



Enhancing NATO Air and Space Power in an Age of Global Competition

A Review of the JAPCC's Joint Air and Space Power Conference 2022

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Introduction

'Our world is contested and unpredictable'. 'Pervasive instability' and 'strategic competition define our broader security environment'. The challenges and 'threats we face are global and interconnected'. Overall, 'the Euro-Atlantic area is not at Peace'. This is how NATO's newest Strategic Concept, endorsed at the Madrid Summit, describes the current security environment.

The intent of the Joint Air and Space Power Conference 2022 and its overarching theme 'Enhancing NATO Air and Space Power in an Age of Global Competition' was to broaden our view beyond the wars we currently see and take into account the whole range of global security and defence challenges we face. As usual, the conference offered a forum to leaders and experts on defence from national and international staffs and headquarters, from industry and academia, to consider and discuss the development of our

defence capabilities and how we build and operate our forces across all domains.

Together with a three hundred-strong audience, our two distinguished keynote speakers and the panelists explored the conference theme along four main questions: What is global competition and what are the implications for our security? What are the consequences for deterrence and defence? How can we enhance defence and industrial processes to deliver the capabilities we need? And, how do we ensure our forces are ready to provide for effective defence?

The JAPCC very much appreciates the frank, sound, and profound exchange of thoughts and opinions in the Chatham House Rule environment of the conference. What follows is a summation of the key points made and the ensuing discussions rather than the view of any particular speaker or participant. It does not offer a complete summary of the conference but will serve as a reminder and basis for further analysis and assessment.

with the global competition we perceive today in the sense of a systemic rivalry of major state powers. Competitors like Russia and China primarily define their interests in terms of comprehensive state power. They strive to influence and potentially dominate other countries, and underpin their power with military force. Their obvious intent is to reset the rules of the international order, and they are willing to use the military option unilaterally if they deem it to be in their distinct national interest. For an increase of external power, they even seem willing to accept losses in other sectors, including wealth and economic growth.

The Russian war against Ukraine is an obvious case of this prioritization in foreign policy and is in line with other Russian foreign policy activities that started over a decade ago. Russia defines itself as an empire, claiming rights to a sphere of influence over adjacent states who might have difficulty enforcing their inherent right to sovereignty. The Russian president's broader objectives are to achieve military



Global Competition – It Is About Power

In economic terms, competition is supposed to allow us to get better things faster and cheaper. Ideally, competition will increase the level of our common wealth. This positive connotation contrasts

dominance over as much European territory as possible, split Europe from the United States (US), and re-integrate the former USSR.

A similar understanding and somehow congruent vision of world policy can be found in the perspectives

offered by the Chinese president and leader of the Chinese Communist Party (CCP), Xi Jinping. His vision is to make China, latest by 2050, a centre-stage actor bolstered by military power that shapes – and, if necessary, dictates – norms, rules, and values of the international order. We must be aware that in China, national law supersedes international law, and rules and norms are accepted as long as they suit their interests. However, of equal importance is Xi Jinping’s focus on the domestic dominance and survivability of the CCP. Consequently, and in contrast to the Russian president, maintaining the status quo could be an option for Xi Jinping as long as it supports his objectives.

How much pain China is willing to endure to further pursue its ambition to increase and use its power in its nearer and broader neighbourhoods is a question to be further assessed. In general, it seems wise to better understand China’s various dependencies with respect to cooperation and exchange with our economies. The CCP will attentively follow Western states’ reactions to Russia’s aggression in Ukraine to assess the level of unity and resolve of NATO, the EU, their members, and partner nations.

Implications for Our Security

The competition we face today is global in nature and will persist over many years. We have entered a phase of ongoing competition and conflict, which does not fit into the traditional binary categories of war or peace. Contemporary challenges are not bound by geography, and what happens in one part of the world has the potential to reach all corners. A conflict in any region, for example the Indo-Pacific, will have ramifications for Europe and vice versa. This is the flip side of globalization.

Authoritarian and revisionist state competitors seem willing to use all available levers to reach their goals: diplomatic and economic coercion, disinformation and control of information flow, and, ultimately, the military instrument of power. This may be perceived as a ‘weaponization of everything’, meaning that nearly every field of interaction may become a battlespace, or at least an area of harsh contest with severe effects

on the global economy, worldwide wealth, and well-being. Some states have already been exposed to significant coercive diplomacy and unilateral economic coercion. Not only as a punishment but in particular to demonstrate to others the price of such actions.

