



# DRYAD GLOBAL

## Maritime Trends for 2025

### Executive Summary:

In the Indian Ocean along the East African coast, a resurgence of piracy is anticipated in 2025, facilitated by favorable weather conditions and a security vacuum left by the withdrawal of U.S. and EU naval forces. This follows recent pirate activities, including the use of hijacked fishing vessels as motherships, suggesting an increase in hijackings for ransom. Despite the Indian Navy's role as an effective deterrent, the situation might escalate without sustained international naval support. In the Red Sea and Gulf of Aden, the security environment is expected to remain unchanged, with Houthi attacks continuing, albeit with reduced effectiveness after the departure of an Iranian support vessel. The U.S. plans to shift from naval to air support, while EUNAVFOR offers limited escorts. Israeli airstrikes on Yemeni infrastructure could temporarily disrupt Houthi operations, yet without significant policy changes, their long-term threat may persist. The Mediterranean faces heightened security volatility due to Israeli military operations and the collapse of the Assad regime, potentially leading to civil war in Syria. Hezbollah's supply routes have been disrupted, which might force them into new alliances or reduce their military capabilities. The implementation of Sharia law by Hayat Tahrir al-Sham could impact maritime trade negatively due to reduced infrastructure investment and increased security concerns. In the Caribbean, instability in Haiti is driving maritime migration, smuggling, and crime, with Russian military exercises further adding to regional tensions. U.S. policy shifts on deportation could strain maritime resources and international relations, while China's increasing influence might reshape logistics and security around key maritime infrastructure. The Black Sea region is poised for severe risks to shipping due to the ongoing conflict between Ukraine and Russia, involving airstrikes, WBIEDs, and electronic warfare. Efforts to clear sea mines by regional navies may reduce one aspect of the threat, but ceasefire negotiations are unlikely to ease tensions as both nations continue strategic maritime operations. In the Gulf of Guinea, piracy has decreased, yet the underlying socio-economic factors that fuel piracy persist, with the main threat being illegal boardings at ports. Political stability from upcoming elections could influence maritime security alongside the potential spread of Sahelian terrorism to coastal states. The South China Sea is poised to become a geopolitical hotspot, with potential shipping disruptions due to rising tensions between China, the United States, and regional allies. Finally, in 2025, the global maritime sector will face sophisticated cybersecurity threats such as AI-driven attacks, ransomware, and operational technology vulnerabilities, as well as state-

sponsored cyber operations, requiring the industry to strengthen its defenses to secure operations in an increasingly digital and interconnected environment.

## Cybersecurity Threats in Maritime for 2025

The maritime industry in 2025 faces an increasingly complex and dynamic cybersecurity landscape. As digital systems, automation, and global connectivity deepen across vessels and port facilities, the risks posed by cyber threats have never been more significant. Dryad Global forecasts that mitigating these threats will require robust defences, proactive intelligence, and comprehensive industry expertise to ensure resilience and operational continuity.

### Emerging Cyber Threats

Cybercriminals are leveraging advanced technologies, such as artificial intelligence (AI) and large language models (LLMs), to conduct more adaptive and precise attacks. These innovations allow the creation of sophisticated zero-day exploits and phishing campaigns that evade traditional detection methods. Ransomware remains a dominant threat but is evolving into more targeted attacks aimed at crippling critical systems in vessels and ports. Supply chain attacks are also becoming a significant concern, as interconnected maritime operations present multiple points of vulnerability.

### Operational Technology (OT) Vulnerabilities

OT systems, which govern essential shipboard functions such as navigation, propulsion, and cargo handling, remain a major focus for attackers. Many of these systems rely on outdated software and lack modern cybersecurity measures, making them highly susceptible to breaches. Additionally, the growing interconnectivity of IT and OT systems introduces cascading risks, where a single breach can disrupt both operational and digital environments. Direct attacks on OT systems could result in vessel immobilisation, navigational failures, or safety incidents, making the security of these systems a top priority.

### State-Sponsored Cyber Operations

Geopolitical tensions are driving a surge in state-sponsored cyber operations targeting maritime infrastructure. These attacks often focus on disrupting global trade, destabilising economies, or asserting dominance in contested regions such as the South China Sea and the Arctic. Hybrid warfare tactics, where cyber campaigns precede or accompany physical confrontations, are expected to rise, posing complex risks to maritime stakeholders.

### Autonomous Systems and Automation Risks

The adoption of autonomous vessels and automated port operations introduces new vulnerabilities. Cyber attackers may exploit unsecured software, communication systems, or

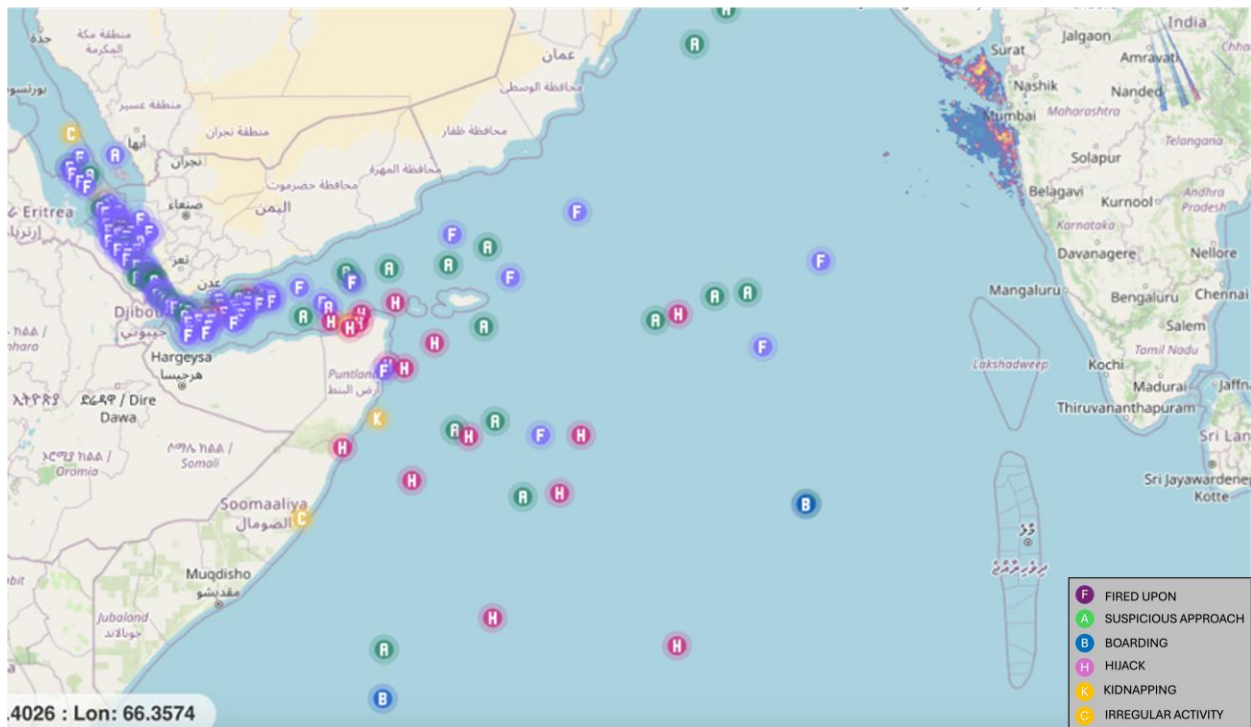
autonomous drones to disrupt operations or gain control over critical systems. Securing these emerging technologies is essential to maintaining the safety and efficiency of future maritime operations.

