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## DEFENCE TECHNOLOGY TRENDS

The wars in Ukraine and Iran, alongside growing concerns over a future Indo-Pacific conflict, have demonstrated that **modern warfare is increasingly shaped by drones, autonomous systems, AI, cyber and EW, resilient communications, and rapid industrial adaptation**. CEPA, CSIS and Atlantic Council reports argue that Western militaries remain overly dependent on slow procurement systems and expensive legacy platforms, while adversaries exploit large volumes of low-cost autonomous systems to impose asymmetric costs and overwhelm traditional defences. NATO and allies should integrate lessons learned from Ukraine, develop interoperable multidomain networks integrating AI-enabled command systems, autonomous air and maritime platforms, undersea capabilities, and digitally connected logistics, surveillance, and targeting systems. For Europe in particular, the challenge is not only technological but industrial and financial: **modernisation cannot rely solely on traditional state-led procurement** and instead requires **mobilisation of private capital**, including venture capital, private equity, sovereign wealth funds, and institutional investors, to accelerate defence innovation and manufacturing at scale. Future deterrence will depend not simply on technological sophistication, but on the **industrial capacity to mass-produce** autonomous systems. **Ukraine is presented as the leading model** for this transition because of its **battlefield-driven innovation cycles** that integrate frontline operators with domestic manufacturers. Ukraine's advantage lies in direct end-user feedback, where soldiers can send manufacturers videos and failure reports that drive rapid software or hardware changes. The most effective Western companies are those keeping engineers or production close to Ukraine rather than relying on distant testing cycles.

# NATO COUNTRIES AND PARTNERS



✦ The **Pentagon** has partnered with Amazon Web Services, Google, Microsoft, NVIDIA, OpenAI, SpaceX, Reflection, and Oracle to **deploy AI capabilities across highly classified military networks**, with the goal of enhancing battlefield decision-making, situational awareness, and cybersecurity. At the same time, the **US Marine Corps has mandated basic AI training for all personnel** by the end of 2026. Pentagon officials also highlighted advanced AI-enabled cybersecurity systems, including Anthropic’s **“Mythos” model**, as examples of tools capable of identifying and patching software vulnerabilities at unprecedented speed and scale. The Atlantic Council described Mythos as a potentially transformative AI capability that could dramatically shift the balance of power in cyberspace and modern warfare. Pentagon officials described this as part of a broader shift towards **digitally driven warfare**, where AI and cyber capabilities are central enablers while simultaneously **increasing the speed and scale at which both states and non-state actors can exploit vulnerabilities**. NATO’s ASG for Cyber and Digital Transformation echoed this view, stating that modern warfare is now fundamentally “digitally underpinned.”

[Breaking Defense](#) | [Military Times](#) | [Atlantic Council](#) | [Inside Defense](#) | [TVP](#)

✦ The **US military is accelerating the use of AI for both battlefield targeting and logistics**. A Defence Innovation Unit project is developing AI-enhanced target recognition systems to help Common Remotely Operated Weapon Station (CROWS) turrets detect, track and engage drones faster and more accurately. Initial efforts focus on countering small drones before expanding the technology to ships, moving vehicles and infantry weapons carried by dismounted troops. At the same time, the US Army is testing AI logistics tools that track ammunition and fuel in real time to speed battlefield resupply and reduce commanders’ cognitive workload.

[Defense News](#) | [Stars and Stripes](#)



✦ **Intelic**, a Dutch Defense startup **has launched BASE, a European military drone marketplace** designed to speed up procurement by allowing defence ministries to compare interoperable systems from multiple manufacturers. Inspired by Ukraine’s Brave1, BASE aims to address fragmentation in Europe’s drone market while supporting faster capability fielding. The

marketplace includes manufacturers from across the EU, with expected combined sales exceeding €1.5 billion and plans to expand beyond UAVs.

### [Defence News](#)

✦ **Türkiye plans to procure around 100 expendable unmanned surface vessels** for its navy, primarily low-profile precision-strike craft for maritime and coastal targets that can operate in networked swarms, share data, and autonomously divide tasks. Datum Submarine Technologies also recently unveiled the **Sinarit XLUUV**, a modular diesel-electric autonomous submarine drone designed for long-range strike and surveillance missions. The platform can reportedly launch FPV drones, torpedoes, mines, and missiles against sea, land, and air targets while maintaining low sonar and radar detectability.

