NATO Chiefs of Defence meeting,
May 10, 2023. Photo by NATO

Admiral Rob Bauer.
Photo by NATO

NATO flag raised on
board Finnish vessel
MHC Vahterpää.
Photo by NATO

" **Collective defence** is truly a task for the **collective**.
It requires a collective effort by all nations, to fulfil their
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A NEW ERA OF COLLECTIVE DEFENCE

by ADMIRAL ROB BAUER

Chair of the NATO Military Committee

ON **FEBRUARY 24, 2022,** when Russian troops and tanks rolled across the Ukrainian border and launched a full-scale invasion, Russia violated Ukraine's territorial integrity, its sovereignty and the rights of its people to self-determine, and ushered in a new era of collective defence. Not just for Ukraine. Not just for NATO and its Allies, but for all free democracies around the world. With this one decision, the course of world history changed, the foundations of the rules-based international order were shaken and war returned to Europe.

FOR MORE THAN 20 MONTHS now, Moscow has sought to bring death and destruction to the heart of Europe, attempting to destroy Ukraine and divide NATO. President Putin predicted that his "Special Military Operation" would take Kyiv in a few days and control Ukraine in a few weeks. Many observers believed Ukraine had little hope to hold out against a full-out assault from Russia. With nearly five times as many military personnel as Ukraine, a defence budget eleven times larger, an economy almost eight times larger, and significantly better military capabilities, Russia's victory seemed inevitable. However, President Putin made two strategic mistakes: he underestimated Ukraine's determination and NATO's unity. Very much like David facing down Goliath, the Ukrainians have astounded the world with their unwavering determination, remarkable strength and whole-of-society resilience.

As NATO's new Strategic Concept makes clear, Russia is the most significant and direct threat to Allies' security and to peace and stability in the Euro-Atlantic area. This has not always been the case. For more than 20 years after the Cold War, NATO and its Allies tried to build a good relationship with Russia and establish a balanced form of cooperation. In 1994, Russia became the first country to be designated a "Partner for Peace" by NATO. Over the years, NATO and Russia worked together on issues ranging from counter-narcotics and counter-terrorism to submarine rescue and civil emergency planning — even during periods of NATO enlargement. However, since March 2014, in response to Russia's illegal and illegitimate annexation of Crimea, NATO suspended all practical cooperation with Russia. Since the 2022 Madrid Summit, NATO no longer considers Russia to be a partner.

NATO's Collective Defence: The Road So Far

For many years, now, NATO and its Allies have been monitoring Russia's use of violence and intimidation; its attempts to re-establish spheres of influence; its weaponization of migration, food and energy; and its complete disregard for the sovereignty of other nations, using conventional, cyber and hybrid means to destabilize them, and even illegally annex territory. Faced with this pattern of aggressive behaviour, the NATO Military Authorities recognized the need to improve NATO's collective defence across the Alliance's territory and domains.

In 2016, NATO Allies established four multinational battlegroups in Estonia, Latvia, Lithuania and Poland, and a multinational framework brigade in Romania. Additionally, Allies boosted the NATO Response Force, with a Spearhead Force of 5,000 troops, the Very High Readiness Joint Task Force (VJTF), which is able to react within days to threats from any direction. The Alliance also strengthened its cyber defences by setting up a new Cyber Operations Centre, bolstering its cyber resilience, integrating national cyber capabilities into NATO missions and operations, and by establishing new Counter Hybrid Support Teams.

