

## Safe skies? Air defence on NATO's northern, eastern and south-eastern flank

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The Russian aggression against Ukraine has highlighted the crucial role of air and missile defence in modern full-scale conflicts. A multi-layered, adequately saturated and integrated system is necessary to provide cover for troops, and also to protect the critical infrastructure and major population centres of the countries on NATO's northern, eastern and south-eastern flank. These countries, along with Sweden and Finland, have varying levels of air defence protection, but none of them are currently sufficient in themselves, and the ongoing efforts to build multi-layered air defences leave much to be desired. Only some of these countries are in the advanced process of modernising and building up their capabilities. There are also some whose systems provide only rudimentary protection, and which have no plans to develop them adequately or are unable to do so for financial reasons. This poses a problem more broadly for the Alliance as a whole, as the critical infrastructure in these countries – which will be used for military purposes in case of a NATO operation – is insufficiently protected.

Ground-based air defence systems are divided into three levels based on their combat range: very short-range (up to 10 km), short-range (10 to 50 km) and medium-range (above 50 km). The main task of the latter is to provide areal protection for a larger territory against the enemy's air force, ballistic and cruise missiles. These systems are expensive to acquire and operate, so countries tend to have relatively few of them, but their long range and high missile altitude force the enemy's air force to fly lower. As a result, the enemy's air threats can be neutralised by cheaper and more numerous short-range systems. These are used to protect large troop deployments and critical infrastructure, but they are incapable of countering ballistic missiles, and cannot destroy cruise missiles unless they are in their flight path. Very short-range systems are primarily designed to provide local protection for military units. They are highly mobile and relatively inexpensive to acquire and operate, and consist mainly of man-portable air-defence systems (MANPADS). Their missile interception capabilities are very limited and their ceiling for combating aircraft is usually less than 5 km, but they perform well in neutralising lower-class helicopters and unmanned aerial vehicles (UAVs).

While air defence systems belonging to individual NATO members are responsible for combating enemy air and missile threats, the Alliance also operates the NATO Integrated Air and Missile Defence System (NATINAMDS). Its main purpose is to command and control the anti-aircraft and anti-missile



assets of the Alliance's member states. It also connects all the members' radar stations, and makes it possible to build up a shared image of the aerial battlefield.

## Air defence in the Baltic states

The Baltic states have rudimentary air defence capabilities based on very short-range missile and artillery systems. At present only Lithuania has short-range defence capabilities; since 2020 it has been using a NASAMS system it ordered in 2016. As a result of the Russian invasion of Ukraine in 2022, all three Baltic states have ramped up their modernisation programmes. Estonia purchased the Piorun MANPADS in September 2022, Latvia procured additional RBS 70NGs in November, and an undisclosed Baltic state also acquired Pioruns in December. Furthermore, the Latvian and Estonian defence ministers signed a letter of intent for the joint purchase of short-range air defence systems in late June 2022; they want to acquire a total of at least four batteries of a yet unspecified system. Meanwhile Lithuania is considering adding additional launchers to its NASAMS batteries. None of the countries in the region have medium-range air defence systems, nor do they intend to acquire them.

**Table 1. The existing and planned air defence systems of Lithuania, Latvia and Estonia**

	Lithuania	Latvia	Estonia
Very short-range systems	Bofors 40-mm L/70 cannons MANPADS: Grom, Stinger and RBS-70	Bofors 40-mm L/70 cannons MANPADS: Stinger and RBS-70	ZU-23-2 cannons MANPADS: Mistral and Piorun
Short-range systems	2 NASAMS III batteries (4 radars, 8 launchers)	-	-
Planned short-range systems	-	2 batteries of a system to be selected	2 batteries of a system to be selected
Planned medium-range systems	-	-	-

Source: author's own compilation, based on information published on the websites of defence ministries, armed forces and manufacturers of air defence systems.

The Baltic states are unable to build a multi-layered air and missile defence due to their budget constraints. The systems they have in place provide at most local cover for military units, and leave critical infrastructure and major population centres unprotected. If they purchase (Latvia and Estonia) and potentially expand (Lithuania) their short-range systems, that will allow them to provide partial cover for their troops and protection for their capital areas. Due to the relatively small number of batteries, it will be impossible to protect both the critical infrastructure and the armed forces, a situation which will generate strategic dilemmas. Although Riga and Tallinn have not yet chosen which specific short-range system to acquire, NASAMS is the front-runner, as it is used by other countries in the Baltic-Nordic region. The system is already in place in Lithuania as well as Finland and Norway, so if Latvia and Estonia acquire it, that would ensure cooperation and interoperability between these countries. Furthermore, NASAMS uses the popular AIM-120 AMRAAM air-to-air missiles, which individual NATO members already stock in large quantities. This would allow for rapid supplies by the allies in the event of conflict. The Baltic states do not have combat aircraft or warships equipped with air defence systems that could support ground-based missile systems; they remain entirely dependent on their allies in this regard as well.

