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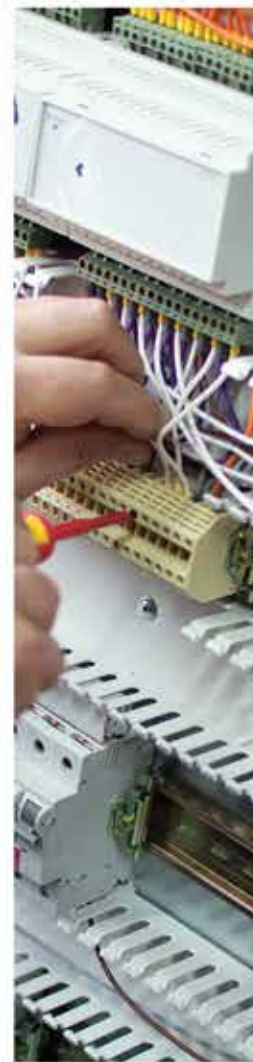
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The World That We Would Like and The World That There Is



A look of the cover image of this issue of ESD makes it clear, with an F-35C landing on the Nimitz class aircraft carrier USS Abraham Lincoln (CVN-72) on March 1st, that I wanted to use this opportunity to talk about the military operation against Iran. However, we first need to provide some context and that means that we need to talk about Iranian regime, about what it is and what it wants. We need to talk about international reactions to this conflict, particularly in Europe, and finally, the implications of this conflict.

At the start of this year mass protests against the clerical regime erupted in Iran, these protests were ruthlessly suppressed by the forces that were part of the Islamic Revolutionary Guard Corps (IRGC), such as the Basij militia and mercenary units recruited around the Middle East region and even beyond. Estimates of casualties among the protesters amount to more than 36,500 dead! One might have expected international protests against the Iranian regime after so many innocents were killed, there were hardly any. Perhaps the wrong kind of victims? Yet after the current conflict started the progressive left and the Islamists were out on the streets, for example a major demonstration in favour of the Iranian regime was held in London. Mind you, the author can remember seeing a demonstration in favour of the Khmer Rouge in London in 1979! Clearly London has a propensity for supporting nasty totalitarian regimes!

There were also plenty of suggestions that this conflict was unnecessary, that talks with Iran on the nuclear issue were progressing well and that a diplomatic solution was in reach. Seeking a diplomatic solution and appeasing the Iranian regime have been tried for years, with Iran being hit with various sanctions as a proverbial stick and then appeased by concessions from the international community as a carrot. While the talks continued, Iran continued with its nuclear programme year-on-year moving towards a Weapons of Mass Destruction (WMD) capability. On the other side of the fence the US, the Europeans and the international community congratulated themselves that talks were continuing and seemed to believe that an agreement was just around the corner.

We must be clear about this, Iran was moving towards a nuclear weapon capability, they also possessed a range of ballistic and cruise missile delivery systems for said nuclear weapons offering the ability to attack targets regionally and beyond. These delivery systems would not have been the most accurate, but that was not really an issue with a nuclear payload. The fact that two Intermediate-Range Ballistic Missiles (IRBM) were launched at Diego Garcia, missiles thought to be of the Khorramshahr type, one was shot down and one was suggested to have failed in flight, clearly shows the ambitions that Iran had.

The missiles were based on the North Korean (DPRK) Musudan BM-25 (Hwasong-10) system, providing even more proof that Iran has access to advanced DPRK missile technology. The basis of the Musudan system is the Soviet-era R-27 missile as used in the Project 667 Yankee class SSBN. The DPRK apparently contracted a Russian design bureau to develop a modernised land-based variant of the missile that could be launched from a MAZ 543/MAZ 7310 Transporter Erector Launcher (TEL) in the 1990s. It should also be noted that later R-27 variants were equipped with a Multiple Independently Targetable Reentry Vehicle (MIRV) warhead.

It should also be noted that the DPRK nuclear arsenal contains a substantial number of Intercontinental Ballistic Missile (ICBM) systems, either currently operational or in development. These include: the Hwasong-14 with a 10,400 km range, the Hwasong-17 and the Hwasong-18 both with a 15,000 km range and the Hwasong-15, which is currently in development with an estimated range of between 8,500 and 13,000 km. These ICBMs have different warhead options, either a single conventional or nuclear warhead or MIRV warheads. DPRK missile technology continues to improve, for example the Hwasong-16B is a solid fuel IRBM that carries a hypersonic glide vehicle to elude interception. It should also be noted the DPRK short-range solid fuel ballistic missiles such as the KN-23 and KN-25 have been supplied to Russia and used operationally in Ukraine. Potentially more advanced DPRK missile technology could be made available to Iran.

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Cover Photo: An F-35C of Marine Fighter Attack Squadron (VMFA) 314 of Carrier Air Wing 9 (CVW-9) comes into land on the Nimitz class aircraft carrier USS Abraham Lincoln (CVN-72) on March 1 during Operation Epic Fury, the military action against Iran. (Image: US Central Command)

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Letter from London

So Much In, So Little Out

Francis Tusa

So, with a budget (including the *Zeitenwende* additional funding) of € 120 billion, heading towards € 160 billion in 2030, Germany is now Europe’s defence spending powerhouse – no dispute. But with a GBP 62 billion defence budget (€ 72 billion), the UK is no laggard – it still the second largest. And the current budget predictions are that UK defence spending will go to at least 2.8% of GDP on defence by 2030, even 3%, with the planned figures ranging from GBP 74 billion to GBP 80 billion (€ 86–93 billion) – this is serious money. But with all of this money flowing in, why is so little seeming to come out of the other end?

To cut to the chase about why the UK spends so much and gets seemingly so little back as regards conventional defence, the answer is simple: nuclear. The Dreadnought class SSBN programme is set to cost GBP 35 billion (€ 40 billion); the costs of the next generation Trident missile are unknown – but not small; the new Mark VII nuclear warhead programme has a budget of GBP 15 billion (€ 17.5 billion); modernisation of the UK’s nuclear infrastructure is anywhere between GBP 8-15 billion (€ 9.5-17.5 billion) – that is some € 75 billion all-up (at the very least...) and that is not chump change! And on top of the UK’s own deterrent programme, one has to add the costs of the trinational SSN AUKUS nuclear attack submarine programme for the Royal Navy/Royal Australian Navy – at this stage GBP 20 billion for new submarines and their associated sub-systems. There’s a lot of money being spent to be spent here...

But it’s not as if the overall equipment budget is measured in pennies. In the last National Audit Office (NAO) report on the UK Ministry of Defence’s (MoD) Equipment Plan in 2023, the rolling 10-year plan on how the MoD would spend on procurement/equipment support and upgrades, the in-year headline figure for 2025-26 was GBP 22.85 billion/€ 26.5 billion – this, on its own, would have been NATO’s 8th largest defence budget!

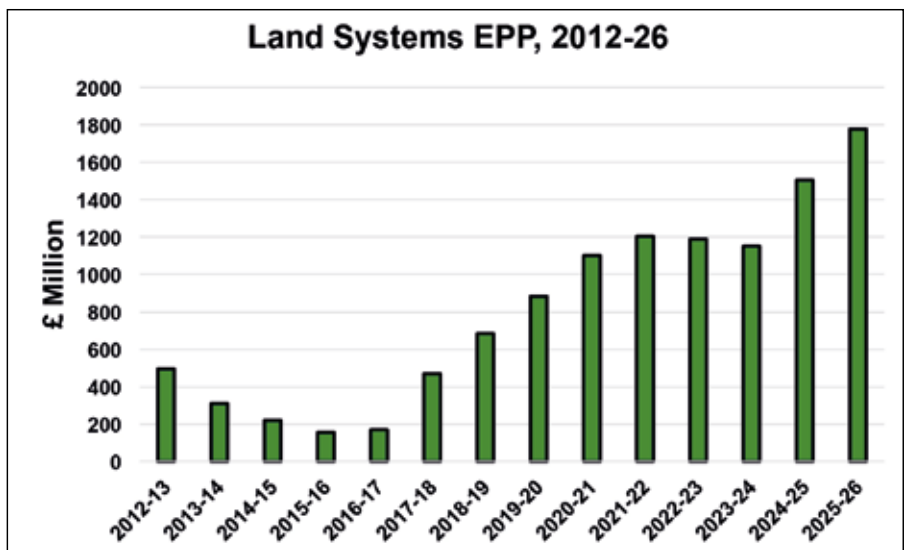
Even if you strip out the UK’s nuclear spend – both for submarines and nuclear weapons – then the spend on conventional equipment is GBP 16 billion/€ 18.6 billion per year, not a small



▲ On the Rovajärvi Training Area in Finland in November 2024, a British Army FV430 Mk3 Bulldog armoured vehicle. It is a damning indictment of British Army armour acquisition that an armoured vehicle that was cleared for production in 1962 is still in service in significant numbers more than 60 years later. (Image: Cown Copyright 2024)

sum. It’s still in the ‘Top Ten’ overall NATO defence budgets, and this is just for procurement/support.

Consider the following though:



This chart shows what the British Army spends on (overwhelmingly) Army AFVs/artillery etc since 2012 – it represents the spend on tracked/wheeled armoured boxes, not radios, missiles etc. The data comes from the NAO’s reports on the Equipment Plan from 2012, reports that ended in 2023.

From 2012-13 to 2025-26, the British Army had, and spent, a budget of GBP 11 billion/€ 13 billion on AFVs/artillery/equivalent. And yet over this period, 13-years, the British Army took into service 14 BAE Systems Archer 155 mm artillery systems, and then about 150 Ajax AFVs, although the acceptance into service of these was rescinded in November 2025 due to noise and vibration issues which caused injuries to operators. There are – possibly – a few other AFVs brought into service, but no large programmes € 13 billion for, maybe, 150 AFVs over more than 15-years...

The Army's Warrior MICV, which used to be regarded as high-end equipment on the international defence scene, is now well over 30-years old, and will exit service within 2-years. The AS90 155 mm artillery systems have been entirely handed over to Ukraine (where it has been very successful) and the Challenger 3 MBT programme faces some serious challenges – but only 142 will be purchased. The bedrock of the British Army's AFV fleet(s) is the FV430 Bulldog APC, the first examples of which entered in the early 1960s. The British Army has spent well over GBP 3 billion/€ 3.5 billion on new APCs without seeing more than a handful being delivered, but over a period of 25-years.

The Royal Navy's (RN) two 65,000-tonne aircraft carriers, five Astute class SSNs, three Type 45 air warfare destroyers, and six OPVs since 2012 – GBP 35 billion/€ 40 billion spent on ships alone (SSNs extra)! But while the Type 26 anti-submarine warfare frigate has seen an artificially extended production/delivery programme, the class it is intended to replace, the Type 23 Duke class, has seen aged ships being retired at an alarming rate, so that the RN now has only six frigates, and the chances are that two or three of these will be retired in the next one or two years. This would leave the RN with an escort ship fleet of 10 destroyers/frigates. Although comparisons are invidious, for the past few decades, the RN has had 19+ escort ships. The purchase of up to five Type 26s by the Royal Norwegian Navy has seen one or two of the RN's ships earmarked to go to Oslo – no order to replace these has been placed...

And as for the RAF, the fast jet/fighter fleet is just over 100 Typhoons and 38 F-35Bs (which are co-owned/operated with the RN Fleet Air Arm) – 20-years ago, the RAF could field 450 frontline combat aircraft, although there were issues about serviceability. The RAF has good numbers of tankers (14), transport aircraft (30), and some impressive numbers of combat support aircraft, but all numbers are down on one or two decades ago.

How can things have got so bad with UK defence and UK defence capabilities? This is an incredibly good question to put – and one that the Ministry of Defence and/or the Services really don't want to answer. To repeat, the nuclear spend is a big weight on UK defence capabilities - but it does not explain the gap between cash resources and what the Services actually see.

There has been a certain amount of "catch up" in UK defence spending that has affected the input/outcome equation. For example, pay for the Services had stagnated in the late-2010s, but we have now seen two above-inflation pay rises – which were needed. And at the same time employers' pay costs have risen. Taken between the two, that is costing the MoD well over GBP 1 billion/€ 1.2 billion per year.

A correct decision was made to buy back the Services' accommodation off the private entity that it was sold to in the 1990s. This has a headline cost of GBP 8 billion, and then the MoD will have to cover upgrade and maintenance costs, which it hasn't needed to do for 35-years – a pledge to spending over GBP 10 billion (over 15-years...) was made at the end of last year. Also, the decision to accept, at pace, tens of thousands of Afghans who worked for British forces to enter the UK, at a cost that could top GBP 4 billion/€ 5 billion is another unforeseen cost.



▲ **The Type 45 destroyer HMS Dragon alongside at the Upper Harbour Ammunition Facility (UHAF) onloading munitions on 6 March 2026 at Portsmouth Harbour. HMS Dragon has been tasked to the Eastern Mediterranean, but the fact that the British response has been so slow is a major embarrassment. (Image: Crown Copyright 2026)**

And then – and this might be impenetrable to non-UK readers, but also to UK readers - that the MoD is having to pay quite a lot of the costs for paying for the lease of the Chagos Islands to Mauritius – it's certainly hundreds of millions per year that no-one in the MoD knew they'd ever have to pay. Furthermore, if legislation is passed to allow Irish Republican Army terrorists to sue the UK for imprisonment and the like, then there could well be liabilities well into the billions of Pounds.

And on top of this, the issue that the largest equipment programmes are not being well-managed. Out of the 40+ programmes assessed by the central body, the National Infrastructure and Service Transformation Authority (NISTA), over 25 had either a risk rating of "RED" – programme has failed in terms of time, cost, or capability – and there was only one that was "GREEN". It has been reported that there is a GBP 28 billion "Black Hole" in UK defence spending, with GBP 18 billion of this being programme overspends in the current programme, not the future plans.

The biggest problem in UK defence is that no-one wants to stand up and admit that things aren't going well. Which means that no-one is willing to tackle the appalling budget management that is now endemic. But without realism, the cycle of failure following failure in the UK as regards the management of defence will continue.



Bienvenue à Paris

The Macron Nuclear Plan

Pierre Tran



France will build more nuclear warheads, plans to fly fighters armed with nuclear weapons to defend European allies, and cooperate more closely with seven EU nations, according to President Emmanuel Macron on 2 March, as he outlined a “forward deterrence” strategy. “We must strengthen our nuclear deterrence against the combination of threats, and we must conceive our deterrence strategy within the depth of the European continent and with full respect for our sovereignty, with the progressive implementation of what I will call ‘forward deterrence,’” the French commander-in-chief said.

Macron was speaking at the Ile Longue naval base on the Atlantic coast, just two days after the first Israeli and US air strikes on Iran. The president’s speech at the nuclear submarine base had long been planned, French authorities said. Meanwhile, there would be close nuclear cooperation between Berlin and Paris, the French president and his German counterpart, Chancellor Friedrich Merz, said on the same day.

Macron flew out on 9 March to the *Charles de Gaulle* aircraft carrier sailing off the coast of Cyprus, where he spoke of French deployment of frigates and Rafale fighters as a defensive response to Iran’s attacks on French allies in the Middle East. Iran bore the “main responsibility,” Macron had previously said 3 March in a televised address to the nation, but the Israeli and US strikes were “outside (of) international law, which we cannot approve.”

On Macron’s visit to Ile Longue, the French authorities released film footage of the presidential Falcon jet flying to the base, escorted by four Rafale fighters. The president spoke before *Le Téméraire*, one of the four-strong Triomphant class of SSBN nuclear ballistic missile boats. The first of class in a new generation of nuclear ballistic missile submarines will be named “Invincible” and will be launched in 2036, according to Macron in his speech on revised French deterrence.

There was a rising threat, including Russia’s “brutal imperialism and revisionism” and its “vast nuclear arsenal” to provide reason to boosting the French stock of nuclear arms, Macron noted. “I have decided to increase the number of warheads of our arsenal,” he added, “To put an end to any speculation, we will no longer release figures on our nuclear arena...To be free, we must be feared, and to be feared, we must be powerful.”

A research note from The Bulletin of the *Atomic Scientists*, titled *French Nuclear Weapons, 2025*, stated that France had some 290 atomic warheads, with a further 80 retired warheads due for dismantling. Those nuclear weapons are for both submarine launch and to be flown on combat aircraft. France had strengthened its “bilateral nuclear cooperation,” Macron said, with senior British officials recently attending a French strategic air force exercise for the first time. The nuclear doctrine remained a French decision to launch.

There will not be any sharing of “the ultimate decision,” he said. “Under our Constitution, the decision to employ nuclear weapons rests solely with the President of the Republic, who is accountable to the French people.”

Forward deterrence included “temporary deployment of elements of our strategic air forces to allied countries,” he said, which would be “very valuable to us”.

Macron then outlined nuclear cooperation with Germany and seven other European Union allies, along the lines of close French ties with the UK. France and Germany have established a high-ranking nuclear steering group, the French and German statement revealed. The first steps of cooperation would start this year and could include visits of strategic sites and joint exercises. Belgium, Denmark, Greece, the Netherlands, Poland, and Sweden have agreed to a “close dialogue” with France, in addition to Germany, Macron said. Other countries were in discussion, which could develop in the near future. There was a book of poetry, *Residence on Earth (Gallimard)*, by Pablo Neruda, on Macron’s table when he spoke to the nation on television. The Chilean poet was anti-imperialist and criticised American intervention, radio station *France Info* said in an editorial.



Letter from Kyiv

Offensive Preparations

Alex Horobets

Moscow failed to start 2026 triumphantly. By the end of February 2026, the reality on the battlefield demonstrates the exact opposite of the Kremlin's claims about Russia's inevitable victory on the battlefield and that Ukraine is supposedly expected to capitulate to Moscow's ultimatums. Instead of the anticipated spring breakthrough, Russian troops are forced to expend resources on localised defence and attempts to regain positions lost in recent months. According to the Commander-in-Chief of the Armed Forces of Ukraine, Oleksandr Syrskyi, since late January, on the Oleksandrivka direction (at the junction of Dnipropetrovsk, Donetsk, and Zaporizhzhia regions), Ukrainian forces have restored control over 400 square kilometres of territory and eight settlements. In December 2025, Ukraine's Defence Forces also carried out a series of counterattacks near the city of Kupiansk, liberating most of the city, which Russian forces have been attempting to seize for 19 months.

In this context, Russia's offensive preparations for the spring–summer 2026 campaign may have been partially disrupted, as instead of accumulating strike groupings, the command was forced to redeploy reserves to “patch holes”. The slow pace of the Russian army's advance has resulted in colossal losses. According to analysts' estimates, since February 2022, Russian forces have lost approximately 1.2 million personnel killed, wounded, or missing in action. At the same time, the Ukrainian military claims that Russia is now losing more personnel than it can mobilise. As a result, Russia may already be preparing for a new wave of forced replenishment. 30,000–40,000 recruited contract soldiers per month is no longer enough, so the Kremlin is promoting the idea of limited reserve call-ups and training assemblies, as a full-scale mobilisation remains too toxic for domestic stability. It is obvious that human resources are becoming increasingly scarce, especially amid a reduction in petrodollar inflows previously used to attract contract soldiers.

At the same time, Ukraine is demonstrating progress in asymmetric capabilities. In February 2026, the Armed Forces of Ukraine carried out several notable strikes against Russia's defence-industrial complex, including the use of new FP-5 Flamingo cruise missiles. Among the targets was the Votkinsk Plant, one of Russia's key enterprises for the production of ballistic missiles (including the RS-24 Yars, RSM-56 Bulava, missiles the Iskander-M system, Kinzhal, as well as the Oreshnik missile).

Ukraine's Defence Forces also conducted successful long-range unmanned aerial vehicles (UAV) strikes against the Dorogobuzh chemical plant in Smolensk region (which plays an important role in explosives production), the Metafrax chemical plant in Perm region, and an oil refinery facility in the Samara region. Such strikes, including those conducted at depths exceeding 1,000 km, undermine Russia's ability to produce and replenish precision weapons. In particular, damage to the Votkinsk Plant workshop could have a critical impact on the entire missile production cycle.

An increasing number of Ukrainian companies in the unmanned technology sector are launching strategic partnerships with American and European partners - from joint development to localisation of production within the EU and the United States. This provides Kyiv with a technological advantage in the most dynamic sphere of modern warfare - the drone war - where inexpensive unmanned platforms destroy equipment worth millions of dollars.



Thus, in the first half of 2026, the following prospects are emerging. Russia will likely attempt to stabilise the front and launch a spring–summer offensive, relying on reserves accumulated by March and on massive strikes against infrastructure. However, time is no longer on the Kremlin's side: its economy is stagnating, sanctions are constraining high-tech sectors, and the demographic decline makes each new wave of conscription increasingly painful for society.

The technological gap that Ukraine is successfully widening remains critically important. In 2026, Ukraine plans to produce tens of thousands of ground robotic systems, many of which are already certified according to NATO standards. This is not merely compensation for manpower shortages but a new paradigm of warfare. Cooperation with Western companies is accelerating production localisation and the development of AI-driven systems, giving Kyiv a chance to shift the dynamics in an asymmetric war.

To achieve a turning point in the war, the West needs to provide Ukraine with technological superiority by scaling up Ukrainian defence technology. The Armed Forces of Ukraine will be able to devalue the enemy's numerical advantage and minimise their own losses only by creating a serious gap in unmanned technologies and precision strike capabilities. The second key element of the strategy should be the systematic destruction of Russia's military-industrial potential deep in its rear. Successful strikes on such facilities demonstrate that Russia's defence machine is highly vulnerable to asymmetric attacks. A turning point in the war will only be possible when the Kremlin can no longer replace its losses in both high-tech weaponry and manpower and continuing the aggression becomes unbearable.



Viewpoint from Vienna

Austria's Defence Agenda 2026

Alan Peterson

With a broken security order now overshadowing the European continent, Austria has been forced to recalibrate its defence posture to meet the challenges of an increasingly unpredictable decade. In early 2026, senior officials in Vienna reassured that any strategic recalibration will preserve Austria's 70-year constitutional neutrality while boosting domestic defence capacity and deepening contributions to European security. This new approach reflects a recognition that neutrality alone can no longer guarantee security in an era of war on the continent. Austria is therefore positioning itself not only as a non-aligned actor, but one that wishes to contribute to European security, capable of both defence and contributing collectively as part of EU frameworks for example.

At the heart of this change is *Risikobild 2026*, the Federal Ministry of Defence's annual assessment of security risks presented in its report "*Risk Image 2026 – End of Order?*" Released and publicly presented on 26 January by Defence Minister Klaudia Tanner, the paper recognises the conflict in Ukraine, migration pressures, hybrid operations, and information warfare as key challenges. The ministry's assessment also underscores the need for a resilient and better prepared Austria, able to respond to threats that extend beyond traditional military domains. It also highlights the close relationship between domestic, regional, and European security — from cyberattacks and misinformation campaigns to economic and energy vulnerabilities; in sum, Austria's security planning now has to account for multiple overlapping risks, not a single isolated and conventional threat.

Strategic Rebalancing

At January's public presentation of *Risk Image 2026 – End of Order?* Minister Tanner stressed that Austria must adapt to a more volatile global order. The 2026 risk assessment links rising geopolitical competition — particularly between major powers — with direct implications for Austria and the EU. Vienna's strategic documents emphasise resilience across civilian and military spheres, recognising that national security now covers everything from migration management and economic stress to cyber operations, and critical infrastructure protection.

This approach links directly into the Bundesheer's long-term *Aufbauplan "ÖBH 2032+" (Österreichisches Bundesheer 2032+)*, a strategic reform plan designed to reverse decades of underinvestment and restore the Austrian Armed Forces to credible territorial defence and crisis-response capability. Its main aim is to make the Bundesheer fully operational across land, air, cyber and support domains by 2032 and beyond, with sustained funding

to rebuild readiness, equipment stocks and infrastructure. The programme includes more modern air defence systems, upgrades to armoured and mechanised land forces, expanded cyber and intelligence capabilities, and reinforcement of reserve structures. It also prioritises ammunition replenishment, command-and-control (C2) digitisation, and personnel retention. In practical terms, *ÖBH 2032+* shifts Austria from a minimal crisis-management force towards a structure far more capable of national defence, critical infrastructure protection, and sustained operations within a European security context.



▲ **A duo of Bundesheer SPZ Ulan Infantry Fighting Vehicles (IFV) on exercise in 2025. The Bundesheer has a total of 112 of these IFVs in service, in December 2022 a life extension programme for the Ulan fleet, which had been in service since 2002, was awarded to GDELS. (Image: Bundesheer)**

Defence innovation

Innovation is emerging as the central pillar of Austria's evolving defence strategy. The Austrian Defence Innovation Conference (*ADIC 26*), held on 28-30 January 2026 in the southern city of Klagenfurt, brought together military leaders, industry partners, start-ups, and research institutions to explore dual-use technologies with security applications. Projects presented at *ADIC 26* included those from AI-driven resource planning tools and cognitive security systems to advanced sensor networks for civilian disaster response and military operations. Defence Minister Tanner emphasised the importance of bridging defence needs and the broader innovation ecosystem to enhance operational effectiveness, underlining that technological edge is increasingly synonymous with strategic resilience.

This focus reflects broader European trends, where defence spending is channelled towards autonomous systems, cyber

operations, networked sensor platforms, and interoperability initiatives. For Austria, these investments allow it to maintain a neutral stance while simultaneously contributing to European security and ensuring sovereign capabilities are not overly dependent on external actors.

Investments in Air and Drone Defence

One of the most high-profile developments of early 2026 is a €2.5 billion investment establishing Salzburg as the country's hub for air and drone defence. The *Schwarzenbergkaserne* will host electronic drone defence systems, short- and medium-range interceptors, and networked sensor platforms. These capabilities are designed to enhance Austria's situational awareness and rapid response, complementing broader European initiatives such as Sky Shield (European Sky Shield Initiative (ESSI): German-led air and missile defence cooperation launched in 2022 to strengthen Europe's layered protec-



▲ **The Austrian military has to cope with complex terrain and weather conditions, as this image of a mountain warfare exercise testifies. Austrian paratroopers exit an AB212 helicopter, one of a modernised fleet of 22 in service. (Image: Austrian Armed Forces)**

tion against missiles and aerial threats; Austria joined in 2023) which aims to create an integrated air defence architecture across EU member states.

This investment builds on recent procurement programmes, including new combat aircraft and transport helicopters, reflecting a deliberate expansion of Austria's sovereign defence capacity. Analysts note that this approach positions Austria as a credible regional actor, capable of monitoring its airspace and contributing to European collective security without compromising its neutrality.

