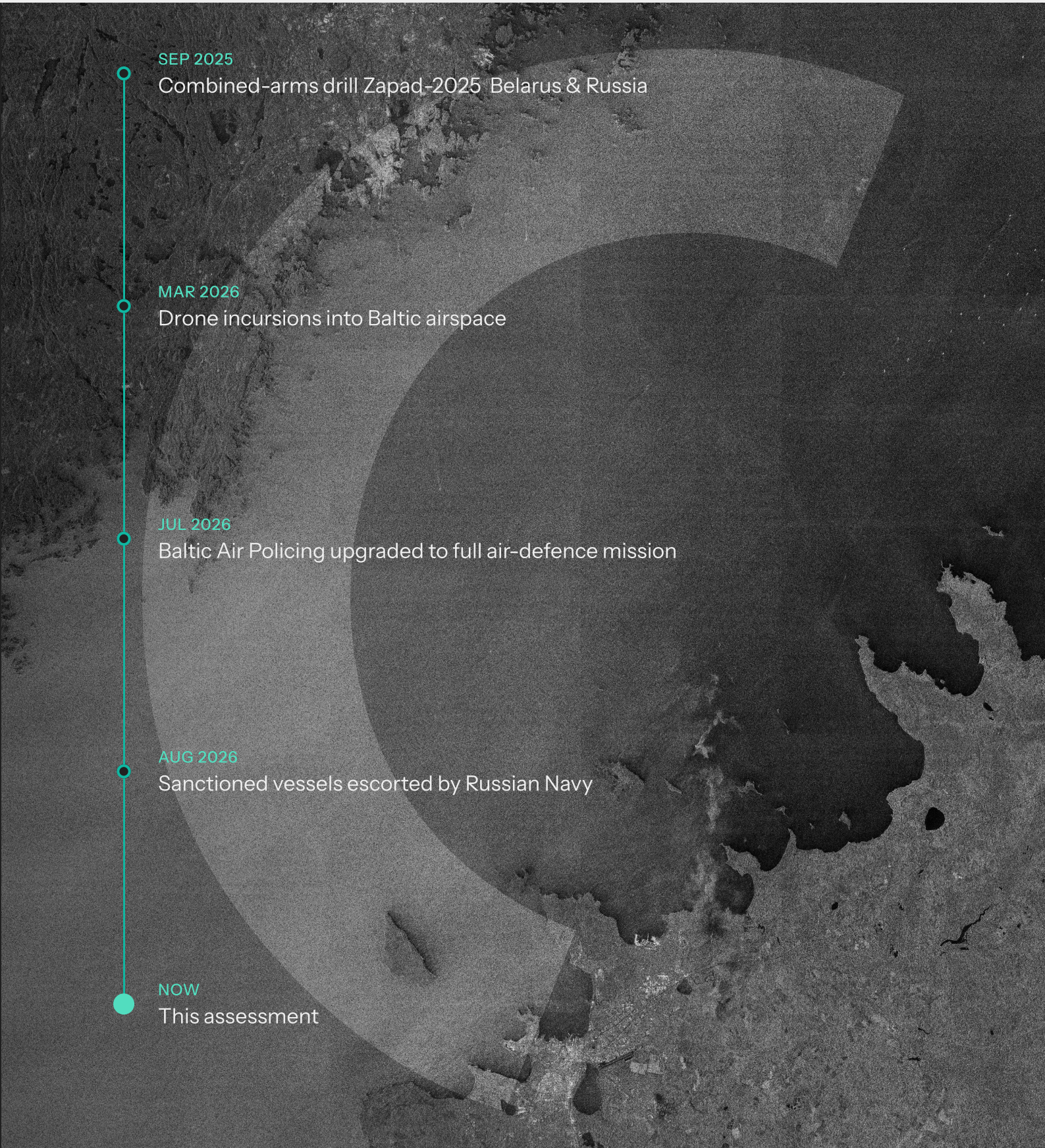
ICEYE Intelligence

ICEYE

Baltic Sea Overwatch

October 2026



Arndt Freytag von Loringhoven

Former NATO Assistant Secretary General for Intelligence and Security

The Baltic Sea has emerged as a major hotspot of international security. Here, NATO shares long, direct borders with Russia; military aircraft and drones constantly cross borders; undersea cables are being cut; and Moscow's shadow fleet continues to operate across the Baltic. Tensions between Russia and the West have reached unprecedented levels. We are not witnessing a fleeting series of incidents or aberrations, but a long-term strategic confrontation in which Russia is testing the limits below the threshold of war. War games are back in fashion, and most scenarios foresee a major confrontation beginning in the Baltic Sea region.

Russia now spends more than 10% of its national income – almost 50% of its state budget – on defense. Almost the entire industrial base is working for the war effort. Western intelligence services assess that Russia's rapid and massive military build-up could enable it to attack NATO by 2029. Others question whether president Putin would launch a military attack even if Russia had the capability to do so, at least while the war in Ukraine continues. What is beyond dispute, however, is that hybrid warfare is in full swing.

Attacks on critical infrastructure and disinformation campaigns are being conducted with increasing intensity and aggression. Hybrid warfare seeks to undermine support for Ukraine, weaken European democracies, and test NATO's cohesion.

Russia aims to regain lost imperial influence, exploit transatlantic divisions, and weaken European countries before they can develop strong and sovereign defense capabilities. Europe, it seems, will not have a grace period until the end of the decade. We are already in the midst of a highly dangerous confrontation, and the Baltic Sea is at its epicentre.

More than anywhere else, Europe's Northeast demands precise and continuous monitoring of Russia's military build-up and hybrid capabilities. Western countries need, in particular, to track the regeneration of Russia's military strength, attacks on critical infrastructure, the increasingly sophisticated and diversified use of electronic warfare, and the deployment of unmanned systems on land, in the air, and underwater.

Doing this requires cutting-edge technology that no longer depends on the United States. Increasingly focused on Asia, the US is reducing its commitment to Europe, and this trend is unlikely to be reversed in the future. Europe must be able to take its security into its own hands.

Rafal Modrzewski

Chief Executive Officer, ICEYE

Europe's security depends on what Europe can see.

Nowhere is that clearer than in the Baltic Sea. Military infrastructure is being rebuilt. Critical infrastructure is increasingly exposed. Electronic warfare is becoming part of the everyday operating environment. And developments far beyond the coastline can rapidly change the security picture for the entire region.

The challenge is not simply to collect more information. Europe needs the ability to see what is happening continuously, understand what is changing, and act before those changes become a crisis.

That requires sovereign intelligence.

Europe must be able to task its own systems, receive information when it needs it, and turn that information into decisions without depending on choices made elsewhere. Sovereignty does not mean isolation. It means having the ability to act independently when necessary, while working closely with allies.

The good news is that Europe already has the technology and talent to do this. ICEYE's own story shows what Europe can build when it backs ambition, innovation and entrepreneurship.

This report shows what sovereign space-based intelligence means in practice: a military site returning to use, a change in air-defence posture, a vessel disappearing from conventional tracking, unusual activity around critical infrastructure. Individually, these developments may be ambiguous. Observed persistently and connected over time, they become intelligence.

Europe does not need to wait another decade. The capabilities already exist. What is needed now is the ambition and urgency to connect them, deploy them at scale and place sovereign intelligence at the heart of European security.

Europe must be able to see, decide and act on its own.

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Key insights

Pressure is building – without crossing into direct engagement. Military and hybrid activity is increasing across the region, while generally staying below the threshold of open confrontation. This makes tracking changes in the frequency and character of incidents even more essential.

Russia is rebuilding for the long term – not just for Ukraine. Russia is preparing military infrastructure consistent with a longer-term confrontation. New barracks, storage and training facilities provide an earlier indicator for NATO than troop numbers alone, as critical buildings appear long before the units that use them.

The Baltic theater does not stop at the coastline. Security around the Baltic is directly affected by developments in Karelia, Belarus and the Arctic. Understanding what is happening in the region therefore requires a much wider view, extending thousands of kilometers beyond the coastline.

Russia is heavily investing in ISR. New sensors, electronic warfare and air defense are being established around the Baltic Sea. As Russia strengthens its ability to see, detect and respond, NATO must upgrade its own capabilities accordingly.

The line between commercial and military activity is being actively blurred.
Russian use of military protection around and aboard merchant vessels is making it harder to enforce sanctions and conduct continuous maritime surveillance. What used to be routine coastguard inspections now risk escalating into state-to-state encounters.

Baltic shipping has limited alternatives.
A major disruption in the Baltic Sea would put pressure on North Sea ports, rail networks and inland logistics. No alternative port currently has the infrastructure to absorb the impact. Contingency planning needs to start now – not after the disruption takes place.

Time between detection and assessment must be reduced.
Given the ambiguous nature of many incidents in the region, faster imagery acquisition alone is not enough. It is also essential to have analysts and decision-makers who can interpret the information and act on it quickly. That is when information has real value.

ICEYE provides all-weather observation and rapid change detection, which can be combined with other sources to help analysts identify and assess these developments earlier.

Introduction

The Baltic is a relatively small sea. Yet the security challenges concentrated within its waters and along its shores are set to shape European defense for a decade.

The Baltic Sea is now one of the most closely watched stretches of water in Europe. But it is also one of the most difficult to make sense of. With so many diverse activities taking place in the same confined stretch of water, it is increasingly difficult to distinguish the significant from the routine.

On the one hand, the sea is a rapidly changing military theater – one in which Russia continues to adapt its force posture, intelligence architecture, maritime behavior, and hybrid warfare playbook while the accession of Finland and Sweden to NATO reshapes the strategic geography. At the same time, it remains both a major commercial artery and the site of critical regional infrastructure, including a fast-growing fleet of offshore wind farms and a dense mesh of communications cables that connect the countries around it.

