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Defending Europe at Sea: Naval Power Needs Industrial Strength

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THE MARITIME DOMAIN AT THE FOREFRONT OF EUROPEAN SECURITY

Competition at sea has intensified over the past decade as more states expand their naval reach and contest the chokepoints through which global commerce flows. With around 90% of world trade carried by sea, the ability to secure or disrupt these routes carries enormous economic and strategic impact.

Europe's economic dependence on the maritime domain is currently outpacing its ability to defend it. Rival powers can increasingly threaten the routes that sustain European trade, while cheap precision weapons allow states and non-state actors alike to disrupt shipping at a cost European navies struggle to match.

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Incidents in the North and the Baltic Seas involving critical underwater infrastructure and the Russian shadow fleet have led to growing concerns about disruptions in connectivity, energy supplies and service interruptions. Increasing cases of intentional damage to submarine cables in Europe in the past years highlight the vulnerability of critical submarine infrastructure and the far-reaching impact the damage to undersea cables can have on the EU's security, defence, economy, telecommunications, digital services and the day-to-day life of citizens. The protection of critical maritime infrastructure, including ports, undersea cables and pipelines, has become a forefront priority for the EU.

Europe's maritime security environment has entered an era shaped by mass precision; the ability to generate precise effects at scale through distributed, networked and increasingly uncrewed systems.¹ Consequently, Europe's maritime security challenges now span the full water column – from seabed to surface and air. Subsea cables and pipelines, offshore energy installations, ports and chokepoints are simultaneously exposed to uncrewed systems, covert interference and legal ambiguity. Mass-precision tools can be used not only to threaten naval task groups and merchant shipping, but also to apply economic and political pressure through hard-to-attribute disruption of underwater infrastructure.

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The current threat environment and the economic importance of the maritime domain for Europe's defence are driving newfound urgency to strengthen and unite maritime security policies, dedicate significant investment in naval capabilities and consolidate its naval defence industrial base to ensure a credible defence and deterrence posture.

EUROPEAN MARITIME SECURITY IN THE ERA OF MASS PRECISION

Modern technology now enables militaries and non-state actors to achieve the effects of massed firepower through dispersed networks of precise, intelligent weapons. Just as this trend is reshaping battlefields on land and in the air, it is transforming the seas into a domain where swarms of drones, long-range missiles and autonomous vessels can overwhelm conventional defences. In the maritime domain, mass precision encompasses not only short-range saturation and uncrewed disruption, but also long-range strike enabled by persistent sensing, networked targeting and cross-domain cueing.

European security, which has historically been reliant on control of maritime spaces from the Baltic and Black Seas to the Mediterranean, now faces a dual challenge: adversaries equipped with cheap networked precision weapons and the need to protect expansive maritime infrastructure (from seabed data cables to harbour facilities) against novel forms of attack.

What distinguishes the current phase from earlier cycles of military innovation is that mass precision is being industrialised in peacetime. Across Europe, defence planning is shifting toward rapid, attritable production, short development loops and systems designed for replacement rather than longevity. This marks a break from the traditional European preference for exquisite platforms and long procurement timelines. Instead, speed, scalability and constant iteration are becoming strategic variables. At sea, where survivability increasingly depends on dispersion and resilience rather than hull size, this industrial turn matters as much as any single technology.²

At the heart of this transformation is the recent trend that smaller powers and even non-state actors can deter or defeat larger navies by leveraging uncrewed systems and precision strikes. In the Black Sea, Ukraine has degraded significant elements of the Russian Navy without fielding a traditional blue-water fleet. The situation in the Red Sea, where Houthi forces employing missiles and uncrewed systems have disrupted global shipping flows without possessing a conventional navy, has reinforced this trend and demonstrated that strategic maritime effects no longer require sea control.

NAVIGATING OLD AND NEW THREATS

European trade and security have long depended on stability in the Baltic Sea in the north and the Black and Mediterranean Seas in the south. Both regions now confront emergent threats shaped by mass-precision warfare. In the Baltic, Russia's fleet and anti-access/area denial (A2/AD) systems traditionally posed the primary challenge. Today, however, European states worry not only about overt military aggression but also covert, hard-to-attribute attacks using uncrewed systems and irregular warfare, as highlighted by the Nord Stream sabotage in 2022 and the Balticconnector damage

in 2023.³ These events underscore that even in peacetime, European nations must strengthen the surveillance and protection of vital undersea assets.