Ukraine: Humanitarian and Strategic Support

While Austria remains constitutionally neutral, Vienna continues to engage actively with Ukraine. In February 2026, the Austrian government pledged over €14 million for humanitarian demining, supporting the reopening of liberated territories and

the restoration of civilian infrastructure. These contributions supplement broader EU efforts, including support for energy infrastructure, reconstruction projects, and resilience-building programmes.

In late February 2026, Austria's Foreign Minister Beate Meinel Reisinger visited Kyiv with a delegation of parliamentarians and government officials to reinforce bilateral cooperation and signal solidarity. Discussions with Ukrainian counterparts focused on reconstruction support, including energy equipment transfers, technical assistance for damaged infrastructure, and intensified collaboration on demining and civilian protection. Austrian and Ukrainian officials agreed to coordinate reconstruction planning, with Austrian firms and institutions providing technical expertise to accelerate recovery efforts. This marked a broadening of Austria's engagement to date, moving beyond immediate humanitarian aid to longer-term recovery and resilience.

"Neutrality does not mean inaction; Austria is committed to supporting Ukraine's recovery and protecting European security," Minister Meinel Reisinger stated during her Kyiv visit.

Diplomatic engagement has also continued in Vienna, with Austrian officials and parliamentarians hosting Ukrainian counterparts to discuss security cooperation, reconstruction, and EU integration prospects. Together, these efforts underscore Vienna's nuanced approach: constitutional neutrality does not preclude meaningful support for regional stability, particularly in a context where European security is indirectly threatened by the conflict in Ukraine.

Neutrality in a Changed Security Setting

Austria's evolving defence posture highlights an enduring debate over neutrality. Strategists argue that neutrality is meaningful only when paired with credible defensive capabilities. The Armed Force's modernisation plans and risk assessments illustrate this careful balancing act: enhancing preparedness and technological know-how, while upholding constitutional non-alignment. This approach seeks to place Austria as a stabilising actor in Central Europe, contributing in a highly targeted manner to security without entering into binding military alliances.

Outlook

As 2026 progresses, Austria will endeavour to balance its policies, by strengthening defence and technological capacity, while preserving political and constitutional traditions, above all its neutrality. Investments in air and drone defence, dual-use innovations, and active humanitarian engagement with Ukraine demonstrate a nuanced strategy: the imperative of defending national interests through strong capability development and clever integration into European security structures.

Looking ahead, by integrating civil-military resilience and credible operational capability, Vienna seeks to ensure that its neutrality is both credible and sustainable, thus allowing Austria to safeguard its sovereignty while finally contributing to wider European stability in a meaningful way.



Viewpoint from Sarajevo

Bosnia Notes

William Glynn

Sarajevo has long stood at the crossroads of empires and cultures: Ottoman-era mosques, Austro-Hungarian civic buildings, and historic synagogues and churches testify to centuries of external authority and coexistence. The city has a symbolic place in world history ever since the assassination of Austrian Archduke Franz Ferdinand in June 1914 led to the outbreak of the First World War.

These multiple layers of history have left behind a legacy of cultural richness, but also inter-ethnic tension still present today. Since the end of the “Bosnian war” in 1995, and the signing of the Dayton Peace Accords later that year, Bosnia and Herzegovina’s (BiH) security outlook has been dominated by domestic political paralysis and non-functioning state institutions. The country’s survival as a unified state is no longer abstract, but remains a very real challenge. In this context, persistent secessionist policies from the Serb-dominated Republika Srpska (RS) entity leadership, political fragmentation at state level, institutional paralysis, demographic decline, and sustained external influence — particularly from neighbouring Serbia. The readiness and cohesion of the Armed Forces of Bosnia and Herzegovina (AFBiH) are important, however not only in military terms, but as a symbol of state functionality. In this highly complex setting, the EU’s limited military force on the ground (EUFOR/ OP ALTHEA) provides a degree of reassurance, but the future of BiH depends on domestic political will, institutional resilience, and credible Euro-Atlantic integration.

Institutional Paralysis

Repeated failures to form functioning governments, disputes over the Dayton Accord’s “constituent peoples” framework, and chronic tension between the Federation and RS entities have resulted in the non-functioning of a number of essential institutions. Legislative impasses thwart reforms in the judiciary, law enforcement, and also in the defence and security sector, all of which weaken state authority. As a result, defence planning suffers: budget allocations, procurement, and modernisation initiatives are all hindered by political disagreement. Furthermore, weak state structures create openings for external influence, encourage separatist rhetoric, and obstruct the development of a unified defence posture.

On top of this challenging mix, fragmented command and control (C2) within the AFBiH adds to the erosion of force capability. Coordination between entity level forces, the central Ministry of Defence, and international partners is undermined by overlapping jurisdictions and partisan behaviour. Although BiH has formally aligned itself with NATO standards (as part of the Alliance’s Partnership for Peace – PfP), operational readiness remains uneven, with shortages in training and modern equipment. The domestic political crisis and defence capacity are inseparable: without functional institutions, Sarajevo cannot rely solely on external actors to guarantee security.



▲ **Bosnia and Herzegovina Armed Forces (AFBiH) Joint Terminal Attack Controller (JTAC) team training with US Special Operations Forces (SOF) in a bomber support mission. Joint training exercises improve AFBiH skills. (Image: US Special Operations Command Europe)**

Serbia: Spoiler Alert

Today, Serbia’s regional posture is still viewed in Sarajevo as a deliberate geopolitical spoiler. Belgrade’s refusal to align with EU sanctions on Russia, its deepening military cooperation with Moscow, and its fostering of nationalist-secessionist sentiment in RS are seen as levers designed to influence BiH’s internal politics. High profile military exercises near the border and political messaging on historical grievances are received as calculated pressure. While outright conflict remains improbable, these actions still heighten political uncertainty, complicate EUFOR’s stabilisation efforts, and provide RS leaders with added pretext to further impede state level reforms.

Belgrade’s economic influence complicates matters further. Serbian investment and trade ties with RS create financial leverage over local political decisions. Sarajevo-based analysts argue that the RS often functions as a proxy for broader Serbian strategic interests. BiH’s internal divisions, therefore, are magnified by external actors, such as Serbia, creating a security challenge linked directly to domestic politics.

On 16 February, ex-president of the RS, and Serbian proxy, Milorad Dodik, criticised the emerging regional military ‘alliance’ between Croatia, Albania and Kosovo, warning it could be “particularly dangerous” for BiH and risk deepening regional divisions, suggesting that such blocs created tensions rather than stability in the Western Balkans.

EUFOR

The European Union Force in Bosnia and Herzegovina (EUFOR) plays a key role in the central authorities' stabilisation strategy. Launched in 2004 under Operation ALTHEA, EUFOR succeeded NATO's SFOR (Stabilisation Force) to oversee implementation of the military elements of the Dayton Accords and to contribute to a Safe and Secure Environment (SASE) countrywide. Its core mandate includes supporting BiH authorities, combined training with the AFBiH, and serving as a deterrent against threats to stability. Currently, the mission comprises roughly 1,500 personnel from 25 contributing countries, including EU member states and non-EU Troop Contributing Countries (TCC).

From Sarajevo's perspective, despite its rather modest size, EUFOR is indispensable, not least due to its mandate stemming from a UN Security Council Resolution. Any perception of bias however, hesitancy, or reduced capacity could embolden nationalist forces in RS or external actors seeking to interfere in internal affairs. Conversely, overly assertive posturing could provoke nationalist reaction in Banja Luka and Belgrade, raising the spectre of escalation. Operationally, EUFOR's relatively small footprint limits its rapid response capability to emergent crises, and its rules of engagement constrain direct action unless the security environment is seriously threatened. In sum, EUFOR is not a peace-enforcement force; instead, it acts as a deterrent, intervening only if local institutions — including the AFBiH and the police — are unable to manage a serious security breakdown.

Readiness and Structural Challenges

As 2026 unfolds, the AFBiH continues to confront structural deficits directly affecting security. Manpower shortages, legacy platforms, and inconsistent training undermine operational readiness. Much of its armour, artillery, and mobility assets date from the Yugoslav era, while contemporary air defence systems are minimal.

Despite impediments, Sarajevo is pursuing gradual professionalisation, deeper interoperability with NATO, and targeted investment in reserve and special operations capacity. Training increasingly focuses on civil military coordination, rapid reaction scenarios, with lessons to be drawn from Ukraine and other recent conflicts. Strengthening the AFBiH is not about assuming a confrontational posture, but about supporting territorial integrity, state sovereignty, and support for EUFOR's role.

Externally, BiH contributes to international peacekeeping operations, with troops and police deployed to UN missions in South Sudan, Cyprus, Lebanon, and Mali for example, and previously supporting NATO-led operations in Afghanistan. These deployments provide operational experience and highlight Sarajevo's role as a constructive security partner.

Sarajevo recognises that modern security challenges extend well beyond conventional military threats. Hybrid operations, including disinformation campaigns, cyberattacks on critical infrastructure, irregular migration, and political subversion, intensify domestic divisions and test institutional resilience. In a fragmented society such as BiH, misinformation can easily in-

flame nationalist feelings, undermine trust in state institutions, and erode confidence in both EUFOR and the AFBiH itself.

In response, Sarajevo has prioritised intelligence sharing, crisis communication, and inter-agency coordination. Cooperation with NATO and EU partners has expanded in cybersecurity, critical infrastructure protection, and counter-disinformation measures. But hybrid threats are worsened by the very same structural weaknesses affecting conventional defence: fragmented command, weak institutional authority, and under-resourced security services.



▲ **Soldiers with the 2nd Infantry Regiment of the Armed Forces of Bosnia (AFBiH) conduct infantry tactical movements during Saber Junction 24 at the Joint Multinational Readiness Center, Hohenfels, Germany, with the US Army 173rd Airborne Brigade. (Image: Oklahoma National Guard)**

Outlook and a Look Ahead

From Sarajevo's perspective today, stability requires internal reform, including clarifying command structures, strengthening institutions, and ensuring credible armed forces, alongside external support from EUFOR, NATO, and EU accession mechanisms.

Serbia's continued spoiler role, structural fragility of the AFBiH, and chronic political dysfunctioning contribute to a challenging mix, which, if left unaddressed, could escalate into crisis. This is not theoretical: more delays in reforms and procurement, or operational unity could create openings for both internal and external actors. Moreover, as seen elsewhere, state fragility has implications beyond borders. A state that cannot maintain internal unity risks destabilising neighbouring countries and complicating EU enlargement and NATO integration processes. Policymakers in Sarajevo argue that effective crisis prevention in BiH can serve as a regional stabiliser, reducing the need for more intrusive interventions by external powers.

In 2026 therefore, BiH's security and defence strategy remains a tricky tightrope to walk. On one hand, there is the obvious need to strengthen the AFBiH, while on the other, it is imperative to preserve a political approach of non-provocative engagement, particularly in a sensitive regional environment where nationalist sentiment can quickly escalate into tension and crisis.



Viewpoint from Zagreb

Defence Modernisation

William Glynn

Croatia's location at the periphery of Central Europe and the Western Balkans defines its strategic security outlook. As a NATO and EU member state, in 2026, Croatia will continue operating within established security frameworks. It is worth recalling that its security posture today is heavily influenced by lessons from its own conflict in the early 1990s during the "Homeland War" (*Domovinski rat*), when Croatia defended its internationally recognised territory following the breakup of Yugoslavia, facing larger, better-equipped Serb-led forces. That three-year conflict highlighted the importance of rapid mobilisation and territorial defence, lessons that continue to influence Croatia's security and defence planning today.

Croatia's complex geography, with a lengthy maritime frontier along the Adriatic Sea and a land corridor linking Central Europe with the Balkans peninsula, means it is both a conduit for trade and a potential flashpoint for regional instability. This position demands capable armed forces, interoperability with Allies, and active engagement with neighbours to manage and mitigate threats before any escalation. Zagreb has to balance these imperatives today through the lens of its NATO and EU membership.

With the war in Ukraine now entering its fifth year, Croatia feels the impact of the conflict, as it deals with the continent's multidimensional security environment. For Zagreb, the goal is not regional power projection for its own sake, but reinforcing credibility as a reliable NATO ally in a volatile region, supporting European security, and maintaining influence with like-minded states in the Western Balkans such as Albania and Montenegro, both fellow NATO members. Military modernisation and strategic diplomacy lie at the very core of Zagreb's approach, ensuring that its own painful lessons from conflict feed into contemporary defence policies.

Support for Ukraine

From the very outset, Croatia assumed a proactive and positive stance on Ukraine, through a mix of pragmatic aid and diplomatic support. Since the 2022 invasion, Croatia has supplied Ukraine with lethal military equipment as part of its broad-based assistance. Its contributions were coordinated with NATO Allies and like-minded Western partners, ensuring interoperability and replenishment for Croatia's forces. Zagreb provides this support as both a strategic and moral commitment since it sees its assistance to Ukraine as reinforcing

European security, reinforcing its own credibility as a NATO member country, and demonstrates the country's ability to contribute to regional stability. Its support has expanded to include training Ukrainian personnel and humanitarian demining assistance, as well as involvement in EU-led initiatives aimed at strengthening civilian protection.



▲ **One of 89 US-donated Bradley IFVs – with deliveries continuing throughout 2026. These vehicles will be an important addition to local capabilities. (Image: MORH [MoD])**

Regional Relations and the Western Balkans

Croatia's security today is closely tied to regional stability. Relations with neighbours Slovenia, Hungary, and Bosnia and Herzegovina (BiH) are constructive overall, but in BiH, Croatia – as a co-signatory to the Dayton Peace Accords and a 'kin State' – closely monitors developments affecting the Bosnian Croat community within the Federation entity in BiH.

But its relationship with neighbouring Serbia is the most complex, and some might say, for obvious reasons. While an outright return to conflict is improbable, historical grievances, nationalist rhetoric, and Serbia's alignment with Moscow represent ongoing challenges. Zagreb mitigates risks in the region through diplomacy, intelligence sharing with Allies, and regional resilience measures, including joint exercises, cross-border coordination, and conflict prevention mechanisms.

Defence modernisation

Croatia continues to invest in modernising its armed forces, with a focus on mobility, interoperability, and technology. Modernisation efforts to date cover multiple capability areas to bring the armed forces into line with NATO standards. At the centre is a large scale procurement package approved in late 2025 for up to 44 Leopard 2A8 main battle tanks from Germany, replacing ageing Yugoslav era armour and significantly enhancing heavy armour capability; deliveries are expected between 2028 and 2030 under a joint European procurement framework. Croatia received a total of 89 M2A2 Bradley IFVs as part of a US-donated package; deliveries will continue through 2026 as the full fleet is refurbished and brought into service. In 2026, procurement programmes are prioritising next-generation combat platforms and integrated air and missile defence systems. These acquisitions aim to ensure that Croatia can operate effectively within NATO frameworks and respond to regional crises.

Training and exercises emphasise rapid reaction capabilities, civil-military coordination, and hybrid-threat responses. Lessons from Ukraine are quickly feeding into contemporary doctrine, highlighting the importance of robust command structures, flexible logistics, and readiness for conventional and non-conventional threats.

Outlook


Looking ahead in 2026, Zagreb will continue to balance a credible military capability with pragmatic regional engagement. Croatia's support for Ukraine, ongoing modernisation of armed forces, and constructive diplomacy with neighbouring countries reflect responsible regional leadership.

But Zagreb recognises that security is not defined by military capability alone, meaning interoperable forces and cooperative

regional relationships allow the country to act as a stabilising factor in the Western Balkans. In a context defined by hybrid threats, geopolitical competition, and persistent regional fragility, Zagreb demonstrates that a small state can punch above its weight and exert influence through capability and proactive engagement. The "Croatian model" therefore underscores that modern defence policy requires not just equipment and troops, but strategic planning, credible deterrence, and effective diplomacy, thereby ensuring that the country remains both secure and influential in a volatile neighbourhood.

Beyond conventional defence considerations, Zagreb is also increasingly focused on long-term structural resilience. Energy security, critical infrastructure protection, and supply-chain stability are now embedded within national security planning. The war in Ukraine has reinforced the vulnerability of transport corridors, ports, and digital networks. As a country with significant maritime infrastructure and energy transit routes, Croatia recognises that economic security and defence policy are closely linked.

Zagreb is also alert to the strategic competition playing out in its immediate neighbourhood. External actors continue to challenge political cohesion within the region through disinformation, economic leverage, and political influence. Croatia's response emphasises coordination with EU institutions and regional partners to address this malign influence.

In such a volatile and unpredictable setting, through sustained defence investment, strengthened Alliance integration, coupled with a credible and effective armed force, Zagreb is helping reduce uncertainty in the region. The message being sent in 2026 from Zagreb is measured but firm: stability in the Western Balkans requires credible deterrence, sustained engagement and funding, and alignment with Euro-Atlantic structures. 

- ▼ **Croatia purchased 16 PzH2000 artillery systems from German Army stocks with 12 entering service. More recently in December 2025 they contracted for 18 KNDS Caesar Mk2 155/52 mm artillery systems. (Image: MORH/F. Klen)**



At Sea ...

The NATO Maritime Component Will Provide Core Arctic Sentry Capabilities

Dr Lee Willett

In mid-February, NATO established its 'Arctic Sentry' activity, covering the Alliance's Arctic and High North regions. The capabilities NATO will assemble to generate the effects required underline the impact the Alliance's maritime mass has on building regional deterrence and defence.

'Arctic Sentry' was created as NATO's response to a perceived strategic need to reinforce Alliance regional security, particularly around Greenland. In an 11 February statement, NATO's Supreme Headquarters Allied Powers Europe (SHAPE), based in Mons, Belgium, said "The multi-domain activity will further strengthen NATO's posture in the Arctic and High North as persistent NATO presence in the region grows."

The activity lead is Joint Force Command Norfolk (JFCNF), based in Norfolk, US; it will lead under the auspices of Allied Command Operations (ACO), headquartered at SHAPE. JFCNF's area of responsibility (AOR) encompasses the region in question. ACO is responsible for all NATO exercises, activities, and operations.

SHAPE underscored the role 'Arctic Sentry' will play in establishing "one overarching operational approach" to cohere various allied activities already taking place across the region, adding that initiating 'Arctic Sentry' involved NATO planners building full visibility of all allied country activities. The statement pointed to Denmark's 'Arctic Endurance' exercise, established in January 2026, initially around Greenland, as a year-round activity; and Norway's 'Cold Response', a long-standing, biennial exercise in northern Norway running again in March. Both exercises are joint, combined, and multi-agency events covering military tasks across the operational spectrum.

Sustaining deterrence across an AOR arcing from Norwegian waters in the east to Danish and Canadian waters in the west requires considerable, persistent maritime presence, generated largely by NATO naval forces (supported by maritime aviation). Yet NATO navies have already been enhancing presence there for some time, particularly since the Russo-Ukraine war erupted in 2022 and since Russia began building its own Arctic and North Atlantic presence – notably, underwater – from around 2016.

Standing NATO Maritime Group 1 (SNMG1) – NATO Allied Maritime Command's (MARCOM's) destroyer/frigate-based, North Atlantic-focused standing naval force – is the mainstay of the Alliance's at-sea regional deterrence and defence presence. In the first half of 2026, it is delivering at least two major anti-submarine warfare (ASW)



▲ **NATO's SNMG1 is pictured during Exercise 'Arctic Dolphin' in February 2026. Alliance maritime forces will integrate existing presence to support the new 'Arctic Sentry' activity. (Image: NATO MARCOM)**

exercises around the Greenland-Iceland-UK (GIUK) Gap: 'Arctic Dolphin', which occurred in the Norwegian Sea in early February; and 'Dynamic Mongoose', set to take place off Iceland in April/May. Both are routine activities. Alongside exercises, SNMG1 operates regularly in the region, deploying around the GIUK Gap twice in 2025, its second deployment concluding in December.

The GIUK Gap has always been a critical maritime choke point, which US Navy (USN) 'heavy metal' must push northeast through to complete sustainable sea lines of communication (SLOCs) across the Atlantic into northern Europe – especially Norway. NATO submarines are growing their presence in the Norwegian Sea (east of the Gap) to help push Russian submarines further north through the 'Bear Gap' (running from Svalbard, past Bear Island, to Norway's northern mainland) to keep the Kalibr cruise missiles out of range of more European targets. Allied submarine presence around these two strategic 'Gaps' is reinforced today by improved forward resupply access, including in Iceland, the Faroe Islands, and Norway.

Options NATO and its navies could consider to enhance regional at-sea presence include establishing a standing task force involving Arctic-resident member countries. Such a force could be informal, deploying on an ad hoc basis; or more formalised, like being a third NATO SNMG (alongside SNMG1 and the Mediterranean-focused SNMG2).

In the interim, NATO's North Atlantic navies are building national presence. On 14 February, the UK announced its HMS *Prince of Wales* carrier strike group (CSG) would deploy to the Arctic in 2026, in what the government called "a major show of force across the Euro-Atlantic and High North, reinforcing NATO's deterrence at a time of rising Russian threats". The announcement said the CSG will work with SNMG1, and that the Royal Navy Type 45 air-defence destroyer HMS *Dragon* will join SNMG1 in 2026. Other allies could sail within the CSG: the US and Norwegian navies, amongst others, have sent ships on previous UK CSG deployments. 

Europe Defies Hegemonic Fantasies at Munich – A German Perspective

Florian Pfitzner and Jürgen Fischer

Not everyone understood why many conference participants at the Bayerischer Hof rose to applaud Marco Rubio at the end of his speech at the 62nd Munich Security Conference (MSC). The messages the US Secretary of State delivered to Europeans were “just as passive-aggressive” as those previously heard from the administration of President Donald Trump, commented security expert Nico Lange. Conflict researcher Nicole Deitelhoff went further, describing the Trump envoy’s remarks in Munich as “even more dangerous than those of JD Vance.”

A year earlier, US Vice President Vance had sharply rebuked Europeans from the same stage. In 2025 he declared that Europe’s greatest threat came neither from Russia nor from China, but from a “threat from within” — particularly what he perceived as growing restrictions on freedom of speech.

Rubio struck a more measured tone this time. He emphasised the importance of transatlantic relations. “We belong together,” said the Miami-born son of Cuban exiles. “Our roots lie here in Europe.” At a time when headlines were proclaiming the end of the transatlantic era, he argued, it should be clear that this was neither the goal nor the desire of the United States. “For us Americans, our homeland may lie in the Western Hemisphere,” Rubio explained, “but we will always remain children of Europe.”

What, then, was dangerous about it? “It was a rhetorically very effective speech — emotionally appealing, confidence-building, and forward-looking,” political scientist Deitelhoff told ESD afterwards. “But behind all the friendly language lies a classic MAGA message combined with a claim to dominance: close the borders and protect the unique Western-Christian civilisation.”

A Sigh of Relief in the Hall

Among the major mistakes that Europe and Germany had made, Rubio argued, was the “wave of mass migration.” Yet he added: “We made these mistakes together.” The United States, he said, was now ready to correct course — if necessary on its own. But its preference, and “our hope,” he emphasised, was to do so together with Europeans — “our friends.” The US remained committed to Europe: a Europe “proud of its heritage and its history.”



▲ **German Chancellor Friedrich Merz at the Munich Security Conference: “In the era of great powers, our freedom can no longer be taken for granted.” (Image: Björn Trotzki)**

Some in the Bayerischer Hof may have felt that things had, after all, turned out reasonably well — and applauded. Wolfgang Ischinger, chairman of the conference, responded diplomatically. “I’m not sure whether you heard the sigh of relief in this hall,” he remarked. For Rubio, much like Vance before him, had offered Europe no form of shared leadership — the very alternative to “great-power politics” that German Chancellor Friedrich Merz had proposed the day before. Instead, he spoke from a position of hegemonic authority. Rubio made no mention of Russia’s war in Ukraine.

“The transatlantic relationship feels like a toxic relationship,” wrote military analyst Lange, a senior fellow at the Munich Security Conference, on X. Deitelhoff warned that anyone taking Rubio’s speech as reassurance that the transatlantic partnership remained fundamentally sound was mistaken. For her, the address was further evidence of the “erosion of the community of values.”

China Warns Against Unilateralism

Across from the Bayerischer Hof, the company Helsing displayed a multi-storey advertisement for its AI-assisted autonomous combat aircraft, the CA-1 Europa. The Munich-based firm hopes to supply the Combat Aircraft 1— together with advanced sensors from the Bavarian company Hensoldt — to the German armed forces. The message on the enormous billboard was simple: “We Got This.”

“Marco Rubio Doesn’t Get It,” *The Atlantic* magazine headlined after the Munich conference. The Trump administration, the magazine argued, continued to attack its allies while strengthening its adversaries (of course *The Atlantic* has never had a positive word about the Trump Administration!)

It was therefore not without irony that China’s foreign minister, Wang Yi, warned at the conference against unilateral actions by individual states. Without mentioning the United States by name, he stated in the official translation: “Multilateralism must be promoted and strengthened. It must not happen that some countries dominate others.”

“Under Destruction”— Not Far Enough for Merz

The Munich Security Conference itself is wrestling with its identity. Since 1963, transatlantic relations have been the core focus of this leading global forum for security policy debate. “Under Destruction” was the bleak theme chosen for the three-day gathering.

“At the forefront of those promising to free their countries from the constraints of the existing order and lead them to renewed greatness stands, of all governments, the current US administration,” notes the *Munich Security Report 2026*. More than 80 years after its creation, the post-war order — shaped largely by the United States — is now undergoing a process of destruction.

Chancellor Merz argued that even the phrase “Under Destruction” did not go far enough. “The motto suggests that the international order based on rules and rights is in the process of being destroyed,” he said at the start of the conference. In reality, he warned, it should be stated more plainly: “That order — imperfect though it was even at its best — no longer exists in its previous form.”

The Alliance, with its familiar assumptions, has reached a temporary end point. In what Merz calls an “era of great powers,” Germany increasingly finds itself urged to assume a leadership role in Europe. “For weighty reasons, we in Germany have always been uncomfortable with state power,” the Chancellor said. Since 1945, it has been deeply ingrained in German thinking that such power must be restrained. Yet he



▲ US Secretary of State Marco Rubio (centre) is escorted into the hall by conference chair Wolfgang Ischinger. (Image: Björn Trotzki)

added: “Not only too much state power destroys the foundations of freedom — too little state power leads to the same result by another path.”

Cross-Party Praise for the Chancellor

Merz himself highlighted the European dimension of this dilemma. Poland’s foreign minister, Radosław Sikorski, had once reminded Germany: “I fear German inactivity more than German power.” That, too, formed part of Germany’s responsibility—derived from its constitution, its history, and its geography. “We accept that responsibility,” Merz said.