To truly understand the Baltic, we need to see it for what it is: a set of interlocking, interconnected systems whose knock-on effects can extend across the region – and sometimes far beyond it. Military activity in Kaliningrad cannot be assessed separately from Russian force generation in Karelia and the Leningrad Military District. Ships leaving Baltiysk link the region to the North Sea, the English Channel and the Mediterranean. Developments in Belarus reshape the military geometry facing Poland, the Baltic States and the wider European theater. Even a single incident, such as an unmanned vessel carrying explosives in the Gulf of Finland, could be enough to halt shipping traffic, disrupt energy infrastructure, and alter political decision-making across the wider Baltic region.

The challenge is not simply to "watch the Baltic". It is to maintain a persistent, multi-domain picture of the land, air, sea and infrastructure systems that shape Baltic security — including the Russian and Belarusian depth areas that can generate effects into the region.

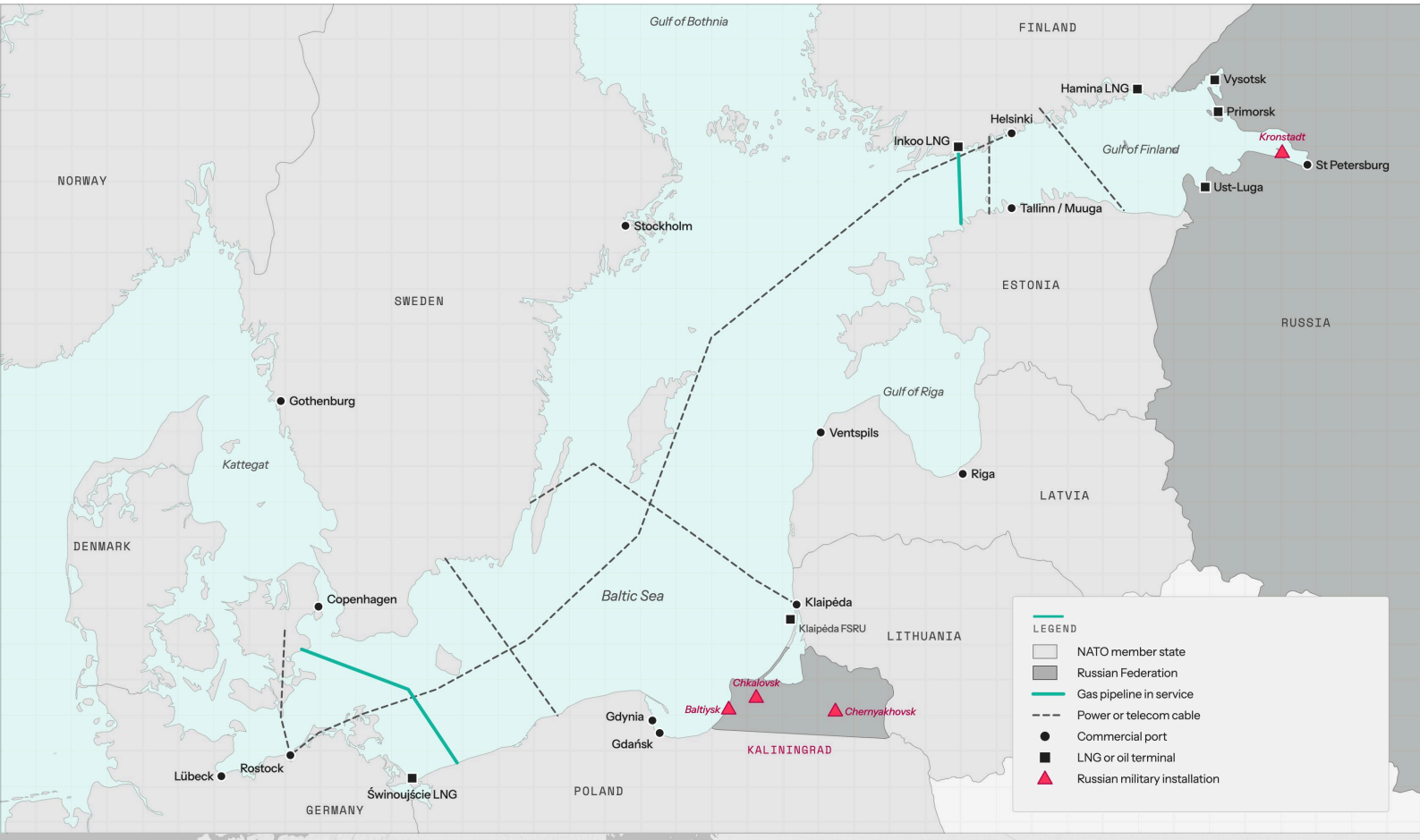
In analyzing the state of the region today, this report draws on examples from military domains, as well as the commercial activities they touch – everything from equipment depots and munitions infrastructure to airfields, naval bases, escorted merchant traffic and critical infrastructure.

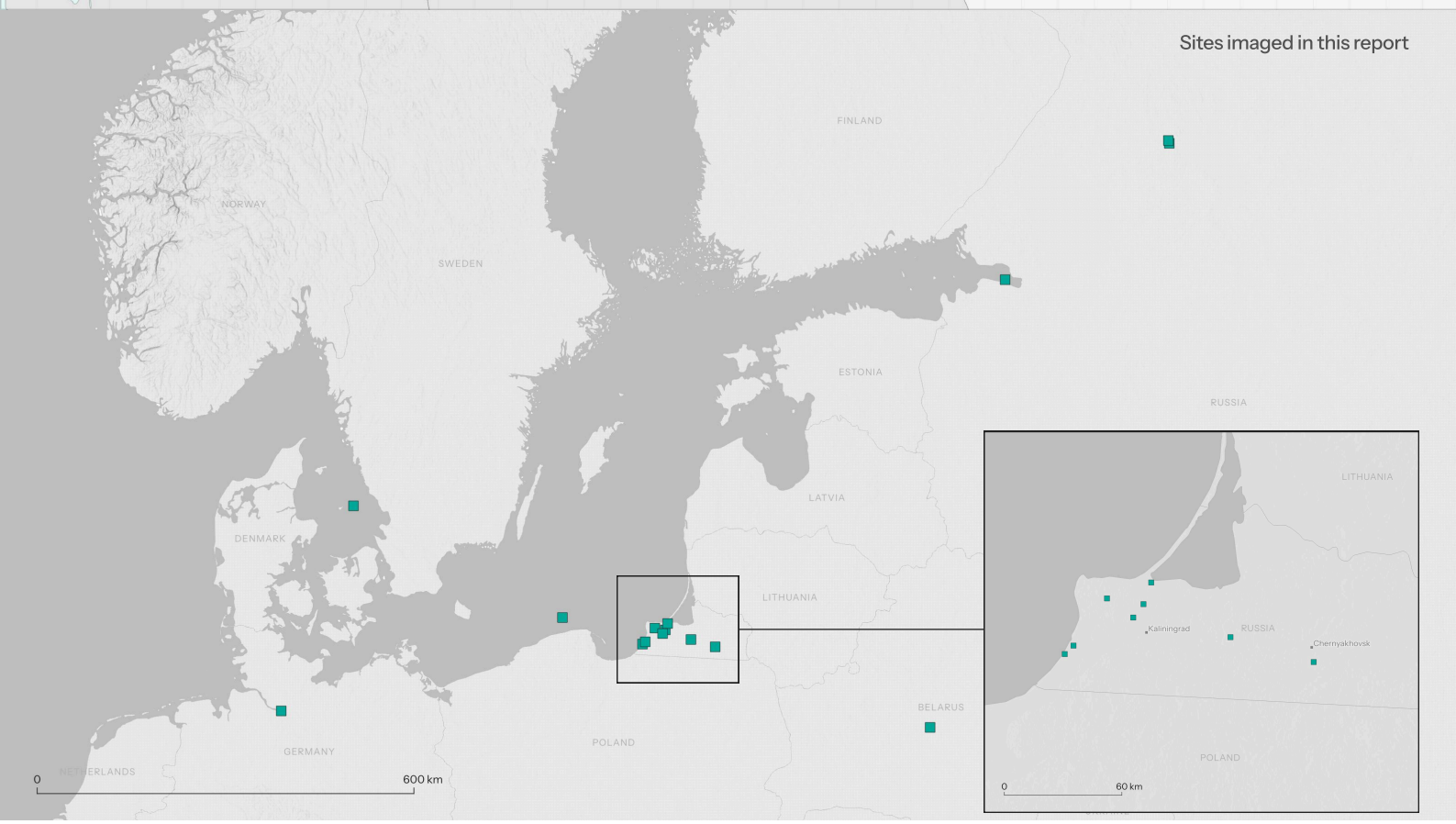
It also draws on a range of sources including:

- SAR imagery to establish what is physically present and how it changes
- Automatic Target Recognition (ATR) to speed up the detection and classification of relevant objects
- Automatic Identification System (AIS) and open-source reporting to add identity and context
- Official reporting to provide the wider strategic picture

No single event or source tells the whole story. A storage yard that appears unchanged, a hardened aircraft shelter or a vessel loitering near an offshore wind farm may have limited significance when viewed in isolation. Real analytical value is only created when observations are connected with other activity, across different domains and, critically, over time.

The Baltic-wide operating picture





Rebuilding on the north-western and western axis

Rebuilding remains uneven and constrained by the war in Ukraine. But the direction is clear: more formations, more infrastructure and a stronger permanent posture.

Russia's decision to recreate the Leningrad Military District and form the 44th Army Corps in Petrozavodsk has provided the institutional framework for an expansion of its forces in the north-west.

However, planned troop numbers can only tell us so much – especially at a time when Russia is simultaneously replacing losses from the ongoing war and rebuilding for a longer confrontation. A far stronger indicator is the fixed infrastructure currently being prepared, including barracks, storage, workshops and training areas.

A similar picture is emerging further south, where Russia is extending its military posture through closer integration with Belarus. Since 2022, the two countries have been engaging in joint exercises, shared basing arrangements, and air-defense cooperation.