Russian naval efforts supported by its submarines, especially those of the Northern Fleet, remain a persistent challenge. Their surveillance and tracking in the Atlantic require a permanent anti-submarine deterrent.

In the Mediterranean, Russian deployments, migration routes and the protection of sea lines of communication and energy infrastructure converge. The mass-precision paradigm adds new dimensions. A state or non-state actor could use a swarm of explosive-laden uncrewed boats to attack a naval task force or a commercial liquid natural gas terminal, exploiting the same asymmetry seen in the Black Sea. The speed and reach of modern precision weapons also mean that distant conflicts can have spillovers on EU-flagged merchant shipping. European navies must be prepared for distributed, multi-domain operations; they must be able to monitor drone activity from Gibraltar to Suez, coordinating with allies to respond quickly, and countering adversary uncrewed platforms.

The Red Sea shows that sea denial through mass precision can disrupt global commerce and impose strategic costs without full-scale war. Since late 2023, Houthi forces in Yemen, backed and enabled by Iranian technology, have employed anti-ship ballistic missiles, cruise missiles and uncrewed aerial and surface systems to target commercial vessels transiting the Bab el-Mandeb and southern Red Sea. This asymmetric campaign has relied on persistent, relatively low-cost precision attacks designed to create uncertainty, raise insurance rates and force rerouting.

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The strategic effect has been disproportionate. Commercial shipping has diverted around the Cape of Good Hope, increasing transit times, fuel costs and supply-chain strain across Europe. A non-state actor, using distributed precision tools, has succeeded in shaping global maritime behaviour without controlling sea space.⁴

The widening confrontation with Iran in 2026 has underscored that the Red Sea campaign was not an isolated anomaly but part of a broader operational pattern. Iranian and proxy forces have relied on the same toolkit of drones, missiles, electronic disruption and maritime intimidation to impose strategic costs on shipping without seeking conventional naval battle.

The opening phase of the 2026 war with Iran has also demonstrated the rapid diffusion of uncrewed maritime strike into the Gulf. Iranian forces have used explosive uncrewed boats, often disguised as fishing vessels, to attack oil tankers and commercial shipping in and around the Strait of Hormuz. Several vessels have already been damaged by remotely controlled explosive craft, forcing crews to abandon ship and disrupting global shipping flows. These systems are small, inexpensive and difficult to distinguish from normal maritime traffic until the final moments of an attack.⁵

Furthermore, on top of these threats, sea mines continue to pose an important challenge to naval and commercial vessels, with a significant potential to disrupt global trade as seen in the Black Sea and the Strait of Hormuz recently.

LESSONS LEARNED FOR EUROPE

Several lessons emerge for Europe from the maritime theatres of the Baltic, Black, Red Seas and the Gulf.

Firstly, maritime mass precision does not require a blue-water fleet. Shore-based launchers, mobile missile batteries and uncrewed systems can threaten chokepoints and deny access at scale. Secondly, interception alone is not a sustainable strategy. The exchange ratio between low-cost drones or missiles and high-cost interceptors places defenders at a structural disadvantage unless layered defences that include electronic warfare, directed-energy systems and pre-launch disruption can absorb the volume.⁶

Thirdly, maritime security operations in such environments demand coalition endurance. Sustained escort operations, persistent intelligence, surveillance and reconnaissance, and rapid attribution stretch naval capacity over time. The Red Sea underscores that mass precision favours the actor willing to impose continuous pressure without the need to seek a decisive battle.

Fourth, for Europe, the Red Sea experience also reinforces that maritime deterrence must extend beyond fleet-on-fleet conflict. Protecting sea lanes now requires integrated air and missile defence, resilient logistics, rapid intelligence fusion and the political willingness to sustain operations over months, not days. Mass precision at sea is not only a military phenomenon, but it has also emerged as a tool of economic coercion.