Still, in Poland some observers are asking how upcoming elections might unfold — and how Germany will be governed in five or ten years. In Munich, however, the Chancellor’s speech received praise across party lines. Insiders said he had demonstrated leadership by clearly defining the strategic situation. Confronting the great-power posture of the United States was necessary, they argued — not least to strengthen European unity.

“The speech offered a clear analysis of the situation and a strong commitment to Europe’s liberal values, which we must also be prepared to defend with power,” said Green Party MP Robin Wagener on the margins of the conference. “It is a position around which the democratic centre can unite.”

Ukraine at the Centre of Attention

Just a few minutes’ walk from the Bayerischer Hof, supporters of Ukraine gathered at Max-Joseph-Platz for a rally under the slogan “Together Against the War.” Among the prominent speakers was Ukraine’s ambassador, Oleksii Makeiev, who again advocated NATO membership for his country. “We are already doing our part today,” he stressed.

For Wagener, Europe’s unity and strength should also be measured by its willingness to increase defence support for Ukraine — a point, he noted critically, the Chancellor had not addressed in his speech. He had recently visited Ukraine himself and seen how urgently additional capabilities and financing were needed. “Otherwise there will be neither peace nor security—nor a strong Europe,” he warned. “Putin attacks, Trump negotiates — the Ukraine pays the price, Europe the bill.”

Zelenskyy Says He Is “Tired but Strong”

The organisers of the Munich Security Conference made a concerted effort to place Ukraine at the centre of attention. For the first time, they established a “Ukraine House” next to the Bayerischer Hof. President Volodymyr Zelenskyy received the conference’s Ewald von Kleist Award on behalf of the Ukrainian people.

“It has become clear that Ukraine has strong European friends on whom it can continue to rely,” Benedikt Franke, chief executive of the Munich Security Conference, told *ESD*.


For four years now, the country has been defending itself against Russian aggression. “A genuine peace will only emerge if Ukraine receives credible security guarantees that Russia will not attack again in two years’ time,” Franke said.

Zelenskyy used his time in Munich to renew his call for Ukraine’s accession to the European Union by 2027, for additional military assistance, and for the delivery of Taurus

cruise missiles from Germany. At a press conference he remarked that he felt “tired, but strong.”

By now, Zelenskyy has grown accustomed to the tone adopted by Vance last year. Ahead of this conference, Ischinger had urged European leaders to deliver a “joint signal of self-assertion”. According to Franke, that objective had been achieved.

“Anyone who listened to the speeches by Friedrich Merz, Mette Frederiksen, Alexander Stubb or Kaja Kallas can only reach one conclusion: Europe is determined to assert itself confidently in this new world order.”

Criticism of the standing ovation for Rubio, however, continued after the conference. “I understand why some view the reaction in the hall critically,” Franke said. In recent months, he acknowledged, “an enormous amount of trust has been lost” in transatlantic relations. Many in the audience may therefore have been applauding less specific passages than the more conciliatory tone of the speech. That tone, he suggested, might at least make it “somewhat easier to remain in a partnership-based dialogue”. 

Editor’s Note

The Munich Security Conference (MSC) was very important this year and we are fortunate that two of our German colleagues from Mittler Report Verlag were on the ground in Munich to report on key issues in the proceedings. This report provides a unique German perspective on the happenings at the MSC.

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Europe: Not as reliant on the USA as you might think

Francis Tusa

It is a commonly-held thought that Europe – call it “European NATO Plus” – has extremely high dependence on the USA for equipment and a variety of associated capabilities. This might, possibly, have been true before February 2022, but it has become less and less true over the past four years.

Overwhelmingly, any “dependence” on US equipment for European MoDs has been a choice, not a necessity, with a few exceptions... These include the fact that Europe has never been dependent on the USA for AFVs, surface warships, submarines

The only US frigate to bother the scorers in Europe has been – largely secondhand – the FFG-7 Oliver Hazard Perry class. But ten secondhand US Navy ships is a drop in the ocean when put against the 100+ built to European designs and capabilities over the past decade plus. Neither the vastly-expensive DDG-51 Arleigh Burke class destroyer, nor the failed Littoral Combat Ship have seen any interest in Europe – there has been no need for either. As the USA does not make conventional submarines, there has been no dependence in Europe in that sector.



- ▲ **An RAF F-35B of 617 Squadron on a training exercise at RAF Akrotiri in February 2026. The large number of European customers for the F-35 is often used as an argument of how dependent Europe is on the US. This article argues the opposite. (Image: Crown Copyright 2026)**

or missiles, let alone small arms, radios, or radars. There have been a handful of M1 MBT sales in Europe – but the reasons for this have been political, not least Poland’s desire to give Germany a slap by not buying the Leopard 2 MBT! Artillery sales in Europe have revolved entirely around European systems (Pzh2000, Caesar, Archer), and South Korean systems (K-9 Thunder), and a few Israeli-sourced systems.

It is often stated that Europe is utterly dependent on the US for satellite imagery. If so, how is it now that Ukraine receives two thirds of its satellite intelligence from France, as announced by President Macron in February? And there have been no complaints about the quality. Europe has highly capable satellite companies, more than capable of designing and building satellites as good as US ones – but it was a choice to

save money to accept US satellite dominance. It is worth noting that over the past few years, the USA has vetoed sales of surveillance satellites to countries such as Egypt and the UAE, both countries trying to buy from Europe as they could never buy from the USA.

In the 2000s and 2010s, it was true that Europe did rely on the USA for airborne surveillance/ISTAR platforms – the venerable E-3 Sentry AWACS, and the RC-135 Rivet Joint. But look at the picture today: Saab's GlobalEye AWACS eclipses the stuttering Boeing E-7 Wedgetail in both performance and price, and can be delivered faster. ELINT/SIGINT aircraft? There are now at least five European programmes, including the Thales Archangel, Hensoldt Pegasus, the confusingly-named Italian Pegasus (based around Israeli architecture, but with other Italian systems), and a secretive offering from Saab which has been sold to – probably – Saudi Arabia and/or the UAE, and now a Spanish equivalent – no dependence on the USA here. And this is before one looks at MALE UAVs with ELINT packages. No dependence here...

One reason why European MoDs chose to buy American was in the belief that if they did so, they would “buy an American security guarantee” from Washington – that the USA would step in to avoid American-supplied equipment from being beaten up by, say, Russia. This approach was evident in both Finnish buys, first of the F/A-18C/D, and then the F-35A – it was explicit that the proximity of Finland to The Russian Bear meant that buying both fighters was essential to get such a security guarantee. Others have made similar decisions.

The glowing exception to the reliance exception is the F-35. As many European operators are discovering, the closed nature of the F-35 ecosystem means that a user is entirely dependent on US weapons, US EW, you name it. Whereas the European F-16 User Group was able to insert its own EW and other systems onto the F-16, this is simply not an option for the F-35. And with the example of the MDBA ASRAAM, the Raytheon UK Paveway IV, and Kongsberg Joint/Naval Strike Missile aside, there are no European weapons allowed onto the F-35. Even Germany has to accept that it will have to buy AIM-9X, rather than integrating the IRIS-T onto their F-35As.

Many might say that there is an “F-35-like” European dependence on the USA in the case of the Patriot SAM. It has to be said that many purchases of Patriot – Sweden, Switzerland to the fore – were to curry favour in DC, and they were not alone. But there are some interesting currents which are changing the equation for Patriot, largely interconnected.

First, the USA is suffering from production bottlenecks for Patriot. This has meant that every European client, new and existing, has been told that deliveries will be delayed, sometimes by 2-3-years. Switzerland and Denmark, as just a handful of examples, are now looking elsewhere to fill a gap they have no control over.

Something extra to throw into the equation; with a – still – restricted production rate, Washington is having to prioritise Patriot deliveries – and events have made matters worse. The fact that the current Iran War means that the Gulf States will

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be rushing to Washington with hard cash to re-fill their Patriot magazines means that European users face the prospect of even more delays. So, a drive to look elsewhere.

But surely Europe is still dependent on Patriot? Germany, a Patriot operator, would point to the fact that for upper-tier air defence, it has opted for the Israeli Arrow 3, eventually produced in Germany. But European manufacturers have been nipping at Patriot's heels. The MBDA Sky Sabre, in its extended range variant, can get to 50km+, and over 10,000 m in altitude – the proposed medium-range version will have a

Ukraine, a real war-winner), Saab's RBS-70, and the MBDA (France) Mistral 3. Anti-ship missiles? Kongsberg NSM, Saab RBS-15, MBDA Exocet MM40 Block 3, and then the tri-national (France, Italy, UK) Future Anti-Ship Missile.


Standard SAMs? Well, there is a bit of a European "Standard Club": Germany, the Netherlands, and Spain. But with the development of IRIS-T – the German Navy has integrated a version with the F-125 – there is an option open. And the Sea Ceptor Club (MBDA, naval version of Sky Sabre) is also growing.

"But Europe is dependent on the USA for heavy airlift!". If your requirement is operating in the European theatre, you don't need a C-17, let alone a C-5 – you have roads and something the USA doesn't understand: railways. In-flight refuelling? The A330 MRTT shows up the geriatric KC-135, and even the KC-46!

There are – currently – no European equivalents for the CH-47 Chinook/CH-53K Super Stallion heavylift helicopters. But if there are any lessons from Ukraine, traditional concepts of air assault on the battlefield are dead. In other support and maritime rotary areas, both Airbus and Leonardo have offerings – any reliance on the USA for these is a choice, not a necessity.

Equally true for the P-8 Poseidon MPA. But France is developing an Airbus A321XLR MPA, and has offerings from Dassault's business jet range for maritime roles. Saab has also worked on its Swordfish MPA based, like GlobalEye, on a Bombardier business jet – there are options here, if not immediately now.

The biggest thing holding back Europe is the belief that there are multiple capability dependencies on the USA. But the more one looks into every capability area, Europe either doesn't require what the USA can provide, or it has the industry that can design and build what is needed for the threats faced. Is any of this good news for US industry? Well, once they wake up to what is happening in Europe and then notice that a loss of business will have an

impact on turnover, and thus share price, it will force them to change approach. 



▲ **A SAMP/T fire unit with Aster 30 missiles. In December Denmark announced it was adopting the Eurosam SAMP/T NG system to meet its long-range air and missile defence requirement. Europe is far more competitive in key defence areas than many would credit. (Image: Eurosam)**

range over 100 km, and 15,000m+ in altitude. Germany's Diehl has equally developed its IRIS-T, originally an air-to-air missile. The resulting IRIS-T SLS/SLM also gets 50 km range, and the in-development IRIS-T SLX also gets close to 100 km/30,000 m – the latter figure is well into the ballistic missile interception envelope. Add in MBDA's Aster SAMP-T, with the on-going development on the B1NT missile (120 km+ range and 25-30,000 m altitude, exceptional kinematics), and Europe is not necessarily as dependent on Patriot as might have been thought.

And the Javelin anti-tank missile? There's EuroSPIKE and MBDA's Akeron. No sensible MoD would buy Stinger when you have Thales' Starstreak (with amazing performance in

Editor's Note

With "Open Forum" ESD intends to provide a space where a diverse range of voices can share their thoughts on key issues and subjects of interest. Francis Tusa, a regular contributor to ESD, has provided the first article in this new format. We hope that others who are interested in the European and international defence scene will take up their pens and share their thoughts in our "Open Forum" feature.

Next-Generation Hypersonic Capabilities

Dr Lee Willett

Hypersonica – an Anglo-German defence and aerospace company specialising in developing next-generation hypersonic systems for the civilian and military markets – has conducted a successful first test of its new hypersonic strike missile prototype. The test, which took place at Andøya Space in Norway, and was announced on 10 February, saw the technology demonstrator missile achieve hypersonic flight. This achievement was the first step in a phased approach to developing a manoeuvrable hypersonic strike capability by 2029.

In Hypersonica's Andøya test, the prototype strike missile reached a speed exceeding Mach 6 and a range exceeding 300 km. In ascent and descent through the atmosphere, all systems operated in accordance with engineering requirements, with performance at hypersonic speeds validated down to subcomponent level, Hypersonica said.

Prior to the test flight, preparation activities on the technical side included concept, design, procurement, integration, and ground-testing work; and on the commercial side included export control, regulatory, flight safety, and range organisation tasks. Hypersonica said that all elements were completed within nine months.

◀ **In early February, Anglo-German company Hypersonica conducted a successful first test flight of its prototype hypersonic strike missile capability at Andøya Space, Norway. (Image: Hypersonica)**

The company's approach to developing the concept and the missile capability is based around rapid iteration from design to flight-ready hardware, combining computer simulation, prototyping, and testing, with the benefits of this approach including faster development and upgrade cycles. In addition, compared to conventional approaches, the iterative testing and use of a modular architecture potentially reduce development timeframes from years to months, and can bring down costs by over 80%, Hypersonica said. Here, Hypersonica is seeking to harness an approach pioneered in the space sector, using rapid iteration and testing for increasing complexity while keeping overhead costs down – an approach the sector has also used in production phases. Overall, the company statement noted, "[Our] approach will enable Europe to field hypersonic capability within the timelines of both the NATO and UK 2030 hypersonic frameworks – and at a fraction of the usual expense." This in turn will allow countries to consider the capability

even when faced with increasingly constrained budgets, the company argued.

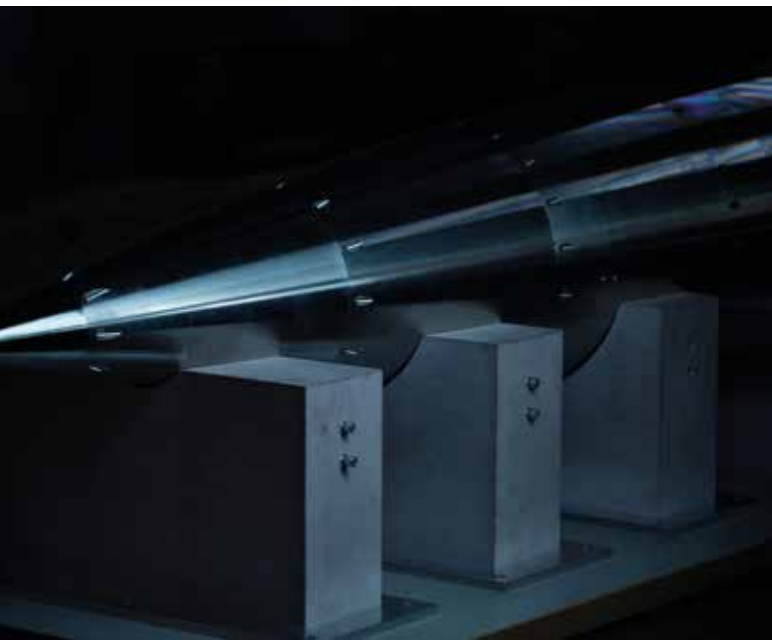
"Our speed from design to the launchpad in just nine months should recalibrate expectations about the costs and time needed to develop this crucial capability," Hypersonica's co-founders

The 2029 timeline is significant. The United Kingdom and NATO have both set out timeframes of 2030 for the fielding of hypersonic capabilities. The UK's Team Hypersonics programme, for example, is seeking a hypersonic weapon technology demonstrator by 2030. Germany has listed hypersonic systems as a future technology for the Bundeswehr as well.



Dr Philipp Kerth (chief executive officer) and Dr Marc Ewenz (chief technology officer) explained. Kerth and Ewenz added that the successful test was “a major milestone” on the company’s pathway to developing a hypersonic strike capability by 2029. “Our test flight yielded invaluable datasets that will inform the design and development of future high-speed strike systems,” they said.

Hypersonica is a privately funded start-up, founded in December 2023 with a headquarters in Munich and a wholly owned subsidiary in London. Its tie-up with Andøya Space was a core component of the test programme’s success. “We are grateful for the expert support and partnership from Andøya Space on this successful mission,” Kerth and Ewenz said. The Norwegian company’s contribution to the mission included provision of launch services and a telemetry downlink, the latter enabling the capture of payload data gathered during the test flight, Kerth explained to *European Security & Defence (ESD)*.



▲ **In the test flight, Hypersonica said all systems operated in accordance with engineering requirements, with performance at hypersonic speeds validated down to subcomponent level. (Image: Hypersonica)**

Hypersonica’s integration with Andøya Space for the test mission illustrated its ability to partner with other NATO countries at national and multinational levels.

Strike Requirements

Hypersonica said that its design, development, testing, and data work will enhance countries’ capability to analyse adversary hypersonic weapons system profiles. NATO’s integrated air and missile defence (IAMD) capability development strategy encompasses the need to be able to build layered defence against the full range of air and missile threats, including hypersonic systems.

Delivering hypersonic capability has operational significance for NATO member countries. Russia has used hypersonic weapons extensively in its war with Ukraine, launching the Kinzhal (air-launched), Oreshnik (land-launched), and Tsirkon (sea-launched) systems. China, Iran, and North Korea are also developing and delivering hypersonic weapons.

Russia’s use of hypersonic weapons in its war in Ukraine has proved, so far, to be neither operationally nor strategically ‘game changing’ in the war itself. However, the emergent capability has added complexity to NATO IAMD requirements, in particular the need to accelerate the speed of response in targeting inbound weapons in defensive operations. A new type of weapon system is also simply adding mass to the threat.

In contemporary combat operations, the capacity to deliver effect at speed and scale in offensive outputs is crucial. For NATO countries, in the event of any conflict with a peer competitor, the speeds delivered by hypersonic systems will be critical to overcoming adversaries’ highly capable, massed IAMD networks in offensive operations. Affordable hypersonic weapons will be a central element of the rapidly delivered, massed precision effects NATO forces will need to generate, especially given the increasing conceptual focus on ‘left of launch’, ‘shooting the archer’ approaches – in other words, targeting an adversary’s ballistic, cruise, and hypersonic missile mass before it can be launched.

European Capability

With Hypersonica’s test being successful and precipitating the passing of a significant milestone in the development of what the company called cutting-edge technology, Kerth and Ewenz said “This is a proud moment for European defence innovation.”

The company is focused on delivering innovation and advanced technology to help drive development of independent European defence capability. Given the importance of hypersonic technologies in contemporary defence capability developments, other European countries and defence industrial players are developing hypersonic systems. Hypersonica believes its technology and its weapons system offer unique capability as a sovereign European defence industrial development. “We will provide hypersonic deep precision strike weapons at affordable cost and with a sovereign production,” Kerth told ESD. “We believe these systems will be a powerful deterrent if procured at scale, which our lower prices will enable.”

Explaining the emphasis on sovereignty, Kerth said “We aim to equip European allies with a sovereign hypersonic strike capability – meaning designed, developed, and produced at scale, ITAR-free within Europe, for independent European operational control.”

As regards the procurement element of the programme’s development process, Kerth said “While no details about partnerships and components can be shared, we can state that not every subcomponent for hypersonic flight vehicles needs to be redeveloped from scratch.” “Most importantly, one needs a very thorough understanding of the hypersonic speed regime to make the right component and design choices,” he added. Here, Kerth explained, Hypersonica can act as a gravitational centre for hypersonics expertise while also drawing on technology developed by other NATO suppliers.

Hypersonica prospectively can play a pivotal role in either context. Underscoring the impact of its test in capability development terms, the company’s statement said Hypersonica is “the first privately funded European defence company to achieve this technological milestone”.



A Brave Scary New World

Francis Tusa

As part of the NATO commitment to its Eastern Flank states, regular exercises are conducted by local forces and their NATO allies. In Estonia, where the UK leads the NATO force, the annual Hedgehog exercise is where forces are put through their paces, enhancing interoperability and readiness. However, Ex Hedgehog 2025, had an added element that was not expected – or welcome. A small 10-man Ukrainian unit equipped with a range of drones, destroyed British and Estonian formation in hours, exposing limitations in some NATO armies.

The Ukrainian unit used its domestically-created DELTA AI system to control its activities. The system merges data from a wide range of sources, providing an enhanced battle picture in incredibly short times, sometimes in under a minute. The resulting battle picture allowed strike drones to then be launched to engage and destroy that targets thus created – and this is what happened, although under exercise conditions.

To be fair, a key part of the exercise was to see how/if armoured/mechanised formations could manoeuvre on the modern battlefields, ones where drones have proliferated. Currently, most of the Ukrainian War is more or less static, trench

warfare, and there is a belief that if Ukraine was to obtain the upper hand over Russia, then it has to try to manoeuvre in strength. As such, Ex Hedgehog 2025 showed that unless there are extra measures, traditional armoured manoeuvre on a drone dominated battlefield is not an act of war...

Local reports say that the British Army troops seemed almost blasé, not using camouflage and concealment, not using deception and decoys – this made them easy prey to Ukrainian and Estonian drone units, both in location and then strikes. Indeed, briefings were held before Hedgehog 2025 saying that the British Army units (and others...) just had to change how they operated. But for whatever reasons, this did not happen. Estonian sources have also commented on the less-than-impressive equipment of the British Army battlegroup in the country – “they are keen troops, but you’ve equipped them from the last century” was one such comment.

There has been a regular stream of Ukrainians visiting the UK (and other NATO allies) over recent years to give presentations on how they have been fighting, how they adapt, and what the results of this are. Talking to some Ukrainians who have visited the UK, they say that the impact of their detailed presentations is mixed – often, the older officers are more sceptical about the validity of Ukraine’s experiences on the battlefield, although more junior officers/ranks seem more open to what they are hearing.

One “complaint” is that the structures and organisation of many NATO armies are too rigid, and are not designed to adapt at the pace that has been shown by Ukrainian and Russian armies. Ukrainian forces are far more federated than their NATO counterparts. Frontline units won’t be “just” infantry or the like. Integral to their organisation will be personnel capable of reprogramming drones or jammers from foxholes, rather than having facilities in the rear areas for such work. Information exploitation, too, is done right at the front, not in an intelligence cell located kilometres to the rear

◀ **While the British Army does have UAS capabilities, Ex Hedgehog 25 exposed the fact that they have seemingly not yet understood how the profusion of UAS has changed the modern battlefield. (Image: Royal Armoured Corps)**



and Ukraine has far fewer bulky headquarters, of the type that is typical for a NATO army – and these aren't just physically large, they have major electromagnetic signatures that make them easier to locate and target.

The important issue here is that although it was a Ukrainian drone unit that acted as the enemy, causing such damage, Russia has also shown similar innovation, and is no slacker when it comes to using drones on the battlefield, so all that happened on Hedgehog 2025 was the Ukrainians were simply showing what Russia would also do.

successful Starstreak/Martlet air defence missile are far from high. British Army ground-based air defence was run down in the 2000s-2010s.

Observers feel that there have to be more heavy machine gun (HMG) and medium calibre cannon anti-air systems inside British battlegroups as a matter of course, rather than having these operated by the Royal Artillery, being brigaded when required. Those who see anti-aircraft artillery as the optimum route for dealing with proliferating drones point to the massive sales of Rheinmetall's Skyranger 30 mm AAA system, a



▲ **Dealing with the UAS threat will require a complete rethink of air defence strategy and tactics. In the case of the British Army air defence capabilities were severely reduced in the post-Cold War era and have not recovered. More expedient C-UAS solutions like these GPMGs will have to suffice in the meantime. (Image: Defence Ops)**

Of note, the British Army does have a programme to introduce its version of DELTA AI, under the umbrella Project Asgard, with a headline cost of over £1bn. But it is worth noting that the roll out will take over 2-years – much slower than that of novel systems for Ukraine, where cycle times are often measured in a short number of days. The speed of innovation of Ukrainian forces has been highlighted by the UK Chief of the Defence Staff, having never been seen in the history of warfare. Also, British forces deployed in Estonia are also being used as testbeds for a range of new drone technologies, so it isn't that the British Army is doing nothing about innovation – but Ex Hedgehog 2025 possibly showed that it isn't just about new equipment – it is also about a need for totally new operating habits, new things to train for, a new mindset.

Will lessons be learned from Ex Hedgehog 2025 by the British Army? Well, to avoid embarrassment on an actual battlefield in the future, things will have to change. There is an obvious deficiency in all British Army units: organic air defence. The UK has a mere five launch vehicles for its advanced Sky Sabre SAM system, although this would not be the weapon of choice against small quadcopters, and numbers of the

system that can be mounted on a range of vehicles, with these as integral to frontline units.

One possible “solution” to the vulnerabilities of armour to a drone dominated battlefield could be active protection systems (APS). It is known that Israel's two APS manufacturers, Rafael (Trophy) and Elbit (Iron Dome) are already adapting their products to deal with drones, and reports say that the sensors and processing already in the system, used to protect (mainly) main battle tanks is already suitable for drones. There have been some reports that this adaptation of existing APSs has been demonstrated on operations in Gaza.

The British Army has bought Trophy to protect its future Challenger 3 MBT fleet, but no decision has been made on buying any APS for smaller platforms. If APSs do provide a suitable capability not just for RPGs, but also for drones, then the chances are that they will have to be fitted to all armoured vehicles, and maybe some soft-skinned logistics vehicles as well – and there is a cost to this. It can arguably be justified for expensive MBTs and artillery – someone will have to make a decision on smaller and lighter AFVs/vehicles.



Submarine Acquisition Programmes in NATO

Conrad Waters

The heightening of global tensions to a level not seen since the end of the Cold War is placing renewed emphasis on the acquisition of 'high end' warfighting weaponry. In the maritime sector, this trend is particularly evident in a significant increase in submarine acquisition to stabilise and, ultimately increase, underwater force structures. This status report provides a broad overview of the programmes for crewed submersibles currently being pursued by NATO fleets.

United States

The US Navy operates by far the largest NATO submarine force. As of the end of 2025, a total of 14 nuclear-powered strategic missile submarines (SSBNs), four nuclear-powered guided missile submarines (SSGNs) and 48 nuclear-powered attack submarines (SSNs) were in commission. The navy

currently has live construction programmes for significant numbers of both SSBNs and SSNs. This is putting the relevant industrial base under significant pressure.

Construction of SSNs is focused on the longstanding Virginia (SSN-774) class, the first of which was procured in fiscal year (FY) 1998. A total of 41 had been authorised as of FY2025 and acquisition is currently expected to continue through to at least FY2039 at an approximate 'drumbeat' of two boats each year. Assembly is shared between General Dynamics Electric Boat of Groton, Connecticut and Huntington Ingalls Industries' Newport News shipyard in Virginia. Each shipbuilder is responsible for building discrete parts of all submarines, with assembly of the nuclear reactor compartment and final integration split evenly between the two facilities. The Virginia class has been constructed in a series of progressively im-



- ▲ The Virginia (SSN-774) class nuclear-powered attack submarine Idaho (SSN-799) pictured whilst under construction at General Dynamics Electric Boat's (GDEB's) Groton, Connecticut shipyard in June 2024. GDEB shares construction of the Virginia class with Huntington Ingalls Industries' Newport News shipyard. (Image: General Dynamics Electric Boat)

proved iterations known as 'Blocks', the most recent of which is Block VI. From Arizona (SSN-803), the second unit of Block V, the submarines are being stretched with the incorporation of a Virginia Payload Module (VPM) that provides a significant increase in missile capacity. Current unit cost is around US\$ 4.5 billion (€ 3.8 billion).