### Regulatory and Compliance Challenges

The International Maritime Organization (IMO) and other regulatory bodies are tightening cybersecurity requirements to address the growing threat landscape. However, compliance remains a challenge for many operators, particularly smaller entities with limited resources. Gaps in implementation may leave organisations exposed, underscoring the need for tailored solutions and expert guidance to navigate these requirements effectively.

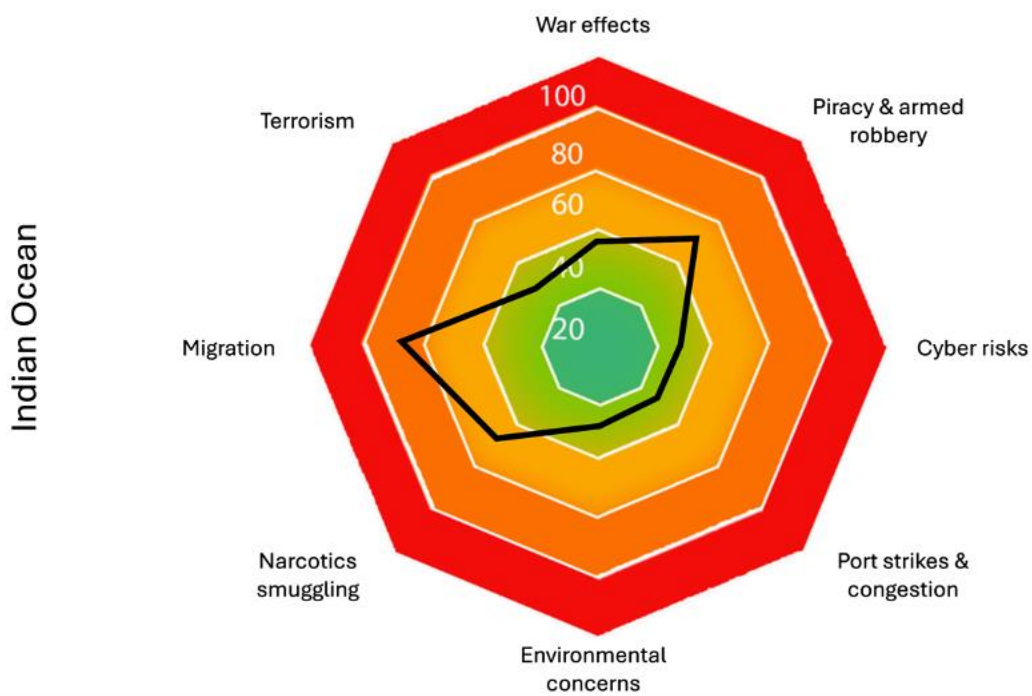
In 2025, the maritime industry will contend with unprecedented cybersecurity challenges, from AI-driven attacks and OT vulnerabilities to geopolitical cyber conflicts. Maritime operators must adopt proactive measures and invest in comprehensive cybersecurity strategies to remain resilient in this volatile landscape. Dryad Global invites operators to take the first step by conducting a cybersecurity survey and consulting with our experts for a tailored risk assessment. With the right partner, maritime entities can safeguard operations, meet regulatory demands, and stay ahead of adversaries in an increasingly interconnected world.

### Indian Ocean – East Africa Coast



2024 Indian Ocean Incidents

The resurgence in piracy observed in 2024 is expected to increase in 2025. Piracy activity is likely to resume as weather conditions off Somalia's coast improve. With the U.S. naval withdrawal and the EU's rotation of military assets, there is likely to be a security vacuum that pirate groups may attempt to exploit. The resurgence in piracy was further demonstrated by the December 2024 incidents involving the hijacking of fishing vessels for use as motherships, which could signal the onset of broader piratical activities. It is anticipated that there will be renewed attempts to hijack commercial vessels for ransom. Notably, in 2024, the Indian Navy has proven to be an effective deterrent and rapid response force against piracy in the region, successfully liberating crews from both fishing and commercial vessels on multiple occasions.