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Fifth, legacy platforms from frigates to aircraft carriers remain essential for sea control, power projection and interoperability with key partners. Nonetheless, to remain survivable and relevant in a mass-precision environment, these platforms must be embedded in a wider, modular data-centric force structure that includes attritable uncrewed systems, smaller multi-role combatants and robust cross-domain communications. Their effectiveness also depends on trained crews, responsive maintenance and the ability to operate together. NATO standards provide a basis for interoperability across different ship designs, while common components and coordinated maintenance can reduce costs and increase the number of vessels available for deployment.

Sixth, an important characteristic of recent conflicts is the targeting of civilian assets and infrastructure. This has given European navies a very strong weight to the protection function, whether it is the protection of commercial traffic, submarine infrastructure or port infrastructure. This mission begins with a strengthening of the self-protection of the vessels, which would otherwise be put out of service very quickly.

EUROPEAN NAVAL INDUSTRY CHALLENGES

Adapting at sea and incorporating lessons learned requires a powerful European naval industry to enable the various European navies to acquire the capabilities needed for their missions, without depending on third powers. The European naval industry is facing several challenges:

- **The increasingly challenged civil maritime industry:** the maritime industry forms a base of trades, skills, infrastructure and supply-chain coordination.
- **A shortage of human resources.**
- **The need for targeted budgets:** the volatile security and geopolitical environment translates into a need for reinforcement across a variety of domains and subdomains such as land, air and sea, space, the seabed, the electromagnetic spectrum, cyberspace and the information domain.
- **Insufficient convergence on fleet models:** lessons learned from the Ukrainian theatre have highlighted the importance of uncrewed systems and the mass production of low-cost items; at the same time, other theatres have also underlined the need to retain high-end capabilities. This “high, low, or mixed” dilemma will be reviewed and refined with each new generation of systems and capabilities.
- **Insufficient European prioritisation:** for political, operational or technological reasons, it has until now been fairly common to acquire equipment from outside the EU, particularly from the United States, leading to interoperability being conflated with interchangeability.

► **Insufficient industrial cooperation and coordination:**

as noted above, industrial coordination is not an operational necessity, but it holds strong economic and organisational value. Industrial cooperation must be linked to concrete programmes, joint procurement and long-term demand while preserving market competitiveness to drive improved efficiency.

► **Partial dependence on external operational**

support: Europe's ability to sustain naval operations remains vulnerable where essential intelligence, targeting data, munitions or technical support depend on decisions taken outside of Europe on the political will of third countries.

Europe's naval shipbuilding industry represents a strategic asset for the continent's security and sovereignty, combining decades of proven technical expertise with a broad industrial base spread across multiple member states. Addressing these gaps is essential to Europe's freedom to act at sea. European navies must be able to arm, repair and adapt their fleets throughout a conflict, with assured authority to employ their weapons and the technical access required to modify sensors, combat systems and countermeasures as threats evolve. Dependence on third-country suppliers can leave these decisions subject to external restrictions. Europe therefore needs a naval industry able to carry out repairs close to operational theatres and work continuously with naval commands to accelerate upgrades and return naval vessels to service. Procurement decisions must secure that freedom of action throughout a vessel and its various systems' operational lifetimes.

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THE EUROPEAN MARITIME POLICY LANDSCAPE

In recent years, the maritime domain has assumed a more central role in NATO and EU policymaking. As new trends and threats have emerged at sea, NATO, the EU and its member states have developed a range of strategies and policy frameworks to define priorities. Boxes 1–6 present relevant documents and the policy objectives they set out.

BOX 1: NATO'S ALLIANCE MARITIME STRATEGY

The Alliance Maritime Strategy (AMS)⁷, agreed in October 2025, sets out how allied maritime power supports NATO's three core tasks. It identifies Russia and terrorism as the Alliance's two main threats, notes Russia's use of shadow-fleet vessels and its capacity to disrupt allied reinforcement and frames uncrewed systems and hypersonic missiles as already reshaping the operating environment.

Key priorities include securing undersea infrastructure in close cooperation with commercial stakeholders; balancing high and low-end technology rather than choosing between them; maintaining persistent maritime situational awareness under NATO's Digital Ocean Vision; capability for deep precision strike and joint fires; achieving forward logistics and resupply of battle-decisive munitions at sea; and expanding industrial capacity and ensuring systems remain aligned to NATO interoperability standards.