In FY2021, the US Navy began procurement of the new Columbia (SSBN-826) class. Twelve of these boats will eventually replace the current flotilla of 14 Ohio (SSBN-726) strategic submarines at a cost of US\$ 126 billion (€107 billion) in what is regarded as the navy's top priority programme. As is the case for the Virginias, construction will be shared between Electric Boat and Newport News but the former yard will be responsible for final assembly of all units. Newport News will gain some compensation for this decision by undertaking a greater share of Virginia class assembly. Two Columbia class submarines have been authorised to date. It is planned to procure the remaining ten at a rate of one each year from FY2026 onwards.

The simultaneous construction of Virginia and Columbia submarines has revealed the difficulty inherent in ramping up submarine production after the reductions of the post-Cold War era. Recent deliveries of Virginia class boats have been running at around 1.2 each year, resulting in an increasing production backlog, whilst delivery of the lead member of the Columbia class is reportedly running up to 17 months behind schedule. Significant investment in both capital infrastructure and workforce are being made to improve industrial performance, but it is unclear at this stage as to what extent this will be successful.

- ▼ **The third French Suffren class nuclear-powered attack submarine Tourville entered operational service in July 2025. She is one of six members of the class contracted with Naval Group's Cherbourg yard, where this photograph of the start of her sea trials was taken in 2024. (Image: Iannis Giakoumopoulos via Naval Group)**

Canada

Canada currently fields a small underwater flotilla of four Victoria – formerly British Royal Navy Upholder class patrol submarines (SSKs). Plans for replacement of this class are being developed under the Canadian Patrol Submarine Project (CPSP), which was established in 2021. This will replace the existing boats from the mid-2030s onwards, with a considerable increase to 'up to 12' new submarines currently envisaged under a programme reportedly valued at CAD 60 billion (€ 37 billion).

In a major decision announced in August 2025, the Canadian government revealed that Germany's TKMS and South Korea's Hanwha Ocean had been shortlisted to provide the new submarines. The TKMS proposal is based on the Type 212CD design developed for the German and Norwegian navies whilst Hanwha Ocean is offering a variant of the Republic of Korea Navy's KSS-III design. The latter bid benefits from a teaming agreement with Babcock International's Canadian subsidiary, which is responsible for maintaining the existing Victoria class boats. The timing of the selection of a final contractor has yet to be announced.

United Kingdom

The British Royal Navy's (RN's) submarine flotilla comprised four Vanguard class SSBNs and six Astute class SSNs at the end of 2025. Achilles, the seventh and final member of the class, remains under construction at BAE Systems' Barrow-in-Furness shipyard.

The main current British submarine programme is for four Dreadnought class strategic submarines, which will replace the Vanguard class on a numerical like-for-like basis. Fabrication of all four of these SSBNs is now underway at Barrow following a ceremonial first steel cutting ceremony for the fourth boat, HMS King George V, on 22 September 2025. It is intended that the class will start to enter service in the early 2030s. Overall project cost is budgeted at GBP 41 billion (€ 47 billion), including a GBP 10 billion contin-





- ▲ **The TKMS Type 212CD (Common Design) is being built for the Norwegian and German navies. This is a conceptual image of one of these submarines at TKMS' Kiel shipyard. (Image: TKMS)**

gency. As at the time of the latest official statements in May 2025 – despite considerable concerns over delays and cost overruns – the programme was reported to be running on time and to budget.

The Dreadnought class will be followed into production by the SSN-AUKUS (SSN-A) nuclear-powered attack submarines being acquired under the so-called Pillar 1 of the Australia-UK-US AUKUS defence partnership. SSN-A submarines will be built for both the RN and the Royal Australian Navy at, respectively, Barrow and a new submarine construction facility at Osborne in South Australia, with reactors for all units produced by Rolls-Royce in Derby. The programme entered a GBP 4 billion (€ 4.6 billion) Detailed Design and Long Lead (D2L2) phase in 2023 that will take the project through

to initial fabrication. It is anticipated that the first RN SSN-A will be delivered in late 2030s, with the lead Royal Australian Navy boat arriving early in the following decade. The British 2025 Strategic Defence Review (SDR) envisages up to 12 SSN-As being built for the RN.

France

France's submarine force structure is similar to its British neighbour, encompassing four SSBNs and five SSNs at the time of writing. The SSN element of the underwater force is currently in the middle of transitioning from the original six-strong, Cold War-era Rubis class to the same number of considerably larger 'Barracuda' or Suffren class boats.





▲ **SAAB's construction of two A26 Blekinge class AIP-equipped SSKs – seen here in CGI form – for Sweden's navy has been much more costly and protracted than envisaged when they were first ordered. However, the design looks set to gain its first export success with an order from Poland. (Image: SAAB)**

Built by Naval Group in Cherbourg, the Suffren class's design went through a long gestation period due to post-Cold War era economies. The lead boat was eventually ordered in December 2006, entering operational service in June 2022 after considerable pre- and post-delivery trials. Two further boats joined the active fleet in 2024 and 2025, with the remaining three expected to follow between 2027 and 2030. Unlike their current American and British nuclear-powered counterparts, the French boats' reactors are fuelled by low-enriched uranium, necessitating periodic refuelling during their service lives.

A follow-on SNLE 3G or third generation nuclear-powered ballistic missile submarine programme to replace the French Navy's strategic submarines is already underway. This was formally initiated in 2021 and was followed by a first steel-cutting ceremony for the lead submarine at Cherbourg in March 2024. The as yet unnamed boat is due to enter service in 2035 and will be followed by her three sisters at roughly five-yearly intervals. The full cost of the programme has yet to be announced.

Naval Group's Cherbourg facility is also occupied supporting a number of significant export contracts for both NATO and non-NATO fleets.

The Netherlands

The Royal Netherlands Navy's protracted efforts to secure the replacement of its quartet of Walrus class SSKs reached a successful conclusion with the signature of a contract with France's Naval Group to acquire four diesel-electric 'Blacksword' variants of its 'Barracuda' family in September 2024. The award followed the design's provisional selection for the Dutch requirement in

March that year after a fiercely-fought competition in which TKMS's Type 212CD and Saab's enlarged C718 iteration of its A26 design had also been shortlisted. The submarines will be known as the Orka class in Dutch service. Total programme cost as of March 2024 was € 5.65 billion.

The agreement with Naval Group envisages the delivery of the first two members of the class in 2034, ten years after contract signature. Although it appears that the submarines will be assembled at the company's Cherbourg yard, Royal IHC will supply modular structures for the boats and other Dutch companies will be important sub-contractors. It is expected that fabrication will start in 2026 to meet the planned delivery schedule. Previous delays in selecting the successful design mean that two of the existing SSKs will be laid up to provide spare parts for their sisters until the new boats arrive, with Walrus already decommissioned.

Germany/Norway

Germany and Norway both currently operate six-strong flotillas of German-built SSKs, respectively the Type 210 Ula and Type 212A class designs. Both these classes will be ultimately replaced by TKMS Type 212CD ('Common Design') submarines under a joint procurement programme. Despite the shared Type 212 nomenclature, the Type 212CD is much larger than the previous Type 212A and is essentially a new design.

The scope of the Type 212CD programme has been progressively expanded since an initial € 5.5 billion contract for four Norwegian and two German members of the class was first signed with TKMS in July 2021. In December 2024, Germany exercised

an option to increase its order from two to six submarines at a reported cost of € 4.7 billion. Subsequently, in December 2025, the Norwegian government announced its intention to increase its own order to six submarines, subject to receipt of parliamentary approval. This will cost NOK 46 billion (€ 3.9 billion). The significant price increase from the initial order was partly explained by inflation, system and weapon upgrades, and a financial contribution towards the cost of establishing a second production line in Germany. This is required to ensure timely delivery given TKMS' heavy workload fulfilling both domestic and export requirements. The project encompasses significant Norwegian industrial participation, including the delivery of ORCCA combat systems through the Kongsberg-Atlas Elektronik Naval Systems consortium.

Fabrication of the first Norwegian Type 212CD commenced at TKMS Kiel in September 2023. She is expected to be delivered in 2029 and will be followed by her first three sisters between 2030 and 2035. The first two German Type 212CDs should commission in 2031 and 2034. The Deutsche Marine's 'Vision 2035+' force structure plan ultimately anticipates up to nine of the class being ordered, whilst efforts continue to secure export orders.

Italy

Italy's submarine force comprises four Type 212A Todaro class SSKs built by Fincantieri in partnership with Germany's TKMS and four older Sauro class boats. The older submarines will be replaced on a numerical like-for-like basis with the U212 NFS (Near Future Submarine) design, which is now under construction.

The U212 NFS is an evolved Type 212A design that has been developed by Fincantieri. It encompasses a stretched hull, hydrodynamic improvements, lithium-ion batteries, and upgraded combat systems and sensors. Fincantieri was awarded

a EYR 1.35 billion contract for the first two submarines and associated training and support in February 2021. Two options for additional units and capability upgrades were exercised in July 2023 and June 2024 at a total cost of € 1.16 billion. Fabrication of all four submarines is now underway at the group's Muggiano shipyard following a first steel cutting ceremony for the last boat in December 2025.

Deliveries of the four members of the U212 NFS class are scheduled to take place from 2027 to 2032. It is expected that they will be followed by a larger pair of U212 NFS EVO class boats which, in turn, will provide a technological bridge to a planned NGS Next Generation Submarine.

Sweden/Poland

Sweden's current submarine procurement is focused on the construction of two A26 Blekinge class SSKs. These will replace the sole remaining A17 class submarine, Södermanland, and complement the three modernised A19 Gotland class boats, thereby increasing the submarine force from four to five units.

After a convoluted and protracted development process, the initial order for the Blekinge class was placed with Saab's Kockums subsidiary in June 2015. At that time, it was expected that deliveries would take place in 2022 and 2024 at a cost of SEK 7.6 billion. An associated contract encompassing mid-life upgrades for the Gotland class was intended to reduce the risk of much of the technology destined for the new submarines. However, delivery of the Blekinge class has proved to be much more difficult and expensive than initially envisaged, leading to substantial contract renegotiations in August 2021 and October 2025. It is now expected the submarines will be delivered in 2031 and 2033 at a total cost of SEK 25 billion (€ 2.3 billion).

TABLE
Current NATO Submarine Programmes

Country	Submarine Type	Class	Number	Shipbuilder	Planned Delivery
France	SSBN	SNLE-3G	4	Naval Group	2035 onwards
	SSN	Suffren ('Barracuda')	6	Naval Group	2020-2030
Germany/Norway	SSK (with AIP)	Type 212CD	6/6 [1]	TKMS	2029 onwards
Italy	SSK (with AIP)	Type 212 NFS	4 [2]	Fincantieri	2027-2032
Netherlands	SSK	Orka ('Blacksword')	4	Naval Group	2034 onwards
Spain	SSK (with AIP) [3]	S-80	4	Navantia	2023-2030
Sweden/Poland	SSK (with AIP)	Blekinge (A26)	2/3	SAAB	2031-2033 [4]
Turkey	SSK (with AIP)	'Reis' (Type 214)	6	Gölcük Naval Shipyard [5]	2024 onwards
	SSK (with AIP)	MILDEN	Not known	Gölcük Naval Shipyard	Not known
United Kingdom	SSBN	Dreadnought	4	BAE Systems	Early 2030s onwards
	SSN	SSN-AUKUS	Up to 12	BAE Systems	Late 2030s onwards
United States	SSBN	Columbia	12	GDEB/HII	2029 onwards
	SSN	Virginia	60+ [6]	GDEB/HII	2004 onwards

Notes

- Germany may order more units
- Two additional Type 212 NFS EVO class submarines planned
- First two units delivered without AIP
- The Polish order has yet to be confirmed and will be delivered later
- Built to a modified TKMS Type 214 design
- 41 submarines authorised to date in several 'Block' iterations. Procurement continuing at two units each year

Sweden has made considerable efforts to export the A26 and evolved variants. After several setbacks, these finally gained success in November 2025 when it was announced that Poland had selected the A26 design as the basis for its own 'Orka' submarine replacement programme. Although a formal contract has yet to be signed, it appears that an order for three boats is planned for delivery during the 2030s.

Spain

Spain's underwater force has been reduced to just two SSKs due to the considerable problems that have previously been experienced with executing its S-80 submarine programme. Intended to deliver the country's first truly indigenous submarines, the project first received government authorisation in 2003. At that time, it was expected that four S-80 submarines, all equipped with air-independent propulsion (AIP), would be delivered at annual intervals between 2011 and 2014.

Implementation of the programme at Navantia's Cartagena shipyard was subsequently beset by widely-publicised problems that included a loss of buoyancy due to unexpected weight growth. These are now largely in the past and the lead boat, Isaac Peral, was commissioned in November 2023. The second member of the class was launched in October 2025 and two sister boats are under construction for delivery before the end of 2030. This pair will be the first members of the class equipped with AIP from build after delays arising from difficulties with developing the plant.

Whilst Navantia's perseverance looks set to allow successful completion of the S-80 project, the programme cost of around € 4.3 billion is more than double the initial estimate. Its past problems have also seemingly hindered the design's prospects in export competitions despite its status as a large, modern design suitable for those navies seeking an oceanic type SSK capability.


- ▼ **Isaac Peral, the lead Spanish S-80 class submarine, photographed whilst conducting sea trials from Cartagena in 2022. Navantia has made considerable progress bringing the programme back on track after previous difficulties. (Image: Navantia)**

Greece

Greece's submarine inventory encompasses four modern Type 214 Papanikolis class AIP-equipped SSKs and five older Type 209 submarines of various ages and configurations. The Hellenic Navy's future plans include mid-life upgrades for the Papanikolis class and replacement of the older submarines by a new class of four boats. This procurement is still in its early stages due to the priority being given to surface fleet modernisation.

Turkey

The Turkish Navy operates NATO's largest fleet of diesel-electric patrol submarines. All of these are of German design, encompassing four Type 209/1200 and eight Type 209/1400 boats, as well as two, more recent Type 214 AIP-equipped units. Known locally as the Reis class, the Type 214s form part of a six boat, € 2.1 billion order placed in 2009 that provided for local construction at the Gölcük Naval Shipyard under a transfer of technology arrangement. Project realisation has taken longer than anticipated, possibly because of the incorporation of significant quantities of Turkish-developed equipment in the new class. The first two Reis class submarines were commissioned in 2024 and 2025. The third was launched in May 2025 and the remaining trio are all under construction.

Future submarine production will be focused on a new 'MILDEN' national submarine, the first of which commenced fabrication at Gölcük at the start of 2025. The fully indigenous design benefits from considerable input from Turkey's expanding defence industrial base, including defence conglomerate Aselsan. The project is representative both of the evolving nature of NATO's submarine industry and also the increased attention being paid to modernising underwater forces across the alliance. 



C-UAS Options, Techniques and Acquisition

Sidney E. Dean

Recent headlines and analyses underscore how unmanned aerial systems (UAS) – large and small, long-range and short, reconnaissance and strike – are changing tactical norms on today’s battlefield, and beyond. In January 2026, Ukraine’s Defence Ministry stated that 80% of enemy targets destroyed were now caused by drones. That same month, Latvian intelligence sources independently reported that 70-80% of casualties on both sides of the Ukraine War result from unmanned systems. And in February 2026, the *Wall Street Journal* reported that a 10-person team of Ukrainian drone operators, acting as an OPFOR unit during the March 2025 Hedgehog Exercise in Estonia, achieved simulated kills against 17 NATO tanks, as well as 30 other targets during a single day, effectively incapacitating two battalions. While these reports highlight only one aspect of modern warfare, and should not lead to a ‘target fixation’ on the drone threat, they do underscore the need for enhanced counter-drone capabilities at both the static and manoeuvre warfare level.

The Ukraine War also underscores the need to secure domestic military, industrial and critical public infrastructure from reconnaissance and strike drones, whether launched on long-range cross-border missions or deployed at close range to the target by infiltration teams. While there have been no documented attacks outside the two warring parties, European nations and the United States alike have recorded a significant number of incursions by unidentified UAS which are widely believed to reflect efforts to test defences and reconnoitre targets.

ESD recently discussed counter-UAS (C-UAS) options for dismounted infantry (Issue 03/2026). This article will focus on options for securing fixed sites and for deployment on mobile tactical platforms.

Detection, Tracking and Intercept Networks

The first step in UAS defence is detection of incoming threats, along with tracking and targeting solutions for whichever countermeasures are available. Multilayered defences are particularly feasible for securing area targets and high-value infrastructure targets in the homeland setting. Networks



▲ **The first vehicle-mounted Locust laser weapons suitable for C-UAS were delivered to the US Army in August 2025. (Image: AeroVironment/Blue Halo)**

include electromagnetic (EM) spectrum sensors and radars, with interceptor options spanning the gamut from EM jammers to short-and-long range missiles to guns. The greater the number of layered components – both sensors and interceptors – the stronger the system will be. One major challenge is the need to differentiate between hostile, potentially hostile, and legitimate or friendly UAS sharing the same airspace. The proliferation of commercial, recreational and own-government unmanned aircraft over domestic airspace significantly limits the deployment of radio-frequency (RF) countermeasures; explosive-laden or long-range kinetic interceptors risk civilian personnel and infrastructure casualties and are also generally contraindicated, limiting intercept options.

Golden Dome

The Golden Dome for America integrated air and missile defence system being developed for the United States is currently focused on countering the spectrum of missile threats and other advanced aerial attacks. There are suggestions to expand this to include networked C-UAS capability for critical infrastructure and public venues. AeroVironment (AV) is one firm openly touting this approach. In October 2025, the firm announced an expanded collaboration with GrandSKY, a commercial UAS business and aviation park located on the grounds of Grand Forks Air Force Base (North Dakota) “to establish the foundation of its Golden Dome for America limited area defence architecture” at the base. AV will deploy its inner layer distributed C-UAS capabilities which the firm describes as the backbone of a layered

defence architecture. This deployment will integrate AV's Titan and Titan-SV RF-based platforms for long-range detection and identification of unmanned aircraft. The AV_Halo COMMAND software platform will fuse the sensor and surveillance data into a unified operating picture for C-UAS and Beyond Visual Line of Sight (BVLOS) airspace awareness, the firm stated in the October release. "We're deploying technologies that deliver unmatched situational awareness to Grand Forks AFB while

The latter mission includes rapid integration, testing and delivery of C-UAS capabilities. On 24 February 2026, the Pentagon announced that JIATF 401 had declared 'initial operational capability' for the C-UAS Marketplace. Described by a task force spokesperson as "an Amazon-like marketplace for the procurement of counter-drone technology and equipment where people can go online, look for capabilities and user feedback," the online catalogue



▲ **Components of NORTHCOM's C-UAS Flyaway Kit poised to deploy for air base defence. Two Anvil interceptor launch boxes sit on the right. (Image: US DoW)**

providing a road map to expand these limited area defence capabilities at critical sites throughout the nation in support of Golden Dome for America," said Wahid Nawabi, President and CEO of AV. Notably, for the moment AV's demonstration at Grand Forks is limited to detection and identification technology, demonstrating the essential capability to discriminate between hostile and friendly aircraft over domestic zones.

JIATF 401

As expected, the Pentagon itself is focused on neutralising drone threats over military installations and forces. The goal is for each installation to have a self-sufficient C-UAS capability. In August 2025, the US Secretary of War directed the establishment of Joint Interagency Task Force 401 (JIATF 401) "to better align authorities and resources to rapidly deliver Joint C-sUAS (Counter small UAS) capabilities to America's warfighters, defeat adversary threats, and promote sovereignty over national airspace." JIATF 401 assesses threat levels and gaps at individual locations and regions, devises mitigation plans, provides training for installation personnel and for civilian agency personnel at all levels of government, and facilitates procurement of C-UAS technology.

currently hosts more than 1,600 pre-approved components including sensors, C2 elements, software, power systems, accessories and training systems, as well as effectors. Authoritative performance data on each system is provided, says JIATF 401 director Brigadier General Matt Ross; this permits end-users, from military installations and federal agencies to local law enforcement, to select solutions suitable to their respective threat and operational environment and assemble them to a tailored system.

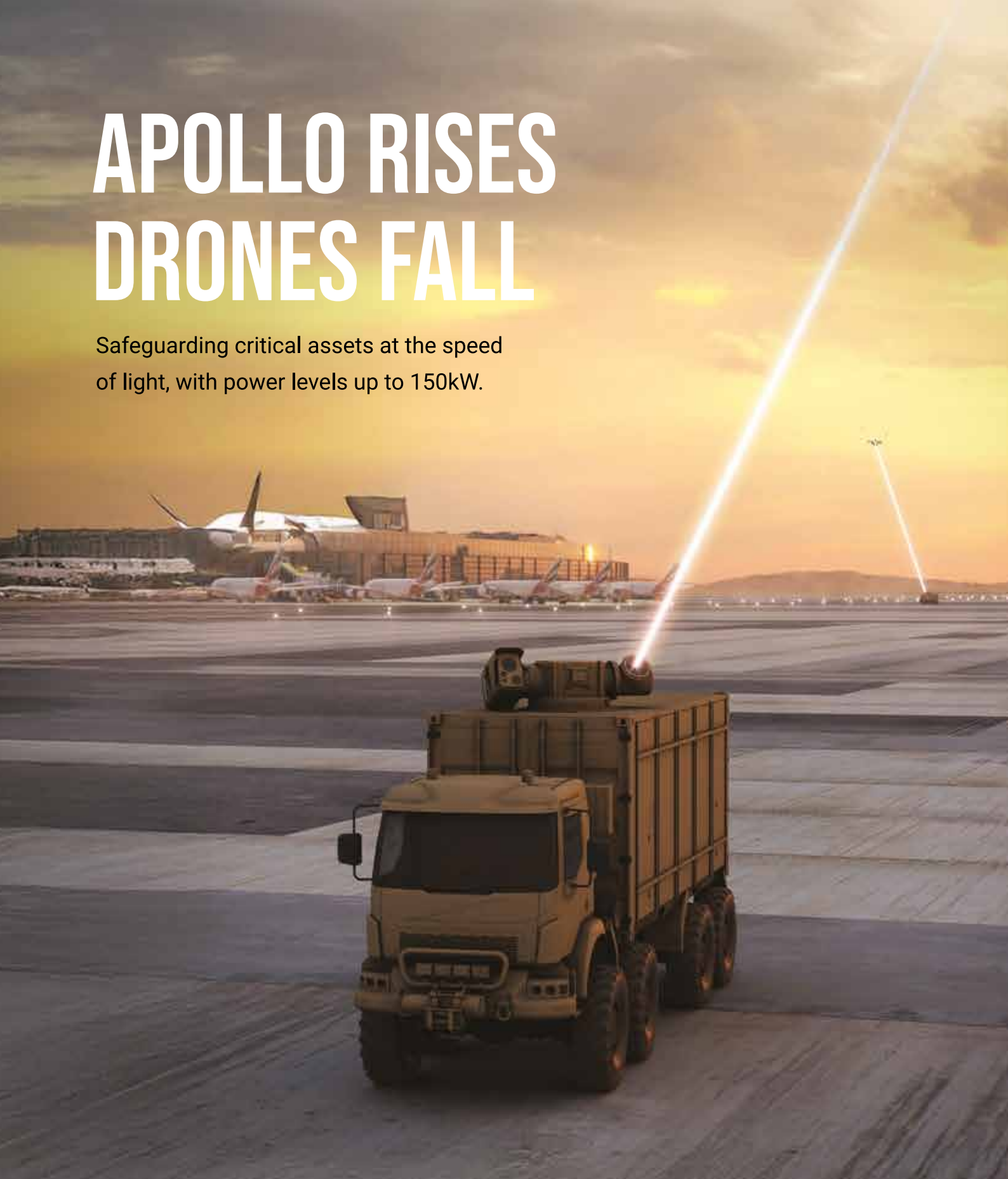
The task force is currently also working to harmonise the command-and-control of the disparate systems being used by the military and its civilian agency partners. "[We are going to] standardize the communications protocols on how we send and receive information so that every component of a counter-UAS system is plug and play," Ross said.

Validated Interceptor Systems

Only a fraction of the marketplace catalogue's inventory consists of actual interceptors. To date JIATF 401 has validated three interceptor systems. Validation verifies performance against Group 1-3 UAS in operationally representative environments, interoperability with the joint C-UAS architecture,

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and compliance with safety, airspace, and RF regulations. The three validated effectors cover the gamut of directed energy weapons, net capture systems, and kinetic intercept and include:

LOCUST

The Laser Optical Counter UAS System (LOCUST) 20 kw weapon system developed by AV can be mounted on light tactical vehicles for mobile defence of installations or manoeuvre forces, or pallet-mounted for fixed site defence (domestic or expeditionary). The system includes electro-optical and infrared cameras (EO/IR), gimballed beam directors, rangefinders, and multi-band RF sensors for precise tracking; effective

putting five F700s against five 'hostile' UAS flying autonomous, pre-programmed attack missions. As released by the firm, the interceptors were controlled by a single SkyDome system, Fortem's AI-powered software platform for airspace awareness and drone engagement. "SkyDome autonomously planned, sequenced, and coordinated all five intercepts, with no human involvement," the firm stated. The F700 system can also be utilised for installation defence or as part of a mobile package.

Bumblebee V2

In late January 2026, JIATF 401 awarded Perennial Autonomy a contract for the Bumblebee V2 counter-drone system. Considered a 'next-generation' first-person view (FPV) kinetic inter-

ceptor, the quadcopter destroys targets via direct collision. Both drones are destroyed, but the lack of a blast or fragmentation warhead designates the Bumblebee as a low collateral damage interceptor. The highly agile UAS can defeat manoeuvring, high-speed or low-altitude threats. Additional advantages include low cost and rapid fielding. It is suitable for homeland or expeditionary missions.