**Red Sea & Gulf of Aden**

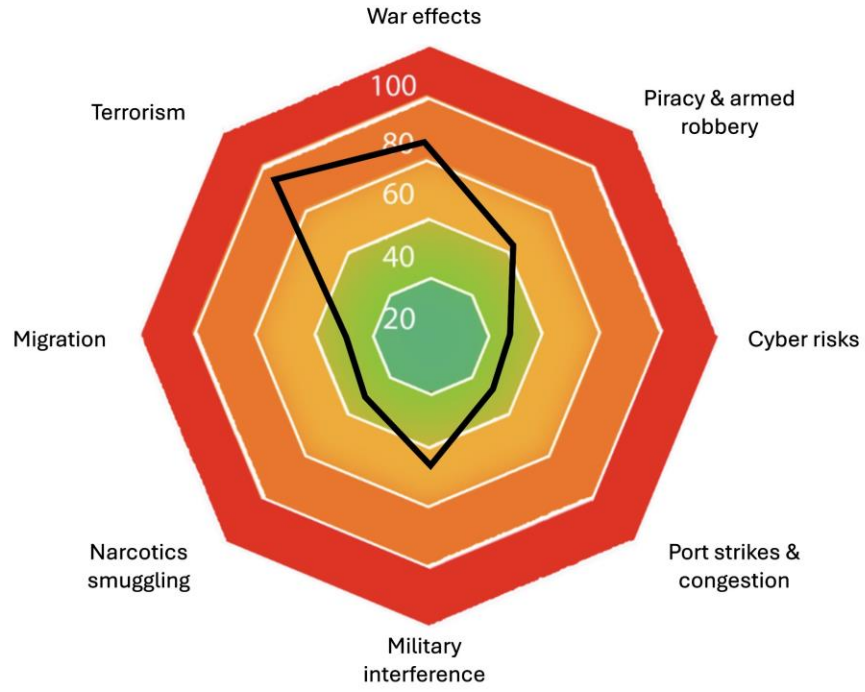


2024 Red Sea & Gulf of Aden Incidents

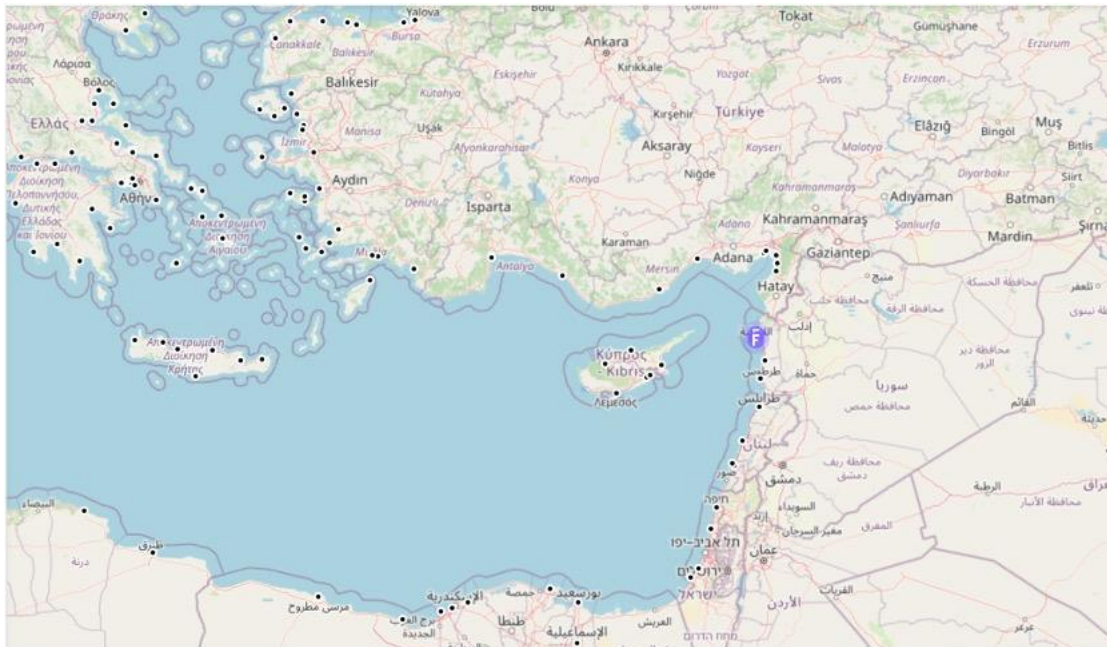
The security environment in the southern Red Sea, Bab el-Mandeb Strait, and Gulf of Aden is expected to endure during 2025. The Houthis have shifted to an attrition strategy, launching indiscriminate attacks on vessels irrespective of their affiliations, with no discernible pattern or predictability. Recent data indicates an average of 3-4 attack attempts per month against commercial shipping, alongside some coordinated efforts against military escort vessels. However, the effectiveness of these attacks has waned, with minimal damage reported in recent months. The departure of the Iranian Revolutionary Guard Corps (IRGC) vessel BESHAD has notably reduced the accuracy of these strikes.

The U.S. Department of Defense has declared plans to withdraw its remaining naval forces from the region at the start of 2025, opting instead to support the security mission through air assets, including B-2 bombers. Meanwhile, EUNAVFOR and Operation ATALANTA continue to offer escort services for commercial ships upon request, though offensive actions aimed at neutralizing the Houthi threat have been constrained. Recent Israeli airstrikes have targeted key infrastructure in Yemen such as fuel depots, power plants, and ports that are critical to Houthi military operations. This included targeting the cranes at Al Hudaydah Port, which are used to import weapons and supplies. Such actions may temporarily disrupt Houthi capabilities to launch complex missile and drone attacks, as seen with earlier this year's US and UK strikes. However, the Houthis' resilience and adaptability, as demonstrated by their ability to sustain attacks in the face of previous strikes, suggests that, while their capacity may be hampered, it may not be significantly diminished in the long run. Without significant policy shifts from NATO or the United States, the current situation is likely to persist.

Red Sea & Gulf of Aden



Mediterranean



2024 Eastern Mediterranean Incidents

The Israeli military operations in Gaza and Lebanon, coupled with the ousting of the Assad regime, have significantly heightened security volatility in the Eastern Mediterranean. The abrupt regime change in Syria is poised to potentially precipitate a civil war in 2025. Rebel forces under the command of Abu Mohammed al-Golani of Hayat Tahrir al-Sham (HTS) have claimed victory. However, the limited resources of HTS may hinder their ability to establish control over all of Syria's territory. Despite the rebels' declaration of victory, Israel's targeted airstrikes on Assad's remaining weapon stockpiles, naval installations in Latakia, airfields, and air force assets have curtailed the capabilities of the nascent government to engage in large-scale military actions against residual opposition groups or neighboring countries.