### [Defense News](#) | [Interesting Engineering](#)

✦ Technologically, **Ukraine has emerged as Europe's most advanced and combat-tested defence innovation ecosystem**, rapidly evolving its tactics and quadrupling medium-range drone strikes since February against Russian command posts and supply lines. Ukraine recently launched its largest-ever drone barrage against Russia, deploying **nearly 600 drones** in a single night. However, its advantage lies not only in production scale, but in **fast adaptation cycles** linking frontline operators directly with domestic manufacturers. Ukraine is also scaling defence-systems production at extraordinary speed, with **interceptor-drone output in the first four months of 2026 already exceeding total 2025 production**. At the same time, **Kyiv is rapidly integrating UGVs** into frontline logistics, casualty evacuation, engineering, and rescue operations, with more than 9,000 missions conducted in March alone and 25,000 UGVs contracted in the first half of 2026. **NATO is also increasingly recognising the battlefield value of UGVs**, as demonstrated during Latvia's recent **Crystal Arrow exercise**, where ground drones were used for reconnaissance, logistics and direct attacks against opposing forces. NATO commanders described the systems as "force multipliers" that provided clear tactical advantages, reinforcing expectations that UGVs will become a core component of future land warfare. However, the exercise also highlighted persistent limitations, including communication disruptions in dense forest environments, terrain constraints, and the continuing challenge of integrating UGVs effectively into military doctrine, command structures and battlefield decision-making.

[CEPA](#) | [Reuters](#) | [CEPA](#) | [Defense News](#) | [Defense News](#) | [Atlantic Council](#) | [Defense News Agency](#) | [France-Presse](#) | [Agence France-Presse](#) | [Reuters](#) | [The Economist](#)

✦ The **Pentagon is accelerating efforts to reduce US dependence on Chinese drone manufacturing** through its Drone Dominance initiative, which includes a proposed \$55 billion FY2027 investment and an initial \$1.1 billion programme to expand domestic production. As part of the initiative, the DOW plans to procure 340,000 FPV drones from US suppliers to strengthen a domestic industry currently overshadowed by DJI, which controls roughly 80% of the US commercial drone market. Pete Hegseth has also announced **plans for a new autonomous warfare command** focused on advanced drones and low-cost "attritable swarm" systems, reflecting lessons drawn from conflicts in Ukraine and Iran. Complementing these efforts, the DOW has launched a **counter-drone pilot programme at five military installations** to test directed-energy

technologies, high-energy lasers and microwave systems, to strengthen homeland defence.

[Wall Street Journal](#) | [Defense Scoop](#) | [Inside Defense](#) | [Defense News](#)

✦ **Companies from TFX Baltic, Sairdrone and Kraken, are advancing unmanned maritime capabilities and securing major contracts.** Sairdrone, alongside Lockheed Martin and Fincantieri, has developed **Spectre**, a 170-foot unmanned vessel designed for long-range, high-speed anti-submarine warfare with modular payloads and wind-assisted endurance. Positioned as a cost-effective complement to traditional warships, Spectre is intended to operate ahead of crewed fleets as a combined sensor and strike platform. Separately, Anduril and Kraken Technology Group are partnering to produce scalable, low-cost USVs, with **Anduril integrating its Lattice autonomy software and payloads onto Kraken's K5 and K7 platforms.** The vessels are designed for rapid production, modular missions, and payloads exceeding 1,000 pounds. The effort supports the US Navy's push toward a fleet that could be about 45% unmanned by 2045.

[TWZ](#) | [Breaking Defense](#)

✦ **South Korea plans to train 500,000 "drone warriors"**, soldiers and conscripts trained to operate, detect, and support military drone operations using small commercial and FPV drones. The programme is intended to prepare the military for modern drone warfare, influenced by lessons from Ukraine and North Korea's rapidly expanding drone capabilities. However South Korea faces major obstacles, including shortages of military instructors, declining recruitment, demographic decline, and heavy dependence on Chinese drone components. Unlike Ukraine, South Korea lacks wartime mobilisation systems and flexible training structures that enabled rapid drone-force expansion.

[War on the Rocks](#)



✦ **Japan is accelerating a major defence transformation by developing advanced long-range strike systems** aimed at strengthening deterrence against China and defending its southwestern islands. Central to this effort is a new generation of coastal defence missiles, including the Type 25 Surface-to-Ship Missile with an estimated 1,000 km range and advanced targeting capabilities, alongside future precision-guided missiles capable of striking both naval and land targets. **Japan is also investing heavily in hypersonic weapons**, including a hypersonic guided missile equipped with a Dual-Mode Scramjet engine that combines ramjet and scramjet technologies to achieve sustained speeds above Mach 5 while maneuvering unpredictably to evade air defences. In parallel, **Mitsubishi Heavy Industries is developing a hypersonic glide vehicle**, designed to provide survivable long-range strike options against high-value targets.