C-UAS Flyaway Kit

These localised C-UAS defences can be augmented by mobile systems such as the C-UAS flyaway kits operated by the joint US Northern Command (NORTHCOM). Combining multiple sensors and effectors, the 'kits' form a comprehensive system to detect, track, identify and neutralise hostile or suspicious UAS. They are operated by small specialist teams and

deploy within 24 hours via C-130 to installations experiencing significant drone incursions. In its current configuration the kits consist of the following: the Heimdal mobile sensor trailer with a continuous 360-degree pan and tilt unit, thermal optics and a radar; the Pulsar electromagnetic warfare effector featuring radio frequency detect, track, classify and deny options; launch boxes with Anvil drone interceptors which neutralise targets through collision; and the AI-enabled Wisp wide-area infrared system that provides a 360-degree, full-motion operational picture.

Drone Wall

In Europe, NATO and EU nations have agreed on the need for a so-called 'drone wall' along the circa 3,000 km communal eastern frontier. Not a physical barrier, the 'wall' will combine ground-based sensors, AI-supported reconnaissance drones, and mobile counter-drone platforms, all augmented by satellite surveillance data. Poland has begun implementing its own portion of the drone shield by awarding a January 2026



▲ **The Bumblebee V2 kinetic interceptor is considered a cost-effective C-UAS solution.**
(Image: US Army)

engagement range is classified but lasers of this energy category are considered short-range weapons. LOCUST has been deployed along the US-Mexico border, where the US military records more than 1,000 cartel-related UAS incursions monthly. In early February, concerns that the laser could endanger civilian aircraft led to a temporary shutdown of operations at the El Paso airport. Two weeks later, the laser downed a Customs and Border Patrol drone in a 'friendly fire' incident, emphasising the need to deconflict for safe C-UAS operations.

DroneHunter F700

In January 2026, JIATF 401 selected Fortem's DroneHunter F700 interceptor for the Pentagon's C-UAS portfolio. The reusable, AI-driven and radar supported F700 tracks targets in complex, cluttered environments; identifies even RF-silent drones via their radar and visual profile; and captures verified targets in a tethered net, minimising risk to infrastructure, aircraft or personnel. On 4 February, the firm announced the results of an internally conducted test, simultaneously

US\$ 4.2 billion contract to Kongsberg Defence & Aerospace and Polish state-run defence group PGZ for a comprehensive border C-UAS system. First elements of this San C-UAS system are expected to be delivered before year's end, with the entire system expected to be delivered within 24 months of contract signing. Polish deputy prime minister and defence minister Władysław Kosiniak-Kamysz stated that the contract will equip 18 anti-drone batteries encompassing 52 firing platoons, 18 command platoons and 703 vehicles based on the Jelcz truck and the Legwan light reconnaissance vehicle. PGZ said that 60% of the systems will be provided by the Polish consortium. Kongsberg's contribution will be based on the firm's Protector family of weapons, including the Medium Caliber Turret (MCT30) and the Remote Weapon Station, mounting 35 mm, 30 mm and 12.7 mm guns as well as missiles and interceptor drones. Deliveries of the entire system are expected to be completed 24 months following the signing of the contract. The C-UAS system will be only one segment of a multi-faceted 'East Shield' defensive system to strengthen the nation's eastern border.

Tactical Manoeuvre Force C-UAS

The second leg of C-UAS is designed to defend the expeditionary and manoeuvre force, both in camp and on the move/ in battle. Potential solutions include RF countermeasures as well as containerised and vehicle-mounted kinetic interceptor systems. Modularity and flexibility are key factors determining a system's ultimate effectiveness.

Vampire

The L3Harris VAMPIRE (Vehicle-Agnostic Modular Palletized ISR Rocket Equipment) is a versatile, low-cost mobile C-UAS solution which has been combat-proven in Ukraine since 2023. It can be mounted on any military or civilian vehicle with a flatbed cargo bed. The modular design permits mounting on a new carrier within as little as two hours. More recent variants have been configured for deployment on unmanned surface vessels or on helicopters and light attack aircraft.

WESCAM MX-series EO/IR cameras mounted on a telescopic mast provide advanced ISR and target acquisition capabilities including laser target designation. The primary interceptor is the laser guided 70 mm AGR-20 Advanced Precision Kill Weapon System (APKWS), equipped with an advanced proximity fuze developed by L3Harris. Additionally, the firm has now incorporated additional sensor capabilities, precision weapons (including the Thales 70 mm FZ275 laser-guided rocket), electronic jammers and non-kinetic effectors for enhanced versatility. The system uses Shield AI artificial intelligence and machine learning to more swiftly detect, engage and defeat small and elusive unmanned threats. New options include a containerised APKWS system for point defence of remote locations, an elevated turret mounting an automatic gun and non-kinetic effects, designed for drone defence of military bases and critical infrastructure, and a vehicle mounted system that eschews kinetic interceptors in favour of jammers, minimising the risk of collateral damage.

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LIDS

The US Army's Low, Slow, Small UAS Integrated Defeat System (LIDS) family of systems can be deployed in a palletised fixed-site variant (FS-LIDS) or as a vehicle-mounted mobile variant (M-LIDS). Several major contractors contribute to the system, including SRC Inc., Leonardo, Moog, Northrop Grumman and Raytheon/RTX.

LIDS integrates a suite of sophisticated mast-mounted sensors with kinetic and electronic warfare (EW) effectors to defeat Class 1-3 UAS (which would include Shahed drones). Major elements include the AN/TPQ-50 multi-mission radar (which can detect and track UAS at up to 35 km range), high-definition EO/IR cameras, and SRC's Counter-Small Unmanned Aircraft Electronic Warfare System (CUAEWS) to classify and neutralise individual and swarm targets. Additional primary effectors are the jet-powered Coyote Block 2+ kinetic interceptor (effective range 15 km, altitude 9,000 m, airspeed – as reported by US DoD – up to 595 km/h), which destroys targets via a proximity-fuzed warhead, and the retrievable Coyote Block 3 non-kinetic interceptor which employs EW to neutralise single and swarming UAS. In addition to EW systems and the Coyote, the M-LIDS configuration also includes vehicle turrets mounting either a 30 mm chain gun and a 7.62 MG, or a 12.7 mm MG. LIDS has seen sustained operational deployment in the US Central Command area of responsibility. In 2022, Qatar became the first confirmed foreign purchaser of the system.

- ▼ **The Diehl Defence GARMR mobile C-UAS system, a complete C-UAS solution. (Image: Diehl Defence)**

GARMR

Diehl Defence has significantly upgraded its highly mobile C-UAS system, presenting the new GARMR configuration (named for the heavenly guard dog of Norse mythology) during the February 2026 Enforce Tac trade fair on security and defence in Nürnberg. Mounted on a Caracal tactical vehicle. GARMR features additional high-performance interceptors and an AI-enhanced threat detection, prioritisation and engagement-decision framework. According to Diehl, GARMR's sensors can detect UAS ranging from small quadcopters up to Class 3 UAS including the Shahed family. The system is equally suited for infrastructure or fixed site defence and for direct combat support of manoeuvre forces. Depending on the mission environment, GARMR can deploy with the Short-Range System (SRS) or the Medium Range System (MRS). The SRS utilises the tube-launched Cicada interceptor developed by Diehl; 15 vertical tubes can be secured in the Caracal's bed. The Cicada is configured for intercept of Class 1-2 drones at short range; target neutralisation is optionally accomplished via net capture or by a proximity-fuzed warhead. Diehl does not identify the intended effector for the medium-range system, simply stating that the MRS "neutralizes targets with innovative interceptor drones." In addition to the two primary interceptors, further effectors can be integrated for both ranges to ensure optimal configurations for the operational situation. The firm added. While the precise intercept range for the SRS and MRS has not been formally confirmed by Diehl, some industry analysts have postulated likely range bands of 20 and 40 km, respectively. The selection of sensors and effectors (augmented by a Gatling gun for close-in defence) provides GARMR considerably greater operational depth than most mobile C-UAS systems.



Searching Deep: New Underwater Challenges and Capabilities Prompt New Thinking in Sonar Concepts

Dr Lee Willett

Naval underwater competition is as significant today as in the Cold War, with this sub-surface resurgence evident in both the Euro-Atlantic and Indo-Pacific theatres. The asymmetric impact offered in the underwater domain – in tactical, operational, and strategic contexts – by improved anti-submarine warfare (ASW), critical undersea infrastructure (CUI) protection, and enhanced maritime situational awareness (MSA) outputs mean NATO navies and alliance adversaries alike are striving to build underwater capability. Whether considering defensive or operational contexts, improved underwater sensing is central to meeting ASW, CUI, MSA, and other task requirements.

Sonar sits at the core of such sub-surface sensing requirements. Sonar concepts and capabilities are well-proven in technological and operational terms. What is changing today is the need to conduct sensing across increasingly larger areas, with less crewed maritime platforms available (air, surface, or sub-surface), and thus the need to use new platforms – namely uncrewed systems, especially uncrewed underwater vehicles (UUVs) – to generate this enhanced sensing mass.

Using new platforms like UUVs to help build this mass may also mandate the development of new sensors, to fit the bespoke design and operational requirements of such platforms against the task outputs. It is worth noting that UUVs carrying bespoke sensors (designed to fit and optimise these new platforms) may also need to detect other UUVs, as well as traditional underwater domain targets including submarines and surface ships.

North Atlantic threat

While underwater competition has returned on a global scale, the Euro-Atlantic challenge has become especially acute, in and around the context of Russia's continuing war in Ukraine. Russia's return to the strategic stage since around 2008 has been characterised by naval activities, especially underwater. Around that time, Russian submarines began returning to sustained patrol patterns in the Arctic and elsewhere, with this focus developing



▲ **NATO navies are seeking to develop improved sonar capabilities to enhance underwater sensing capacity, in the context of growing threats in the sub-surface domain. (Image: NATO Maritime Command)**

since to the point that senior NATO naval commanders now regularly refer to Russian submarine activities as occurring at similar or higher levels than Cold War days. Moreover, this drumbeat pulses louder today, given the arrival of new Russian submarines and capabilities (for example, the increasingly quiet, Kalibr cruise missile-capable, Yasen/Severodvinsk-class boats). This enhanced Russian presence puts at risk more NATO targets at sea and ashore, including threatening sea lines of communication access and port infrastructure vital to enabling resupply from North America to Europe in the event of crisis or conflict.

In response, NATO navies are seeking to further build alliance ASW capability, to push Russian boats further back up north. The challenge for NATO here is compounded by the fact that – unlike other elements of Russia's armed forces – Russia's Northern Fleet and its submarines have not needed to be committed to combat operations around Ukraine, so remain largely unscathed in capacity terms.

Moreover, the underwater world arguably has been an illustration of Russia's implementation in the maritime domain of its strategy of targeting adversary critical national infrastructure – something it has demonstrated continuously on land in its war in Ukraine. In this maritime context, both naval and commercial vessels can be used as surface platforms for conducting activities targeting CUI nodes;



▲ **Sonar 76Nano consists of arrays of sensing tiles that can be scaled to fit the size and operational requirements of the host platform in question. (Image: Thales UK)**

however, underwater platforms – particularly, UUVs – are a primary means for carrying out attacks on such infrastructure.

So, NATO navies must address an urgent, real-world, real-time requirement for enhanced underwater sensing presence across the North Atlantic.

The UK Royal Navy (RN) is one example of a navy moving quickly in response to this threat. “Russian investment in its Northern Fleet and in particular in [the fleet’s] sub-surface capabilities is undiminished,” General Sir Gwyn Jenkins, the RN’s First Sea Lord and Chief of Naval Staff, told the Paris Naval Conference (co-hosted by the French Navy and IFRI, France’s international relations institute) in February. “They will test us in [the underwater] environment,” Gen Jenkins continued. “It doesn’t take many assets to fix us as allies because, rightly, we have a very low risk tolerance of allowing a potentially aggressive actor operating in our backyard, and that does take a lot of resource to respond to.”

The combination of capability and operational threats, accelerating technology change, and continuing strategic uncertainty creates a

significant challenge for NATO navies that is difficult to counter. “You have to develop different solutions because ... there’s only so many complex warships [you] can build, there’s only so many complex nuclear submarines [you] we can build,” said Gen Jenkins. The RN is undergoing significant fleet recapitalisation, which among other developments includes building two new frigate and two new submarine classes. Yet, Gen Jenkins argued, “It’s not going to be enough.”

“We’re going to need a genuinely innovative approach if we’re to respond to this multifaceted challenge we’re facing at the moment,” the First Sea Lord added.

A core component of the RN’s innovative approach is its ‘Atlantic Bastion’ concept, revealed in the UK’s latest strategic defence review (SDR), published in June 2025.

Reflecting the navy’s need, as defined in SDR, to evolve into a ‘hybrid fleet’ – blending crewed and uncrewed platforms across high- and lower-end operational tasks, to meet growing requirements for naval capability outputs – ‘Atlantic Bastion’ will layer together an integrated, multi-domain sensor network to build persistent capacity and capability to counter the underwater threat. It will do so in two phases: ‘Atlantic Net’, which involves deploying UUVs in numbers to enhance sensing coverage in key North Atlantic waters; and ‘Atlantic Bastion’, which involves spreading these initial sensing ‘ink spots’ out more broadly across the North Atlantic’s maritime map, and integrating the initial ‘net’ more widely with extra-large UUVs (XLUUVs) and with crewed sub-surface, surface, and air platforms to build maritime sensing mass.

Delivering such effect is critical for the UK in both national and NATO contexts. According to SDR, ‘Atlantic Bastion’ is central to the second (North Atlantic deterrence and defence) of three core roles the review prescribed for the UK’s armed forces.

Within ‘Atlantic Bastion’, SDR pointed to the need for crewed and uncrewed platforms to be harnessed with artificial intelligence (AI)-enhanced acoustic detection systems, sensors themselves networked into the UK’s emerging ‘digital targeting web’, to help accelerate targeting decision-making.

In speeches at two major events in London in 2025 – the DSEI exposition in September, and the RN’s ‘Seapower’ conference in December – General Jenkins stated the navy’s aim to have sensors in the water to deliver on ‘Atlantic Bastion’ in 2026, supported by contracts issued to industry to provide sensing capability as a service.

In between these two speeches, the UK Ministry of Defence (MoD) commenced a competition to find sensing capabilities and what it termed ‘commercial mission partners’ to deliver underwater intelligence, surveillance, and reconnaissance (ISR) capacity as a contracted service through a contractor-owned, contractor-operated, naval oversight (COCONO) model.

Indeed, key components of the ‘Atlantic Bastion’ concept are new commercial constructs to enable accelerated delivery of capability.

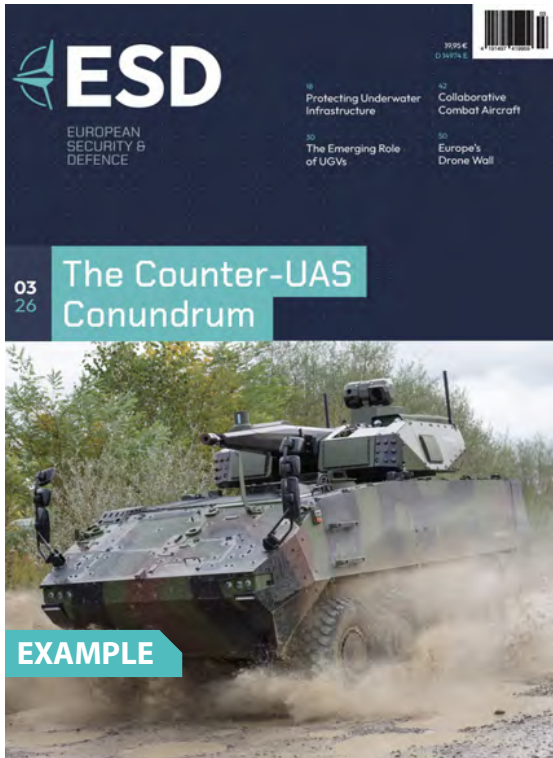
Equally important is innovative, enhanced technology that can be quickly scaled in terms sensing capability and the platforms that can carry it. Several companies have been involved in the ‘Atlantic Bastion’ testing process, demonstrating different concepts for providing the required capability.

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REPORT

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Industry response

Thales, particularly its UK-based underwater business, is a major supplier of underwater sensing capability for the RN. For example, its Sonar 2076 integrated suite (which includes bow, fin, flank, and towed-array sonars) provides the primary sensor for the navy's in-service Astute-class nuclear-powered attack submarines (SSNs) and in-built Dreadnought-class nuclear-powered ballistic missile submarines (SSBNs).

In December 2025, the company – which works across the defence, cyber, and space domains – launched a new sonar product designed to meet RN and other NATO navies' underwater battlespace sensing requirements. Sonar 76Nano is a passive or active acoustic detection system that is a miniaturised derivative of Sonar 2076. A key reason for this miniaturisation is that Thales is seeking to offer a route to generating enhanced sensing mass through pairing a new sensor capability with the UUV 'family' (medium, large, and extra-large variants). The sensor's versatile, modular, platform-agnostic design and architecture mean it could be a fit for various such UUVs. It can also be fitted to fixed seabed sensors ('bottom nodes'), plus crewed platforms too.

In a 15 December statement revealing the new capability, Thales said "Thanks to its modular and flexible design, this sonar system can be deployed onboard a wider range of UUVs and seabed monitoring systems rather than being limited to large, high-value platforms."

Sonar 76Nano is designed to support various underwater sensing outputs, including threat detection; seabed mapping; data collection, including acoustic information; and long-range communications. Such outputs support tasks like ASW, with passive and active threat detection conducted using the system's receive and transmit arrays (with Thales working with small-to-medium enterprise Neptune Sonar to develop the transmit capability for this task); CUI protection including seabed survey and mapping, using an in-built medium-frequency synthetic aperture sonar (SAS) capability; and communications, via the system's active transmit array and acoustic receive panels.

The structure of the Sonar 76Nano capability is a straightforward but scalable one. In sum, it is based around fitting sets of acoustic sensing panels (measuring 75 cm by 75 cm, and also known as tiles) along a UUV's port and starboard flanks, and (in the case of an XLUUV) on its bow. Ian McFarlane, Thales UK's underwater systems sales director, explained to ESD that, with many UUV designs offering significant external space for sensing capability, fitting a scalable number of tiles can create what is effectively a large flank array panel. The port and starboard flank fits, for example, can be scaled up to arrays containing up to 48 tiles. "The more tiles you've got, the more receive capability you'll have," he said.

Such scalability is 76Nano's 'unique selling point', McFarlane suggested. "[It's] the ability to create the best array possible on



▲ **Thales has progressed the Sonar 76Nano capability through concept, development, prototyping, in-water fielding for testing, and technology demonstration, with an aim of conducting sea trials with the system in 2026. (Image: Thales UK)**

your vehicle or your seabed node with the number of tiles fitted," he said. "We can work with the user to say 'you can fit 48 tiles on this vehicle and it will give you this capability'. That's really strong, because you can provide a limited capability on a much smaller vehicle, and you can provide a very credible capability on a larger vehicle."

Each array assembled on a vehicle also includes a single transmit tile (measuring 40 cm by 40 cm). This tile provides the active ASW search element, plus the CUI search imaging capacity through the SAS capability. Explaining the SAS capability's CUI impact, McFarlane said "What we're providing is the ability to conduct change detection over a much wider area than a high-frequency oil and gas industry-type sonar in a single sweep." Using a medium-frequency SAS sensor means larger-area sweeps can be conducted more quickly, too.

In the CUI protection context, the capacity to conduct wider searches more quickly, and then to repeat such searches more regularly due to the prospective more routine availability of a UUV (compared to, for example, a crewed platform) – and all with a sensor capable of picking up objects like small packages lying near or on a pipeline – potentially increases the prospects of effective area search coverage. Crucial is the change detection capability, which allows for closer investigation of new or altered objects or events.

Regarding the long-range communications capability, McFarlane explained that the active transmit beam is steerable, meaning it can be directed to a particular location and can transmit data. As the beam is relatively narrow too, probability of intercept is lower, he added.

As well as tailoring the array numbers and size to fit the physical parameters of the UUV in question, such array numbers and size can also be tailored to optimise the sensing fidelity and range for a vehicle and its operational requirements, McFarlane said. This underlines the 76Nano concept's focus on agility, in mating smaller sensors with different types of smaller vehicles; it also illustrates why an XLUUV, with its extra space, is an ideal 76Nano platform, he explained.

Capability concept

Reflecting NATO navies' need to push the sensing 'picket' further 'up-threat', Thales envisages a Sonar 76Nano-capable UUV as contributing to building an ASW 'net' or 'tripwire'.

Moreover, because a UUV-based sensor can be produced en masse compared to building new submarines, constructs like 'tripwires' can be laid out in more numbers across a broader area to add search capacity in an operational and tactical scenario, compared to the coverage that could be generated by a single crewed platform like an SSN or a towed array-capable ASW frigate.

The operational concept includes the UUV working within a network of other UUVs, or integrated with a crewed platform like a NATO SSN. In the latter context, 76Nano's active transmit capability could be used to locate a very quiet target platform like an adversary SSN – with the uncrewed host platform being a lower-risk target and creating the noise (including in a possible decoy role), helping the NATO SSN locate and prosecute the adversary's boat.

The use of sensing capacity spread across more than one platform also supports NATO navies' growing focus on dispersed and disaggregated operations.

Reflecting too navies' requirement to accelerate threat detection, target identification, and decision-making to deliver effect more quickly, Sonar 76Nano is harnessed to Thales' cortAix AI tool – an iterative, edge-processing (on the platform) capability for real-time sifting, analysing, and prioritising of data, with this process seeing mission-critical information assessed 'in-stride' onboard, and then 'offboarded' immediately to enable and support action and effect elsewhere, with the remaining data assessed onboard in post-mission analysis.

Here, McFarlane explained, with ever-larger amounts of data being collected, identifying key information for the operator within this data mass is crucial. "Doing that 'in-stride' analysis as the data comes off the sonar, using AI to strip out what you need, [and highlighting] what you should look at where and when, gives you a lot of advantages as a warfighter," he said.

Reflecting also navies' needs to deliver new capability quickly, Thales had progressed from concept to capability in 10 months, by the time the product was launched in December. This encom-

passed passing through the prototyping stage, fielding the sonar in water, and getting good testing results, McFarlane said.


In mid-December, Thales conducted a technology demonstration. "It went very well, we achieved everything we set out to, with no delays," said McFarlane. "System development is progressing, with tailoring of current sonar processing software to make it specific for 76Nano – to give the operator the best information, displayed in the most appropriate way."

Work remains on track to fit 76Nano to a test vehicle and conduct sea trials in 2026, McFarlane added.

Driving force

McFarlane explained that Thales' driving force behind developing the new capability – and quickly too, including through using the company's own funding – was its awareness of the increasing threat, the RN's accelerating ASW operational tempo in response but with less crewed platforms available (arguably in both relative and absolute terms, compared to the threat), and the company's understanding (including as an incumbent ASW capability supplier to the RN) of the need thus to provide new systems and capabilities to sustain and advance the operational output.

Overall, Sonar 76Nano's capability is designed to provide quiet, passive, persistent receive sensing capability, McFarlane said. Yet its scalability adds value as a force multiplier. Not only can its tiles and arrays be scaled up for the UUV in question, but individual UUVs (of any size) can be integrated into a network of other UUVs, as well as with crewed platforms. Alongside working with an SSN as a 'loyal wingman', McFarlane explained that Sonar 76Nano-capable UUVs provide a perfect sensing partner for the RN's new Type 26 City-class ASW frigates, augmenting the ships' significant range of sensors – namely, the Ultra Type 2150 hull-mounted sonar; the Thales Sonar 2087 towed-array system; and the organic, Merlin helicopter-embarked, Thales dipping sonar.

Ultimately, broadening and accelerating search capacity, while focusing and accelerating decision making, are the core aims of a new sonar technology like 76Nano. "It gives a navy greater reach, greater threat detection, and allows the warfighter to see the adversary further away, which gives that range advantage and additional time to decide what to do," said McFarlane. "It's trying to build that recognized underwater picture for warfighters, to enable better decisions earlier, to give them better information earlier." 

- ▼ **Despite NATO navies continuing to build and operate large numbers of surface ships and submarines, uncrewed systems are needed to help meet increasing requirements for underwater sensing mass. (Image: NATO Maritime Command)**



Pressure Points – Training CIC Crews

Dr Trevor Nash

As threats become more prolific, littoral naval operations grow increasingly challenging. Success is dependent on an individual ship's Combat Information Centre (CIC) and how that team performs. That performance is characterised by type, relevance and intensity of training that crews receive before deployment.

range of 2,500 km. Typically used by the Houthi rebels against Western navies or merchant vessels in the Red Sea, this low-cost weapon platform is typically used in swarm attacks where a number are flown at a warship from different directions and varying heights in an attempt to swamp sensors and defensive weapons.



▲ **The crew of HMAS Parramatta undertake Exercise STRONGBACK SIM at the RAN's Maritime Warfare School at HMAS Watson in Sydney that is managed by Serco. (Source: RAN)**

Perhaps the best exemplar of the current threats faced by naval operations can be found in the Red Sea. As naval operations have inexorably shifted from the blue water battleship-versus-battleship engagements conducted over range and typified during the Second World War, today's naval conflicts have become more littoral, which has raised the threat stakes. These threats are now delivered from the sea, air and increasingly, from land. The latter domain includes anti-ship cruise missiles (ASCMs), such as the Iranian Noor family with ranges varying from 30 km to 220 km. Longer range and more powerful ballistic missile options include the Chinese DF-21D and DF-26B, the so-called "carrier killers" with maximum ranges of 2,150 km and 4,000 km respectively.

As well as the threat posed by anti-ship ballistic missiles (ASBMs), lower-cost unmanned aerial vehicles (UAVs), such as the Iranian Shahed-136 drone, can carry a 50 kg warhead out to a maximum

These new challenges - alongside air and ground-launched hypersonic and supersonic missiles, mines, high-speed drone and manned suicide boats, surface and sub-surface launched torpedoes - means that modern warships and strike groups must have the ability to counter these threats in an efficient and timely manner. A key part of this is the coordination of the battlespace, with that task primarily taking place in the ship's CIC. The CIC is considered the 'nerve centre' of the warship, tasked with the coordination of the battlespace through analysis of sensor input derived from radar, electro-optics, sonar, ESM, human observation from the deck and bridge, as well as sensor input from other ships, airborne assets and satellites.

The CIC is a stressful environment that needs careful management. Errors can and do happen, as was shown in December 2024 when the USS *Gettysburg* shot down an F/A-18F Super Hornet with a SM-2 missile on its approach to the USS *Harry S. Truman* aircraft carrier. A second missile was fired but luckily missed another F/A-18F due to that pilot taking evasive manoeuvres. This incident highlighted two factors about modern warfare. The first was that technology does not always perform as specified and in this case that technology included IFF, Link 16, the on-board datalink infrastructure and *Gettysburg's* Cooperative Engagement Capability (CEC);

a system designed 'to provide a single integrated air picture.' These equipment failures were compounded by a failure in the handover procedures between CIC operators. All of these factors have a bearing on training and what training is undertaken.