## Air defence in the Nordic countries

The Nordic countries have varying air defence capabilities. Denmark and Norway do not have any very short-range systems, and are only now rebuilding the capabilities they have lost in recent decades.<sup>1</sup> Oslo bought an undisclosed number of Polish-made Piorun systems in November 2022; deliveries are set to begin in 2023. Copenhagen plans to acquire new very short-range launchers by 2024. Sweden and Finland have MANPADS as well as artillery systems to cover their troops. Despite this, Stockholm is unable to provide protection for all of its units as only armoured battalions use artillery systems, and they have relatively few of these. Moreover, the MANPADS are set to be phased out in the near future, which will reduce flexibility at the lowest level of air defence. Finland is in the best position, as it has the most extensive and best-saturated very short-range air defence in the region, which can provide cover for all of the country's armed forces.

**Table 2. The existing and planned air defence systems of Denmark, Norway, Sweden and Finland**

	Denmark	Norway	Sweden	Finland
Very short-range systems	-	Piorun MANPADS (deliveries from 2023)	Lvkv-90 self-propelled artillery systems RBS-70 MANPADS	ZU-23-2 cannons MANPADS: Stinger and RBS-70
Short-range systems	-	4 NASAMS batteries (no data on radars and launchers, AIM-120 AMRAAM missiles)	4 IRIS-T SLS batteries on tracked chassis (4 radars, 16 launchers), Robotssystem 23 BAMSE (no data on numbers)	8 NASAMS II batteries (8 radars, 24 launchers), 7 Crotale NG batteries (21 launchers)
Medium-range systems	-	-	4 Patriot batteries (4 radars, 12 launchers, GEM-T and PAC3 MSE missiles)	-
Planned short-range systems	One battery of a system to be selected	-	-	-
Planned medium-range systems	-	-	-	An unknown number of batteries of a system to be selected (decision due in 2023)

Source: author's own compilation, based on information published on the websites of defence ministries, armed forces and manufacturers of air defence systems.

There are also differences between the Nordic countries with regard to short-range air defence systems. Denmark does not have any, but by the end of 2024 it aims to acquire one battery, to be backed up by MANPADS. The battery will only cover a single army brigade, leaving the country's entire territory unprotected, including its critical infrastructure and major population centres. Norway has only four batteries of the NASAMS short-range system, three of which defend its two main air force bases (Ørland and Evenes), while the fourth, which covers the only land forces brigade in the north of the country, is currently being set up. The ground forces will be equipped with a new, more mobile variant of the launcher by 2026.<sup>2</sup> Sweden has slightly superior capabilities to Norway in this area, as it has four IRIS-T SLS short-range air defence batteries as well as an unknown number of Robotssystem

<sup>1</sup> Both countries used Stinger systems, but the lifespan of the missiles came to an end as they aged. Norway also had RBS-70 systems, but sold them to Lithuania.

<sup>2</sup> The battery launchers army will additionally be integrated with German-made IRIS-T SLS missiles (with a range of 12 km), 150 of which have been purchased. Norway's NASAMS currently use AIM-120 AMRAAM missiles.

23 BAMSE systems with a range of up to 20 km. Once again, Finland has the greatest capabilities in this field, as it has Crotale NG and NASAMS systems in stock.<sup>3</sup>

Sweden is the only Nordic country with medium-range air defence capabilities. It ordered four batteries of the US-made Patriot system in its PAC-3+ configuration in 2018. Deliveries were completed in December 2022, and the system will be fully operational by 2025.<sup>4</sup> Among the other countries in the region, only Finland currently has plans to acquire a similar system, with the final selection expected in 2023. The absence of medium-range air defence makes Denmark, Norway and Finland vulnerable to missile attacks. Helsinki has recognised this gap in its capabilities, and intends to close it by the end of the decade.