Then, at the 2018 Brussels Summit, Allies adopted a Readiness Initiative to enhance their

Below from left: British Jackal 2 armoured vehicle demonstrating combat readiness of the battlegroups in Lithuania and Poland; NATO multinational battlegroup Estonia; NATO multinational battlegroup Poland; a German Rheinmetall KZO drone used for training the NATO battlegroup in Lithuania; a close-up on a battlegroup badge. Photos by NATO

#WeAreNATO #StrongerTogether #DeterandDefend

Above: (Left to right) General Christopher G. Cavoli, Supreme Allied Commander Europe; Admiral Rob Bauer, Chair of the NATO Military Committee, and General Philippe Lavigne, Supreme Allied Commander Transformation, at the NATO Chiefs of Defence meeting, May 10, 2023. Photo by NATO

ability to reinforce across the Alliance. They agreed a major update of the NATO Command Structure, with more than 1,200 additional personnel and two new commands — Joint Forces Command Norfolk in the United States and Joint Support and Enabling Command in Germany — to ensure our forces can move quickly across the Atlantic and within Europe.

At the same time, the NATO Military Authorities started developing an overarching strategy for both our current and our future collective defence. In 2019, Allied Chiefs of Defence established a new threat-based NATO Military Strategy, which helped set out NATO's military priorities and approach to current and future threats in a more unpredictable world as well as deal with the consequences of a changed security environment. This spurred the Alliance's shift from reacting to crises to deterring crises. This was followed in 2020 by the Concept for the Deterrence and Defence of the Euro-Atlantic Area (DDA): a strategy for the short to medium term that enables Allies to rapidly strengthen NATO's deterrence and defence posture, in all domains, in a coherent and purpose-driven manner to counter two threats, Russia and terrorist groups.

Subsequently, in 2021, Allied Chiefs of Defence developed the Warfighting Capstone Concept (NWCC): a strategy for the long term, which provides a 20-year vision for the devel-opment of the Alliance's military instrument of power and sets out a realistic path forward to turn that vision into reality. NATO deliberately developed these two strategies almost in parallel to ensure a coherence across planning for the "now" and planning for the future.

The fact that these strategies were in place enabled NATO to scale up its posture on the eastern flank very quickly after the start of Russia's invasion of Ukraine. Within hours, NATO had activated its defence plans from the Baltic to the Black Sea, putting 40,000 troops under NATO command, backed by significant air and maritime capabilities.

New Regional Plans: Across Allied Territory and Domains

When I started my term as Chair of the NATO Military Committee in June 2021, the shift from crisis management to collective defence was already well underway. The DDA was being operationalized into plans for peacetime, times of crisis and times of conflict. This included the revision of the Alliance's Graduated Response Plans and the development of Regional Plans, which were presented last July at the NATO Summit in Vilnius. These geographically specific plans describe how NATO will defend key and relevant places within our Alliance against the two previously mentioned threats described in the Strategic Concept and the 2019 NATO Military Strategy: Russia and terrorist groups.

These are the most comprehensive defence plans NATO has had since the end of the Cold War. Not only do they integrate national defence plans and NATO defence plans to an unprecedented level; they also provide a much more precise demand signal from NATO and will shape our armed forces for decades to come. The plans are divided by region:

- the north, the Atlantic and European Arctic, under Joint Force Command Norfolk;
- the centre, covering the Baltic region and central Europe, under Joint Force Command Brunssum;
- and the south, covering the Mediterranean and Black Sea, under Joint Force Command Naples.

These Regional Plans are accompanied by Force Structure Requirements, which set out objective, threat-based capabilities targets for nations. This means that Allies now know precisely what assets or capabilities in all domains — maritime, land, air, space and cyber — are required of them in a crisis scenario, including where and what to deploy, and what their tasks would be. Furthermore, these Regional Plans require a new NATO Force Model, which will produce well over 300,000 troops at high readiness across our Alliance. This will be a combination of in-place forces and strategic reinforcements. The majority of these high-readiness forces will be based in their home countries and available to NATO commanders, under the Supreme Allied Commander Europe.

We are also adapting the NATO Command Structure to ensure that NATO is sufficiently agile, resilient and staffed to execute these plans. This will improve our ability to conduct exercises, to manage NATO's posture in peacetime and in the transition to crisis and conflict, and to undertake command and control for the full spectrum of missions, including large-scale multi-domain operations for collective defence, throughout the new geography of our Alliance, especially with Finland's accession, and soon with Sweden's. These plans move us from an Alliance optimized for out-of-area contingency operations to an Alliance fit for the purpose of large-scale operations in defence of all Allied territory.