The recent stationing of Oreshnik missiles in Belarus has added nuclear signaling to the mix. By dispersing high-value capabilities outside the Russian Federation, Moscow is able to build strategic depth while increasing the number of locations NATO has to monitor and making Russian military activity harder to interpret.

The sites examined below cover both ends of this axis, from preparations of fixed infrastructure on the Finnish approach to a large munitions facility taking shape 60 km south of Minsk.

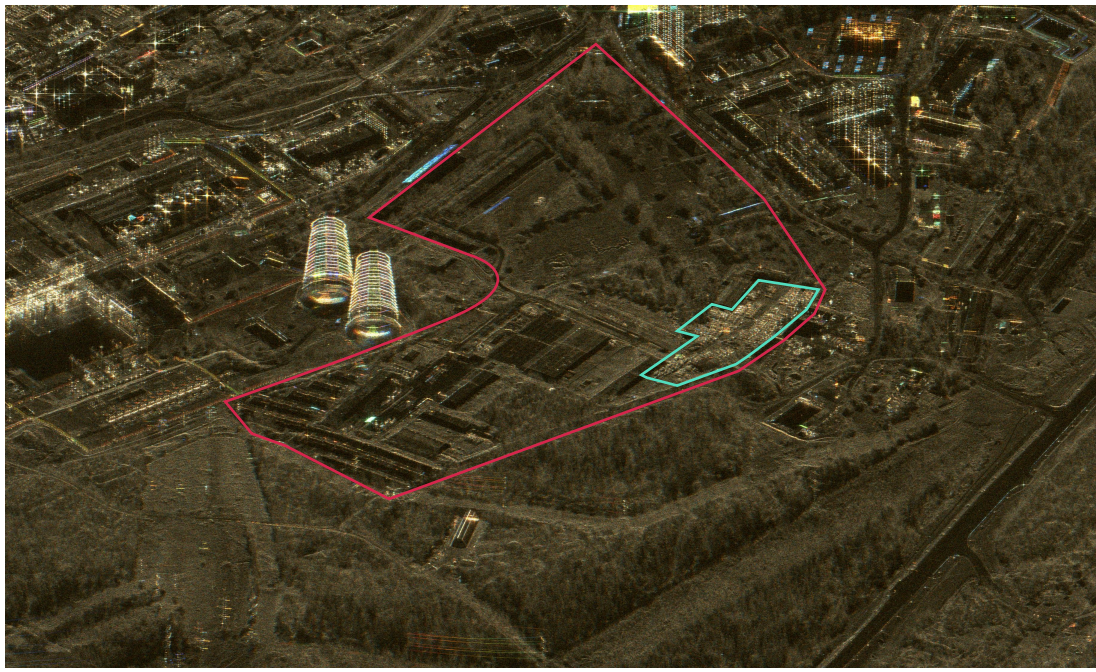
BALTIC SEA OVERWATCH

Reading reconstitution in change and stasis

Rybka Garrison, outside Petrozavodsk, had stood largely empty since the 2000s. But over the last few years, the picture has changed. In October 2025, military vehicles were observed parked inside the perimeter. Even more tellingly, established overgrowth was cleared between June 2024 and April 2025, indicating a deliberate effort to return the site to active use.

RYBKA GARRISON

Rybka Garrison 11 May 2026 (isometric view) - build up of vehicles and material marked in blue



Sometimes, the absence of change can be revealing, as at this equipment depot north of Petrozavodsk.

At a time when Russia has drawn heavily on other storage sites to support war in Ukraine, this one has remained largely untouched. SAR imagery from recent years shows the same occupied storage rows, with more than 1,000 vehicles, tanks and artillery pieces still held in the open.

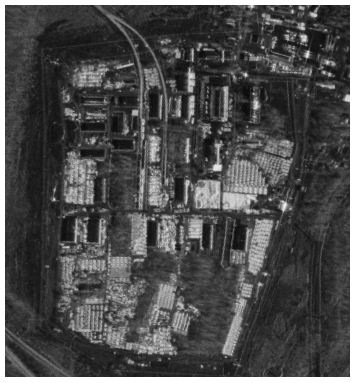
Given that these are predominantly Soviet-era holdings, it is likely that at least part of what remains is not worth restoring. Even so, retaining a stockpile of this size on the north-western axis while comparable sites were emptied suggests that some of the materiel may be reserved for requirements beyond Ukraine.

PETROZAVODSK

Reconstitution tracked through change and stasis in facility use.



10. September 2025



01. February 2026

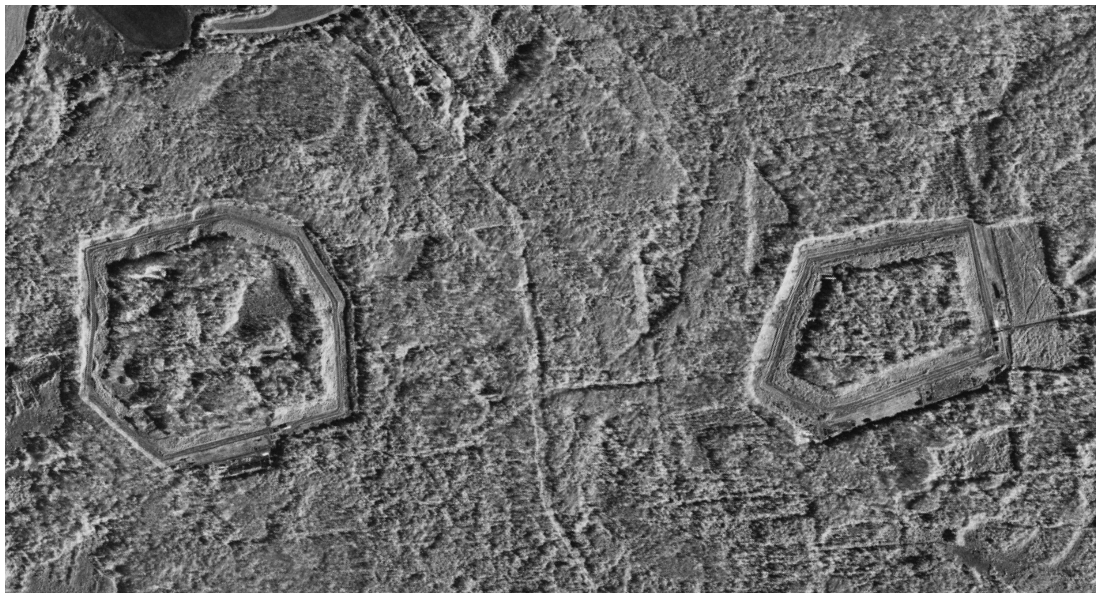


26. June 2026

Hiding sensitive sites from public view

Changes in publicly available imagery can also provide useful indicators of sensitive sites.

KALININGRAD
2574th Arms and Ammunitions Base - SAR image 09. September 2026



Take these sites, which are attributed to the 2574th Arms and Ammunitions base, just north of Kaliningrad.

KALININGRAD
2574th Arms and Ammunitions Base
Source: Yandex Maps



They were recently removed from Yandex maps, Russia's leading web mapping service.

Any site concealed in this way likely warrants further inspection, as it indicates the Russian authorities consider it sensitive.

BALTIC SEA OVERWATCH

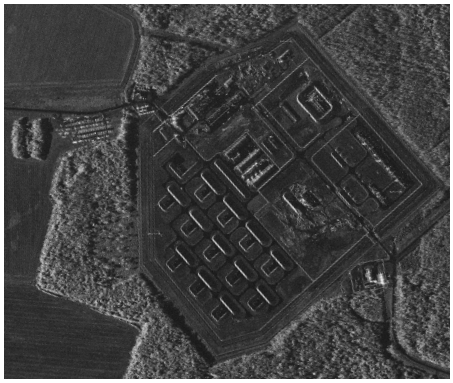
Strategic depth that reaches directly into the Baltic theater from Belarus

PAVLOVKA

Military complex under construction 2025 - 2026



01. October 2025



30. August 2026

Another large munitions complex is under construction near Pavlovka in Belarus's Slutsk district, some 60 km south of Minsk. Satellite imagery and Belarusian investigative reporting have documented the development, which is notable not only for its scale and layout but also for its location on the site of a former Soviet strategic missile regiment.

While Belarusian president Alexander Lukashenko denied in December 2025 that the Russian Oreshnik intermediate-range missile system had been placed there, the true purpose of the construction has not yet been officially explained.



Newly constructed sites at Pavlovka Military Complex, imaged 29-31.08.2026

BALTIC SEA OVERWATCH

Russia's forward C4ISR node

Kaliningrad's ground forces have been drawn down for the war in Ukraine, but its value as a forward sensor, electronic-warfare and command node keeps growing.

According to Lithuania's national threat assessment, Russia has been constructing elements of an over-the-horizon (OTH) radar at several locations across Kaliningrad. This changes the picture for the region significantly. Until recently, it was discussed largely in terms of troop and unit strengths. Now and in the future, there needs to be just as much focus on the buildout of C4ISR infrastructure.

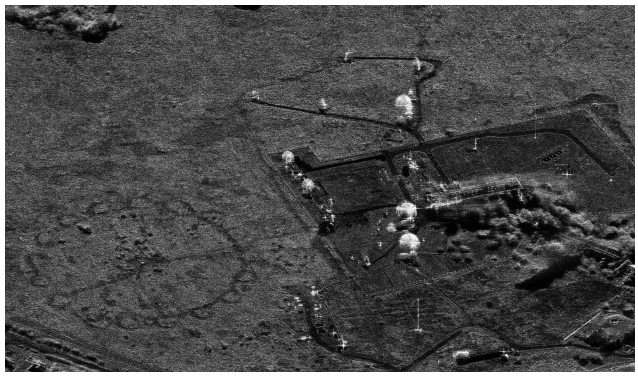
Russia's C4ISR capabilities are best understood as a network rather than as individual sites. Long-range radar, signals intelligence, communications interception and Electronic Warfare (EW) each contribute different types of information, but their real value comes when their capabilities are combined. Together, they can help Russia build a more complete air picture and detect activity earlier. This matters because, in a crisis, even a few additional minutes of warning can affect dispersal, command decisions and the order in which defensive measures are taken. A broader mix of sensors also makes it harder for NATO forces to conceal their activities and manage the signatures associated with them.