Denmark's recent steps in the field of air defence development must be described as seriously insufficient. This also poses a problem

**” The steps recently taken by Denmark and Norway in the field of air defence development must be described as highly inadequate.**

for NATO, as it uses the infrastructure of the Danish port of Esbjerg to receive US troops arriving to Europe. Although Norway's air defence is undoubtedly stronger than Denmark's, Oslo's current capabilities in this field are also incomplete, and do not provide protection for Norway's port infrastructure, which will be responsible for receiving allied forces in case of conflict. Sweden is the only country in the region with a multi-layered air defence featuring very short-, short- and medium-range systems, but there are relatively few of them; that raises serious dilemmas for Stockholm over whether it should secure selected naval and air bases, its critical infrastructure, or the capital region. For its part Finland, which shares a long border with Russia, takes the threat of a potential air attack seriously. Its relatively large number of short-range batteries means that it is able to meet its air defence needs at this level. All the Nordic countries rely on fighter aircraft for their air defence; Sweden can also protect its territory against ballistic missiles thanks to the Patriot system.<sup>5</sup>

## Air defence in the Visegrad Group countries

Poland, the Czech Republic, Slovakia and Hungary mainly use post-Soviet air defence systems, but they are in the process of being replaced. Poland has an extensive very short-range defence consisting of hundreds of Soviet-era anti-aircraft guns and artillery and missile systems, as well as Polish-made Grom and Piorun MANPADS. It is also in the process of extensive capability-building in this sphere. The artillery systems it uses are largely obsolete, but modernisation efforts are underway as part of the overall transformation of Poland's air defence. This will significantly increase the country's saturation with very short-range systems, providing cover for its armed forces and military infrastructure.

<sup>3</sup> The Crotale battery consists of three launchers mounted on a Finnish-made Sisu XA-181 chassis, each of them carrying eight VT-1 missiles with a range of 15 km. Finland's NASAMS consist of a single fire unit equipped with a radar and three launchers armed with AIM-120 AMRAAM missiles.

<sup>4</sup> Each Swedish Patriot battery consists of one radar and three launchers. Stockholm has purchased 200 state-of-the-art PAC-3 MSE missiles (with a range of 60 km) and 100 older GEM-T missiles (with a range of 160 km).

<sup>5</sup> The F-35A will become the sole multi-role fighter jet in Denmark (which will have 27 aircraft), Norway (52) and Finland (64) by the end of the decade. Sweden plans to operate 60 JAS-39 Gripen C/D and 60 JAS-39 Gripen E fighter jets by 2030. In special cases, the Nordic countries' navies can provide support to their air defences. Denmark and Norway have warships equipped with short-range systems that use RIM-162 ESSM missiles with a range of 50 km; in the future Finland will also have these. Danish vessels are also equipped with medium-range systems (46 SM-2 Block IIIA missiles with a range of 150 km).

**Table 3. The existing and planned air defence systems of Poland, the Czech Republic, Slovakia and Hungary**

	Poland	Czech Republic	Slovakia	Hungary
Very short-range systems	Cannons: ZU/ZUR-23, S-60MB, ZSU-23–4 self-propelled artillery systems MANPADS: Grom and Piorun	RBS 70 MANPADS	9K38 Igla-2 MANPADS	Mistral MANPADS
Short-range systems	20 2K12 Kub batteries (20 radars, 80 launchers), 17 PZR S-125M Neva-SC batteries (17 radars, 51 launchers), 16 9K33 Osa batteries (64 launchers), 2 Mała Narew fire units (2 radars and 6 launchers with CAMM missiles)	4 2K12 Kub batteries (4 radars, 16 launchers)	5 2K12 Kub batteries (5 radars, 20 launchers)	4 2K12 Kub batteries (4 radars, 16 launchers)
Medium-range systems	2 Patriot batteries (4 radars, 16 launchers), 1 battery of the S-200 Vega system (6 launchers)	-	-	-
Planned short-range systems	23 Narew batteries (46 radars, 138 launchers with CAMM and CAMM-ER missiles), 21 Pilica+ batteries (21 radars, 42 launchers with CAMM missiles)	4 SPYDER batteries (4 radars and 16 launchers)	-	An unknown number of NASAMS III batteries
Planned medium-range systems	6 Patriot batteries (12 radars, 48 launchers)	-	-	-

Source: author's own compilation, based on information published on the websites of defence ministries, armed forces and manufacturers of air defence systems.

