange represents a start within the region but should be connected to existing NATO structures.⁶ The NATO EOP and its PII provide a framework for such discussions with NATO on the basis of existing standards for integrating data from a variety of national sensors. Establishing full sharing of all air surveillance data could be politically sensitive in Finland and Sweden, but there are steps short of full integration—such as arrangements that would be exercised but only invoked in a crisis situation—that could mitigate such concerns and provide political leaders a “turnkey” response in a crisis.

NATO's Baltic Air Policing has sent a message of alliance solidarity by patrolling the airspace on the Alliance's eastern flank, starting with the 2004 NATO accession of the Baltic States, and further strengthened after Russia's 2014 intervention in Ukraine. It is time for an upgrade from air policing to air defense. Some steps have been taken in this regard, including the agreement between Sweden and Denmark allowing for peacetime air basing access.⁷ These measures provide greater strategic depth in northern Europe across non-NATO/NATO boundaries. Finland and Sweden have conducted training and exercises with deployed NATO air defense aircraft in the Baltic States and in Iceland, which NATO should seek to expand and facilitate, building greater capacity for cooperation in a crisis. Reconfiguring the mission will also require more short- and medium-range air defense systems and related sensors in the region. Sweden has decided to upgrade its air defenses with the Patriot system.⁸ Discussions with Stockholm should focus not only on the sale of the system but also on the opportunities for regional integration of sensor data to ensure maximum

4. Damien Sharkov, “NATO: Russian Aircraft Intercepted 110 Times above Baltic in 2016,” *Newsweek*, January 4, 2017, <http://www.newsweek.com/nato-intercepted-110-russian-aircraft-around-baltic-2016-538444>.

5. Mats Bergquist, François Heisbourg, René Nyberg, Teija Tiilikainen, *The Effects of Finland's Possible NATO Membership: An Assessment* (Helsinki: Ministry of Foreign Affairs of Finland, April 29, 2016), <http://formin.finland.fi/public/download.aspx?ID=157408&GUID={71D08E6C-3168-439F-9C31-0326D1014C26}>; Anya Loukianova, “Clouds of Suspicion: Airspace Arrangements, Escalation, and Discord in U.S./NATO-Russian Relations,” Center for International and Security Studies, University of Maryland, May 2016, http://www.cissm.umd.edu/sites/default/files/Loukianova_CISSM_brief_060316.pdf.

6. Reuters Staff, “Nordic States Step Up Defense Cooperation Because of Russia Worries,” Reuters, November 6, 2017, <http://www.reuters.com/article/us-nordic-defence/nordic-states-step-up-defense-cooperation-because-of-russia-worries-idUSKBN1D629T?il=0>.

7. “Sweden and Denmark Reach Bilateral Defense Agreement,” *DefenseNews*, January 21, 2016, <https://www.defensenews.com/global/europe/2016/01/21/sweden-and-denmark-reach-bilateral-defense-agreement/>.

8. Reuters Staff, “Sweden Seeks to Buy \$1bn U.S. Patriot Air Defense Missile System,” Reuters, November 7, 2017, <http://www.reuters.com/article/sweden-defense-raytheon/sweden-seeks-to-buy-1-bln-u-s-patriot-air-defence-missile-system-idUSL5N1ND7ZD>.

coverage and effectiveness, creating a more effective counter to Russia's anti-access/area denial (A2/AD) capabilities. Precedent for such a sensor data sharing arrangement within the alliance exists and includes the At Sea Demonstration in 2015 and the more recent Formidable Shield exercises in the fall of 2017. Beyond the Patriot system, the National Advanced Surface to Air Missile System (NASAMS) and its upgraded version, NASAMS II, were ordered by Norway and Finland and could provide a cheaper short-range option better suited for smaller defense budgets.

The Baltic States have publicly lobbied for deployment of U.S. Patriot missiles, which were on display during the July 2017 air defense exercise Toburq Legacy in Lithuania. The Trump administration is considering such a proposal but has not put a time line on a decision.⁹ The United States already has a memorandum of understanding with Poland for the sale of eight Patriot missile systems for \$10.5 billion, as well as approval to sell seven systems to Romania for \$3.9 billion.¹⁰ The deployment of NATO-interoperable systems will be advanced by Lithuania's purchase of two Norwegian advanced surface-to-air missile systems in 2020 as part of Vilnius's midrange air defense program.¹¹ The Baltic countries continue to discuss the possibility of joint development of a medium-range air defense system, but the prospects for agreement remain unclear because of different national priorities and the likely cost of the system relative to their defense budgets.¹²