[Foreign Affairs](#) | [Naval News](#)



✦ **McKinsey published a Quantum Technology Monitor for 2026**, finding that **quantum computing has reached a commercial tipping point**, moving from experimentation to **early deployment**, with over 300 companies adopting the technology and embedding it into business workflows. It highlights rapid growth in investment, a maturing ecosystem built around cloud-based access and software tools, and increasing focus on practical use cases such as simulation, optimisation, and risk analysis. Despite this progress, most applications remain hybrid, combining quantum, classical computing, and AI due to ongoing technical and scaling constraints. **For the military domain**, these developments suggest future advantages in areas such as advanced materials, operational optimisation, intelligence analysis, and cryptography, while also introducing risks to current encryption standards and security architectures.

#### [McKinsey Technology](#)

✦ The NATO STO 2025 Highlights Report outlines **NATO's approach to quantum technologies as a critical emerging domain for future military advantage**, spanning communications, navigation, computing, and sensing. It highlights quantum's role within the NATO innovation ecosystem, including the ACT-led Innovation Continuum, where capabilities such as quantum-enabled navigation and sensing were demonstrated, particularly in environments where GPS is denied or degraded. Within NATO, the Centre for Maritime Research and Experimentation (CMRE) leads applied research, advancing underwater quantum communications, quantum-enhanced navigation using magnetometers, and prototype quantum navigation algorithms. At the strategic level, ACT drives coherence, capability planning, and roadmap development across the Alliance.

#### [STO 2025 Highlights Report](#)



✦ The war in **Ukraine has demonstrated how critical space-based systems are for modern C2**, with Russia's battlefield setbacks in early 2026 closely tied to the loss of illicit access to SpaceX's Starlink satellite network. Once satellite connectivity was disrupted, Russian forces experienced severe communication breakdowns, including poor coordination, inaccurate situational awareness, and an inability for commanders to effectively direct troops on the front line. Ukraine was able to exploit these weaknesses rapidly, advancing on the southern front and reclaiming territory without relying on major new weapons systems or increased Western military aid.

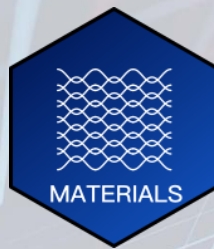
✦ **NATO must modernise policies and partnerships to integrate commercial and allied geospatial intelligence for faster decision-making.** Lessons from the war in Ukraine show success depends on integration rather than collection of data and imagery, with rapid fusion enabling near real-time insights. The expansion of commercial data and AI requires shared standards, interoperable systems, updated governance across NATO allies, and structured pathways for data sharing and fusion.

[Space News](#)

✦ **US Space Command, alongside Australia, Canada, France, Germany, New Zealand and the UK, is developing a joint “orbital warfare” operational plan,** expected by the end of 2026, to integrate multinational space defence capabilities more effectively. The initiative builds on earlier cooperation by expanding joint exercises and coordinated space operations, while **SPACECOM is also working more closely with commercial space firms** on scenarios including orbital nuclear detonations, sustained satellite manoeuvres and missile warning. In parallel, the defence ministers of **Germany, Austria, Switzerland and Luxembourg have agreed to deepen military space cooperation,** with a focus on satellite protection, collision avoidance and situational awareness. They also stressed the need to reduce reliance on US systems such as Starlink and develop independent launch capabilities to strengthen strategic autonomy.



✦ **The U.S. military is rapidly advancing directed energy weapons (DEW),** particularly laser systems, as a core component of its future warfighting capabilities. The Department of War has launched a pilot program across multiple military installations to **operationally test high-energy lasers and microwave systems.** The Pentagon is now reforming procurement, doctrine, and training to integrate DEW into operational use. **The U.S. Navy has equipped nine Arleigh Burke-class destroyers with operational shipboard laser systems** to disrupt enemy sensors and disable small drones. Operation Epic Fury showed why this matters: DEW offer advantages such as near-instant engagement, rapid reuse, and low cost per shot. Even more importantly, destroyers have limited Vertical Launch System cells, and **every defensive interceptor carried means one fewer offensive missile.** In the future the most capable laser-defence vision will likely require future ships designed around directed energy from the start, while containerised systems are being implemented as nearer-term bridges.



The Army's digital transformation also includes the use of additive manufacturing (3-D printing) in the field to quickly create replacement parts for drone systems during multinational exercises like Project Flytrap. ([Breaking Defense](#), [Defense News](#))

✦ Although China has agreed to address US concerns over rare earth shortages, its export control regime remains largely intact. Shortages of minerals such as yttrium and scandium are already disrupting US aerospace and chip manufacturing, while falling Chinese exports of indium threaten production of next-generation photonic chips needed for AI data centers. The US remains especially vulnerable because it still depends on China for most rare-earth separation and refining, including materials used in F-35s and advanced missiles. Efforts to reduce this dependence are underway, but true supply-chain independence is likely to take at least a decade.