The Czech Republic, Slovakia and Hungary rely solely on MANPADS for short-range air defence, but there are relatively few of them, and they provide only partial cover for their troops. The lack of artillery systems creates a gap, especially in terms of cost-effective capability to counter smaller UAVs. Hungary plans to acquire the German-made Skyraanger 30 artillery and missile system to cover its mechanised units. Slovakia is in the worst situation, as its post-Soviet Igla MANPADS are long past their prime, and it is running out of missiles to supply them. Bratislava is aware of this, but it still has not decided on a generational replacement.

In the field of short-range air defence, aging post-Soviet 2K12 Kub systems (with a range of up to 24 km) form the core capability of all the Visegrad countries, while Poland also operates Osa and Neva-SC systems.<sup>6</sup> The Soviet-era systems used by the V4 countries are at various stages of modernisation. Warsaw intends to acquire a total of 23 batteries under its Narew programme, but so far it has only signed a contract for two Mała Narew (pol. "Little Narew") fire units, whose final configuration is still incomplete; the first of them has already been delivered. Poland has also signed a framework agreement to receive 21 Pilica+ batteries, which envisages the creation of a hybrid system combining very short-range artillery and missile systems (ZUR-23–2 cannons with Grom/Piorun missiles) with radars and short-range launchers identical to those in the Mała Narew. The Pilica+ is designed to back up the batteries of medium-range systems.

The Czech Republic purchased the Israeli-made SPYDER system in 2021, with deliveries expected to begin in 2023. A year earlier, Hungary signed a contract for an undisclosed number of NASAMS batteries (most likely between four and six), which are due to arrive in the country by 2025. Slovakia is

<sup>6</sup> Photos have appeared on social media showing the Ukrainian Armed Forces using launchers of the Polish-made Neva systems. It can be presumed that Warsaw has also handed over other systems to Kyiv, but the government has not made any official statements on this matter.

looking for a successor to its Kub systems, but has not made any decisions in this regard yet. The replacement of post-Soviet short-range systems will multiply the air defence capabilities of the Visegrad countries. In terms of the scale of the ongoing modernisation, Poland clearly stands out: once the Narew programme is completed, the Polish Armed Forces will have the most extensive short-range air defence on NATO's entire eastern flank, but the first mass-produced battery of this system will not be delivered until 2026. The number of batteries purchased by Hungary and the Czech Republic may meet their basic needs, but will not provide full protection. Until the process of modernising their armed forces is completed, the air defences of the V4 countries must rely on obsolete systems that do not meet the requirements of the modern battlefield.

Poland is the only country in the region with a medium-range air defence system, which consists of a single battery of the Soviet-made S-200 Vega. By the end of

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2023, it will be joined by two batteries of the US-made Patriot system in the state-of-the-art PAC 3+ IBCS configuration, purchased in 2018. As part of the second phase of the Wisła programme, Warsaw plans to acquire six more Patriot batteries in 2023, deliveries of which should begin in 2027. After the United States, Poland has become the first user of the new Integrated Battle Command System (IBCS), which the Polish Armed Forces and the US Army are introducing simultaneously. It increases situational awareness and allows for more effective use of the available anti-aircraft and anti-missile assets.<sup>7</sup>

Slovakia had a single battery of the S-300PMU medium-range system until recently, but handed it over to Ukraine in April 2022; Bratislava has not yet decided whether to acquire any systems of this level. The Czech Republic and Hungary do not operate such systems and have no plans to acquire them. Medium-range systems are expensive, so it seems doubtful that these countries will choose to purchase them, as they rely on an *ad hoc* allied presence for their medium-range air defence.<sup>8</sup> This means that all three countries remain vulnerable to missile attacks, particularly if carried out with ballistic missiles. In addition, their fighter jet fleets, unlike those in the Nordic countries, are not capable of forming the backbone to their air defences.<sup>9</sup>

## Air defence in Romania and Bulgaria

Romania and Bulgaria's air defence systems are extensive but outdated. At very short range, they use hundreds of artillery systems, which are backed up by post-Soviet Strela and Igla MANPADS. However, these systems are old and thus largely ineffective, despite their high saturation at the lowest level. Romania does use the Gepard and Oerlikon GDF-003 artillery systems, which have been phased out in Western Europe but are fairly effective; however, their numbers are too small to provide cover for the country's troops. Bucharest is pursuing a programme of purchasing over 230 MANPADS to partly replace its Strela systems, but these numbers will still be insufficient.

<sup>7</sup> M. Marciniak, T. Jakusz, 'Sieciocentryczność – optymalizacja wykorzystania posiadanego potencjału', *Dziennik Zbrojny*, 28 July 2020, [dziennikzbrojny.pl](http://dziennikzbrojny.pl).