Human factor shortcomings were also highlighted in the US Navy's Strike Group Investigation Report summary issued in December 2025. The summary stated, "that a lack of integrated training opportunities between USS *Gettysburg* and the Carrier Strike Group, lack of forceful backup [speaking-up when something is going wrong or not as expected] on the cruiser, and lack of cohesion across the Carrier Strike Group contributed to the misidentification, and subsequent engagement, of the friendly aircraft and near miss of another." In the words of one member of the *Gettysburg's* CIC team, "scenario complexity [during training exercises] did not reflect real world operations." In other words, the training being provided was not realistic or relevant.

CIC Training

Like all types of military preparedness, training members of a CIC starts with training individual skills. These individual skills are then brought together into team training before embarking on collective training for the complete CIC and other strike/carrier group enterprises. This collective training may be conducted in the synthetic (virtual and constructive) or live training domains, the former using simulation and the latter relying on real equipment and people. This feature will concentrate on synthetic training.

Both complement each other as a spokesperson for the German Navy HQ in Rostock told *ESD*: “The German Navy follow a blended model combining shore-based synthetic training with onboard training at sea. Synthetic exercises allow complex operational scenarios to be developed and adapted quickly, ensuring flexibility and efficient use of personnel and material resources.

“At the same time, live training at sea remains essential to validate procedures, teamwork, and command and control under real conditions.”

Synthetic training can be conducted onshore in a CIC simulator or alongside or at sea using embedded simulation in the real CIC equipment. Live training, although beneficial in many ways is now losing favour in some quarters because of its difficulty in accurately replicating threats such as supersonic and hypersonic missiles as well as massed drone attacks. As we shall see, the answer appears to be in improving synthetic training.

Although a ship’s CIC concentrates on tactical operations, it is very much reliant on communications with the bridge, engine room and damage control coordination and so it is vital that these elements are also factored into the collective training enterprise in addition to supporting vessels in the strike group.

In the UK, the Royal Navy has embarked on a project to reinvigorate its CIC training as a result of experience in the Red Sea and to increase the capabilities of its carrier battle group. Historically, the UK’s synthetic CIC training system of choice has been the Maritime Composite Training System (MCTS). Originally conceived by BAE Systems, the two shore-based MCTS sites are located at HMS Collingwood and HMNB Devonport. In May 2022, the running of MCTS was taken over by Team Fisher, the winners of the UK MoD’s Project Selborne competition that was charged with running the Royal Navy and Royal Marine’s shore-based training sites.

As part of the Capita-led Team Fisher, the two MCTS sites are operated by Elbit Systems UK. Supporting ASW, AAW, maritime security and multi-national exercises, the MCTS “environment is highly configurable, allowing the flexibility to develop multiple individual’s specific professional skills in one part of the facility, while achieving a crew’s joint training objectives at the same time within another area.”

Shore-based training constitutes the majority of synthetic training currently provided to CIC staff. At the NATO Maritime Interdiction Operational Training Centre (NMIOTC) located at Souda Bay in Crete, that organisation’s CIC simulator can train up to four command teams simultaneously to represent CICs from patrol vessels up to frigates.

The Romanian Naval Academy (RNA) at Constanta has adopted the ubiquitous Kongsberg Proteus Action Speed Tactical Trainer (ASTT) as its shore-based tactical training system. As well as training, the RNA also uses the device as a development and test environment for new tactics, threats and equipment. In evaluating the performance of the ASTT, RNA staff undertook a survey of 20 students from the 2024/25 cohort. “The results indicated a positive impact on skill development and tactical knowledge,” said LCDR Dr Ovidiu Cristea, Head of Navy Tactics and Combat Systems. “Participants reported significant perceived improvements: 25-30% in situational awareness, 30-40% in communication under pressure, 20-25% in teamwork and 30-35% in decision-making speed.”

A typical Proteus ASTT installation comprises a number of student cubicles that are controlled from an Instructor Operating Station (IOS). The cubicles are configured to feature simulated sensors, combat management systems, weapon simulations and communications, and if required the device can be networked with a ship’s bridge simulator.



▲ **The Kongsberg Proteus ASTT is used widely at the Romanian Naval Academy and features a number of student cubicles that are controlled from an instructor operating station. (Source: RNA)**

Another approach to shore-based CIC training can be seen in Sweden where the Royal Swedish Navy selected CAE to provide its Naval Warfare Training System (NWTS) for its Naval Warfare Centre at Karlskrona in the country’s south-east. Becoming initially operational in 2016, the heart of NWTS is the Naval Combat Systems Simulator (NCSS) that features 52 student stations and 13 IOS. Having received a number of upgrades over the years, NWTS is now also being used to undertake operational research for the adoption of the Luleå class frigate, a larger and long-range surface combatant than used hitherto by the Royal Swedish Navy that will be optimised for NATO operations in Northern Europe.

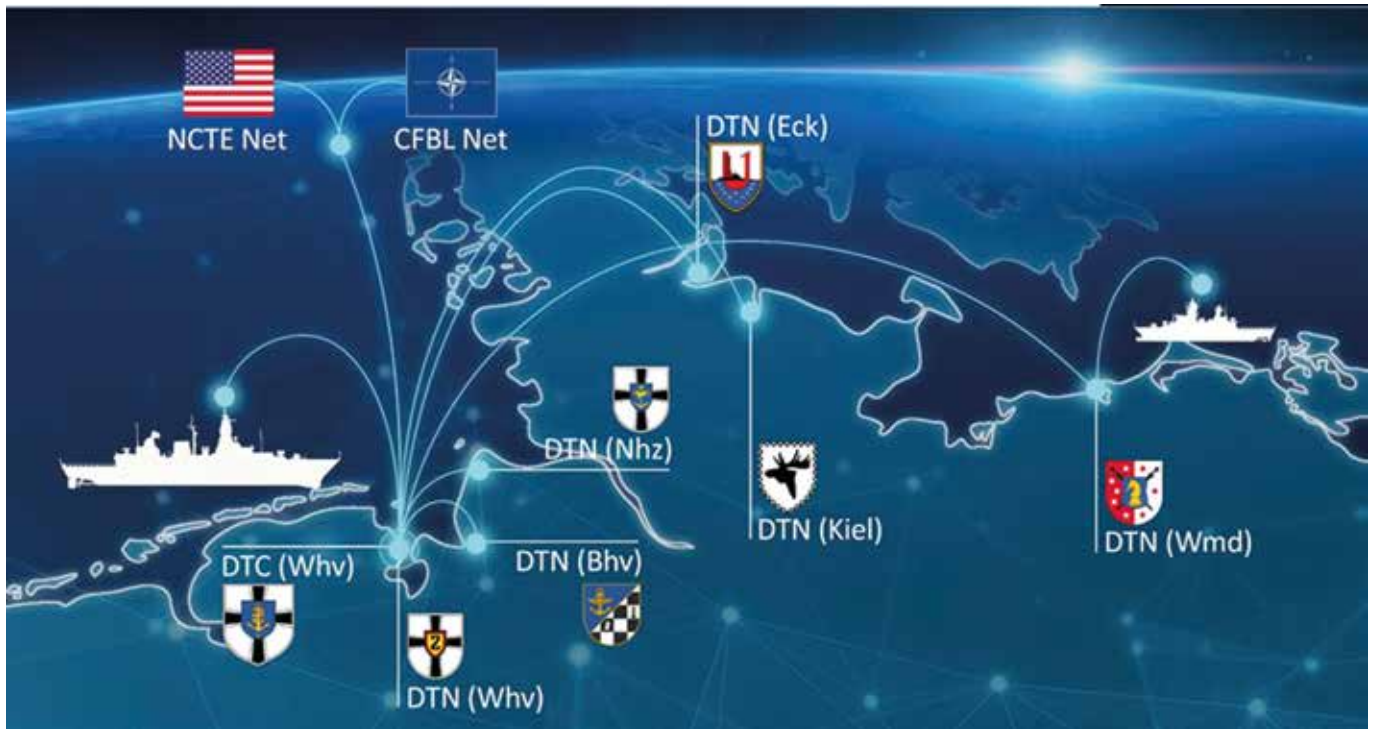
On the back of its success in Sweden, CAE won a contract in the Abu Dhabi to develop a Naval Doctrine and Combat Training Centre (NDCTC) at Taweelah. In addition to CIC simulation, the centre features a range of other naval simulators that can be networked to enhance the CIC exercises if required.

Other Approaches

In the US, the Surface Combat Systems Training Command (SCSTC) is responsible for CIC training. Headquartered at Dahlgren, Virginia, SCSTC comes under the US Naval Education and Training Command (NETC). Its mission, "is to provide the United States Navy and our allies with highly trained war fighters to maintain, operate, and tactically employ surface combat systems across the spectrum of operations."

in Western Australia. Serco's primary sub-contractors are CAE Indo-Pacific, Sayres Australia, JMC and Indo-Pacific. Like many navies, the RAN approach is primarily shore-based as the force, "continues to place greater emphasis on synthetic and simulation-based training to improve readiness while reducing pressure on operational platforms."

The whole question of whether training should be conducted onshore, in a classroom or when the ship is at sea raises a number of issues. As the RAN has highlighted, shore-based synthetic training means that there is no wear-and-tear on operational vessels nor is there a need to misuse an operational vessel for training. There is also the safety factor to consider in that training in a simulated CIC environment onshore is a relatively benign environment compared to being at sea. Some CICs already have a



▲ Shown here are the six locations of the German Navy's VTAM simulation network. Those being: Wilhelmshaven, Rostock-Warnemünde, Bremerhaven, Eckernförde, Kiel and Nordholz. (Source: Rheinmetall)

A key element of the US Navy's CIC training regime is its Re-configurable Combat Information Center Trainer (RCT). Used primarily to train AEGIS CIC personnel, the RCT forms part of the Surface Training Advanced Virtual Environment – Combat Systems (STAVE-CS) that has been developed in conjunction with Cubic Defense and Leidos. With three RCTs now in service, a fourth is shortly to be deployed to San Diego.

As far as training for the Littoral Combat Ship (LCS) is concerned, like AEGIS, CIC training is primarily conducted onshore. The US Navy says that, "operational demands do not allow sufficient time for under instruction watchstanding or proficiency training during operational periods, and crews do not have organic training teams or embedded training systems. This new approach drives the need for the shore-centric Train-to-Qualify and Train-to-Certify concepts, which rely heavily on high-fidelity shore-based trainers."

In Australia, Serco has recently renewed a contract to manage the Royal Australian Navy's (RAN) maritime warfare training that is delivered at HMAS Watson in Sydney and HMAS *Stirling*

limited embedded training capability, an example being the Lockheed Martin Canada Shipboard Embedded Training Tool (SETT) that forms part of the company's CMS 330 CIC system.

CMS 330 SETT is independent of the operational system meaning it does not interfere with operational software. It can be used to train sub-teams or the complete CIC. As well as purely virtual content, SETT can also accommodate real world live inputs during an exercise.

One of the major players in the provision of CIC simulation is Rheinmetall. The company's latest contract with the German Navy concerns its Distributed Naval Training Architecture, abbreviated to VTAM in German. The project will network virtual simulators at six German naval bases to enable, "crews of vessels, boats and aviation units to be trained together in a virtual scenario". Exercises will be coordinated from the VTAM Distributed Training Centre at the Naval Support Command in Wilhelmshaven. As well as the shore-based simulators, Rheinmetall says vessels at sea can be linked for "networked virtual exercises."

“Single-ship CIC training is comparatively straightforward,” explained the German Navy Rostock-based spokesperson. “Greater complexity arises when operating within task groups, particularly multinational ones, where interoperability, secure data exchange, and a shared operational picture are essential.

“Our distributed simulation environments are specifically designed to train these aspects, including real-time command and control across national boundaries. During Exercise Dynamic Mirage for example, all participants were connected via military networks, enabling real-time command and control. The Commander Task Group and staff operated a virtual maritime task force, maintaining a continuously updated recognized maritime picture while executing operational tasks.”

Dynamic Mirage was conducted by NATO Allied Maritime Command in the North Sea and was a “synthetic training exercise designed to enhance maritime operational and tactical war fighter capabilities in contested environments. It [focused] on testing command teams against threats above, on, and below the sea, with significant participation from the Royal Canadian Air Force alongside eight other NATO nations.”

More Radical?

In the UK the Royal Navy is looking to radically shake up how it conducts its training. Ambitions are high but long-term funding issues could limit horizons and truncate some of the highly ambitious programmes now being considered.

The over-arching Royal Navy training transformation programme is known as the Maritime Operational Training Environment (MOTE). MOTÉ comprises two elements; the synthetic SPARTAN (Synthetic Platform-enabled and Realistic Training for the Adaptive Navy) and the live APOLLO capability.

SPARTAN is being conducted in four tranches with the first, the Maritime Command and Staff Trainer (MCAST) awarded to QinetiQ in August 2025. Speaking at the time, Commodore Andy Ingham, commander of the Fleet Operational Standards and Training (FOST) organisation said, MCAST is, “...a dedicated synthetic training facility, designed to prepare us to face both known and developing threats.”

SPARTAN Tranche Two is concerned with developing a synthetic network to deliver exercise scenarios from a secure hub to enable ships to exercise alongside or at sea. Tranche Three will provide a Platform Enabled Training Capability (PETC) to enhance training whilst at sea. Players involved in this tranche include QinetiQ and its subsidiary, Inzpire alongside BAE Systems. Tranche Four envisages bringing together all shore and at sea-based simulation capabilities as well as aircraft. Funding is yet to be secured for Tranches Three and Four.

One of the key technologies involved in Tranche Three is the BAE Systems MIMESIS. The company says that its “MIMESIS synthetic environment provides a high-fidelity representation of the maritime warfare environment and everything in it; from terrain and seabed, to weather and underwater acoustics; accurately modelling the movement and behaviour of ships, submarines and other platforms, and digitally replicating their unique capabilities including combat management systems, sensors and effectors.”

MIMESIS certainly seems to be able to deliver. In 2023 it was used as part of a concept demonstrator process at RNB Portsmouth when HMS *Queen Elizabeth*, HMS *Diamond* and HMS *Kent* were networked as part of the proof-of-concept exercise.

More recently, MIMESIS formed the core of Exercise Virtual Warrior 25 that took place in the hangar of HMS *Queen Elizabeth* at RNB Portsmouth where the Royal Navy was exercising its Carrier Support Group (CSG). Although not using actual CIC equipment, the exercise brought together CIC crews from HMS *Prince of Wales*, HMS *Dauntless* and HMS *Portland*. Also taking part in the exercise was a virtual *Arleigh Burke*-class destroyer from the US Navy.




▲ **Located at the Swedish Naval Warfare Centre in Karlskrona, Sweden, its shore-based Naval Warfare Training System has been supplied by CAE and features 52 student stations. (Source: T. Nash)**

With industry support provided by BAE Systems and MASS Consultants, the exercise was managed by the Royal Navy’s Joint Training and Planning Staff, part of FOST. It is understood that the exercise marked the first time that operational level battlestaff had worked together with tactical level operators in a single synthetic exercise.

Conclusion

The CIC is the pivotal factor in ensuring the vessel can complete its mission and counter threats against it, as well as the other vessels in its group. Training the CIC crew features two approaches; synthetic and live. As far as synthetic training is concerned, this may be conducted on-shore using simulator-based classrooms or using embedded and perhaps stimulated systems associated within the actual CIC while the vessel is alongside or more rarely, at sea.

Another factor to be considered is the need to accommodate coalition partners in this type of training. The need to network other nation’s vessels into strike and carrier strike groups is paramount. Although a challenge, this requirement is growing in importance. There is no real consensus as to the optimum solution as factors such as crew and ship availability, costs and safety all play a part. The real trend is that industry is now able to offer the user higher-fidelity training options that more adequately reflect real world operations. VTAM and MIMESIS provide examples perhaps of where CIC training is moving towards. Less stand alone, more standout. 

Finland Offers New 4x4 Armour Option

David Saw

In the wake of the Russian invasion of Ukraine on February 24, 2022, the security situation in Europe changed dramatically. For Finland it was clear that these new circumstances made it essential that they join a collective security organisation to further enhance their defence capabilities. As a result, they applied to join NATO on 18 May 2022. Sweden reacted to the changing European security situation in the same way and also applied to join NATO on the same date. Finland would become a full member of NATO on 4 April 2023, while Sweden would gain membership on 7 March 2024.

The new security situation and NATO membership would lead both Finland and Sweden to enhance their defences, subsequently both of them would look, where possible, to collaborate and coordinate their defence procurement efforts. In consequence this would mean that not only would domestic defence markets grow in tandem with new requirements, but joint procurement requirements by Finland and Sweden would further grow the available market.

There was already a basis for collaboration via the Nordic Defence Cooperation (NORDEF) grouping of Denmark, Finland, Iceland, Norway and Sweden established back in 2009. As a part of this the Joint Nordic Defence Industry Cooperation Group (JNDICG) was formed so that defence industry associations could cooperate for mutual benefit. In the current defence environment serious defence procurement cooperation between the Nordic countries is becoming an increasing reality, opening the way to further joint procurement in indigenous Nordic systems.

Opportunity

All of this means that national defence markets in the Nordic countries have not only grown, but now there is the opportunity to address a broader multinational Nordic defence market. Into this environment steps a new defence player in the shape of a Finnish company SCATA, based in Jakobstad in the Ostrobothnian region. Location is important here as the region contains many engineering and metalworking enterprises, these will provide a supply chain to SCATA and also offer the potential to significantly increase vehicle production capabilities as required.



▲ **The SCATA MK1 is a modular family of 4x4 armoured vehicles utilising the Texelis Celeris mobility platform. According to the company first deliveries of the SCATA MK1 could be made before the end of this year, with production ramping up to between 150 and 200 vehicles in 2027. (Image: SCATA)**

There is a background in specialist vehicles within SCATA, the foundational idea behind the company is to meet what they saw as a requirement to fill the gap in the Finnish Army (Maavoimat) armoured/protected vehicle fleet. The Maavoimat has the Sisu GTP at the low end of this vehicle spectrum, this 4x4 vehicle has a gross vehicle weight of 16,500 kg and a payload of up to 5,000 kg, protection level is to NATO STANAG 4569. There are three variants of the vehicle available and the Maavoimat was the launch customer, more recently in 2025 a joint order was placed by Finland and Sweden for up to 300 GTP vehicles split between both countries.

Above the GTP in the Maavoimat armoured vehicle fleet came the Pasi in the XA-180 and XA-185 variants, this 6x6 vehicle was procured in large numbers by Finland with substantially more than 400 acquired from 1983 onwards. An effective wheeled APC reflecting the operational requirements of that era, it is in the 18-ton weight category and apart from Finland it was exported to the Netherlands, Norway and Sweden, with more recent operators being Estonia and Ukraine.

The opportunity that SCATA saw was for a vehicle that would fit between the GTP and the Pasi, this led them work with Maavoimat to define a requirement and then work on a design for a new 18-ton class 4x4 armoured vehicle. The next challenge to be surmounted was the question of a mobility

platform for the new vehicle, in principle it could have been designed in Finland, but this would have increased risk, time and cost.

The solution to the mobility issue was found at SecD-Day, a defence conference and exhibition held in Helsinki at the end of January. Amongst the exhibitors was the French company Texelis, they had provided the axles for the Sisu GTP, they had also worked on significant international armoured vehicle programmes. For example, they provided Yugoimport SDPR in Serbia with T700 axles for the Milosh 4x4 Multirole Tactical



- ▲ **The SCATA MK1 Light Air Defence variant is optimised for C-UAS missions where its could be fitted with the Saab MSHORAD system for the RBS70NG for example. Other C-UAS option could include a gun system mounted on an RWS.**
(Image: SCATA)

Vehicle (combat weight 14 tonnes), T750 axles on the larger Miloš 2 4x4 Multirole Tactical Vehicle (combat weight 18 tonnes), while Texelis T900 axles and other systems are used on the Lazar 3/3M 8x8 vehicles. It was in France that Texelis would win its most important defence programme, providing the mobility platform for the Véhicule Blindé Multi-Rôle Léger (VBMR-L) Serval 4x4 armoured vehicle programme. Serval is in service and on order for the French Army in large numbers, it has also been ordered by Belgium, Croatia and Luxembourg, with Ireland also said to be interested in an acquisition.

Texelis then went on to develop Celeris, a turnkey modular armoured vehicle mobility platform applicable to 4x4, 6x6 and 8x8 vehicles, featuring a Cummins diesel engine and an Allison transmission. Because the Celeris system has been optimised for the military marketplace, it is designed for a service life of 30 years or more in a military environment. This is particularly important as there are some manufacturers who have attempted to base their vehicle solutions on commercial vehicle and truck platforms, with less than impressive results. Thus far the Celeris system has been selected for programmes in Canada and Indonesia with interest from other international customers.

The people from SCATA visited the SecD-Day conference and exhibition, they met Texelis and found themselves with the solution to their mobility platform needs with the Celeris sys-

tem. This enabled the programme to move forward at pace, with the first two SCATA MK1 prototype vehicles being available rapidly. According to SCATA a testing programme continues with Maavoimat assistance with one prototype, while the second SCATA MK1 vehicle will be on display at the Eurosatory exhibition in Paris in June.

Options

Initially the SCATA vehicle will be offered with Cummins diesel, but a hybrid -powered option could also be available, this is an

area that Texelis also have expertise in. As a modular system the SCATA MK1 can be offered in a number of different variants: these include an APC, an armoured ambulance, a flatbed version with the capability to carry a 10-foot container, a version for Special Forces and a Light Air Defence variant that could be equipped with the Saab MSHORAD system and RBS70NG or a gun system according to operational taste. The modularity of the SCATA MK1 system also means that the vehicle protection level can be geared to meet differing operational requirements.

The SCATA vehicle is already attracting interest within the Nordic region, but also in broader international markets. The starting point for SCATA sales is likely to be the Maavoimat, then Sweden is seen as a strong potential market. Norwegian requirements are also of interest, but to progress that opportunity a Norwe-

gian partner will be required, with the emphasis on after-sales support and long-term maintenance. According to SCATA they have also held talks about the vehicle with a broad range of potential international customers. While they were not willing to be more specific on these international customers, they did suggest that these customers could be drawn from North Africa, Europe, the Middle East and Asia. The company is also prepared to support local production of the vehicle if requested by the customer.

Initially though the objective is to have SCATA MK1 production in Finland, with first deliveries being possible at the end of 2026. Initial production could reach between six and 12 vehicles per month. After that point SCATA believe that they will be able to significantly increase production in 2027, with figures of between 150 and 200 vehicles per annum being reached.

SCATA are only at the beginning of their defence industrial journey, but they have an extremely viable armoured vehicle proposition to put to potential users. Add to that the fact they are in a position to offer deliveries in 2026 and mass deliveries in 2027, this becomes a very interesting proposition indeed. The 4x4 armoured vehicle sector is highly competitive at this point in time, but if SCATA can get a launch order in the near-term then it should be on course for significant success in the Nordic region and beyond.

Continued from Page 1

Having an IRBM capability means that Iran had the ability to target Berlin, Paris and London, certainly London would have had no defence against such a missile attack. There are other weapon options that Iran could deploy against Europe, these include the Soumar cruise missile system. The DPRK has developed a range of land-attack cruise missiles, the Hwasal-1 and the Hwasal-2, it is not beyond the bounds of possibility that DPRK assistance was necessary for Iran to make this a reality. In Europe, Vienna, Berlin and Rome are all within the operational range of the Soumar system.

Beyond these ballistic and cruise missiles, the Iranian UAS threat should not be ignored. The Shahed-136 UAS (also manufactured in Russia as the Geran 2) has the range to attack targets in Central and Eastern Europe from Iran, as is well known these UAS systems have been produced in large numbers, consequently selected European targets could have their defences overwhelmed by a mass attack. Considering the level of military-technical collaboration between Iran and Russia it is conceivable that Russian technology and potential assistance could have been used to improve the performance of Iranian systems.

Beyond nuclear weapons that they were on the verge of deploying, there are other aspects to the Iranian WMD arsenal. Iran had been the victim of chemical attack in the Iran-Iraq War (1980-1988) and had built its own chemical capability in response. Since then, it has invested in a full cocktail of blister agents, choking agents and blood agents, it has also developed a capability in nerve agents such as Sarin (GB). There have also been reports of chemical weapons being used against anti-regime demonstrators. Again, links with the DPRK could have given Iran increased abilities to develop chemical agents and even biological weapons. The DPRK shares no ideological sympathies with Iran, on the other hand they do like the fact that Iran will pay for weapons and defence technology with US dollars and/oil. There is also the fact that the more the world is focussed on the Middle East, the less attention it pays to what the DPRK is up to.

Imagine if you will what the situation would be if Iran was able to achieve its goal of having a deployable WMD capability? With the security provided by a WMD umbrella Iran could threaten regional neighbours either directly or via its surrogates like the Houthi in Yemen, the Shia militias in Iraq, Hezbollah in Lebanon and Hamas in Gaza. It could manipulate energy prices and it could even set the scene for regime changes in the region. International responses could be deterred via the Iranian IRBM and cruise missile capability, if Iran gained an ICBM capability with DPRK assistance, it could then target the Eastern Seaboard of the US. For rational people, allowing a country with a propensity for public executions and condemning people to death for "Being at War with God," to have WMD capabilities would be incredibly foolish. While stopping them getting WMDs and halting their ability to threaten neighbouring states would appear to be entirely logical.

Ever since the military operations in Iran have started, oil and gas prices have trended upwards, increasing even further since the Iranian statements that they will close the Straits of Hormuz and their attack on fossil fuel infrastructure in neighbouring states. Why is it that people are only interested in energy security when energy supply is no longer certain and costs have risen dramatically? If the current conflict had taken place in the European winter and gas supplies from the Middle East had been disrupted, with US gas shipments delayed due to weather conditions, the consequences would have been catastrophic.

It is clear the European nations must keep a strategic oil and gas reserve that they can draw down upon in times of crisis, hoping that a greater emphasis on renewable energy will solve the problem still remains a fantasy. The aftermath of the Russian invasion of Ukraine in 2022 and its impact on Europe should have been warning enough that in an unstable world that a strategic energy reserve was absolutely essential.

Finally, it is important to mention the question of international law. There have been numerous instances of the US and Israeli actions against Iran described as being against international law. Many European politicians have expressed their opinion that what is happening is contrary to international law, if they were more honest, they would say that they have no intention of having to make a decision on whether to join the conflict or sit it out. International law provides a convenient set of words to hide behind!