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As seen with the conflict in Ukraine, NATO must be able to move and fight at a moment's notice, in all domains and in all geographical areas. Time is no longer on our side. This is the fundamental change between crisis management and collective defence: it is not we, but our adversary who determines the timeline.

The war in Ukraine has shown us that we are on the right track with our strategies. Nevertheless, we are actively accelerating their implementation. Now we must focus our efforts on the execution of these plans. At our annual Military Committee Conference, last month in Oslo, the NATO Chiefs of Defence discussed the next steps, namely the different requirements to ensure these plans can be executed in a timely and realistic manner. This will require recruiting more people, more training and exercising; rebuilding stocks, increasing production capacity and formations; buying equipment; and planning defence investments. These requirements will be fed into NATO's Defence Planning Process and divided up amongst NATO nations. Needless to say, collective defence is truly a task for the collective. It requires a collective effort by all nations, to fulfil their pledges and ensure NATO is ready to deter and defend as and when required.

War in Ukraine: Stark Lessons for the Future

Many experts agree that Russia's war against Ukraine has fundamentally changed the rules of modern warfare. There is a myriad of lessons to be identified and learned, including on data integration, national resilience, sustainable logistics, and the implementation of multi-domain operations.

Under the leadership of President Zelenskyy and Chief of Defence General Zaluzhnyi, Ukrainian soldiers have been demonstrating practical and tactical brilliance,

Above: Ukrainian President Volodymyr Zelenskyy, at the Vilnius Summit, shaking hands with NATO Secretary General Jens Stoltenberg, July 12, 2023. Photo by NATO

outthinking and outmanoeuvring their opponents as well as finding creative and innovative ways of leveraging technology. The ability of the Ukrainian Armed Forces to integrate new weaponry and technology in their operational procedures has been unparalleled. Their ability to innovate has been a big contributor to their success. Not only have the Ukrainian Armed Forces been making use of their limited resources in brilliant, creative and innovative ways, but they have also integrated AI in areas such as command and control, counter-insurgency and offensive strategies. It has allowed them to plan and execute targeted attacks with surgical precision, minimizing the risk to civilians and reducing collateral damage.

Technology has proven important, but its application is changing. The successful use of modified weapons has highlighted the value of initiative and creative problem solving by soldiers at the tactical level. For example, Ukrainian forces have been converting commercial drones to carry grenades for kinetic strikes, which have proven dramatically effective. Additionally, reports indicate that Ukrainian Forces have modified a variety of common grenades for air delivery as well as converted grenades

into bombs by adding attachments, including 3D-printed fins and other parts.

The Ukrainians are also harnessing the potential of AI to create a truly networked battlefield in which data moves at the speed of light to connect not only sensors to shooters, but also the totality of deployed forces and platforms. They achieve this, for example, by using automated unit management systems such as **Delta**. This is a military information system for decision support and situational awareness — to plan operations and combat missions, coordinate between units and exchange of information on the location of enemy forces. Another example is the automation of certain control tasks, through systems such as **Nettle**, which allows the Ukrainian Armed Forces at the level of battalion, company, platoon to combine the means of reconnaissance, control, and fire damage of various units into a single information field.

Alternatively, chat bots such as **eEnemy** can be turned into useful tools. eEnemy collects all reports about the movement of Russian occupiers and enemy equipment and quickly transfers them to Ukrainian units so they can track the invaders and strike their positions as effectively as possible. The software **Kropyva** allows commanders to enter target coordinates into a tablet, and then the direction of firing and the distance to the target are calculated automatically. Reminiscent of an "artillery Uber,"

Below, from left: AS-90 howitzers lined up ready to fire, photo by NATO; Ukraine effectively uses AI to target Russian forces, illustration by Shutterstock; NATO instructors training Ukrainian soldiers on the use of the NLAW anti-tank guided missile system, photo by NATO.