BOX 2: UPDATED EU MARITIME SECURITY STRATEGY (2023)

The 2023 Updated European Maritime Security Strategy reorients the EU from a predominantly soft security posture to a more robust defence focused approach, reflecting heightened geopolitical competition and growing vulnerabilities at sea. Key priorities include expanding EU operations and activities at sea, boosting maritime domain awareness, coordinated presence in key zones, protection of critical infrastructure (to include undersea cables and pipelines) and accelerating the development of naval capabilities.

BOX 3: WHITE PAPER FOR EUROPEAN DEFENCE READINESS 2030

The EU and its member states officially identified maritime as one of the nine priority critical defence capability areas requiring joint development and spending. The paper specifically calls for: enhanced naval capabilities, including underwater uncrewed systems, to ensure comprehensive maritime security, protection of vulnerable underwater infrastructure and protection of sea lines of communication; and increased maritime domain situational awareness across European waters through pooling efforts.⁸

BOX 4: EU ACTION PLAN ON CABLE SECURITY (2025)

With its Action Plan on Cable Security, the European Commission has taken an important step toward addressing concerns about the physical protection of subsea networks. The Commission's Action Plan on Cable Security is structured around four pillars – prevention, detection, response and repair and deterrence – and urges the faster implementation of measures and greater integration of surveillance and intelligence sharing. The plan highlights the importance of enhanced cable repair capacity and stronger information exchange between the Union, member states, partners and industry.⁹

BOX 5: EU INDUSTRIAL MARITIME STRATEGY 2026: KEY NAVAL AND SECURITY PRIORITIES

- ▶ **Naval production capacity:** Mobilising financial and regulatory instruments to support and scale up European shipyard production for naval and patrol vessels.
- ▶ **Maritime domain awareness:** Strengthening EU-level surveillance and monitoring to protect critical maritime infrastructure.
- ▶ **Underwater and dual-use technology:** Prioritising capabilities in submarine cable protection, autonomous underwater systems and research/monitoring units.
- ▶ **Recognising shipbuilding as a vital dual-use sector** under European economic security frameworks to reduce dependency on non-EU industrial bases.¹⁰

BOX 6: INTEGRATED MARITIME AND SEABED DEFENCE – EUROPEAN DEFENCE PROJECT OF COMMON INTEREST

European Defence Projects of Common Interest are large-scale collaborative initiatives proposed by the European Commission to boost the EU's strategic autonomy by contributing to the development of member states' military capabilities in critical domains

The European Defence Project of Common Interest on Integrated Maritime and Seabed Defence, proposed in July 2026, focuses on enhancing capabilities in areas such as maritime domain awareness, protection of critical underwater infrastructure, interoperable naval architectures and underwater and seabed warfare capabilities. The project builds on several ongoing European Defence Fund (EDF), Permanent Structured Cooperation (PESCO) and European Defence Agency (EDA) initiatives, takes into account relevant NATO activities and involves 17 member states.¹¹

such. The sector requires stability and predictability, and EU policies and tools to provide support and protection to EU industries. In particular, naval shipbuilding needs predictability on future demand in order to plan long-term investments in shipbuilding capacity.

- ▶ **Policy initiatives:** Swiftly implement the European Industrial Maritime Strategy to ensure the consistency and protection of the European Maritime and Naval Industrial Base.
- ▶ **Financial tools:** the European Competitiveness Fund and the MFF 2028–34 must provide reliable support to maritime industries and to the technologies in the naval domain and frame shipyard capacity, maritime supply chains and dual-use manufacturing as critical defence infrastructure.

The European Competitiveness Fund must guarantee a minimum investment threshold for defence R&D, including a fair share for naval warfare, underwater warfare and cross-domain naval systems, and build on the success of the European Defence Fund. Without a protected financial floor and strong eligibility criteria, Europe's maritime technological and industrial base risks being unable to meet the procurement demand necessary for achieving defence Readiness 2030 goals.