To be clear, international law does not require a country to be attacked before it takes military action to defend itself, its people and its allies. International law does not require a country to receive the sanction of the United Nations (UN) to defend itself against an actual or perceived threat. Indeed Article 51 of the UN Charter contains the inherent right of self-defence. When progressives start with their mantra on international law, their objective is to stop Western nations taking any form of military action that they disagree with, on the principle that it is inherently wrong. This is the path that leads to disaster.

David Saw

A Recap on NATO's 21st LCM Conference

Andreas Kirchhofer

At the annual NATO Life Cycle Management (LCM) Conference, held on 20-21 January 2026 in Brussels, representatives of government, military, industry, and NATO presented new visions, innovative approaches, developments, lessons learned, and achievements. Overall, the conference was well received by participants.

It was particularly appreciated to have a transatlantic format to bring the different communities and participants together. In contrast to former years, a host of new faces underlined the relevance of the topic and the format, as well as the interest in NATO standardisation, i.e., the brand new STANAGs, like 4876, ALP-10 or the revision of Programme Processes, Quality, Life Cycle Cost, Engineering and Configuration standards. Nevertheless, the concepts, methodologies, business approaches and opportunities offered by System Life Cycle Management, whether applied from the outset or introduced later in a system's life cycle, remain insufficiently recognised outside these specialised communities. Their potential impact on capabilities and business models, however, is substantial.

It may be surprising for insiders, why and how a topic that effects at least 70% of the total cost of ownership, as well as 100% of the Operational Availability of Systems, is so often neglected, forgotten or disregarded in industries, as well as in the military. It is even more astonishing, since the prospects of efficiency, savings, long-term agreements to the benefit of all stakeholders are so tremendous, that it was worth building and maintaining an international community of interest, with more than 60 years of experience and research gained in this time.

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▲ **The 21st Life Cycle Management in NATO Conference and Exhibition was held from 20/21 January 2026 at the Holiday Inn Brussels Airport. The event was organised by Mittler Report in cooperation with the NATO Life Cycle Management Group (LCMG) and the NATO Industrial Advisory Group (NIAG) Industrial Interface Group. (Image: Mittler Report)**

It is also amazing that the same deficiencies are repeated, time and again. Even organisations and programmes that once excelled are not immune to setbacks when a new generation of management or operational personnel takes over. One safeguard is a strong tradition and standardisation of achievements, which can serve as enduring "tools" for both current and future generations. Alliance standardisation offers a means of facilitating interoperability through a revised set of standards that provide guidance, enable practical use, are directive, thereby protecting investments, and include assessment tools to support continuous optimisation by all stakeholders.

The event was organised by Mittler Report Verlag in cooperation with NATO's Conference of National Armament Directors' (CNAD) two main groups, Life Cycle Management Group (AC/327) and NATO Industrial Advisory Group's (NIAG) Industrial Interface Group to AC/327 (NIIG).

The application of System Life Cycle Management (SLCM), as a basis for new, flexible, and innovative approaches, remains the key enabler in turning plans and investments into actual combat power in the hands of the war fighter, persistently available, reliable, maintainable, adjustable, and sustainable. In addition to the military perspective, it is worth noting that SLCM is a scientific methodology and organisational business approach focused on the life cycle of a system, designed to use a system to deliver

capabilities within, by, and across organisations. Next to military usage, it has an important relevance in all civil areas, where the operational availability of systems is key.

The utilisation of SLCM is all about implementing operational efficiency, that allows for more targeted actions, shortens adjustments to the ever-changing operational environment, and strengthens both the quality and flexibility of the systems and its operations. The aim is to provide and operate (and maintain) systems to support the war fighter in a most flexible, fast, and efficient way. Operational availability of systems and a sound system-of-systems design, across the value chain, are key elements for sustainable allocation and use of capabilities. It is a matter of control and efficiency.

Delivering operational availability throughout the entire life cycle of a system — and doing so in a cost-effective way — represents a profound conceptual shift.



▲ **The theme of the 21st NATO LCM Conference was “Cooperating for Capability: The Key Enabler from Investment to Combat Power.” The conference audience came from government, military and industry from across Europe. (Image: Mittler Report)**

It should be requested by customers as a key characteristic or new capability from the very beginning, at the pre-concept stage. It must be planned for, be part of the initial requirements, and supported by a sound business model to be fulfilled by the contractor, starting in the conceptual stage and to be addressed and performed throughout the whole life cycle.

This year’s conference saw a new structure: two blocks with round-table discussions and a dinner the first day. Another two blocks with round-table discussions and the conclusion on the second day.

Day 1

The first day was well received by participants; in contrast to previous years, new faces testified to the relevance of the topic and also the format.

Block one: “Overview LCMG, Operational Availability, Digital Enablement of Collaborative Life Cycle Management, Asset Development & Support”.

After the opening by the conference chairs, Gizem Özkan, Chair of AC/327, informed about the structure, mission and latest, highly relevant topics the group was working on. NATO standardisation is perceived as an enabler of collaboration and interoperability; a huge range of standards exist, which means solutions. Manuela Tudosia, Chair of NIAG’s industrial interface group to AC/327, explained how industry experts can become involved in NATO standardisation.

NCIA’s Massimiliano Filippi provided insights into inherent and operational availability, the requirements to achieve it, and its consequences. He outlined the link between operational availability of systems and service level agreements, supported by NATO’s AAP-20 and AAP-48. He also presented a theory with multiple models and emphasised their purpose: to reduce downtime, both within the organisation and across the supply chain. From the outset, an important consideration was designing for availability, incorporating appropriate models for delay time and life cycle costs. From these overall concepts and requirements, he expanded the discussion to the specifics of COTS-intensive systems and NCIA’s approach to managing them.

The data management and analysis section consisted of three presentations, beginning with Deloitte’s James Wood and Mark Gaunt on Digital Enablement of Collaborative Life Cycle Management for Assets. They shared and discussed three models of data exchange and collaboration within a project. Simon Pettersson from Eurostep presented a software solution for data exchange purposes. Fraunhofer’s Martin Kröll shared technical, sensor-based approaches from the automotive industry and discussed different topics, including sensor fusion.

A lively round-table discussion concluded that the problems in interaction between stakeholders can be traced to a lack of sensible, acceptable standardisation. This is exactly where NATO’s Life Cycle Management group can offer proven, relevant approaches and “tools”.

Block two: “Modelling, Simulation, integrated digital Engineering, Aftermarket approaches and Obsolescence Management”.

The second block in the afternoon combined modelling, analysis, simulation, and insights from the aftermarket, as well as effective use of additive manufacturing. It kicked off with a presentation by SYSTECON’s Younes Lousseief and Oscar Tengö, who introduced a simulation model, working through different programme levels, with a focus on collaboration, capability readiness, and an interoperability perspective. Ryan Griffin of CDS Defence & Security shared an example for a discrete event simulation on a mathematical model without the need for a large software tool. Martin Holland introduced PROSTEP and relevant projects and activities based on their software solutions. Yarkin Sargin of ASELSAN, explained how his organisation treats sustainability - as a strategy, not as a service and why traditional support models are often subject to failure. It starts with the operational profile as a basis for a sound sustainment design. Finally, Michael Wohlfahrt of EOS offered practical examples on when and how additive manufacturing may deliver real-life contributions to cope with obsolescence, long-lead-times and how they might support supply chain resilience.

The second round-table discussion concluded that for every system, it has to start with a sound analysis of the operational environment, to identify requirements and CONOPS that are to form

the basis for a thorough integrated analysis, as defined in ALP-10. A sound system approach, a re-use strategy based on a standardised, flexible, integrated environment is the key to success. In short, doing the right things at the right time.

Participants appreciated the possibilities to exchange ideas and experiences at the cocktail, followed by the dinner. A great first day overall.

Day 2

Block one: “Life Cycle Costing and Optimisation”.

Murat Arda Cakmak, in his role as AC/327 WG/3 Chairman, introduced the working groups’ perspective and long-term planning. He stressed that speed was crucial and quick decisions should be taken. He introduced a Cost Estimation Tool Mapping to provide an updated summary of methods, models and software across

that the basis for a sound Life Cycle Cost analysis should be a sound Support Analysis integrated with systems engineering long before a preliminary design review. This was perceived to be crucial to influence the design of a system of interest / aka product in a way that it is designed to be supportable, reliable and maintainable. Based on a sound integrated approach, reliable information will be generated that can be used to calculate or simulate diverse scenarios for decision.

Block two: “Asset Data Management, Unique Identification, Contracting against KPIs, Change Management in PMO”.

Andrew Keserich of Camcode Global highlighted the issue of asset data optimisation, sharing an example from the Netherlands that he worked on with KPMG. Data sources included ERP systems, legacy data, SME knowledge, and others. He addressed the challenges of collecting and cleaning this information. He also showed that, even without optimisation or changes, valid information can yield up to 20% in cost savings.

Roketsan’s Emrah Özdemir, sensitised the audience regarding a key area of conflict that exists at the beginning of programmes: 70% of Life Cycle costs (in-service) and 80% of the project budget are committed at a project stage when 20% of the total costs are spent. Based on Roketsan’s experience, 35% of projects become successful, while 90% of products fail. While artificial intelligence on past data and user data in the in-service stage may create insights for the future, a sound in-service maintenance optimisation process should generate input for new projects.

Fergus Hawkins and Simon Pethick from TFD Europe, shared insights regarding contracting to capabilities, performance-based contracting, KPI alignment in equipment support, and that in many organisations, civil and military, the necessary structures are not yet established. They introduced a metrics-based approach following a system of contracts at different levels down through the supply chain, and the need to strike

a balance in order to quantify risks and prices. Dynamic KPIs can be aligned with system availability, integrated life cycle support planning, and corresponding support strategies.

Pam Rooney, US DoD Contractor and Alan Cunningham, Camcode Global updated about US acquisition policies in relation to STANAG 2290. They gave insights to the work of the Asset Tracking Working Group leading to IUID 2.0. Among other important changes, the focus now lies on NCAGE, Part Number, and Serial/Charge Number (and equivalents), while virtual UIIDs are no longer permitted. GS.1 had been removed with regards to the revised MIL-STD-130, while the respective programme office is responsible for identifying the items to be identified.

It was concluded that there remains a high demand for usable standards and a transatlantic forum to exchange experiences, trends and developments. The participants, as well as the chairs and organisers, are looking forward to the next conference in Brussels, in cooperation with NATO AC/327 and the NIIG.



▲ **One of the most important features of the Life Cycle Management (LCM) in NATO Conference and Exhibition is the opportunity for attendees to question and interact with speakers over the two days of this critical LCM event. (Image: Mittler Report)**

NATO. The aim is to provide policy documents with practical guidance. Atte Hytönen and Jaakko Mustonen of Patria stressed the importance of data integration for comprehensive insights based on correlations. They introduced a tools-based approach and shared insights into their challenges on data analysis. Joachim Schöffner explained the 4cost bottom-up, top-down and parametric approach on Life Cycle Cost Estimation in relation to the respective life cycle stages of a system. He emphasised the importance of a sound product structure, the relevance of a system-of-systems approach and how to determine Life Cycle Cost parameters and a model-based approach. Sirius Analysis’ Sanathanan Rajagopal explained how they support the UK MoD with an appropriate, attributable, reasonable approach on how to determine acceptable evidence for cost justification of suppliers and a relation to a risk register to be used as a basis to evaluate risks in single source contracts.

During the first roundtable of day two, participants discussed how and when Life Cycle Cost analysis makes sense or may be feasible at all, and to what extent. One fact shared was



Restructuring of the Marine Corps:

Brazil and Germany in Comparative Perspective - Challenges, Innovations, and Convergences in the Transformation of Amphibious Forces in the 21st Century

Maximiliano Pinheiro de Oliveira



◀ An Oshkosh JLTV of the Brazilian Marine Corps waiting to embark on the LPH NAM *Atlântico* (A140). *Atlântico* was formerly HMS *Ocean* of the Royal Navy and was commissioned into the Brazilian Navy on 29 June 2018. (Image: Brazilian Marine Corps)

Such restructuring is not occurring in isolation. It represents a coordinated response to evolving threats, deeper integration with alliances such as NATO (in Germany's case), the strengthening of resilience, and the adoption of innovations including artificial intelligence (AI) and autonomous systems. Central to this transformation is the management of knowledge, which enables the systematic assimilation of lessons learned, ongoing

As the first quarter of the twenty-first century concludes, the international geopolitical environment has become increasingly intricate. Regional disputes, hybrid threats, and the rapid advance of technology present unprecedented challenges to armed forces. The conflict in Ukraine, ongoing tensions in the Baltic Sea, North Sea, Middle East and the Indo-Pacific, as well as the rise of armed non-state actors, exemplify a volatile and unpredictable security landscape. These developments necessitate far-reaching structural, doctrinal, and technological reforms within the Marine Corps of both Brazil and Germany, ensuring their continued strategic relevance and operational effectiveness.

AUTHOR

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doctrinal refinement, and the dissemination of best organisational practices. This approach also ensures alignment between technological innovation, organisational adaptation, and the strategic planning of naval forces and their amphibious contingents—essential instruments for power projection, the defence of sovereignty, and the safeguarding of national interests.

This article provides a comparative analysis of the restructuring processes under-taken by the Brazilian Marine Corps and the German Naval Infantry, highlighting areas of convergence, distinctive features, and emerging trends, with particular emphasis on technological integration, organisational resilience, and strategic alignment.

Modernization of the German Naval Infantry: Response to New Geopolitical Demands

Geopolitical and Doctrinal Context

Germany, positioned within a European strategic landscape increasingly shaped by the escalation of Russian threats—particularly following the invasion of Ukraine—has embarked upon a comprehensive reassessment of its defence posture. The Baltic

Sea, North Sea, and North Atlantic have emerged as theatres of strategic contest, where the presence of Russian submarines, the menace of hypersonic missiles, and hybrid activities such as sabotage and espionage demand swift and coordinated responses. This has led to the revision of NATO's regional strategies, requiring heightened readiness, interoperability, and deterrence capabilities from all member states, Germany included.

Consequently, from 2023 onwards, three pivotal strategic documents have been issued to steer the preparation and operational deployment of the German Armed Forces, with particular focus on the Navy and its amphibious elements. At the governmental level, the "Operations Plan for Germany" addresses the deteriorating security climate in Europe and underscores the necessity of robust civil-military cooperation to safeguard Germany and the eastern and northern flanks of the continent. The German Navy has published the "German Navy Objectives for 2035 and Beyond" and "The German Navy Navigation Plan", both of which, given the imperative for operational readiness, set out the requirements for the Navy and Naval Infantry to deliver credible combat power and deter emerging threats. These documents emphasise multidomain operations, advanced personnel training, acquisition and modernisation initiatives, and the integration of AI and autonomous systems.

As part of the Deutsche Marine, the German Naval Infantry is undergoing a transformation to move beyond its traditionally defensive and reactive stance, embracing a more offensive and expeditionary approach. The objective is to ensure operational capability in contested littoral zones, the protection of critical infrastructure, and a meaningful contribution to the collective defence of the Atlantic Alliance. This includes closer integration with naval forces, engagement of maritime targets from land, countering hybrid threats, and the deployment of assault craft for operations against coasts, islands, and ports.

- ▼ **NDM Oiapoque is an Albion class LPD launched in December 2001, acquired from the Royal Navy in 2025 and commissioned in the Brazilian Navy in 2026. Formerly HMS Bulwark (L15), the Oiapoque is a major addition to the operational capabilities of the Brazilian Marine Corps. (Image: Brazilian Marine Corps)**



Structure, Activities, and Innovations

The restructuring of the German Naval Infantry encompasses the reorganisation of its units, the modernisation of equipment, and the adoption of new operational doctrines, with a particular emphasis on coastal defence. Activities span base and arsenal protection, amphibious operations, coastal



- ▲ **Snipers of the Seebataillon Reconnaissance Company on exercise. As the threat environment facing Germany has increased, the Seebataillon, German Naval Infantry, have undergone a transformation process, as has the Brazilian Marine Corps. (Image: via Brazilian Marine Corps)**

patrols, and participation in multinational task forces. Strategic planning highlights the necessity for rapidly deployable forces capable of securing and holding key positions, even under the demanding climatic conditions of the Baltic and Arctic regions.

At present, the German Marines are concentrated within the Seebataillon, comprising eight companies: Maritime Operations (two), Training (two), Diving and Countermining, Protection, Reconnaissance, and Support. The ongoing transformation will further reinforce this unit's pivotal role in amphibious and protection missions, including the utilisation of remotely piloted aircraft. Plans are also in place to establish a land-based coastal defence component, capable of engaging naval surface targets at extended ranges.

Technological innovation is at the heart of these reforms. The German Navy has invested in the integration of autonomous systems, aerial, maritime, and submarine drones, as well as process automation and the extensive application of AI for situational analysis and command and control. The intention is to embed the Naval Infantry within the Navy's digital combat network, enabling joint operations with unmanned systems.

Logistics, Personnel, and Strategic Alignment

Logistical frameworks are being adapted to ensure flexibility and sustainability in extended operations, including the pre-positioning of materiel in allied territories and enhanced multinational cooperation. The “one-third factor” (one third fully ready, one third in graduated readiness, one third in maintenance) is designed to maximise operational efficiency. Sufficient financial resources are essential to acquire the necessary assets in the quantities and timeframes stipulated by strategic directives. Standardisation of equipment facilitates maintenance and improves both availability and personnel training.



▲ **Riverine operations and Littoral Warfare, are a key part of the operational tasking of the Brazilian Marine Corps. Shown here a Brazilian Marine with an M4 5.56 × 45 mm assault rifle on a riverine warfare exercise. (Image: Brazilian Marine Corps)**

Human resources remain a priority, with a focus on comprehensive training and retention programmes, and the expansion of personnel, particularly in technological fields and the Naval Infantry, to support high-intensity operations. Strategic alignment is evident in Germany’s commitment to NATO’s mission, participation in joint exercises, and the sharing of information. Protection against hybrid threats is further strengthened through interagency cooperation and the enhancement of cybersecurity, supported by the establishment of legal frameworks for information exchange and improved situational awareness.

Restructuring of the Brazilian Marine Corps: Innovations, Challenges, and Perspectives

National Defence Strategy and Transformation Vectors

In Brazil, the ongoing restructuring of the Marine Corps (CFN) is intrinsically linked to the National Defence Strategy, released in 2024, which places emphasis on readiness, adaptability, and expeditionary capability. With its extensive coastline and vast network of rivers, Brazil faces distinctive challenges, including the defence of the “Blue Amazon”,

safeguarding critical infrastructure, and the capacity for swift response to humanitarian and environmental emergencies.

This transformation, presently underway, has been prompted by a range of internal and external factors, notably technological innovation, the development of human resources, automation and AI, the strengthening of strategic communications, and international cooperation. The IV Marine Corps Symposium, convened in Rio de Janeiro in 2023, played a pivotal role in assimilating global trends and adapting best practices, particularly in relation to personnel, doctrine, and materiel.

Restructuring and Operational Axes

The restructuring, initiated in 2024, is structured around four principal axes: amphibious, riverine, littoral, and protection. Within the amphibious domain, owing to its longstanding prominence over the past 70 years, no significant organisational or doctrinal changes have been identified. Nevertheless, the recent acquisition of HMS *Bulwark* (to be commissioned as Multipurpose Dock Ship Oiapoque in the Brazilian Navy) marks a substantial enhancement in amphibious capability, facilitating the deployment of helicopters, landing craft, and armoured vehicles, as well as joint operations with littoral craft and amphibious tracked vehicles.

The presence of 12 river basins and 42,000 km of navigable waterways underscores the strategic importance of the riverine environment for both the economy and national defence, necessitating specialised techniques, tactics, and procedures, alongside dedicated troops. The establishment of the Riverine Division Command will enable effective

coordination of reinforcements for Riverine Operations Battalions in the Amazon and Pantanal regions.

In relation to littoral operations, the prevailing global and regional geopolitical context, combined with Brazil’s unique geography, has necessitated a comprehensive transformation. This has resulted in the activation of the Littoral Division Command, five Littoral Operations Battalions, the Littoral Anti-Ship Missile Battery (utilising domestic technology), the procurement of Littoral Landing Craft, and the formation of Littoral Protection and Security Groups. These initiatives are designed to exert influence over the Maritime Theatre of Operations from land, enhance integration with naval assets during patrol and inspection, and reinforce the Defence Industrial Base.

The protection axis, which holds additional strategic significance due to the Navy’s leadership in the nuclear sector and its responsibility for the security of the Brazilian Nuclear Programme and other critical infrastructure, has led to the creation of a robust Nuclear, Biological, Chemical, and Radiological (NBQR) protection and defence system, comprising three NBQR Battalions and a dedicated NBQR Command to coordinate and integrate traditional protection activities.

The Immediate Response Force to Environmental Disasters (FRIDA), established in 2025, makes a direct contribution to the national Civil Defence System, aiming to deliver rapid responses to public emergencies through specialised teams and resources for emergency, prevention, and socio-environmental recovery operations.

A robust doctrinal development process is essential to underpin these changes. The Command for Training and Doctrinal Development (CTDDCFN) has been expanded to update concepts, integrate teaching and training with a focus on competencies and educational technology, and systematise operational techniques, tactics, and procedures. CTDDCFN is also tasked with collecting and analysing lessons learned to ensure the continuous improvement of training cycles.

Strategic Communication, Technological Innovation, and Desired Effects

The restructuring process is distinguished by intensified strategic communication and technological innovation, both of which will contribute to achieving the desired outcomes at regional and national levels. Strategic communication is vital for aligning objectives, strengthening organisational culture, and building credibility. For Brazilian Marine Corps, effective communication—particularly regarding its combat capabilities—serves to enhance institutional reputation, foster integration with society, and expand international cooperation.

Technological innovation permeates the entire organisational transformation, with the consolidation of the Marine Corps Technological Centre (CTecCFN) as a Scientific, Technological, and Innovation Institution responsible for the provision of specialised materiel. The establishment of a Tactical Drone Squadron and a Drone School will augment operational capability, supported by the creation of Expeditionary Manufacturing Units (UFEX) capable of producing drones and spare parts via 3D printing. The introduction of an AI research stream within the Advanced Officer Improvement Course further consolidates the CFN as a modern, technologically advanced force aligned with international best practice.

The synchronised and ongoing adoption of these initiatives will enhance deterrence and expeditionary readiness, consolidating the CFN as an instrument of national sovereignty and a cornerstone of Brazilian Naval Power projection.

Points of Convergence and Singularities

A comparative assessment reveals notable areas of convergence between the Brazilian CFN and the German Naval Infantry. Both forces are responding to an increasingly intricate international environment, characterised by hybrid threats, regional disputes, and the imperative to safeguard strategic interests. There is a shared commitment to developing modular, adaptable, and technologically sophisticated structures,

with particular emphasis on the integration of AI, automation, and unmanned aerial systems. Organisational resilience is highly valued in both contexts, manifesting in decentralised command structures, the protection of critical infrastructure, and the capacity to sustain operations following attrition. The standardisation of equipment serves to streamline maintenance and training, while effective knowledge management ensures the assimilation of lessons learned and the ongoing refinement of doctrine.




▲ **Brazilian Marines embarking on the LPH NAM *Atlântico* (A140). The Brazilian Marine Corps has been able to enhance its operational capabilities through the acquisition of the LPH *Atlântico* and the LPD NDM *Oiapoque* from the Royal Navy and by looking to embrace a programme of transformation. (Image: Brazilian Marine Corps)**

Nevertheless, distinctive features are evident. Brazil, with its expansive riverine, littoral, and territorial domains, places considerable emphasis on riverine operations, the defence of the “Blue Amazon”, and disaster response. Germany, operating within a framework of military alliances and facing both conventional and hybrid threats in Europe, prioritises integration with NATO, the protection of critical infrastructure, and readiness for operations in the Baltic and North Atlantic regions.

Conclusion

The examination of the restructuring processes within the Marine Corps of Brazil and Germany underscores the genuine necessity for adaptation to environments that are complex, volatile, and technologically dynamic. The prominence afforded to structural flexibility, the incorporation of disruptive innovations, and the elevation of knowledge as a strategic asset are clearly discernible as essential factors in maintaining strategic relevance and rapid response capability.

The convergence of trends such as automation, AI, and multidomain operations signals a future in which readiness, resilience, and innovation will serve as decisive differentiators. Ultimately, by reinventing themselves in response to contemporary challenges, the Brazilian Marine Corps and the German Naval Infantry are establishing themselves as exemplars in the transformation of amphibious forces in the twenty-first century. 

Russian Defence Exports: Growth Trends in 2025 (Part II)

Yury Laskin

Belarus is Russia's closest ally, with the two Slavic states deepening integration through the Union State of Russia and Belarus. Moscow supplies Minsk with key military equipment, including aircraft, tanks, and missiles, that Belarus does not produce domestically. A unified defence space has effectively been formed as part of the Union State, Dmitry Pantus, the Chairman of Belarus's State Military-Industrial Committee, said following a meeting of the Belarusian-Russian Intergovernmental Commission on Military-Technical Cooperation on 31 October 2025. According to Pantus, the meeting also addressed a range of issues concerning cooperation between the two countries' defence industries. "A protocol amending the 2009 military-technical cooperation agreement between our countries will be signed in the near future. As a reminder, a programme on technological processes was recently signed."

In recent years, the pattern of work in the Belarusian defence industry has changed significantly, according to Pantus. "We have moved from direct supplies to industrial cooperation. A huge number of parts, components, and assemblies produced in Belarus are used in finished products manufactured in Russia, and vice versa. We have made significant progress in aircraft manufacturing. These days Belarus supplies a fairly large volume of products and assemblies in this area. The Osvey (light passenger-transport aircraft) project and a number of others are well-known," Pantus noted. He emphasised that "sanctions have given additional impetus to the development of areas that were not very developed in Russia and Belarus."

A Deepening Relationship

A new batch of Su-30SM2 fighter jets arrived at a Belarusian airfield on 26 December 2025, the Belarusian Defence Ministry press service reported. The total number of the latest version of the Flanker-H fighter in Belarus has now grown to eight jets.