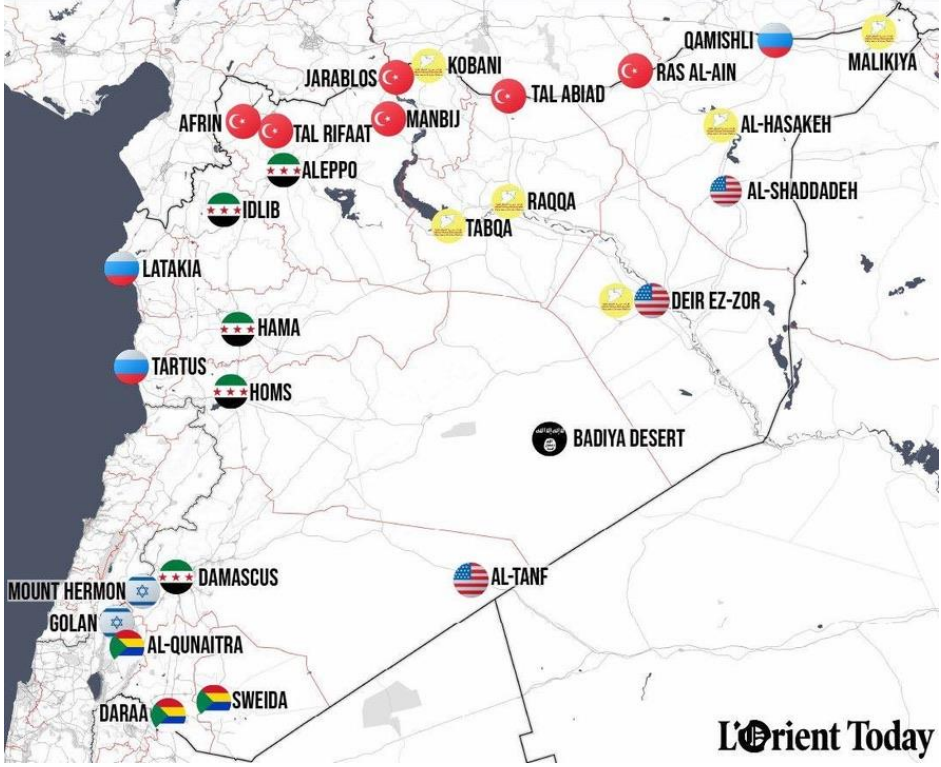
Hezbollah's supply routes from Syria have been disrupted following Assad's removal, complicating potential agreements with Syria's new leadership. Ideological differences, reduced influence, and shifting geopolitical interests reduce the likelihood of a deal between the two parties. However, survival needs, shared anti-Israel interests, and Iran's influence may encourage pragmatic negotiations. Disrupted supplies impact Hezbollah's military capabilities, reducing firepower and operational effectiveness, especially during conflicts with Israel. Hezbollah's strategic loss could lead to new alliances, economic losses, and psychological demoralization, potentially undermining its supporters and propaganda. This could also expose vulnerabilities for regional adversaries, potentially reducing Hezbollah's influence and potentially altering Lebanon's political landscape.

Leaders from HTS have expressed intentions to implement Sharia law across Syria. Considering the historical actions and current stance of HTS commander Abu Mohammed al-Golani, the adoption of such governance could have significant implications for maritime trade. Historically, nations operating under stringent interpretations of Islamic law or led by groups with similar ideological leanings have often faced challenges in maintaining or enhancing port infrastructure. This is due to several factors, including a reorientation of economic priorities towards ideologically aligned trade, reduced infrastructure investment, potential international sanctions, and heightened security concerns that might discourage commercial maritime traffic.

The likelihood of the US, Russia, Israel, Türkiye, and the various factions within Syria reaching a compromise without sparking another major civil war appears slim given the current geopolitical dynamics. The US's expansion by occupying former Russian bases in Syria, Russia's cessation of grain shipments to Syria with Ukraine stepping in, and Türkiye's opposition to US-backed Kurdish forces highlight conflicting interests. Türkiye's hostility towards Kurdish autonomy directly opposes the incoming Syrian government's promise to grant territory to the Kurds, potentially escalating tensions. Israel's strategic control over areas like Mount Hermon and its alignment with the Druze in the south further complicates matters, is aimed at countering Iranian influence but adding to regional friction. Each nation has divergent goals, with a history of proxy warfare complicating direct negotiations. Historical precedents suggest that compromise requires either a monumental diplomatic effort or a shift in national policies, neither of which seems imminent, pointing towards continued fragmentation rather than unity in Syria.

# SYRIA: THE FORCES ON THE GROUND

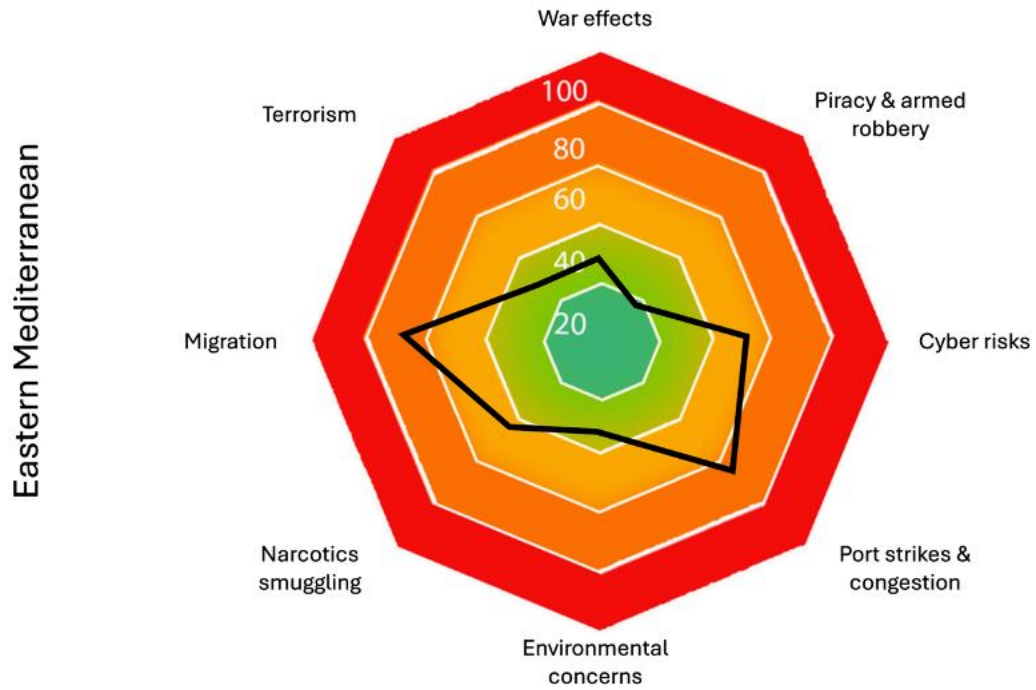
-  UNITED STATES
-  RUSSIA
-  ISLAMIC STATE
-  SYRIAN DEMOCRATIC FORCES
-  ISRAEL
-  DRUZE FACTIONS
-  TURKEY
-  HAY'AT TAHRIR AL-SHAM (HTS)