There should be greater consideration of the role of unmanned aircraft systems (UAS), whether they are armed or not. UAS should factor into defense planning and complement NATO's Alliance Ground Surveillance (AGS) system, which will represent a new NATO capability but which will be in high demand across NATO missions. Specifically, UAS could be used as an aerial sensor to track cruise missiles that can hide in terrain. Their use would also help overcome the inherent range limitations of ground-based radars. Russia has used UAS to help guide targeting for artillery in Ukraine and could potentially do the same with missiles. Greater integration of UAS would reinforce the region's current air defense network.

The air capabilities in the region are evolving rapidly: Norway and Denmark are acquiring fifth-generation Lockheed F-35 fighters, Sweden has ordered an updated "E" version of the Saab Gripen,¹³ and Finland in the coming years will decide on a replacement for its Boeing F/A-18 jets,

9. AP, "US VP Mike Pence in Estonia Raises Prospect of Deploying Patriot Missiles," *Deutsche Welle*, July 30, 2017, <http://www.dw.com/en/us-vp-mike-pence-in-estonia-raises-prospect-of-deploying-patriot-missiles/a-39899520>.

10. Mike Stone, "Raytheon Gets OK for \$10.5 Billion Patriot Sale to Poland: Pentagon," Reuters, November 17, 2017, <https://www.reuters.com/article/us-raytheon-poland-patriot/raytheon-gets-ok-for-10-5-billion-patriot-sale-to-poland-pentagon-idUSKBN1DH2KQ>; Reuters Staff, "BRIEF: Romania Aims to Buy Patriot Missile System Worth \$764.8 Mln in 2017," Reuters, November 1, 2017, <https://www.reuters.com/article/romania-raytheon/brief-romania-aims-to-buy-patriot-missile-system-worth-764-8-mln-in-2017-idUSL8N1N75J4>.

11. Ministry of National Defence of the Republic of Lithuania, "Lithuania Signed a Technical Agreement with Norway on Procurement of Components and Missiles of Mid-Range Norwegian Advanced Surface to Air Missile System," October 21, 2017, https://kam.lt/en/news_1098/current_issues/lithuania_signed_a_technical_agreement_with_norway_on_procurement_of_components_and_missiles_of_mid-range_norwegian_advanced_surface_to_air_missile_system.html.

12. "Baltic States Push US on Patriot Missile Defense Deployment," *DefenseNews*, May 26, 2017, <https://www.defensenews.com/land/2017/05/26/baltic-states-push-us-on-patriot-missile-defense-deployment/>.

13. James Drew, "Saab Upbeat about New Sales," *Aviation Week*, June 18, 2017, <http://aviationweek.com/paris-air-show-2017/saab-upbeat-about-new-sales>.

which will reach the end of their service life beginning in 2025.¹⁴ The procurement decision will have significant implications for long-term defense relationships in the region.

EDN LAND

The Western response to the Russia challenge since 2014 has been a transformation to a tripwire forward presence as part of a broader NATO reinforcement strategy. The result is a strengthened presence of land forces along the eastern flank. This includes recent initiatives such as NATO's Enhanced Forward Presence (eFP) and the rapid-reaction Very High Readiness Joint Task Force (VJTF). The eFP was created at the 2016 Warsaw Summit and consists of four multinational battle groups deployed in Estonia, Latvia, Lithuania, and Poland. The battlegroups are led by the United Kingdom, Canada, Germany, and the United States, respectively, and supported by 16 contributing countries of the Alliance. The VJTF was established at the 2014 Wales Summit to address the Alliance's lack of capabilities to rapidly respond to potential challenges and threats. The VJTF is a multinational brigade, some elements of which are able to deploy within two days, with most units ready to respond in less than seven days. While it primarily consists of a land component, it is supported by air, maritime, and special operations forces capabilities.¹⁵ An additional initiative agreed to at the 2014 Wales Summit was the establishment of NATO Force Integration Units (NFIUs), which are small headquarters elements, and which would help facilitate the rapid deployment of the VJTF in order to enhance the Alliance's responsiveness. The first four NFIUs were established in Estonia, Latvia, Lithuania, and Poland.¹⁶