For all these reasons, any assessment of Kaliningrad should evaluate not just Russia's strike capabilities but also what its sensor network can detect and classify.

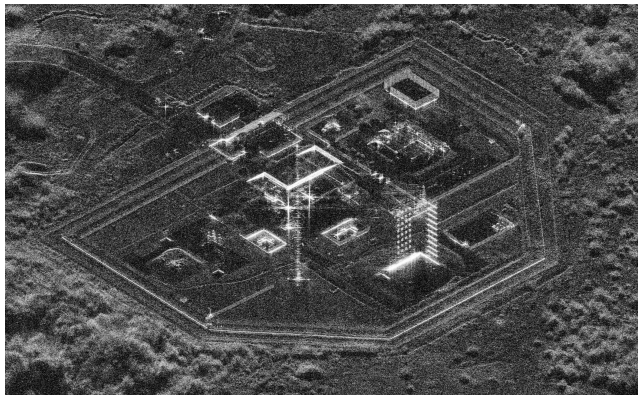
BALTIC SEA OVERWATCH

Kaliningrad's sensor network

VERBNOE
Verbnoe Satellite SIGINT Site 03. September 2026

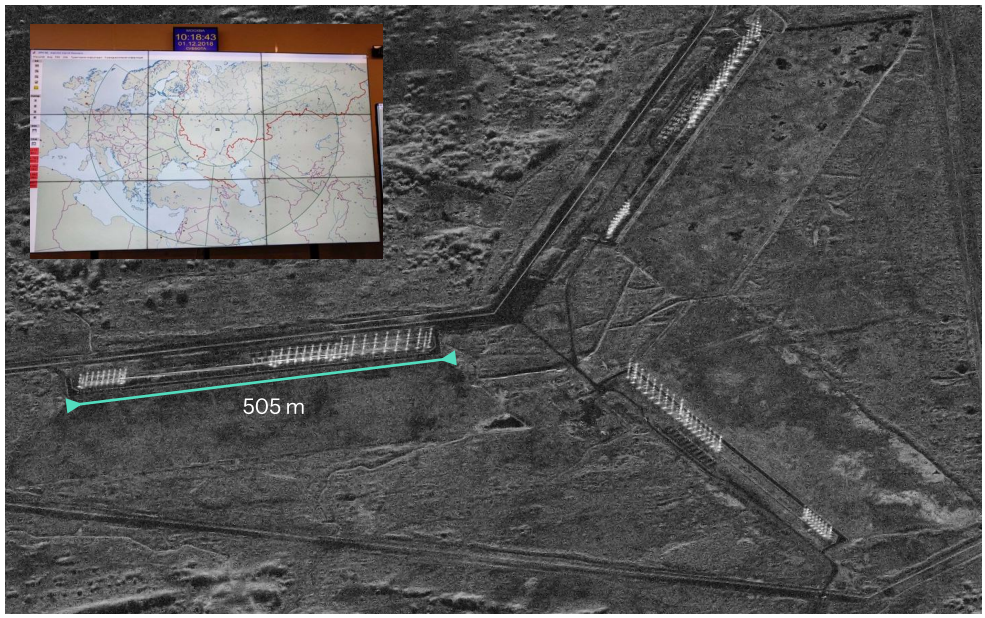


VORONEZH
Voronezh-DM early-warning radar 30. August 2026



Kaliningrad Oblast hosts more than 20 identified Signals Intelligence (SIGINT) and EW sites, with additional sites such as the 29B6 Container OTH radar currently under construction. Together, they provide Russia with a range of ways to monitor activity across the region, from intercepting satellite communications to detecting air movement and ballistic missiles.

GVARDEYSK
Transmitter Station Gvardeysk 28. August 2026 (isometric view) – a 2018 image from a similar site depicts the range of the system



The system cannot see targets that are closer than approximately 900 km, but it can detect aircraft and missiles at much greater distances, extending for several thousand kilometers. Its location and range suggest that it is intended to provide early warning against threats well beyond the current war in Ukraine.

BALTIC SEA OVERWATCH

Kaliningrad's sensor network

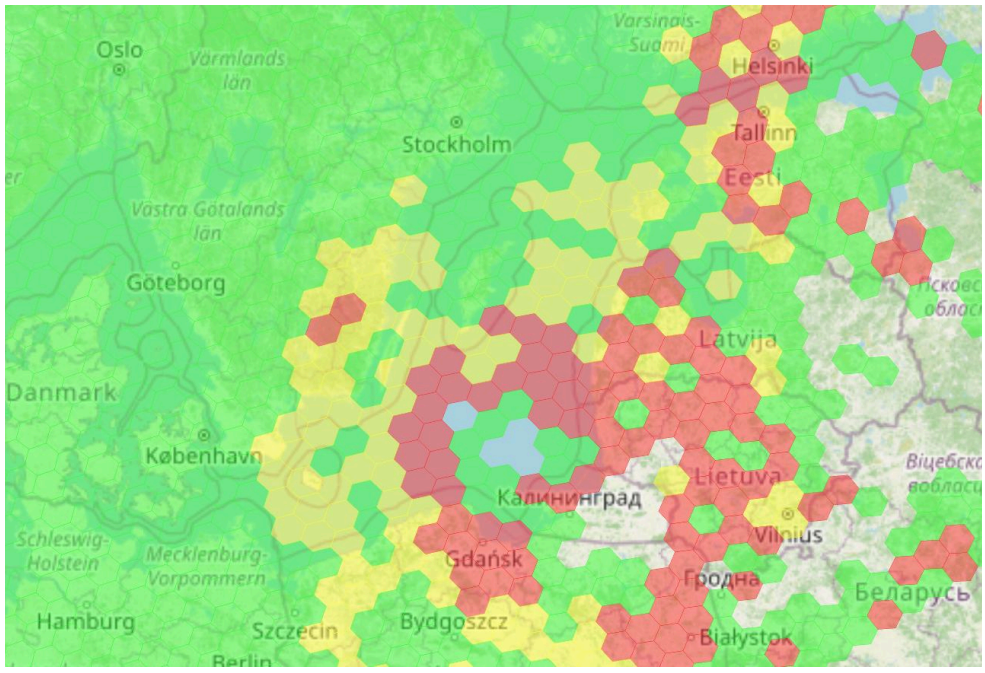
CHERNYAKHOVSK
28. August 2026



Another site has been built near Chernyakhovsk in recent years. The circular antenna array is likely linked to the OTH radar programme described above.

GNSS interference in the region

Global Navigation Satellite System (GNSS) jamming and spoofing are now routine features of the Baltic operating environment. Most of it is aimed at defeating Ukrainian long-range drone attacks, but it can be equally disruptive to maritime navigation and civilian aviation.



GNSS interference based on ADS-B data on 29. August 2026

BALTIC SEA OVERWATCH

Routine intercepts in the Baltic air theater

The Baltic air picture is shaped less by dramatic incidents than by sustained tempo of identification, escort and air-defense activity.

NATO aircraft continue to intercept Russian military flights transiting between mainland Russia and Kaliningrad, particularly when they fly without transponders, filed flight plans or radio contact with regional air traffic control. Reporting through 2026 shows repeated scrambles involving Su-24, Su-30, Su-34, Su-35, Il-20 and transport aircraft.

Figures for August provide a typical example of how frequently these scrambles are occurring and how much they can vary from week to week. There were five scrambles in the week of 3 to 9 August, one in the following week, and four the week after that.

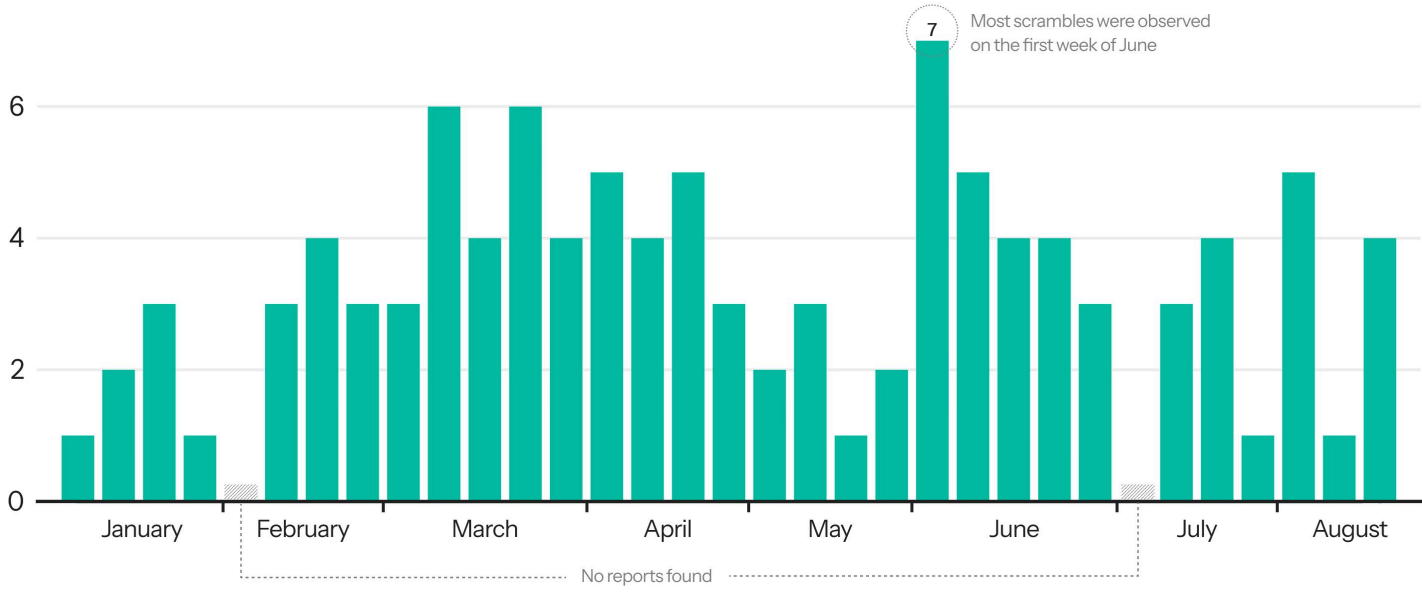
While none of this is new, the fact that it keeps happening does come at a cost. Repeated incidents not only test NATO reaction times. They also give Russia the chance to study NATO procedures at close range.