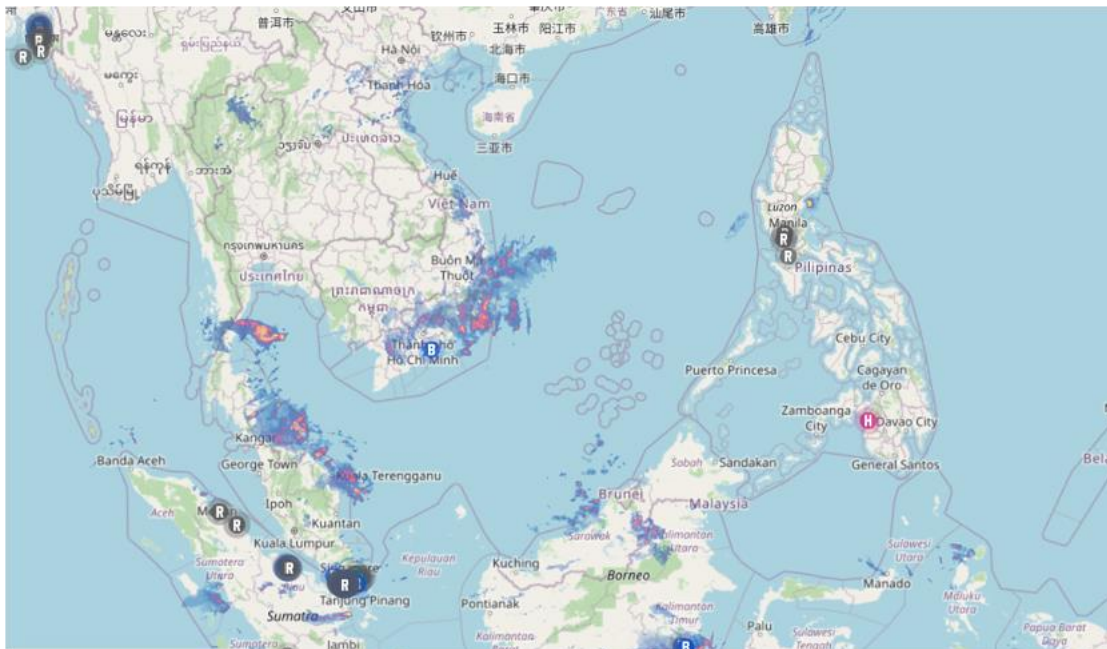
Syria Mid-December 2024

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### South China Sea



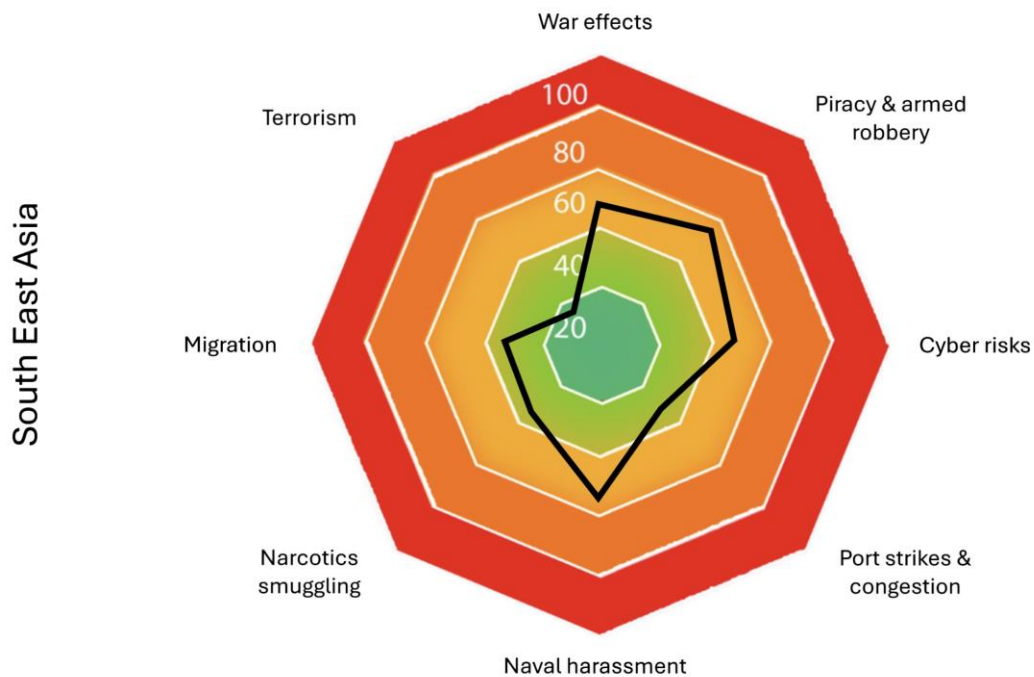
2024 South China Sea Incidents

The South China Sea is expected to become a hotspot for geopolitical risk in 2025, with direct consequences on commercial shipping becoming increasingly plausible.

Incidents of armed robbery and illegal boarding are expected to remain frequent within the Singapore Straits given the high vessel traffic in the area and the lack of significant socio-economic development among coastal communities.

Of increasing concern in 2025 will be the potential consequences of an escalation in regional tensions in the South China Sea and Taiwan Straits. The China-Philippines relationship is expected to further degrade as Beijing seeks to extend its control of Filipino claimed shoals, whilst Manilla adopts an increasingly confrontational stance with U.S. backing. Key hotspots include the Scarborough Shoal (185 nm NW of Manila) as well as the Second Thomas and Sabina Shoals (136 nm W Palawan). Donald Trump's coming to power will likely bring containment of Chinese expansion to the forefront of the U.S. foreign policy agenda, as the President seeks to reduce U.S. engagement in Europe and the Middle East.

Whilst the South China Sea shipping lanes are currently removed from key areas of contention, any major escalation between China and the U.S. or its regional allies could lead to increased naval presence in the region as well as more Chinese Maritime Militia fishing boats transiting the region on their way to contested waters. Merchant vessels in 2025 can therefore expect more cases of suspicious approaches, interference by regional navies and disruption to maritime communications in a context of growing tensions where hybrid warfare could be increasingly resorted to.



## Caribbean



2024 Carribean Incidents

In 2025, various geopolitical influences will have a significant impact on the Caribbean's maritime risks. The unrest in Haiti, which has worsened due to gang violence and political instability, may lead to an increase in maritime migration attempts. This situation has already resulted in the U.S. Federal Aviation Administration extending its flight ban to Haiti, indicating a broader impact on regional travel and security, potentially pushing more individuals to seek escape via sea routes, thereby heightening maritime smuggling and human trafficking risks. Haiti's instability also risks spillover effects, increasing regional maritime security challenges as other nations might see an influx of migrants or goods from Haiti.