Deputy Commander of the Belarusian Air Force and Air Defence Forces, Chief of Aviation, Colonel Alexander Belyaev, said that "the arrival of new aircraft has already become a good tradition: the fleet is being steadily renewed." "These aircraft will soon undergo technical inspection at the air base and, in two weeks at most, will enter on duty to defend our beloved homeland in



▲ **The Sarma 300 mm MLRS made its international debut at the World Defense Show (WDS) in Riyadh in February. The system is said to have a range of 120 km and be highly accurate. (Image: Rosobronexport)**

the airspace," the ministry's press service quoted him as saying. According to Belyaev, "this is not the last batch: new equipment will continue to arrive." He described the Su-30SM2 as "a fighter aircraft that meets all the requirements for aircraft of this class," adding, "flying it is a true joy."

According to the United Aircraft Corporation (UAC), the manufacturer of the Su-30SM2, the new jets are outfitted with cutting-edge high-precision weapons capable of delivering strikes on air, land, and sea targets at a distance of several hundred kilometres. Earlier in December, Commander of the Belarusian Air Force and Air Defence Forces Andrey Lukyanovich reported that this year the Belarusian military had already received

new Tor-M2 short-range air defence missile systems, Su-30SM2 aircraft, as well as Mi-35M helicopters, and was purchasing the Vostok and Rosa radar systems.

Asian Market Expansion

“We started the transition to a long-term and comprehensive nature of planning interaction with partners. We implemented a new format of plans for three- and five-year period. These are the specific action plans comprehensively covering all the areas of cooperation,” Defence Minister Andrey Belousov announced on 17 December 2025. “Specifically, these are the exchange of experience in different military spheres, training of specialists, joint exercises and other practical forms of interaction, and military-technical aid and military-technical cooperation. We signed such documents with eight countries, including Belarus and a number of Central and Southeast Asian countries. Plans are to sign such cooperation plans with six more countries,” the minister added.

The six further countries with which cooperation agreements are likely to include a number of ex-Soviet republics and long-term ex-Soviet allies, such as Vietnam and Laos, plus Myanmar which has purchased significant quantities of Russian equipment. The recent visit of the Russian Security Council Secretary Sergei Shoigu to Vientiane, Laos, has shown that two nations can expand bilateral relations. Summing up the results of talks with Laotian leaders, Shoigu told reporters that the parties “did not overlook military and military-technical cooperation.” “There’s also a significant amount of work to be done here, given that during Soviet times, all armed forces of Laos were primarily armed with Soviet-made weapons,” Shoigu noted. He added that the interdepartmental Russian delegation “inspected a number of enterprises that are being created, or have already been created, for the maintenance and repair of these weapons, which were supplied to Laos at various times.”

Another country with great potential in the field of military-technical cooperation is Indonesia. “We traditionally have highly reliable relations in the military-technical cooperation sphere. Indonesia is our traditional partner in this area,” President Putin said on 10 December 2025 during the talks in the Kremlin with Indonesian President Prabowo Subianto. “Relations between the military departments are developing and are at a level of great professional cooperation. In our educational institutions, including military

academies, Indonesian specialists are trained on a regular basis, and we are ready to expand this cooperation,” the Russian president said. Indonesia has become a full member of BRICS and this may lead to further extension of bilateral relations.

Middle East and North African Developments

Apart from the Dubai Air Show and IDEX, Russia has extended its presence at the main regional exhibitions such as EDEX in Cairo, UMEX in Abu Dhabi and the World Defense Show (WDS 2026) in Riyadh, Saudi Arabia. While the first two exhibitions saw only mock-ups displayed, the Saudi-exhibition was chosen for the global debuts for a number of systems and also live demonstrations were undertaken.

Russia presented brand new products, tested in real combat, at WDS 2026 in Saudi Arabia, announced the Rosoboronexport Director General Alexander Mikheev ahead of the event. He also mentioned one of the most advanced missile systems currently active in the world market. “As for the export-grade Kalibr missiles, they are part of the Kalibr-PLC and Kalibr-NKE integrated missile systems, which are installed on submarines and surface ships supplied by Rosoboronexport to the navies of several countries,” Mikheev announced.

He also stated that Rosoboronexport had been offering a wide range of modern air-launched weapons being successfully used in real combat conditions. “They are designed for inclusion in the airborne armament systems of 4++ and 5th-generation fighters, both Russian and foreign-made”. According to Mikheev, the range of weapons include the RVV-MD2 and RVV-BD air-to-air missiles, the Kh-35UE anti-ship missiles, the Kh-38MLE air-to-ground missiles, the Kh-58UShKE anti-radar missiles, and the new-generation Kh-69 stealth cruise missile.

Rosoboronexport was the national pavilion organiser at WDS 2026, which included the Almaz-Antey Air Defence Concern, ZALA Company, the Rostec State Corporation, High Precision Weapons Holding, and the Kalashnikov Group amongst others. “The World Defense Show is one of the largest arms and military equipment exhibitions in the world. For us it has become a platform for showcasing the latest developments in the Russian defence industry to the partners in the Middle East and other key regions of our operations,” Mikheev added.



For the first time, Rosoboronexport unveiled the latest Sarma Multiple Launch Rocket System (MLRS) on show at the outdoor display area. This 300 mm MLRS was developed by the Rostec State Corporation on the basis of operational experience with rocket artillery. The Sarma is a next-generation MLRS. It employs advanced home-made electronic components, which has significantly improved its performance compared to predecessors enjoying a reduced ready-to-fire time and a better target engagement accuracy at ranges of up to 120 km.

◀ **The Orion-E UAS system on display at the Army 2024 exhibition in Russia. The system has achieved its first export customer in the form of Ethiopia. The Ethiopian Air Force (EtAF) displayed the system at celebrations marking its 90th anniversary in January 2026. (Image: Yury Laskin)**

One of the key advantages of the Sarma system is its high mobility. The vehicle can be deployed and displaced in just three minutes, while a full salvo of six missiles can be fired in 18 seconds to prove the vehicle's survivability in counter-battery fire conditions. The vehicle speed is up to 95 km/h. The Sarma armoured cabin protects the crew against mine and shell fragments, as well as 7.62 mm armour-piercing rounds. The MLRS can fire the full range of 300 mm unguided rockets of the previous generations as well as three types of most modern guided rockets: 9M543, 9M544, and 9M549 making the international debut at WDS as well. The Sarma was showcased at the exhibition as the fire element of a complete reconnaissance-and-strike complex which also employs the Supercam S350 UAV for target reconnaissance/recognition, and the Planshet-A artillery command and control system based on the Atlet armoured chassis.

The BTR-22, a new Russian armoured personnel carrier was also presented. This vehicle employs the ultimate experience with wheeled armoured vehicles and features a new layout and significantly improved ballistic protection and blast resistance. Depending on customer requirements, the BTR-22 could be equipped with either the BTR-82A's weapon station or a new Ballista remote-controlled weapon station fitted with the 2A42 30 mm cannon with a selectable rate of fire. The Ballista can also be equipped with two guided missiles, significantly increasing the capability of the system to destroy armoured targets and protected emplacements.

The new generation IL-76MD-90A(E) military transport aircraft, which delivered much of the Russian equipment to WDS 2026 was also displayed to demonstrate Russian transport aircraft capabilities. Also on display were the latest Russian loitering munitions, small arms and light weapons. The RUS-PE, the first domestically manufactured containerised loitering munition was shown for the first-time outside Russia. It is available in two versions: with a 1- or 2-kg warhead. The RUS-PE is equipped with a seeker, enabling fully autonomous employment. AI algorithms are used for target detection and identification. Rosoboronexport also showcased the KUB-2E loitering munition being integrated with the Skat-350M UAV to provide reconnaissance, guidance and signal relay functions. The ZALA Lancet-E reconnaissance-and-strike system, consisting of the Z-16-E reconnaissance UAV and two loitering munitions was also displayed.

According to Mikheev, Rosoboronexport's Director General, the global arms market has become highly diversified in the face of increased competition. "However, Russian products have a number of advantages, including combat experience, advanced technology and independence from imports. These and other factors often determine the choice of Middle Eastern partners," he added.

Talking about the new form of cooperation within the arms trade, Mikheev announced that Rosoboronexport has consulted partners in several countries within the Middle East/North Africa (MENA) region in particular on local production of the Russian UAV systems. "We are negotiating the localisation of UAV production at customer sites to jointly develop advanced models, taking into account Russia's significant expertise in the system development and combat use," he noted. The head of Rosoboronexport added that the company offers construction of high-tech service centres at the local and regional level for UAV repair and maintenance.

Sub-Saharan Africa Opportunities

Charing the meeting of the Commission for Military-Technical Cooperation with Foreign States, Vladimir Putin mentioned his expectations on defence cooperation with African countries. "New prospects are opening up for expanding military-technical cooperation with countries in other parts of the globe, including with African countries. We sincerely value our historically strong, friendly and trust-based relations with African countries," he said.

He recalled how the former Soviet Union and Russia "supplied African countries with large quantities of weapons and combat vehicles, trained specialists in their production, use, and repairs, as well as military personnel". Echoing the words of President Putin, Alexander Mikheev claimed that "Rosoboronexport is expanding its activities in Africa. Military-technical cooperation with countries on the continent has reached the level it had during the Soviet era and surpassed it in some respects".

This was recently proved by events in Addis Ababa. The Ethiopian Air Force (EtAF) marked its 90th anniversary in January 2026 with a dramatic display of the latest Russian-made products: Yak-130 advanced jet trainers and Orion-E unmanned aerial vehicles (UAV). These acquisitions being revealed during the Black Lion



and Aviation Expo held in Bishoftu air base, represent a core component of Prime Minister Abiy Ahmed’s strategy to double the nation’s air capacity and transition to fifth-generation combat aircraft by 2030.

The arrival of the Yakovlev Yak-130 represents a notable shift in the EtAF training pipeline. During the televised aerial display on 23 January 2026, four Yak-130s with Ethiopian markings were seen performing for the public. Visual evidence from the event and subsequent videos released by the Prime Minister’s office showed aircraft bearing tail numbers 2301, 2302, 2303, 2305, and 2306. This numbering sequence suggests that at least six aircraft have been already delivered from Russia.

Technically, the Yak-130 is an advanced jet trainer designed to mimic the flight characteristics of 4th+ and 5th generation fighters. Its integrated glass cockpit and reconfigurable flight control systems allow pilots to train for high-performance aircraft like the Su-27 and Su-30 without the prohibitive operational costs of flying frontline multirole fighters. Beyond its role as a trainer, the Yak-130 possesses a formidable light-attack capability. It features nine hard-points capable of carrying up to 3,000 kg of weaponry, including guided bombs, rockets, and air-to-air missiles. For a nation facing domestic insurgencies, the ability to deploy a trainer in a secondary ground-attack role provides substantial operational flexibility. These jets will likely serve as the primary training platform for pilots transitioning to Ethiopia’s Sukhoi Flanker fleet, which currently includes 18 Su-27P/SK and six Su-27UB models, as well as the newly acquired Su-30K multirole fighters.

The 90th anniversary celebrations also served as the first public appearance of the export Orion-E medium-altitude, long-endurance (MALE) UAV. Developed by the Russian Kronstadt Group, Ethiopia is the first confirmed export of this Orion-E system. The aircraft features a 16-m wingspan and an endurance of 24 hours, depend-



▲ **The BTR-22 is the latest generation of wheeled armoured vehicle from Russian incorporating lessons from combat. Armament options include the turret system from the BTR-82 or the new Ballista remote weapon station (RWS) mounting a cannon and missiles. (Image: Rosoboronexport)**

ing on the mission profile and payload configuration. It can carry up to 250 kg of varied weaponry, typically consisting of small precision-guided munitions and electro-optical sensors for intelligence, surveillance, and reconnaissance (ISR) missions.

Conclusions

According to Russian First Deputy Prime Minister Denis Manturov, the national defence industry has been employing over 3.8 million personnel. These people form up a skilled back bone of the high-tech industry being capable to compete with the NATO and EC military-industrial complex (MIC). Around 2 million munitions and more than 10,000 weapons entered into service with Russian troops last month, Russia’s Defence Minister Andrey Belousov said on 4 February 2026. In the whole of 2026, more than 310,000 pieces of equipment and some 21 million munitions will be delivered to the Russian Army, he added to prove the unique abilities of the national MIC.

Once the conflict in Ukraine is finished, these people would be able to fulfil a formidable number of export contracts spreading Russia’s influence over the globe whether foreign competitors like it or not. The “technology cooperation” and local production lines being highlighted by Rosoboronexport officials as the most in-demand model for partners are due to play a key role because such long-term industrial projects can smooth a transition from peak war output to a more sustainable export-driven footing once large-scale operations in Ukraine eventually come to an end.

◀ **At the Dubai Airshow in 2025, Russian industry had an immense variety of air weapons on show. Combat proven, these systems are major competitors in export markets. (Image: Yury Laskin)**



Editor’s Note

This article continues on from “Russian Defence Exports: Growth Trends in 2025 (Part I)” contained in ESD 3/2026.

Airbus and BAE Systems Announce Results

Pierre Tran

This February, Airbus and BAE Systems reported buoyant 2025 financial results, with the companies posting robust rises in profit, sales, and orders. These bullish results reflect a re-arming in the West following Russia's full-scale invasion of Ukraine four years ago, and with the US pressing its allies to spend more on defence. The vast majority of Western allies have since raised their military budgets, ordered weapons and have scrambled to develop new technology. These spending increases have boosted the profit line of defence companies, lifting share prices. Keen investor appetite has also driven up

planned European Future Combat Air System (FCAS), backed by France, Germany, and Spain. "We believe we are at a difficult juncture of the programme," Faury told reporters, before adding that "We believe in European cooperation. We believe there is a way forward with two fighters."

There was a range of "scenarios envisaged," Faury told business television channel *BFMTV* and *La Tribune*, a business website on 20 February. The options ran from flying two new fighters sharing common parts, such as the Airbus 350-900 and



▲ **RAF Typhoon at Nellis Air Force Base, Nevada, for Red Flag 2026. The recent order from Türkiye for the Eurofighter Typhoon added further lustre to the 2025 financial results of BAE Systems. (Image: UK MOD © Crown copyright 2026)**

the European STOXX share index for aerospace and defence companies to an all-time high of 3,076.11 in January, with a 42% gain at the end of February from 52 weeks ago.

BAE Systems is a British military business which spans building nuclear-powered attack and ballistic missile submarines, frigates, artillery, and the Eurofighter Typhoon fighter jet. BAE's share price had risen 56.8% in late February from a year ago, while Airbus shares climbed 11.7% over the same period.

At a news conference on 19 February announcing the company's results, chief executive Guillaume Faury said the company would continue working if two new fighters were to be built; in the event that a planned New Generation Fighter (NGF) were cancelled by the three partner nations (Germany, France and Spain). The new fighter is the key element - pillar one - in a

350-1000 - two models of the airliner with shared technology - to flying two fighters without any shared parts. Faury also admitted that there was real difficulty to find the balance in "governance, competition, and meeting all the requirements".

On operational requirements, German Chancellor Friedrich Merz announced in February there was a prospective deal breaker on building the NGF with France - namely Germany had no need for a fighter to carry a nuclear-tipped weapon and fly from an aircraft carrier. However, France has made clear from the outset those were two key requirements for the new fighter. The air chiefs and contractors selected the design architecture of the fighter with the completion of its phase 1B study last year. The next stage - if a contract were to be signed - would be phase 2, namely the development and construction of a prototype fighter and remote carrier drones.

Dassault Aviation has suspended work on the new fighter as it, and Airbus Defence and Space remain locked in a dispute over leadership, workshare and intellectual property. While Dassault, the prime contractor, insists on clear design authority, Airbus is seeking greater access to the French firm's fighter-design data and a larger share of the programme's work.

Airbus Can Build Fighters – CEO

Airbus knows how to build a fighter, since the company is working on the Typhoon, Faury told the same news conference. The company clearly has engineering skills, but some analysts doubt Airbus has the range and depth of knowledge needed to be prime contractor on a future fighter.

Germany's decision in 2017 to partner with France on a new generation fighter was a "strategic mistake", Tom Enders, a former Airbus chief executive, said. "In retrospect, this was a strategic mistake," he told the Financial Times business daily on 25 February. Germany opting to partner with France stemmed from "political disappointment over Brexit", he said, when the wiser choice would have been to work with the UK. A preference for the UK was based on Airbus working closely with BAE for more than 50 years on fighter development, he added. Also, it made little sense for Germany to pursue a national fighter programme, he said, as that would lead to "national hubris", a huge waste of money, and deny "combat effectiveness" for the German air force in the medium term.

Meanwhile, Airbus has much to offer in the military market. "We can bring military capabilities to Europe at scale through the duality of our products - we develop technology with civil and military applications that give scale and speed," Faury said. "We are the largest EU defence player by order intake and by turnover. "The speed of growth in defence will be the same as the speed of growth in civil activities," he recalled. "In the next five year horizon, the balance between civil and military will remain around 80% for civil and 20% for military."

A Failed Merger Attempt

Airbus sought to boost its defence business with a merger with BAE in 2012, said Nick Witney, senior policy fellow at the European Council on Foreign Relations, but the German government objected to the proposed deal, which led to dropping the transaction. Airbus conducted a strategic review following the ruling of the office of then German Chancellor, Angela Merkel, which led to slimming down its defence activities to focus on the airliner market. The company sold its military electronics business, based in Ottobrun, southern Germany, to KKR, a US venture capital firm, for €1 billion.

Airbus reported a 2025 net profit of €5.2 billion, up 23% from the previous year, on sales of €73.2 billion, up 6%. Defence accounted for €14.2 billion of total sales, up 15%. Orders rose 19% to €123 billion, bringing the order book to €618.8 billion, down 2%. The net cash holding rose 4.1% to €12 billion.

BAE Boosts Profits

Meanwhile, BAE reported on 18 February a 12% rise in 2025 operating profit to GBP 3.3 billion, on sales of GBP 30.6 billion, up 10% from the previous year. The company won orders worth GBP 36.8 billion, an increase of GBP 3.1 billion, to bring the order book to a record GBP 83.6 billion, up GBP 5.8 billion. There was strong free cashflow of GBP 2.1 billion, the company said, with large client advances received late in the year. "In a new era of defence spending, driven by escalating security challenges, we're well positioned to provide both the advanced conventional systems and disruptive technologies needed to protect the nations we serve now and into the future," Chief executive Charles Woodburn said in a statement.

The hefty order book reflected the British company winning Türkiye's order for 20 Typhoon fighters in 2025, plus a weapons package worth some GBP 4.6 billion, and Norway's pick of the Type 26 frigate in a government-to-government deal worth GBP 10 billion. The latter was the UK's largest warship export deal, the company said.

In 2025, BAE created with its partners a joint venture company, dubbed Edgewing, to design and develop the Tempest fighter in the Global Combat Air Programme (GCAP), backed by Britain, Italy, and Japan. The industrial partners - BAE, Leonardo, and Mitsubishi Heavy Industries - aim to fly the Tempest fighter in 2035.

The British company also laid the keel last year of the Dreadnought, the first of class in the Royal Navy's planned four-strong fleet of nuclear ballistic missile submarines. The nuclear-powered boat revives the name used for a class of British warships launched in 1906, which stirred a naval race to renew fleets. The battleship drew on the motto of Royal Navy Admiral John "Jacky" Fisher, "*Fear God and Dread Nought.*"

◀ **An Airbus A400M Atlas transport aircraft of the Armée de l'Air et de l'Espace (French Air Force) on the ground in Greenland earlier this year. Airbus reported excellent 2025 financial results, but the fate of the SCAF/FCAS fighter programme remains a key future issue. (Image: Armée de l'Air et de l'Espace)**



Financial Results – Dassault + Thales

Pierre Tran



▲ **A Dassault Rafale C of the Armée de l'Air et de l'Espace takes off from Saint Nazaire. Dassault is working towards a 114 aircraft Indian Rafale order and is in the frame for a potential Saudi Arabian fighter order. As to the future SCAF/FCAS continues to remain uncertain. (Image: Armée de l'Air et de l'Espace)**

Dassault Aviation showed a large question mark on an empty slide when the corporate presentation came to the project for a European Future Combat Air System (FCAS), at its press conference on 4 March on 2025 financial results. The executive chairman, Eric Trappier, appeared to be sending a straightforward company message using simple, clear graphics rather than complex business jargon. That curious visual referred to deepening doubts on the FCAS, due to escalation of words between the French family-controlled company and its industrial partner, Airbus Defence and Space, the German unit of Airbus, the builder of airliners based in Toulouse, southern France.

Dassault, which builds the Rafale fighter jet, reported steady adjusted net profit, just a shade more than EUR 1 billion for a second year in a row, but there was close interest on whether a plan to build a Franco-German new generation fighter would survive, or instead there would be two separate fighters - one French, one German. If it were the latter, it meant the new fighter was a European project too far, and French and German engineers would be competing with each other in the world fighter market. A joint new fighter is at the heart of the FCAS project, which might continue in a diluted form, but without the combat aircraft intended to stand for European sovereign-

ty. "If Airbus maintains the probability of not working with Dassault, the project is dead," Trappier said on the company's elegant boat, Le Talisman, on which he spoke to reporters and financial analysts. "Airbus does not want to work with Dassault. I take note," he said.

"We respect commitments to the letter," he said, calling on Airbus to observe the contract engagements to respect Dassault as prime contractor and leader on the fighter project. The contract refers to a planned FCAS Phase 2, worth some EUR 5 billion, to build a prototype fighter and combat drones, to fly in 2029-2030. A new French fighter would cost less than EUR 5 billion to build Trappier later said on the margins of the press conference, when asked about the budget. That compared to an estimated EUR 100 billion under the present FCAS structure, which includes the planned fighter, remote carriers or combat drones, and a combat cloud, plus a communication, command and control network.

France, Germany, and Spain are the backers of the FCAS project, so the costs are split three ways. Belgium previously lobbied to join the defence project, to win prospective jobs, but Belgian defence minister, Theo Francken, said on a social media platform on 20 February there would not be a

Franco-German-Spanish sixth-generation fighter as the split between France and Germany was too deep.

That scepticism followed the 18 February remarks of the German Chancellor on the podcast Machtwechsel. France needed a fighter for nuclear weapons and for an aircraft carrier, said Friedrich Merz, adding, "That's not what we currently need in the German military." Those French requirements have been known since the start of FCAS, set out in the High Level Common Operational Requirement Document (HL CORD) agreed by the chiefs of staff of the three nations, and backed by a letter of intent by the defence ministers, signed in February 2019 in Brussels.

The German Aerospace Industries Association, BDLI, and the IG Metall trade union made a February common call for two fighters to be built, to break away from Dassault's role as prime contractor for the new generation fighter. The trade body and union later called for worker protests outside the Airbus DS plant at its key Manching site, to lobby Berlin to opt for a German fighter project.

Concerning matters other than FCAS, Trappier, on the margins of the press conference, denied a French media report on restrictions on source code for Rafale for India, limiting the Indian pick of weapons. Dassault is in talks to sell 114 Rafale to India, the largest prospective foreign deal for the fighter. The senior executive said Dassault had presented the Rafale to Middle East nations at the World Defence Show,

when asked if the company had pitched the fighter to the Saudi Arabian authorities at the trade exhibition at Riyadh in February.

Meanwhile, the company had taken steps to protect staff in the region, following the US and Israeli attack on Iran, Trappier said.

Dassault reported a EUR 5 million rise in 2025 adjusted net profit to EUR 1.061 billion, which was 14.3% of sales, down from 17% in the previous year. The stable adjusted net profit was due to a corporate tax surcharge, lower financial income, and Thales' contribution, the company said. Cash holdings rose to EUR 9.4 billion from EUR 8.4 billion, boosted by cash deposits paid on export orders, with a book-to-bill ratio of orders to sales at 1.5.

Thales Reports 2025 Profit Rise

Dassault holds 26.59% in Thales, an electronics company which reported a 14% rise in adjusted operating earnings to EUR 2.7 billion on a like-for-like basis. Thales also took safety measures to help its staff in the Middle East, chief executive Patrice Caine said at a press conference on 3 March on 2025 financial results. Asked about the impact the war in Iran might have on the company, he said, "Nobody knows today how it will evolve. But it is a reminder that the disturbed state of geopolitics in general is leading countries to invest more in security, and therefore defence."

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Thales was completing its work on FCAS, working on two pillars, he said. The company was working with Airbus on the pillar for combat cloud, and was teamed with the Spanish partner Indra and the German FCMS consortium on the sensor pillar. The top executive declined to comment on the outlook for FCAS as that was outside his remit. "We will see what the governments decide," he said. There are seven pillars on FCAS, comprising the new fighter, new engine, combat cloud, remote carrier combat drones, training simulator, sensors, and stealth.

Thales also stood to win some 25% of the value of the prospective sale of 114 Rafale to India, he said, as that was the "rule of thumb" for the company's share on the fighter. The value

paid on export orders. The book-to-bill ratio was 1.14, the seventh year the ratio was above 1, he said. The forecast for 2026 was to maintain the book-to-bill ratio above 1, sales growth of 6-7%, and operating profit margin of 12.6-12.8% of sales.


On 2025 exports, Pascal Bouchiat, chief financial officer, declined to say whether it was Canada or the US which had ordered the Sonar 2087 in the fourth quarter. The sonar 2087 is in the Captas family of low frequency sonar arrays towed by frigates. There was similar discretion when he was declined to give the value of the delivery of onboard electronic systems for the French-built Scorpion armoured vehicles ordered by Belgium in its *Capacité Motorisée* (CaMo) programme. The clients had asked for such discretion, he said.



▲ **Troops from the Belgian Land Component travelled to France to familiarise themselves with Griffon armoured vehicles of the French Army. Under the CaMo programme Belgium is acquiring Jaguar and Griffon armoured vehicles from France, with 123 Serval light armoured vehicles recently ordered by Belgium. (Image: Belgian Land Component)**

also depended on the service contract and equipment ordered beyond the basic kit, such as pods, he added.

The 14% rise in adjusted operating earnings to EUR 2.7 billion, was on an 8.8% increase in sales to EUR 22.1 billion, on a like-for-like basis from a year ago. Orders rose 1% to EUR 25.3 billion. The profit margin was 12.4% of sales, based on adjusted operating earnings, up from 11.8%. Cash flow rose 27% to EUR 2.5 billion, which was a record amount, Caine said. That cash flow "beat expectations," he said, and stemmed from cash deposits

On 30 December 2025, the French *Direction Générale de l'Armement* procurement office ordered a further 92 Griffon multirole armoured vehicles and 123 Serval light armoured vehicles for Belgium, as part of the government-to-government deal for CaMo. That was the first Serval order for the Belgian forces, KNDS France, the prime contractor, said in a statement. Meanwhile, Luxembourg ordered 38 Jaguar combat and reconnaissance vehicles and 16 Griffon troop carriers through the Belgian CaMo programme. That Luxembourg order widened the CaMo programme. 



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