Reported weekly NATO scrambles

January — August, 2026

Number of NATO Alpha Scrambles per reporting week

106 total scrambles



The picture is being further complicated by drone spillover from the war in Ukraine. In May 2026, Latvia reported Russian-origin drones entering its airspace and scrambled NATO aircraft in response. Within two months, NATO had upgraded Baltic Air Policing, moving from identification and escort to defeating airborne threats when necessary.

Russian air activity may represent a recurring operational burden for NATO, but it also serves as a useful indicator of how Russia is using its forces in the region. Take the new shelters at Chkalovsk air base (see p25). A basing change like this, or variations in sortie types or flight profiles, can all give early warning of a shift from routine signaling to preparation for sustained operations.

AIR ACTIVITY: ROUTINE INTERCEPTS, HIGHER READINESS

Hardening the air component

New protective aircraft shelters have been constructed at Chkalovsk naval aviation base, home to the 689th Guards Fighter Regiment and its SU-27 fighter aircraft. Aircraft parked in the open are vulnerable to drone attack. Hardened shelters reduce that exposure.

The construction of these shelters, designed to preserve combat power under attack, shows that Russia is applying lessons from the war in Ukraine to bases on NATO's border.

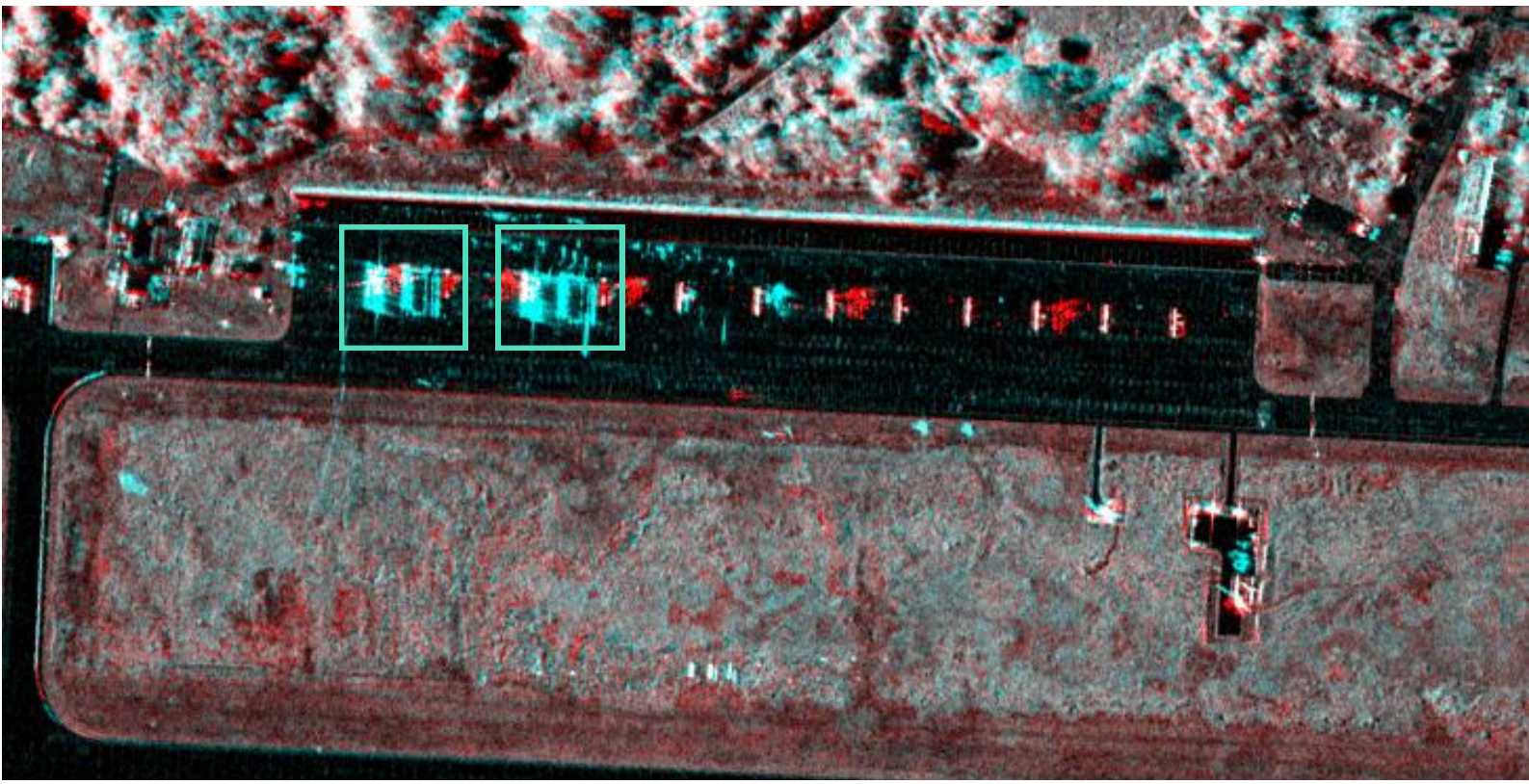


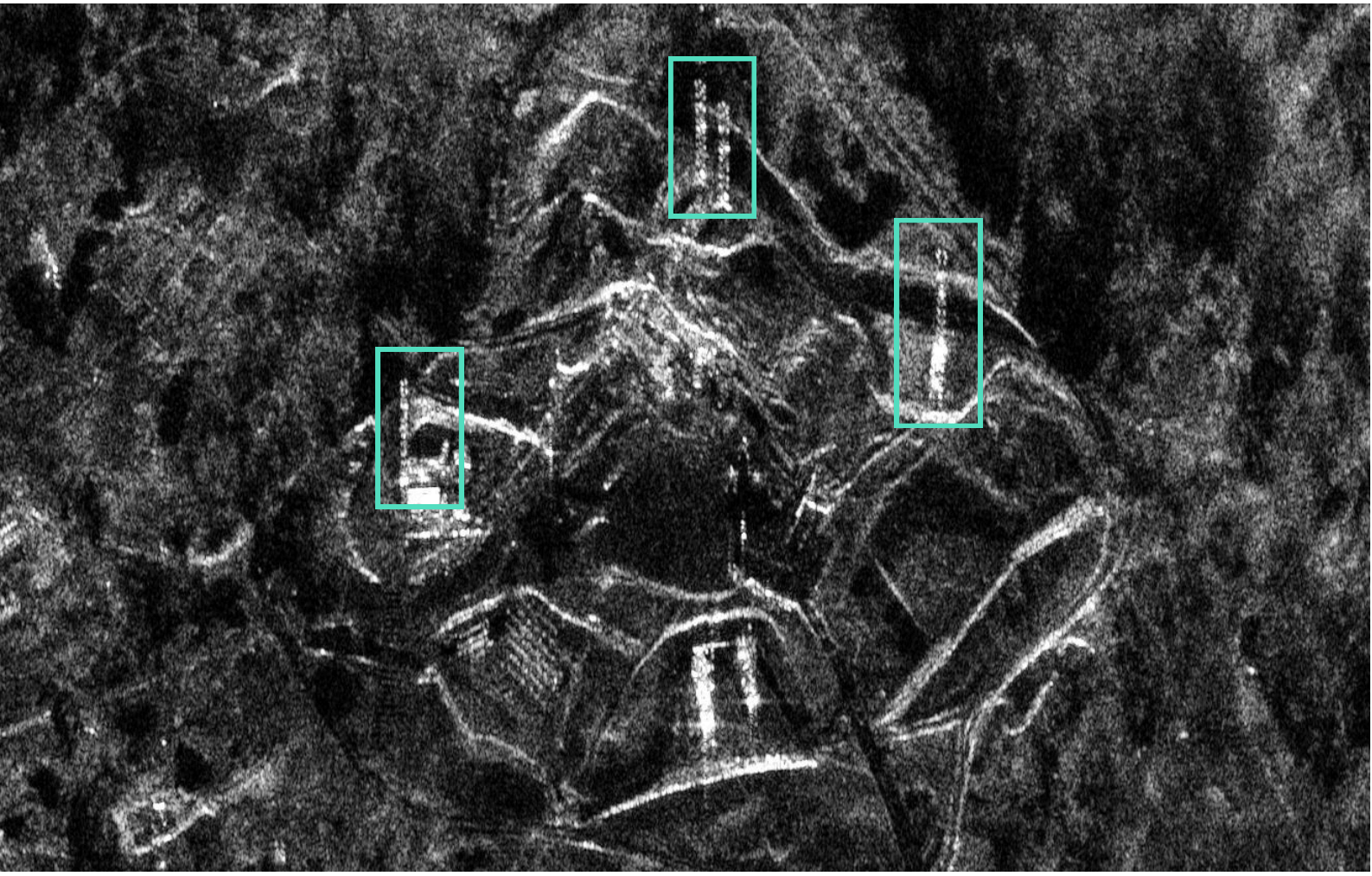
Image comparison between 10. October 2025 and 17. August 2026 – bright blue shows changes to previous image. Newly constructed hard stands highlighted.

BALTIC SEA OVERWATCH

Air defense held at readiness

These raised launchers, seen at a mobile S-400 surface-to-air missile (SAM) site, were detected through ATR. Raised launchers are an observable indicator of readiness, as they mean a battery is configured for engagement rather than storage.