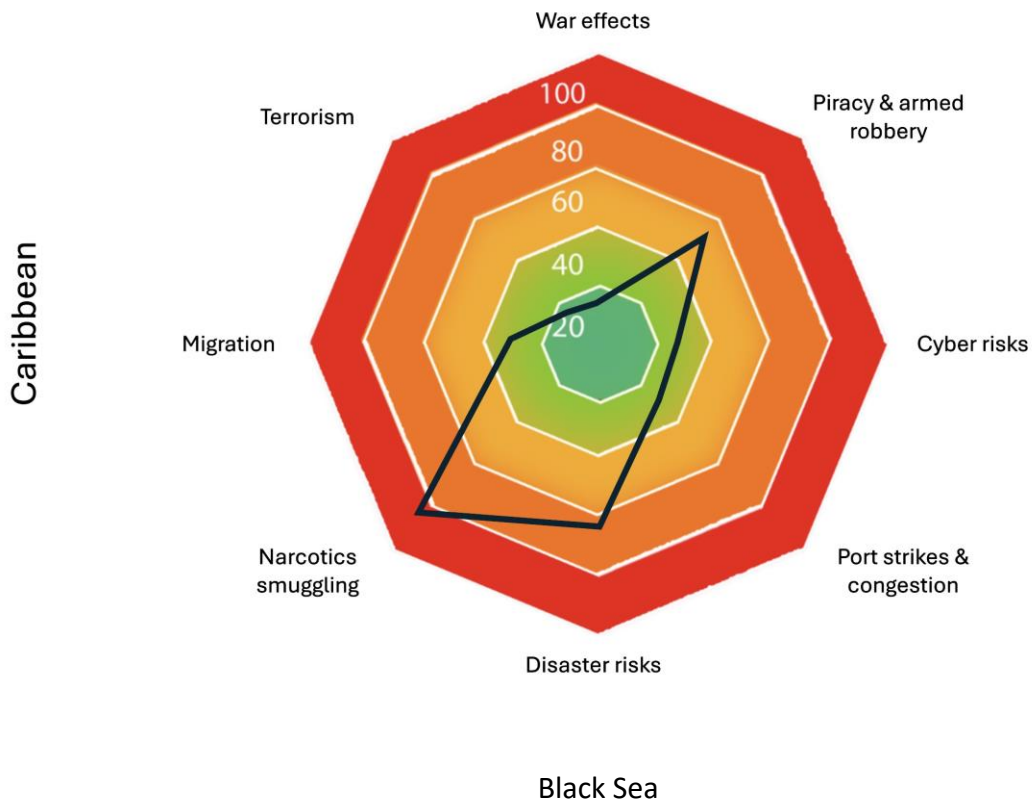
Russian military activities, particularly drills in the Caribbean, indicate a strategic interest in the region, possibly in response to US actions in other parts of the world or to assert influence amid the ongoing geopolitical chess game between major powers. These drills could strain regional relations and increase military presence, potentially leading to increased surveillance or even unintentional confrontations in maritime spaces.

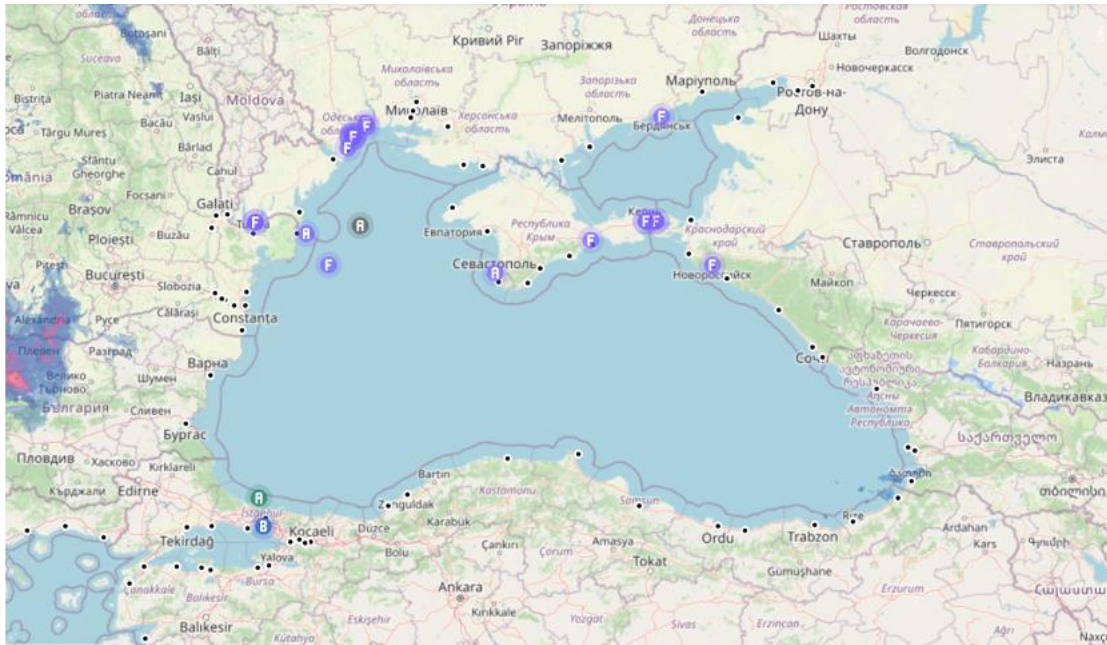
Trends in theft and crime, including piracy and maritime theft, are increasing, potentially driven by economic downturns or the black-market demand for goods. This crime wave could be exacerbated by a geopolitical vacuum or instability, in which law enforcement may be diverted or overwhelmed, leading to bolder criminal activity at sea, endangering commercial shipping and local fisheries.

The potential impacts of a mass deportation program under the incoming U.S. administration could significantly alter maritime dynamics. Such a policy might cause a surge in reverse migration through Caribbean waters, straining resources, increasing the risk of maritime

accidents, and possibly leading to confrontations with local or regional maritime authorities. This could also lead to an uptick in illegal maritime activities as desperate individuals might turn to smuggling networks to return to their home countries or find new destinations. The policy could also foster diplomatic tensions, affecting the region's maritime cooperation and security arrangements.