The strengthened land presence has improved deterrence in the region. While these programs will be the core of NATO's strategy, additional elements would improve defense capabilities. The United States should return to its pre-2012 four-brigade presence in Europe,¹⁷ or at a minimum make permanent the armored U.S. brigade that currently rotates from the United States to Europe. This will provide greater flexibility and faster U.S. response in a crisis. Further, the U.S. Marine rotational force (approximately 330 marines) in Norway and the UK-led Joint Expeditionary Force (JEF), which will become operational in 2018, should be integrated into a region-wide effort. This should involve training and exercises (the U.S. Marine rotation trains primarily for cold-weather operations) and build multinational connections and interoperability across the boundaries of organizations such as NATO and the European Union. Building the presence of the Marine

14. Aaron Gregg, "Trump Says Finland Is Buying Boeing Fighter Jets: The Finnish President Called That News a 'Duck,'" *Washington Post*, August 30, 2017, https://www.washingtonpost.com/news/checkpoint/wp/2017/08/30/trump-says-finland-is-buying-boeing-fighter-jets-the-finnish-president-called-that-news-a-duck/?utm_term=.6176e4b77b8a; Lauri Puranen et al., *Preliminary Assessment for Replacing the Capabilities of the Hornet Fleet: Final Report* (Helsinki: Finnish Ministry of Defence, June 2015), <https://www.defmin.fi/files/3182/HX-ENG.pdf>.

15. NATO, "Wales Summit Declaration," September 5, 2014, http://www.nato.int/cps/en/natohq/official_texts_112964.htm.

16. Allied Joint Force Command, "NATO Force Integration Units—Concept to Realisation," April 16, 2015, <https://www.jfcbs.nato.int/page7715057/nato-force-integration-units-concept-to-realisation>.

17. Kathleen H. Hicks, Heather A. Conley, Lisa Sawyer Samp, Jeffrey Rathke, et al., *Evaluating Future U.S. Army Force Posture in Europe: Phase II Report* (Washington, DC: CSIS, June 2016), <https://www.csis.org/analysis/evaluating-future-us-army-force-posture-europe-phase-ii-report>.

rotational force as well as the JEF in tandem with NATO planning will result in a better, more effective, flexible, and responsive forces.

The reliance on a reinforcement strategy makes military freedom of movement, overflight, and basing essential to conventional deterrence. Yet there are crucial deficiencies in this regard, as the United States and allied nations have experienced in rotating forces to the eastern flank. Internal challenges include: time-consuming and varying procedures for securing diplomatic clearance and/or parliamentary approval for forces to move over land and by air; the inability of European logistics networks to handle heavy and large-sized military equipment; and incomplete information about the logistics network's capacity. In the event of a rapid deterioration in the European security environment, the United States and allied response forces would be impeded not only by external challenges posed by Russia's advanced A2/AD capabilities, but also by the procedural and logistical deficiencies involved in transiting across Alliance territory. The United States and its allies and partners should bring a region-wide focus to these issues by testing the logistical ability to respond to a crisis scenario and elevating to the policy level any issues that weaken the credibility of the deterrence strategy.

EDN MARITIME

Russia's coercive capabilities in northern Europe rely heavily on undersea operations. The result is a series of targeted provocations designed to destabilize, confuse, and ultimately threaten the territorial sovereignty of the Alliance and its partners. A recent increase in submarine activity in the Baltic Sea and the North Atlantic is causing alarm within the Alliance and partner nations, in part because NATO and regional partner antisubmarine warfare (ASW) capabilities have atrophied since the end of the Cold War.¹⁸ There is a need to better integrate national and NATO platforms, sensors, and personnel in a coordinated manner.

The maritime priorities for NATO allies and partners in the North Atlantic and Baltic Sea should thus follow three lines of effort: (1) maintain the capacity to defeat adversaries and respond to aggression, as necessary; (2) ensure that sea lines of communication in the region remain open, allowing for the free flow of goods and security of critical undersea infrastructure; and (3) ensure military access (including for reinforcement of NATO's eastern flank forces and access to Finland and Sweden) and monitor Russian undersea and surface maritime activity.¹⁹ While the Baltic, Barents, and the North Atlantic comprise one region from the strategic perspective, the geography and maritime challenges of the Baltic Sea differ and the location of Finland and Sweden on the Baltic requires special measures to bridge the NATO/non-NATO gap in this region.