Our imagery suggests this is not a temporary measure. On the contrary, consistent monitoring from orbit has shown it to be a standing condition across the exclave of Kaliningrad.



Operational AD-site near Baltiysk Port 09. June 2026 with erected launchers

BALTIC SEA OVERWATCH

Naval activity in the Baltic Sea

Baltiysk remains the Baltic Fleet's forward base in the south and a natural test case for combining SAR, automatic detection and open-source ship identification.

The Baltic Fleet is not the largest in the Russian Navy, but it may be one of the most significant. Sitting in a strategically sensitive spot, it can operate rapidly across the Baltic, reinforcing maritime security around Kaliningrad, escorting Russian shipping and contributing to wider deployments through the Danish Straits.

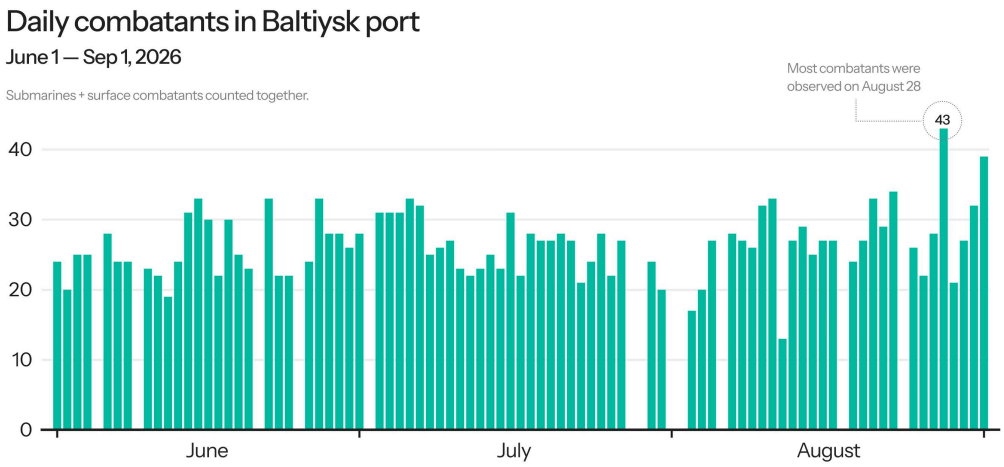
Its composition also gives it flexibility. Corvettes and missile-capable surface combatants can contribute to sea denial and air defense. Landing ships can support logistics and reinforcement. Auxiliaries sustain activity that can extend well beyond the Baltic itself.

At the same time, the fleet's movements are easy to track. Access to and from the Baltic is limited to the Danish Straits, where events can be readily detected through persistent monitoring. These events can indicate exercises, fleet reinforcement, escort missions or the movement of sanctioned military-linked cargo, all of which provide valuable strategic context.

BALTIC SEA OVERWATCH

Turning detections into an order-of-battle picture in Baltiysk

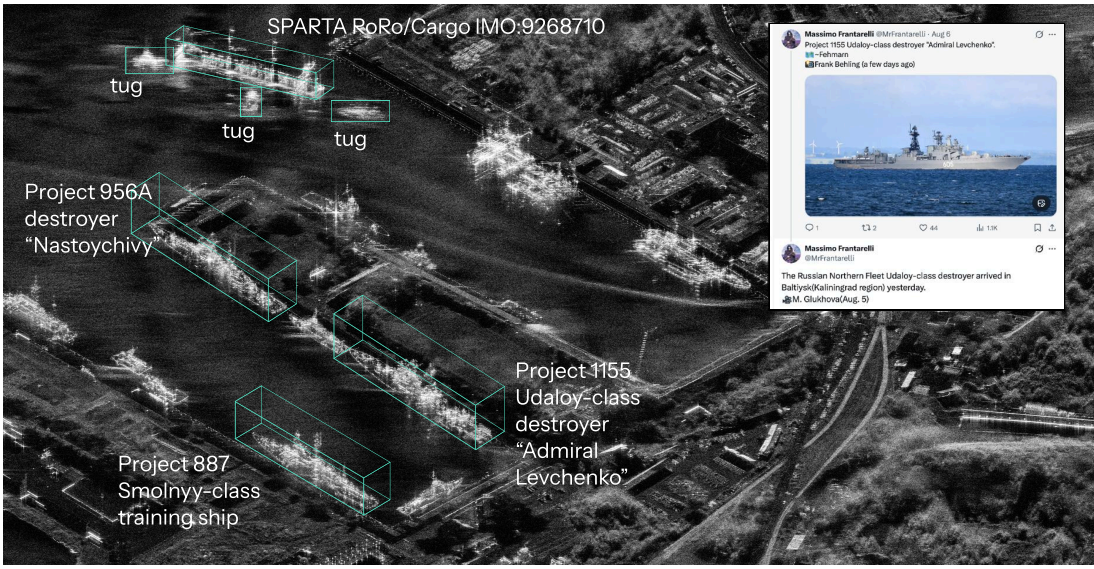
As a major base of the Russian Navy's Baltic Fleet, Baltiysk is a high-value target for persistent monitoring and is imaged on a near-daily basis. The days with a lower count of combatants are those that should be followed up on. Vessels at sea pose a greater threat than vessels berthed at port.



VESSEL IDENTIFICATION: STEP BY STEP

- SAR detects vessels regardless of cloud cover or darkness
- Automatic Target Recognition (ATR) speeds up the sorting of large surface combatants from auxiliaries and merchant traffic
- Open sources are used to take the assessment from class-level to a named hull, with a single post on Bluesky, X or Telegram being enough to supply context to an image
- Named vessels can then be tracked automatically in SAR imagery

In early August 2026, two large combatants were identified in the port: Nastoychivy, a Sovremenny-class destroyer that has been out of service since 2022 and was reportedly being prepared for disposal in 2025, and a new sighting: Admiral Levchenko, an Udaloy-class destroyer that belongs to the Northern Fleet but happened to be present in the Baltic.



Baltiysk Port 08. August 2026 – Class detections through ATR, individual ships through open-source information.

BALTIC SEA OVERWATCH

Between Baltic and Arctic



Icebreaker Viktor Chernomyrdin at Kronstadt Harbour 27. August 2026

The ports and shipyards of St. Petersburg and Kronstadt affect more than just the Baltic region. They also underpin Arctic navigation, as it is here that icebreakers such as the Project 22220 nuclear class and diesel-powered 22600 class are built.

These icebreakers are of direct consequence for Russia's shadow fleet. By cutting the channel that convoys follow along the Northern Sea Route, they give sanctioned vessels a route east that bypasses European naval patrols conducting flag-verification boardings in the Baltic approaches.

In early August 2026, at least eight sanctioned tankers were reported transiting eastward along the Northern Sea Route. All of them had been loaded at Russian Baltic and Arctic ports the previous month.

BALTIC SEA OVERWATCH

Shadow fleet and naval escorts

Russia-linked sanctions evasion is growing into a maritime-security issue, as the Russian state becomes directly and visibly involved in selected vessel movements.

Sanctions evasion at sea has grown sharply since 2022 and the scale of the current enforcement challenge cannot be overstated. As of July 2026, the EU had listed no fewer than 673 vessels under measures targeting Russia's shadow fleet.

Tracking these vessels is not straightforward. The shadow fleet functions like an adaptive ecosystem, with ships regularly changing flags, names, managers and ownership structures. Vessels can therefore only be identified by matching their legal status against their physical location, cargo history and interactions with Russian state assets. At the same time, Russia is making enforcement more complicated by increasingly blurring the lines between commercial and military activity. This includes the use of naval assets to protect some sanctioned movements. It also involves the mounting of weapons on merchant ships such as the Russian liquefied natural gas (LNG) carrier Marshal Vasilevskiy (as seen in imagery released by Estonia in June 2026). Both trends raise the threshold for intervention by increasing the risk of a state-to-state encounter and turning regulatory questions into a strategic concern.



Surveillance imagery from the Estonian Police and Border Guard – May 2026

There is also a strong suspicion that shadow fleet vessels are being used to conduct surveillance and launch drones. While searches by European law enforcement over the last two years have not publicly turned up any drones, launch equipment or surveillance systems, there have been a striking number of drone sightings near suspicious vessels, often when they are on movement patterns that do not match ordinary commercial activity.

In short, the shadow fleet is no longer just about economic circumvention. It has become the vehicle for a wider contest over access, inspection, escort and freedom of maneuver – and could even be playing a role in regional surveillance as well.

BALTIC SEA OVERWATCH

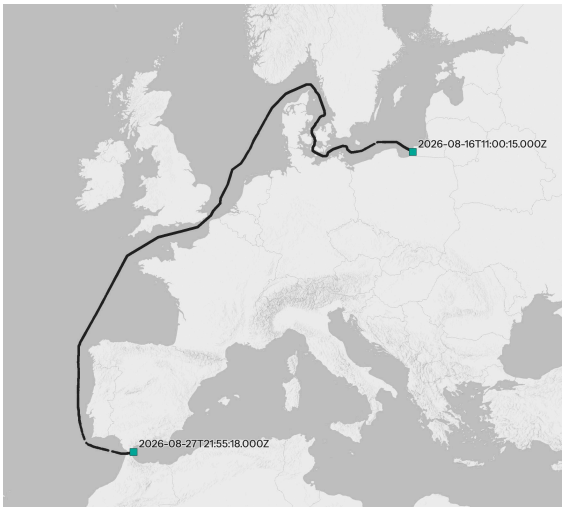
A verifiable pattern of protected logistics

On 15 August 2026, the sanctioned vessel Sparta departed Baltiysk alongside the destroyer Admiral Levchenko, later joined by the tankers General Skobelev and Akademik Pashin.