China's growing influence may have a significant impact on maritime operations in the Caribbean and Latin America in 2025. Increased Chinese control over key maritime infrastructure, particularly around strategic chokepoints such as the Panama Canal, may result in preferential treatment for Chinese vessels, potentially affecting trade routes and logistics strategies. This could lead to more direct trade connections between the region and Asia, reshaping traditional shipping patterns. Furthermore, the proximity of Chinese investments to US military installations may increase surveillance activities, resulting in a complex security environment. Economic reliance on Chinese loans may make regional countries more vulnerable to strategic risks, influencing maritime agreements and operations. Geopolitical tensions may rise because of China's expansion, prompting other powers to increase their naval presence and take security measures. On the plus side, infrastructure improvements could boost maritime efficiency, but there is also a risk of environmental and social backlash from large-scale projects, which could disrupt operational plans. Overall, maritime operators will need to strike a delicate balance between economic benefits, strategic considerations, and potential geopolitical tensions.





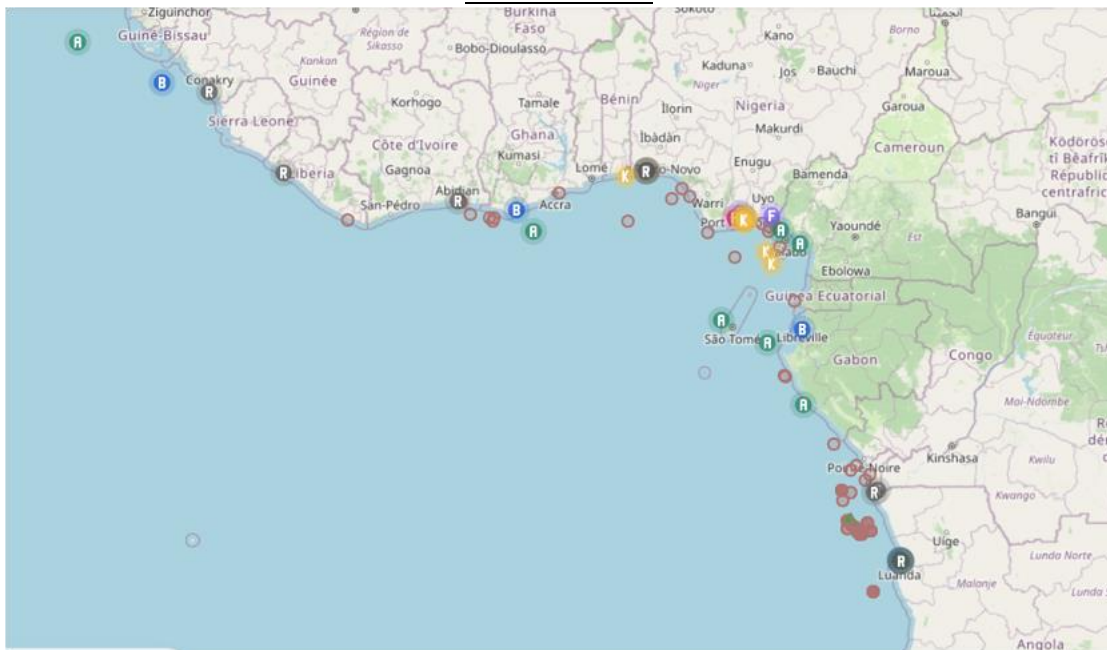
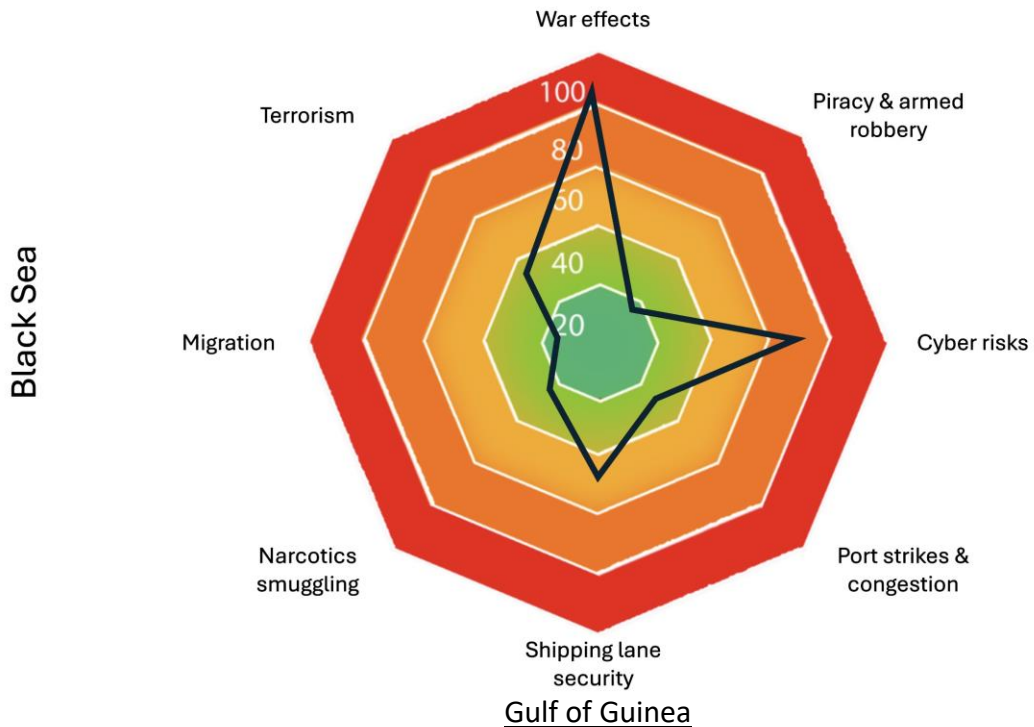
2024 Black Sea Incidents

The security situation in the Black Sea in 2025 will largely depend on the evolution of ceasefire talks between Ukraine and Russia.

Ukrainian and Russian waters are expected to remain areas of SEVERE risk to commercial shipping, as they will continue to concentrate threats from airstrikes on merchant vessels, waterborne attacks from WBIEDs (Water Borne Improvised Explosive Devices) and USV/UUVs (Unmanned Surface/Underwater Vehicles), as well as electronic interference with maritime communications. The wider Black Sea is expected to remain removed from such threats with drifting sea mines continuing to represent the leading threat to commercial shipping. However, mine clearance operations spearheaded by the Turkish, Romanian and Bulgarian navies since July 2024 are set to significantly reduce the number of mine related incidents throughout 2025.