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this system assigns targets to the nearest artillery battery or missile launcher.

One of the lessons that has become apparent from the war in Ukraine is the need for greater investment in existing or new capabilities to ensure command and control systems that allow for rapid assessments and reactions. Data has become a strategic resource. The combination of quick data exchanges and mission command is essential to maintaining the strategic upper hand, especially in times of conflict. This means that we need to ensure all our systems are able to connect and exchange data, but above all that our commanders, across domains, are able to access refined data to make quick and informed decisions.

Another key lesson has been scale, which has demonstrated the necessity to increase production capacity in our defence industries for capabilities and stockpiles. In the recent past, we in Europe have often focused on a limited amount of equipment with the highest possible quality, leaving aside considerations on quantities. While we must obviously keep our technological edge, we should carefully consider how to balance quantity and quality in some areas. We must strike a balance between high quantities of lower-tech weaponry and low quantities of high-tech weaponry.

The war has also demonstrated the importance of sustainable, flexible and effective logistics — from supplying frontline troops or providing medical support to rapidly repairing or modifying systems and equipment.

Military mobility remains critical to reacting to any threat and achieving operational superiority. We must seek innovative solutions to assure continuity between operational, in-service and production logistics in new scenarios, and in new ways. Finally, the diversity of equipment provided to Ukraine has also been a test of the extent and limitations of interoperability and standardization.
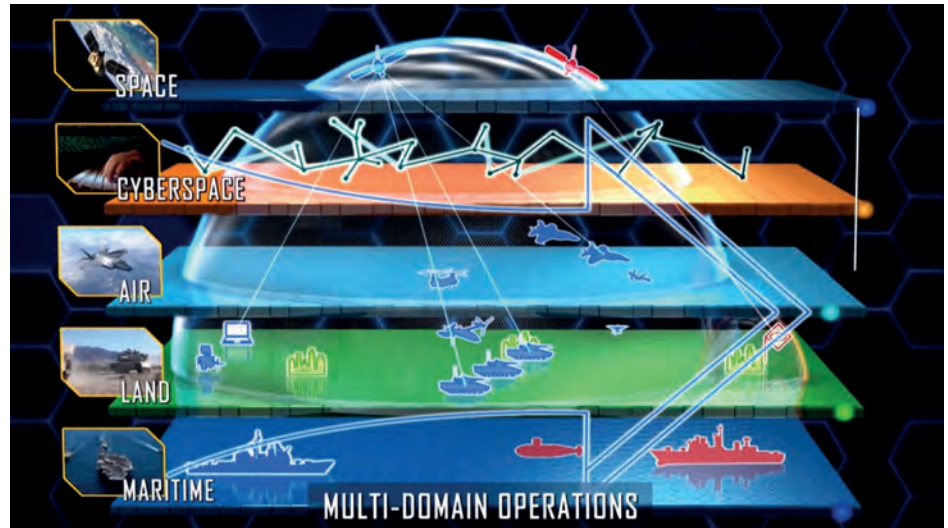
Graphic by U.S. Army Training Support Center

Scale, Speed, Flexibility and a Multi-Domain Approach

In order to allow for a wide range of effects to be delivered, you need scale, speed and flexibility. But for a maximum scheme of manoeuvres, you need multiple domains. Multi-domain operations orchestrate and synchronize military activities with non-military activities, across all domains and environments, to enable commanders to deliver converging effects. This requires our Alliance to re-think warfighting and warfare development in the short, medium and long term to maintain its military credibility.

Back in 2021, the NATO Military Committee tasked the two Strategic Commands to develop an initial concept for multi-domain operations that integrates Allied thinking about how forces work together at the speed and scale of modern operations. Since then, NATO has been working with Allies to consider the meaning of multi-domain operations for NATO and their implications for Allied forces. This can only be achieved through cultural change and a shift in mind-set, by NATO and its Allies, moving from a traditional joint approach to one that is more widely focused across all five operational domains.