2. Build a maritime economic security system to counter strategic dependencies. As part of the EU Economic Security Doctrine, and in line with the European Industrial Maritime Strategy, establish a dedicated maritime economic security function within the European Commission to monitor strategic vulnerabilities in global shipbuilding markets, track foreign state-subsidised competition and identify chokepoint dependencies in Europe's maritime supply

ENHANCING EUROPEAN NAVAL CAPABILITIES

Europe's rearmament already has strong momentum, but preparing its maritime security for an era defined by mass precision and complex threats requires a sharper focus: substantially higher investment in naval capabilities and the naval industrial complex, better implementation and integration of existing European policies, jointly coordinated efforts and sustained political will. The following priorities should lead the agenda:

1. Establish the European maritime industrial base as a strategic sector. Europe's maritime strength cannot be procured, sustained or replaced without a resilient European maritime manufacturing base. This base is shared between the naval and civil maritime sectors, and its resilience depends on the EU actively supporting it as

chains. Mandate the use of existing and adapted trade defence instruments, including anti-dumping and anti-subsidy mechanisms, where evidenced market distortion threatens European maritime industrial capacity. Develop a Maritime IP Protection framework to safeguard European naval and maritime innovations against technology transfer and theft. Recognise that dominance of global shipbuilding by state-backed foreign competitors is an industrial threat vector, with direct implications for Europe's maritime strength and crisis-response capacity. Similarly, the EU Critical Raw Material Act framework needs to be explicitly connected to maritime and naval industrial policy. This can be achieved through dedicated funding, procurement conditions and sector-specific resilience benchmarks so it can deliver meaningful protection for European shipbuilding.

3. Ensure that EU investment priorities, especially in R&D, are anchored in the operational needs of European navies and consider lessons learned from recent conflicts through deepening dialogue between EU institutions, member states, industry and naval commands. Those priorities must include:

- (a) Upgrading European navies with the integration of next-generation systems for future capabilities, including fleet air defence/long-range strike, logistics for distributed operations, interoperable and modular European force adaptation and support capabilities through digital ship architectures, open and standardised interfaces, combat-cloud connectivity and secure data-centric integration.
- (b) Investing in mass precision and distributed maritime operations by upscaling the iterative procurement, swarming and autonomous control of uncrewed surface vehicles, uncrewed underwater vehicles and uncrewed aerial vehicles and integrating these with crewed systems for networked effects – for cheap and scalable solutions to counter drones, among other things.
- (c) Continuing to invest in directed-energy weapons to protect European maritime forces and shore facilities.
- (d) Modernising force structure for a modular hybrid fleet with combined use of high-end crewed platforms with small multi-role uncrewed combatants, modular payload bays, standard drone interfaces and distributed lethality to reduce single-hull risk.
- (e) Communicating across domains as a vital part of a network-centric combat system distributed between surface, subsurface and air assets. The ability to

exchange data seamlessly among aerial, surface and underwater platforms is a prerequisite for any self-organising uncrewed system. Without a robust, lowlatency and tamper-proof communications network, swarming coordination, dynamic task allocation and shared situational awareness cannot be reliably achieved. The development and fieldtesting of such crossdomain secure communication as an enabling technology should therefore be explicitly incorporated into funding programmes and procurement roadmaps.

- (f) Making delivery time and operational availability explicit procurement criteria. Require funded schedules for fielded capabilities, completing upgrades and returning vessels to service, supported by spare parts, trained personnel and repair capacity. Establish regular feedback from deployed crews to manufacturers so that operational lessons translate rapidly into modifications. Availability is also what the NATO Defence Planning Process measures, so EU funding decisions taken against these criteria can be mapped directly as progress on allied capability targets.

4. Integrate critical infrastructure protection into European policies, strategies and roadmaps.

- (a) Critical infrastructure and sea lines of communication are key for EU strategic autonomy and the security of the broader whole-of-Europe. It is paramount to invest in and increase capacity in strategic capability areas, including cable-laying, maintenance and repair ships.
- (b) Coordinate the protection of critical infrastructure through partnership by implementing joint monitoring and surveillance, deploying sensors and rapid-response uncrewed underwater vehicle and surface vehicle teams, updating legal rules of engagement and conducting regular red-team exercises. EU efforts should be built to connect with NATO's existing commitments on detection, attribution and information exchange, including the Digital Ocean Vision, rather than establishing a parallel European surveillance system.
- (c) Structure NATO and EU live exercises and sandbox-like events (e.g. Robotic Experimentation and Prototyping with Maritime Unmanned Systems (REPMUS)) in order for industry and end-users to test, qualify and validate concepts and solutions for critical infrastructure protection.

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