<sup>8</sup> Following Bratislava's handover of the S-300PMU battery to Kyiv, Germany, the Netherlands and the US deployed a total of four Patriot batteries in Slovakia.

<sup>9</sup> Hungary and the Czech Republic each operate 14 Swedish-made JAS-39 Gripen C/D fighters. Prague plans to replace its Gripens with 24 F-35As and has sent a letter of request to the US in this regard. Slovakia has been without fighter jets altogether since it retired its eleven MiG-29s in September 2022. It purchased 14 F-16s in December 2018, but delivery is not due until 2024. Poland uses 48 relatively modern F-16s and 28 obsolete MiG-29s to protect its skies; Warsaw ordered 32 F-35As in early 2020 and 48 Korean FA-50s in September 2022. In addition, it is pursuing a programme to build three Miecznik frigates, which will be equipped with short- and medium-range CAMM missiles. However, the first of these is not expected to come into service until 2028. Hungary does not intend to replace or expand its fleet of combat aircraft.



**Table 4. Romania and Bulgaria's existing and planned air defence systems**

	Romania	Bulgaria
Very short-range systems	Cannons: M 1980/88, Oerlikon GDF-003 and Gepard self-propelled artillery systems MANPADS: 9K31 Strela 1, 9K32 Strela 2	ZU-23-2 cannons MANPADS: 9K38 Igla, 9K32 Strela 2, 9K34 Strela 3, 9K35 Strela 10
Short-range systems	4 9K33 Osa batteries (16 launchers), 8 2K12 Kub batteries (8 radars, 32 launchers), 8 Hawk XXI batteries, 6 S-75M Volkhov batteries	5 2K12 Kub batteries (5 radars, 20 launchers), 5 9K33 Osa batteries (24 launchers), 10 S-125 batteries (30 launchers)
Medium-range systems	1 Patriot battery (1 radar and 4 launchers, GEM-T and PAC3 MSE missiles)	2 S-300P batteries (10 launchers), 1 battalion of the S-200 system (10 launchers)
Planned short-range systems	-	-
Planned medium-range systems	6 Patriot batteries (6 radars and 24 launchers)	-

Source: author's own compilation, based on information published on the websites of defence ministries, armed forces and manufacturers of air defence systems.

The post-Soviet Osa and Kub systems are the pillars of both countries' short-range defences. Romania also uses S-75 and Hawk XXI systems purchased from Denmark, while Bulgaria operates S-125 Nevas. Unfortunately, quantity is not matched by quality; although both countries have many batteries in stock, only the Hawk systems, which have undergone a major upgrade, can be described as relatively up-to-date.<sup>10</sup> Romania and Bulgaria's short-range air defences urgently need upgrading, but budget constraints currently make it impossible for them to plan a generational replacement of their equipment in this field.

Bulgaria's medium-range defence includes aging S-300P and S-200 Vega systems which are a legacy from the Warsaw Pact era, but it is difficult to determine how many of them are actually operational. Sofia does not intend to buy modern medium-range systems for the time being, because it cannot afford to do so.<sup>11</sup> Bucharest, on the other hand, is currently acquiring modern Patriot systems; it wants to equip the Romanian armed forces with a total of seven batteries, four of which have already been procured and one delivered in 2020. Once this programme has been implemented, the country will be able to protect its critical infrastructure and major population centres, but the small number of missiles on order may pose a problem. In addition, both countries have token fighter jet fleets, which cannot act as substitutes for their air defences.<sup>12</sup>

<sup>10</sup> The Hawk XXI system features a modern Sentinel radar, used in NASAMS, and is able to exchange information with these systems through an upgraded command post. The upgraded missile has a range of up to 50 km.

<sup>11</sup> For comparison, the cost of purchasing one Patriot battery (\$764.78 million), which Romania contracted in 2017, amounts to more than half of the Bulgarian defence ministry's 2021 budget (\$1.25bn – 1.56% of GDP).

<sup>12</sup> Bulgaria has only 11 MiG-29 fighters, and is awaiting delivery of the 16 new F-16s it has purchased. Romania operates 17 F-16s formerly used by Portugal, as well as some 23 MiG-21s, which are to be replaced by 32 F-16s originating from Norway. Both countries also operate single warships equipped with missile systems, but these cannot support their air defences due to their limited range.