To do so, NATO will optimize its multi-domain operations by:
- leveraging experiences and current efforts through improved interconnectivity and broader collaboration;
- improving decision-making through the increased sharing, exchange, exploitation and appreciation of data;
- remaining competitive across domains;
- incorporating the cyber and space domains in all planning and activities;
- and finally by achieving seamless command and control across all domains and levels.

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"In order to allow for a wide range of effects to be delivered, you need scale, speed and flexibility. But for a maximum scheme of manoeuvres, you need multiple domains."

Above from left:
British Air Force Eurofighter Typhoons; Exercise GRIFFIN SHOCK 2023; Standing NATO Maritime Group 1 during a passing exercise with USS Kearsarge and USS Arlington, photos by NATO. Artist's illustration of cyberspace and space domains, Shutterstock.

Thankfully, the NATO Warfighting Capstone Concept and the Concept for the Deterrence and Defence of the Euro-Atlantic Area provide the conceptual and operational frameworks for the Alliance's multi-domain operations. Both concepts were developed to be complimentary and aim to ensure that the military instrument of power remains relevant and meets the requirements of the Alliance, now and in the future. The DDA through its work strands, namely the planning and force model, sets the foundation for a multi-domain architecture in peace, crisis and conflict. The NWCC offers mechanisms for the comprehensive developments required to achieve future military capabilities.

Recognizing digital transformation as fundamental to the success of multi-domain operations, NATO endorsed a Digital Transformation Implementation Strategy to underpin its ability to conduct multi-domain operations, drive interoperability across all domains, enhance situational awareness and political consultation, and employ data-driven decision-making. This will encompass three fundamental pillars — people, processes and technology — designed to align crosscutting efforts and provide a digital-ready workforce, agile and digitally enabled processes as well as advanced technological solutions.

Collective Defence: A Task for the Collective

For almost 75 years, NATO has always made sure to not only adapt to a changing security environment, but also sustain an operational advantage. In an era of multi-domain and 360-degree threats, NATO must have the capacity and capabilities to act decisively at any time, in any domain, in every geographic area.

In this new era of collective defence, leaders from the military, from industry and from academia need to work side by side to harness innovation for the good of the Alliance. Once again, collective defence is a task for the collective. The responsibility for freedom does not only fall on the shoulders of those in uniform, but requires a concerted effort from the public and private sectors.

NATO's new DIANA (Defence Innovation Accelerator for the North Atlantic) network will concentrate on emerging and disruptive technologies that NATO has identified as priorities, including artificial intelligence, big-data processing, quantum-enabled technologies, autonomy, biotechnology, novel materials and space.

In June 2023, NATO launched the first call for proposals to develop dual-use technologies to solve problems in three areas: energy resilience, sensing and surveillance, and secure information sharing. Embracing technology can only enhance our effectiveness and make our Alliance stronger, faster and smarter.

Additionally, we will work to fully incorporate space and cyberspace capabilities and threats into our military planning and develop the ability to not only fuse information from all domains and environments, but also optimize multi-domain activity between military and non-military actors towards a unified outcome. The results of this coordinated approach across the five operational domains will further sharpen the physical, virtual and cognitive effects dimensions.

As the DDA family of plans is put into practice and the new Force Model is implemented, the Alliance is building new, enhanced training and exercises for collective defence. Our approach to multi-domain operations will continuously evolve and be tested. As important as our military plans are, they are not set in stone. They are living documents that will be updated as threats and technologies evolve.

NATO is undergoing unprecedented change at an unprecedented pace. But our resolve to protect the one billion citizens that live on Allied soil remains unwavering. Every day, we build on the strong ties between Allies and harness the centuries of military expertise that we all possess. As a defensive Alliance, NATO continues to send an unmistakable message to any potential aggressor: We are united. We are resolute. But above all, we are stronger together. ✦