In the build-up to a ceasefire agreement in the Russo-Ukrainian conflict, Ukraine is likely to pursue its strategy of area denial within the maritime domain through the deployment of WBIED and USV/UUV. In doing so, Kyiv hopes to disrupt Russian naval activity in territorial waters west of Crimea and help secure its commercial shipping route between the Odesa Oblast ports and Romanian territorial waters. Such actions are not limited to military targets but can also extend to civilian vessels perceived to be conducting intelligence gathering missions for the Russian military and oil infrastructure in the ports used to supply the frontline. In parallel, 2025 will likely see a resumption of Russian airstrikes on grain-handling and energy infrastructure in Ukraine's Black Sea and Danube ports as Moscow seeks to increase pressure on Kyiv amid ceasefire negotiations. The likelihood of strikes extending to NATO territorial waters in 2025 is heightened, especially in the context of escalating tensions between Russia and NATO member states.

Commercial shipping and maritime infrastructure remain prime targets for Russian hybrid warfare in 2025, as a means to disrupt Western economies through actions below the threshold of escalation. Amid popular protests against the newly elected Russian-aligned government in Georgia, the risk of sabotage to critical infrastructure such as the Caucasus Cable System, an undersea cable linking Georgia to Bulgaria, is assessed to be SIGNIFICANT.

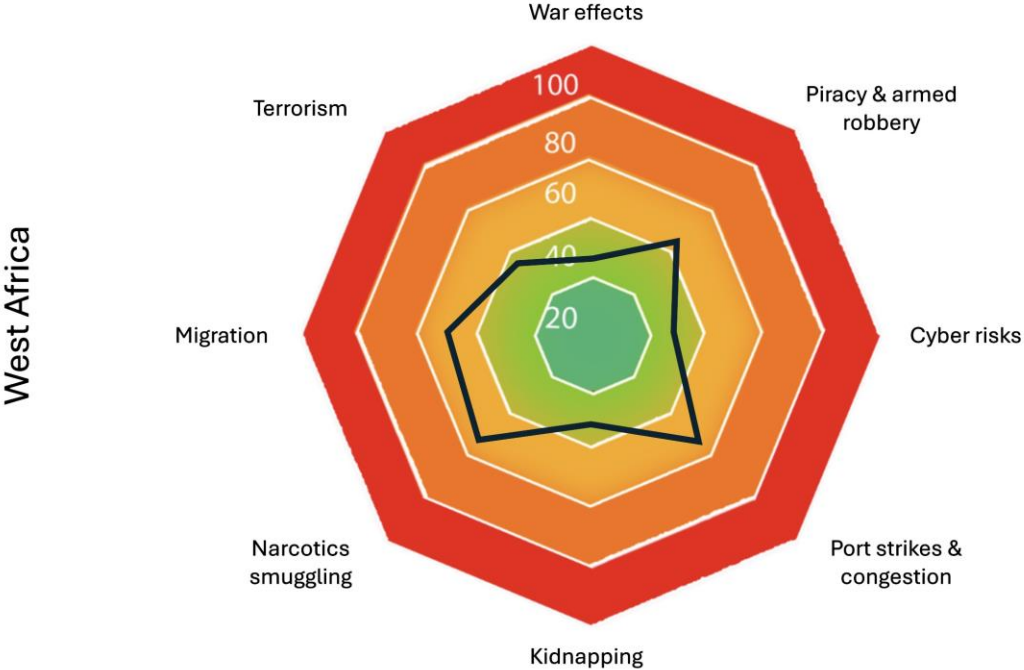


2024 Gulf of Guinea Incidents

The security situation in the Gulf of Guinea in 2025 is expected to stabilize following a consistent decrease in piracy incidents over the past four years.

The main threat to merchant vessels in the Gulf of Guinea is expected to remain illegal boarding and robbery at anchor or at berth, particularly in ports close to large population centers. Despite sustained efforts by coastal states to improve their naval and coastguard capabilities, as well as their prosecution mechanisms, the socio-economic conditions of coastal populations that have historically resorted to piracy as a means of sustenance and protest against local and foreign economic and political actors, are not assessed to have significantly improved. Furthermore, criminal actors retain the capabilities to resume piratical activities, as illustrated by sporadic hijacking and kidnapping incidents throughout 2024 within the Niger Delta waters and offshore Equatorial Guinea. Therefore, it is assessed that the underlying conditions of piratical intent and capacity will continue to be present in 2025.

2025 will be a crucial year for West African security with onshore developments having the potential to impact maritime security. The 2025 electoral calendar will see key coastal states such as Cameroon, Côte d’Ivoire, Gabon and Togo undergoing presidential elections. These countries’ ability to organize free and fair elections could help strengthen political stability and institutional trust which are required for states to effectively mitigate maritime threats. Regional stability could also be adversely affected by the increasing spread of attacks by Sahelian terrorist groups to Gulf of Guinea coastal states, as the military juntas of Burkina Faso, Mali and Niger struggle to contain attacks within their territory. Finally, 2025 will be a year of geopolitical reshuffling in West Africa, with key security actors such as Chad and Senegal severing ties with their Western partners, and Moscow setting a new precedent of foreign policy failure with the sudden collapse of the Russian-backed Assad regime in Syria.



## MAP LEGEND

<b>F</b>	<b>FIRED UPON</b>
<b>A</b>	<b>SUSPICIOUS APPROACH</b>
<b>B</b>	<b>BOARDING</b>
<b>H</b>	<b>HIJACK</b>
<b>K</b>	<b>KIDNAPPING</b>
<b>C</b>	<b>IRREGULAR ACTIVITY</b>

## Conclusion

The maritime industry in 2025 faces a complex array of regional and global challenges, ranging from resurgent piracy in the Indian Ocean to escalating geopolitical tensions in the South China Sea and Black Sea. Emerging cybersecurity threats further underscore the urgency for proactive measures to safeguard maritime operations.

While regions like the Gulf of Guinea and Caribbean face continued threats from socio-economic instability and maritime crime, other areas such as the Mediterranean and Red Sea are shaped by ongoing conflicts and evolving geopolitical strategies. These dynamics require operators, governments, and stakeholders to adapt swiftly and effectively to ensure the safety of trade routes and maritime assets.

The global maritime sector must embrace innovation, strengthen collaboration, and implement robust security measures—both physical and digital—to navigate this evolving landscape. By addressing these challenges head-on, the industry can maintain resilience and protect its critical role in international trade and security.



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