[Nikkei Asia](#), [Reuters](#) | [Reuters](#) | [Nikkei Asia](#)

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## STRATEGIC COMPETITORS



✦ A CSIS report argues that AI governance and crisis-management safeguards should become a central issue in U.S.-China strategic dialogue. Research found that **several leading AI models**, particularly Chinese systems such as DeepSeek and Qwen, **display significant escalatory tendencies when placed in simulated national security and foreign policy crises**. The studies showed these models frequently recommended military escalation, nuclear threats, and even nuclear weapons use at materially higher rates than many Western models, raising concerns about their integration into defence and decision-support systems.

[CSIS](#)



✦ A report by the FDD, a neocon U.S. defence think tank, argues **China is developing autonomous robotic “wolf packs”**, quadruped robots designed for ISR, logistics, suppressive fire, and obstacle breaching. These systems could help the PLA clear urban terrain, sustain operational tempo, and absorb early battlefield losses during an amphibious assault to Taiwan. The report also describes **China’s broader push towards integrated unmanned warfare across land, air, and sea domains**, linking **robotic ground units, drone swarms, and maritime “shark packs”** into coordinated, data-sharing combat networks. The report notes that **China’s autonomous systems remain vulnerable** to jamming, spoofing, cyber intrusion, power limitations, due to their dependence on communications and navigation systems. Separately, a Washington Post article on the broader robotics competition, argues that **China** holds a significant advantage through its industrial robotics capacity, having **installed nearly 295,000 new industrial robots in 2024, more than the rest of the world combined**.

[FDD](#) | [Fox News](#) | [Washington Post](#)



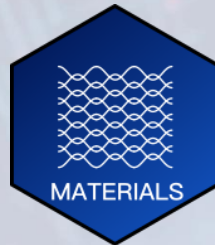
✦ **China is rapidly emerging as a major space power**, conducting nearly 100 orbital launches in 2025, expanding commercial spaceports, and developing the **“Thousand Sails” (Qianfan) constellation to rival Starlink**. A RAND report also found that China significantly expanded the space and surveillance systems supporting its military “kill chain,” including naval observation satellites, electronic intelligence satellites, and over-the-horizon radars. RAND states that these systems improved the PLA’s ability to find, identify, track, and engage U.S. Navy ships, strengthening China’s anti-access/area-denial network around Taiwan. A separate CSIS report argues that **Western space primacy is increasingly threatened** not only by China’s rapid technological rise, but also **by the growing vulnerability of low Earth orbit (LEO) itself**. The paper notes that nearly 80 percent of operational satellites orbit within range of ballistic missiles, making anti-satellite capabilities increasingly accessible through missiles, cyberattacks, jamming, lasers, and debris-generating weapons, even without full space superiority.

[Washington Times](#) | [RAND](#) | [CSIS](#)



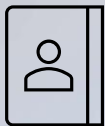
✦ On **24 May 2026**, **Russia launched a major overnight attack on Kyiv** and the surrounding region, using a **hypersonic Oreshnik ballistic missile** alongside a large-scale missile and drone barrage, marking the third time since the beginning of the conflict that this hypersonic system was used. Hypersonic missiles travel at speeds above Mach 5 and, unlike traditional ballistic missiles, can manoeuvre during flight, making them harder to detect, track, and intercept. Russia and China are widely assessed to be ahead of the West in fielding operational hypersonic capabilities, while the US and EU remain largely focused on testing, development, and delayed procurement programs.

[DW](#) | [Bloomberg](#) | [The Washington Post](#) | [Scripps News](#)



✦ **China's restrictions of gallium exports is emerging as a significant defence and national security concern** for the US and its allies. Gallium is a critical input for advanced military systems, including missile defence, radar, electronic warfare, and next-generation semiconductors. Despite a 2025 trade truce, exports have not meaningfully resumed, contributing to severe supply shortages and soaring global prices. **China controls roughly 99 percent of global primary gallium production**, giving Beijing substantial strategic leverage. **This pressure extends beyond gallium.** The US remains heavily reliant on Chinese rare-earth minerals to replenish missile stockpiles depleted by the war in Iran. China also dominates the production of materials such as samarium and cobalt, which are essential for cruise missile guidance systems and advanced radar technologies.

[CSIS](#) | [New York Times](#)



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