## Conclusions

After the end of the Cold War, NATO countries saw maintaining their air defence capabilities as a secondary task, which led to a significant reduction, and in some cases even the elimination, of these capabilities. With full-scale war returning to Europe, discussion within the Alliance about the need to strengthen air defence has resurfaced with a vengeance. Mass Russian strikes involving a whole range of aerial attacks – from ballistic missiles to cruise missiles to low-cost UAVs – have made it clear that it is necessary to have a sufficient number of systems at each level, as well as a large stockpile of missiles.

The modernisation processes in the countries on NATO's northern, eastern and south-eastern flank, as well as Sweden and Finland, were initiated back in 2014 following Russia's annexation of Crimea and are proceeding at different speeds. This translates into a highly diverse landscape of air and missile defences across the Alliance's members. None of the countries analysed currently has a fully integrated, multi-layered system to ensure their adequate saturation with defence assets. The entire area needs huge amounts of funding for very short-, short- and medium-range systems.

Sweden, Finland and in terms of their modernisation plans Poland stand out from the rest of the northern and south-eastern flank. These countries are taking a comprehensive approach to building up their air defences by investing in capability expansion at every level. This stems not only from their perception of threats, but also their financial capabilities. The others, for various reasons, have more or less limited or very rudimentary air defence capabilities, so they are unable to protect both their troops and critical infrastructure from potential air threats at the same time.

No single air defence system is used by all the countries on NATO's northern, eastern and south-eastern flank, since they perceive threats and the ways of ensuring their security in different ways. The wider foreign policy context and the individual countries' military-technical cooperation play a key role here. Due to the importance of relations with the United States, all the countries with medium-range air defence systems (Sweden, Poland and Romania) use US-made Patriot systems, even though there are alternatives, such as the French-Italian SAMP/T or the Israel-made David's Sling. As for the short-range systems, the Norwegian-American NASAMS is the most popular. It is used by Norway, Finland, Lithuania and Hungary, while Latvia and Estonia may join them soon. Poland, which does not want to buy off-the-shelf solutions, has opted for British-made CAMM missiles as part of the development and production of its own system. The former Warsaw Pact countries and Finland have the most extensive very short-range systems, but these are largely obsolete. Capability building at this level represents an opportunity for the Polish arms industry, which manufactures the Grom and Piorun MANPADS.

Norway, Finland, Lithuania, Latvia, Estonia, the Czech Republic, Slovakia, Hungary, Romania and Bulgaria have joined the German-led European Sky Shield Initiative (ESSI). They see it as an opportunity for joint (and perhaps more cost-effective) purchases of selected components of air defence systems that match their needs, modernisation plans and financial capabilities. The new Swedish government, despite that country's advances in bolstering its air defence capabilities (including through cooperation with Germany on IRIS-T SLS), announced in January 2023 that it would join the initiative, although it remains an open question as to whether it will actually make joint purchases of the individual systems. For Poland, given its extensive industrial cooperation with the US (Patriot) and the UK (CAMM), accession to ESSI would mean a significant slowdown in projects that are already underway. In view of the enormous needs in the field of developing short- and medium-range air and missile defence, the countries that have joined the German-led programme are unlikely to be interested in systems capable of countering ballistic missiles outside the Earth's atmosphere (THAAD/Arrow-3/SM-3).<sup>13</sup> Moreover, this

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<sup>13</sup> J. Gotkowska, 'Germany's European Sky Shield Initiative', OSW, 14 October 2022, [osw.waw.pl](https://osw.waw.pl).



capability is provided by the US-made Aegis Ashore system (SM-3 missiles), which has already been built in Deveselu, Romania (operational since 2016) and will be launched in 2023 at Redzikowo in Poland.

The NATO members with significant air defence capabilities include the United States (60 Patriot batteries and four more under construction), Germany (12 Patriot batteries), France (10 SAMP/T and 4 Crotale NG batteries), Spain (3 Patriot batteries, 4 NASAMS), the Netherlands (4 Patriot batteries, 3 NASAMS) and Italy (6 SAMP/T batteries).<sup>14</sup> They can support the flank countries, and indeed are already doing so. Poland has hosted two American and three German Patriot batteries since 2022 and 2023 respectively. Two German, one Dutch and one US battery of this type have also been deployed in Slovakia, one French SAMP/T battery in Romania, and one Spanish NASAMS battery in Latvia. However, this is only *ad hoc* support, and it cannot completely substitute for the countries on NATO's northern, eastern and south-eastern flank having their own air defence capabilities.

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<sup>14</sup> The United States and Germany have declared that they will transfer one Patriot battery each to Ukraine, which will deplete their forces. The Netherlands is also considering that option.