Antisubmarine Warfare

Two areas are important for the Enhanced Deterrence in the North—the North Atlantic and the Baltic Sea. In the North Atlantic, Russia's Navy is focused on maintaining its sea-based nuclear deterrent by ensuring access through the Greenland-Iceland-UK (GIUK) gap, and holding at risk

18. Hicks et al., *Undersea Warfare in Northern Europe*.

19. *Ibid.*, 19.

key NATO assets. Russia's naval activities in the Baltic Sea have included efforts to monitor NATO naval activity, conduct targeted provocations and intimidation, complicate allied contingency planning and preserve Russia's influence including through Russia's A2/AD capabilities, deter NATO military activity on or near its border, disrupt the sea lines of communications of NATO allies and partners, and ensure Russia's territorial integrity.²⁰

For the purpose of EDN, the North Atlantic includes actors such as the United States, the United Kingdom, and Norway, and focuses on strategic routes such as the GIUK gap. In February 2016, the U.S. Navy announced it was returning to Keflavik, Iceland, with funds to upgrade the military airfield. Keflavik includes an aircraft hangar that houses P-8 Poseidon maritime patrol aircraft capable of patrolling and monitoring Russia's increasing submarine activity in the region. The strategic value of the GIUK gap dates back to the Cold War and represents a critical chokepoint that, if controlled by the Russians, would prevent U.S. reinforcements from reaching European allies by sea. There are also concerns that Russian submarines could tap into or disrupt undersea cables that represent key nodes of global communication. An enhanced maritime presence would not only control the GIUK gap, but also increase tracking ability and readiness, and secure critical infrastructure in the event of a possible new era of undersea warfare. Given Russia's access to the Baltic Sea through Kaliningrad and the number of resources in the immediate vicinity, enhancing maritime security in the region requires improvements in the Alliance's ability to monitor Russian maritime activity and respond in a timely manner.

The overarching priority for this region should be to reestablish a sense of reliability and confidence in the ability to detect, track, deter, and counter Russian undersea activity given the lack of investments in readiness and capabilities over the past decade and a half. This begins with reinvesting in submarines, surface vessels, fixed-wing aircraft, helicopters, and in-place sensors. In many instances, effective ASW missions require all of these platforms and systems working in concert, which consequently requires regular and repeated exercises to hone the necessary skills.²¹ Reinvestments should seek to upgrade capabilities to their highest capacity to keep pace with the increasing sophistication of Russian submarines. In doing so, NATO and its partners will reassert their advantage in this domain, which was critical during the Cold War. Furthermore, NATO allies and partners need to develop the ability to quickly counter the Russia undersea challenge. Doing so requires greater integration than is currently present. This is a complicated task considering that effective ASW capability is built on different platforms, sensors, and personnel being able to combine forces in a coordinated manner. Such cohesion, including the organizations, relationships, intelligence, and capabilities that once supported a robust ASW network in the North Atlantic and Baltic Sea have not seriously been called upon since the early 1990s.²² Therefore, a new integrated, multinational ASW campaign should be developed that leverages existing structures and multinational organizations.²³ NATO would be the most obvious body through which this campaign could be shaped, but it is also important to include non-NATO members Finland and Sweden. Therefore, the European Union or NORDEFSCO could also be

20. Ibid., 7.

21. Ibid., 20.

22. Ibid., 30.

23. Ibid.

practical options. Of course, this is easier said than done. Each body has its limitations, particularly when it comes to sharing intelligence of undersea operations, and knitting together a unified response across multiple organizations means running into potential procedural roadblocks. If this proves to be the case, momentum should begin at the bilateral level, which can help bridge the lack of alignment between these international structures. Here, the United States is optimally placed to play a key role in two forms: first, by playing a bridge-building role in the integration of ASW capabilities across the region and enabling partnerships with key allies on sensitive issues that may otherwise prevent greater cooperation, and second, as a kick-starter that can leverage its bilateral relationships to develop and deploy a new generation of undersea capabilities.²⁴

Maritime Patrol Aircraft

In this vein, several nations are currently advancing their maritime patrol aircraft capabilities. In June, the United States announced that it had agreed in principle with Norway and the United Kingdom to create a trilateral coalition built around the P-8 maritime aircraft. The details of the coalition include joint operations in the North Atlantic, information sharing, and the possibility of collocating maintenance and training assets.²⁵ To complement the current fleet of U.S. P-8s, the United Kingdom plans on purchasing nine, while Norway has agreed to purchase five. Such an initiative will support current surveillance capabilities, including the ability to conduct antisubmarine and antisurface warfare, intelligence gathering, and search and rescue.