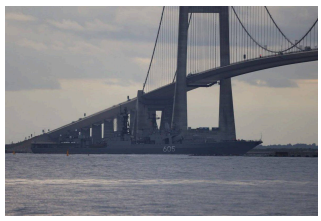
Sailings of this kind follow a recognizable pattern. Sanctioned vessels leave Baltiysk under naval escort with declared destinations in the eastern Mediterranean that their subsequent tracks do not support. Then, as soon as they are past the Danish Straits or English Channel, they obscure their movements by switching off AIS.

There are two important lessons here. First, declared destinations should be treated with caution. Second, if a vessel departing from Baltiysk declares it is heading for the Mediterranean, it is worth defining a likely search area in advance so that SAR imagery can be used to track the vessel's onward progress if, as expected, it reduces or stops transmitting its position.

AIS track of the Sparta until going dark on 27. August 2026, images of the Sparta & Admiral Levchenko at the Great Belt bridge



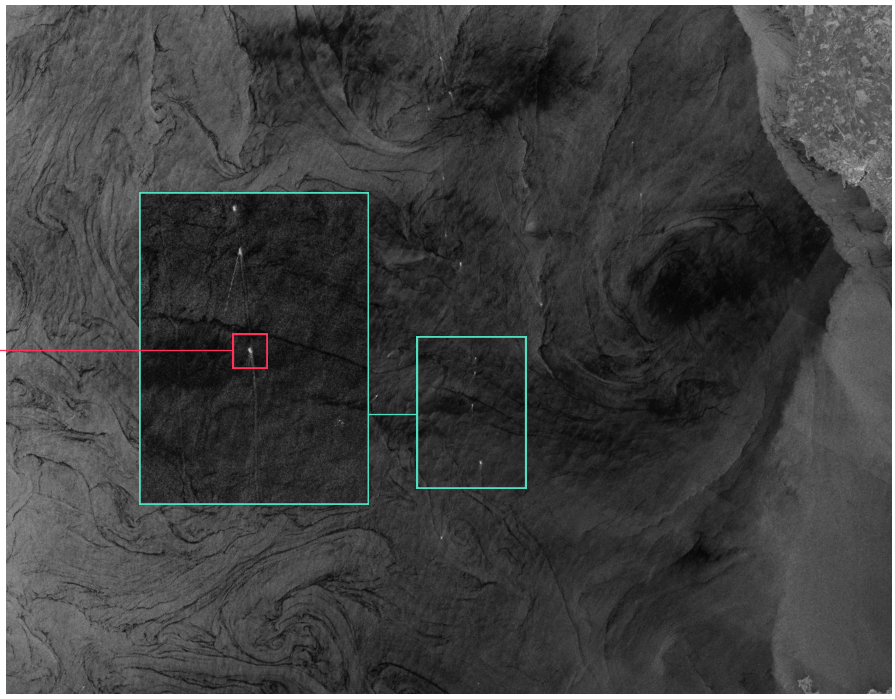




Source: https://x.com/distant_earth83/status/2089967357301067976

KATTEGAT SEA

19. August 2026 Sparta, escorted by General Skobelev and Admiral Levchenko approaching the Kattegat Sea



Critical infrastructure in the Baltic theater

Power, data and offshore energy infrastructure are the strategic assets that connect the region.

Baltic regional resilience depends on the Baltic Sea.

For many years, the seabed has carried a critical network of pipelines, power interconnectors and communications cables. Rapid offshore wind expansion by the EU Baltic states is adding a new layer of strategically valuable assets above and below the surface.

Infrastructure protection, meanwhile, has been pushed to the top of NATO's agenda, following a series of sea-cable incidents that began in 2023. While intelligence reporting indicates that several of these incidents were probably accidental, others have been treated as suspected sabotage. Crucially, the observable vessel behavior is likely to have been similar, whether the reason for it was negligence, unusual routing, intelligence collection or deliberate hostile activity. This makes early detection and assessment even more important, as authorities may well need to respond before the cause is clear.

How is this achieved?

Guarding every inch of infrastructure is simply not realistic. A more workable solution is to prioritize the nodes that matter and stay vigilant when any vessel departs from normal commercial patterns. Wide-area surveillance plays a critical role in this approach, identifying abnormal behavior early, directing scarce patrol and inspection assets to the places that actually warrant scrutiny and helping authorities deter or respond to incidents before they cause widespread disruption.

BALTIC SEA OVERWATCH

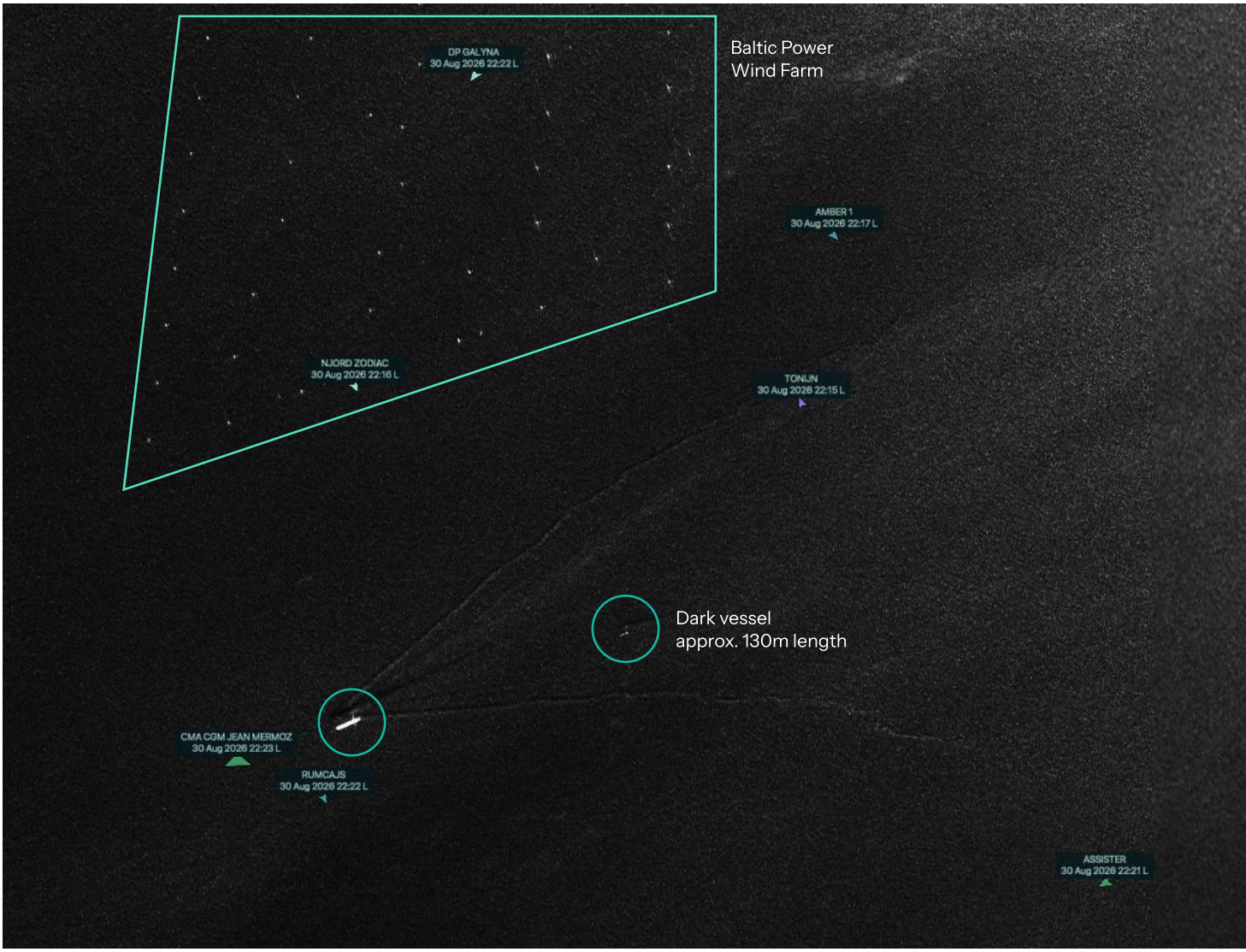
Dark vessels explained

What is a dark vessel?
Cooperative vessels share information about their position and identity via an Automatic Identification System (AIS). If a vessel detected by SAR does not have a corresponding AIS track, it is generally classified as a dark vessel.

Why do vessels go dark?
AIS is often switched off to obscure a vessel's activities. But the absence of AIS does not necessarily demonstrate concealment. Coverage gaps and equipment faults are common, and small vessels may not even be required to carry AIS in the first place.

How does SAR identify vessels that are dark for concealment purposes?
It is impossible to establish the true purpose of a dark vessel from a single pass, as legitimate and illegitimate activities look very much alike. A Russian fishing vessel loitering near a military area, for example, may be carrying out reconnaissance – or it may simply be fishing.

The solution is to use wide-area SAR to provide a baseline of normal activity, which dark vessels can then be compared against. Once normal patterns of behavior around cable corridors and wind farms have been established, the abnormal will clearly stand out.



Stress test: What happens if the Baltic is closed to commercial traffic?

A conflict that closed or severely constrained Baltic shipping would quickly develop into a wider European logistics crisis.