Maritime Domain Awareness and Coast Guard Cooperation

An additional component is a greater sense of cooperation between coast guards and navies to enhance Maritime Domain Awareness (MDA) and achieve the greatest possible degree of common operating picture. This is currently lacking across northern Europe due to deficiencies in sensors and capabilities, as well as a fundamental lack of trust that limits networks through which to share information and intelligence.

Develop Unmanned Vehicles (UVs) for ASW

To further enhance its presence in the undersea domain, an EDN would utilize the advanced capabilities provided by unmanned surface and subsurface vessels. While the technology behind such equipment is still nascent, there is potential for growth. The U.S. Defense Advanced Research Projects Agency (DARPA) is testing the Anti-Submarine Warfare Continuous Trail Unmanned Vessel (ACTUV), which would allow for advanced tracking of quieter diesel electric submarines, which are more difficult to counter due to their low acoustic and optical profiles.²⁶ They will also improve efforts to monitor vital undersea infrastructure.²⁷

24. Ibid., 31.

25. Aaron Mehta, "Pentagon Seeks Increased P-8 Ties with Norway, UK," *DefenseNews*, July 3, 2017, <https://www.defensenews.com/air/2017/07/03/pentagon-seeks-increased-p-8-ties-with-norway-uk/>.

26. Alexander M. G. Walan, "Anti-Submarine Warfare (ASW) Continuous Trail Unmanned Vessel (ACTUV)," Defense Advanced Research Projects Agency, <https://www.darpa.mil/program/anti-submarine-warfare-continuous-trail-unmanned-vessel>; Hicks et al., *Undersea Warfare in Northern Europe*, 37.

27. Ibid.

NATO allies should lead in this endeavor and contribute the necessary funding to develop UVs that can effectively integrate into a theater-level ASW system as part of a longer-term R&D goal. The development and fielding of these systems will allow for greater ASW coverage without large capital investment in manned systems. And when teamed with other platforms, they can be used in concert to offset individual platform shortcomings. Specific to the Baltic Sea, unmanned platforms can be key partners to advanced submarines as they would improve the ability to operate in shallow, crowded waters.²⁸ The combination of manned and unmanned vessels will dramatically impact the ability to track increasingly active Russian maritime activities.

Germany's Reemergence in the Baltic Sea

Germany is playing an increasingly active international security role in the face of transatlantic security challenges.²⁹ Investment in and redevelopment of its maritime capabilities will play a critical role in addressing gaps in the web of regional security capabilities. Similar to its European allies, Germany is placing a greater focus on the Baltic Sea and North Atlantic. This presents an opportunity for NATO and partners Sweden and Finland.

Germany can also play a key role in bridging the institutional divide between NATO and non-NATO members through its Baltic Maritime Component Command (BMCC), headquartered in Rostock, which will also include the national Maritime Operations Center. The BMCC is designed to command and control future operations in the Baltic Sea region, where C2 has atrophied over the years.³⁰ This command would exist outside the NATO command structure (indeed, the Two Plus Four Treaty precludes NATO infrastructure on the territory of the former East Germany, so this makes a virtue of necessity). The BMCC, therefore, would offer an opportunity for Finland and Sweden to engage fully and form a basis for shared operational activity in the Baltic Sea. This platform should be incorporated into regional exercises and taken into account in contingency planning.

ENHANCED DETERRENCE IN THE NORTH DEFENSE DIALOGUE

These strengthened contributions to security in northern Europe should be based on political-level understandings including bilaterally between Finland and Sweden; trilaterally among the United States, Finland and Sweden; regionally through NORDEFECO and the Northern Group; multilaterally in NATO and its partnership programs such as EOP, and between NATO and the European Union. Leadership from the United States will be essential in framing and propelling these discussions in foreign policy as well as in defense channels. Equally vital are signals from the region; Finnish and Swedish leaders understand best the threats to their core security interests and what measures are politically feasible in their respective societies.

28. Ibid.

29. Jeffrey Rathke, "Rising Ambitions and Growing Resources Mark New German Security Strategy," *CSIS Commentary*, July 25, 2016, <https://www.csis.org/analysis/rising-ambitions-and-growing-resources-mark-new-german-security-strategy>.

30. Magnus Nordenman, "Back to the North: The Future of the German Navy in the New European Security Environment," *Atlantic Council*, April 2017, http://www.atlanticcouncil.org/images/publications/Back_to_the_North_web_0406.pdf.

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