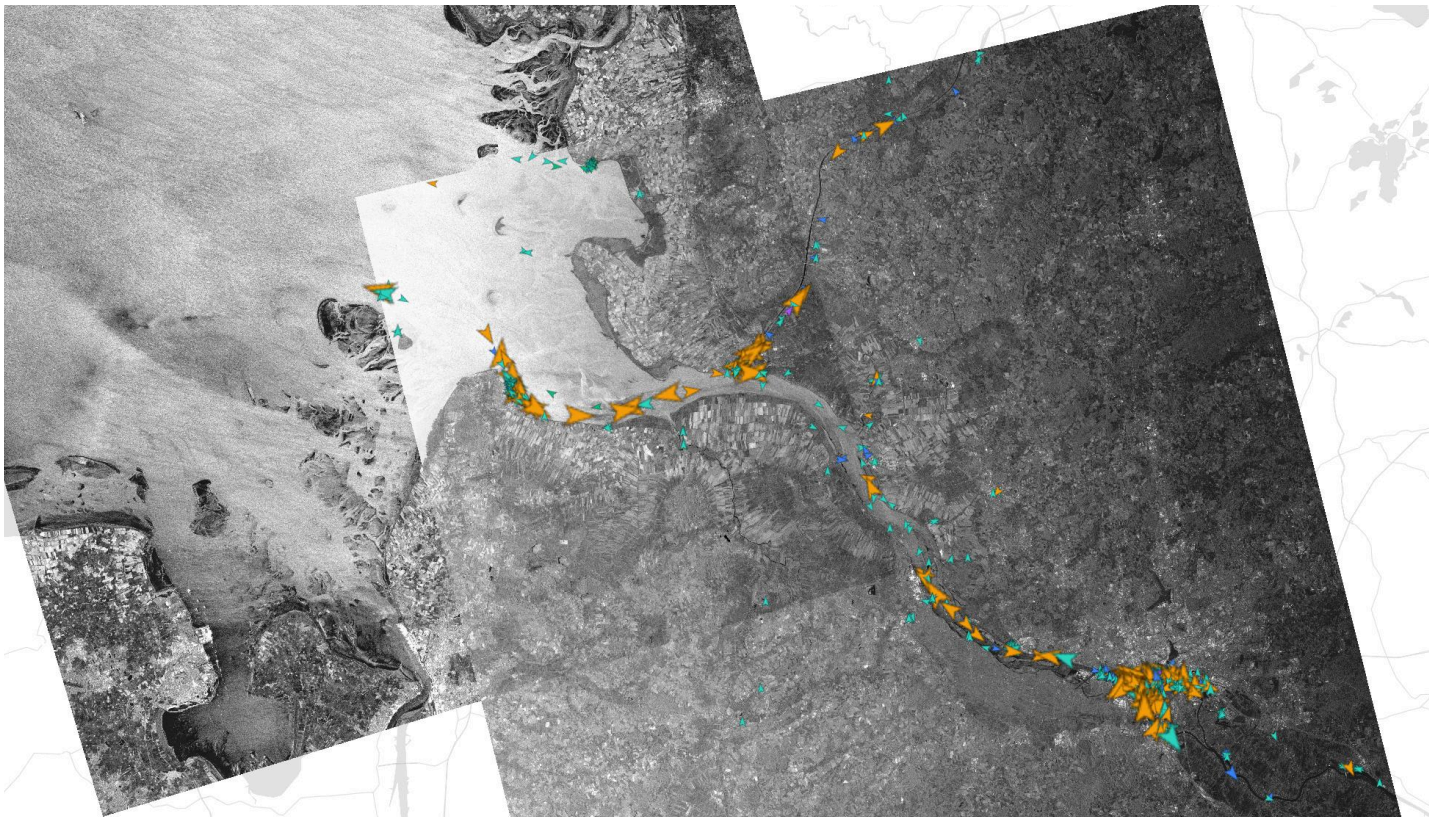
The Baltic's non-Russian economies depend on maritime flows for containers and bulk commodities. If passage through the Danish Straits became unsafe or unavailable, cargo would have to be delayed, rerouted to North Sea ports, shifted to land corridors, or in some cases simply curtailed.

Not all cargo would be affected in the same way. Containerized goods can sometimes be redirected through alternative ports and rail, albeit at higher cost and with more congestion. Ro-ro traffic, however, depends on established ferry links and road capacity that cannot simply be conjured elsewhere. For bulk cargoes, energy products and specialized industrial flows, there are almost no substitutes at all.

Hamburg would be the natural redistribution hub, given its scale, rail connectivity and proximity to northern and central European markets, but it could not absorb the entire Baltic system on its own. In 2025, Hamburg handled 114.6 million tons, almost 50 million tons less than the Baltic's five largest ports combined: Gdańsk (80.4 million), Klaipėda (39 million), Riga (16.8 million), Tallinn (14 million) and Helsinki (13.4 million). That is before even counting Gdynia, the remaining Finnish and Swedish ports, or Germany's other Baltic ports.

BALTIC SEA OVERWATCH

Hamburg and the western gateway



Hamburg and the western Elbe approach 02. September 2026 (including AIS data)

KEY INDICATORS SAR CAN TRACK DURING A CRISIS

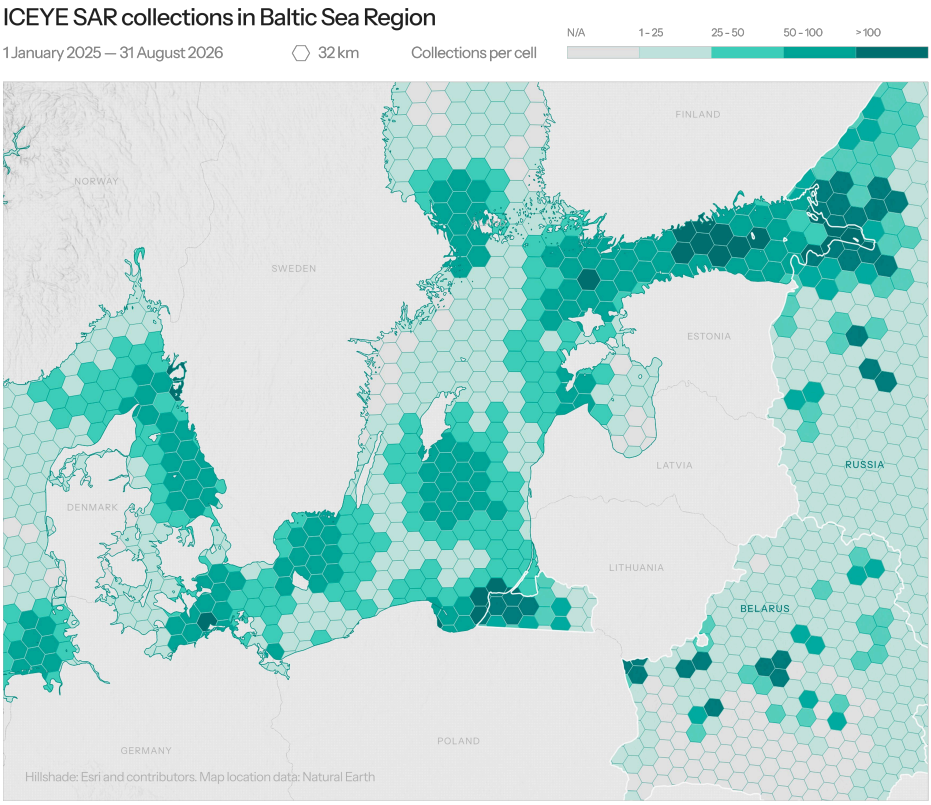
- Anchorage congestion
- Terminal utilization
- Inland dwell times

Even if Hamburg had the capacity to match the Baltic ports, it could not provide a one-for-one alternative. Differences in cargo types, vessel sizes, terminal specialization and hinterland routes are all too great. It would also be competing for capacity with Rotterdam, Bremerhaven and Wilhelmshaven, all of which are already busy serving their own hinterlands. The disruption would move swiftly inland through European road and rail.

In short, Hamburg can mitigate the crisis. It cannot resolve it.

BALTIC SEA OVERWATCH

From observations to warning



SAR tasking and monitoring hotspots around the Baltic Sea

The evidence we have seen throughout this report shows that Russia is rebuilding capacity around the Baltic while improving its ability to sense, protect and sustain that capacity. Individually, these events may appear relatively inconsequential. Taken together, they tell a very different story

Equipment movements in Karelia become more significant when accompanied by new command infrastructure. Hardened aircraft positions warrant greater attention if sortie patterns change. A merchant vessel becomes a different kind of security concern when escorted by warships. Each development reinforces the others, and it is only when you have a complete picture of the region that you can fully understand it.

Achieving a broad perspective takes more than a single sensor. It takes SAR to establish what is physically present and how it changes. It takes a range of other sources – from optical imagery to open-source reporting – to add identification and context. It also, crucially, takes time: data needs to be gathered over days, weeks and months before analysts can confidently distinguish between isolated activity and a developing pattern.

Outlook: what to watch next

Looking ahead to the rest of 2026 and 2027, three developments stand out.

1. Russia's military reconstitution in the north-west
Increasingly, we will see organizational announcements translate into physical capacity, with equipment moving into the region and formations returning from Ukraine.

2. Kaliningrad's C4ISR and electronic-warfare architecture
As new sensors mature and are integrated with existing early-warning and air defense systems, the network is likely to become increasingly consequential.

3. Maritime friction
As European states tighten sanctions enforcement, Russia is likely to devote more military resources to protecting selected shipping. This will add another layer of pressure to an already busy and contested maritime environment.

There is also an important question on the NATO side: how to deal with Russia's response to increased surveillance and protection measures. It is highly likely that arrangements such as Baltic Sentry will lead to higher levels of deception around sensitive activities, including AIS manipulation. NATO's intelligence collection will need to adapt accordingly.

Critical infrastructure will remain the area of greatest ambiguity. Cable faults, GNSS disruption and unusual vessel behaviour will continue to occur. Not every event will be hostile, and not every suspicious activity will immediately reveal its purpose. The challenge is to shorten the time between detecting something unusual and understanding what it means – without assuming hostile intent too quickly or recognizing it too late.

The bottom line
The Baltic is becoming more observable at the same time as it is growing more complex. There is more data, more surveillance and more opportunity to see changes as they happen. But observation alone is not enough. The real advantage comes from watching how those changes develop over time and connecting what is unfolding across domains. When this happens, persistent monitoring goes beyond mere recording – it becomes a powerful early warning system and strategic intelligence tool.

ICEYE's role in a full-spectrum intelligence model is to provide persistent, all-weather observation and rapid change detection across land and sea — then integrate those observations with external data so that leaders receive a coherent picture.

ICEYE

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