Maintaining the rules of the liberal world order in this blurring continuum of peacetime competition at conflict threshold and avoiding a future war requires cautious employment of all elements of national power: diplomatic proficiency, economic statecraft, information superiority, science and technological prowess, and not least domestic resilience. Defence based on military power is only one aspect of a whole of government approach to global competition.

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For defence, challenges have occurred and will occur in the air, land, maritime, cyber, and information domains, as well as in and through space. In this context, NATO is and will remain the cornerstone of the defence of Europe. The EU and its members are contributing to it and can do more to bolster their defence efforts and be more united, capable, and active. As the High Representative of the EU for Foreign Affairs and Security Policy stated: ‘The EU has to learn the language of power.’ Properly understood, an increased strategic autonomy will at the same time strengthen NATO as long as the EU’s security and defence policy efforts are fully coherent with NATO.

Consequences – Deterrence Is Back on the Agenda

During the Cold War, both sides were interested in maintaining the status quo, whereas today we are confronted with Russia’s communicated and



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The 2022 JAPCC's Joint Air and Space Power Conference provided a unique setting to enable far-reaching debates for high-ranking leaders and experts from politics and the military, as well as from academia and industry.

demonstrated intent to redraw borders. Before the Russian large-scale military invasion of Ukraine, NATO and EU nations were divided over how to clearly communicate the consequences of such a step. Instead of us deterring Russia, it can be said that Russia deterred us. The good news is that after 24 February 2022, both NATO and the EU, through their swift united and determined reactions, showed resolve, demonstrated coherence, and confirmed the values that bind them together.

Russia's decision to wage war against Ukraine, combined with its nuclear signalling, revisionist rhetoric, and the demonstrated readiness of other actors to coerce others, urges us to rethink deterrence. A revised understanding must consider credibility, capability, and, communication as the so-called pillars of deterrence.

More than ever, deterrence is not just about the nuclear arsenal; it has an essential conventional component and will have to cover the whole spectrum of military threats and malicious violent activities. Deterrence is a whole-of-government

effort that has to be effective in the 'grey zone' as well. Diplomatic activities and economic sanctions are part of it. Already below the level of armed conflict, it is about denying revisionist and authoritarian actors the incremental gains that might give them the impression of insufficient will and determination of democracies to counter their activities.

On the hard side of defence, deterrence needs resolve and robust presence. Participants debated whether the deterrence by punishment posture, represented by NATO's tripwire force at its north-eastern flank, is sufficient to guarantee 'Article 5'. The decision to move forward to a deterrence by denial posture through prepositioning more substantial forces is an appropriate first answer to the changed threat situation.

Credible deterrence will also need to be bolstered by resilience. It starts with measures to diversify our sources of energy supply and other raw materials, goods, and services and will have to include increased efforts to protect our critical infrastructure.



Top three JAPCC leadership engaging with delegates at the 2022 Joint Air and Space Power Conference, Essen, Germany. (From left to right, Lt Gen Poschwatta, Air Cdre Herber, and General Hecker).

Consequences for Defence – Air Superiority Is a Priority

Looking at the war in Ukraine, it seems more important to realize what we do not see than what is conspicuous. Russia has not been able or willing to launch a comprehensive air campaign, neither at the beginning nor later. Currently, the war in Ukraine can be seen as a First World War type of warfare, notable for the lack of air superiority by either side. It demonstrates the enduring relevance of achieving air superiority as a prerequisite for – though never the sole guarantor of – success in warfare.

In particular, we have to bolster our integrated air and missile defence where we have a double need for long-range and shorter-range mobile air defence systems to build a reliable Anti-Access/Area Denial (A2/AD) capability. This will have to include European-owned and operated assets for an upper-layer defence over Europe, which currently, except for the extant US assets, does not exist. Other required capabilities include deep-precision strike capabilities to successfully perform counter-air missions. We will most probably need additional fifth-generation aircraft, jammers, ISR (Intelligence, Surveillance, and Reconnaissance), and advanced Command and Control (C2) capabilities.

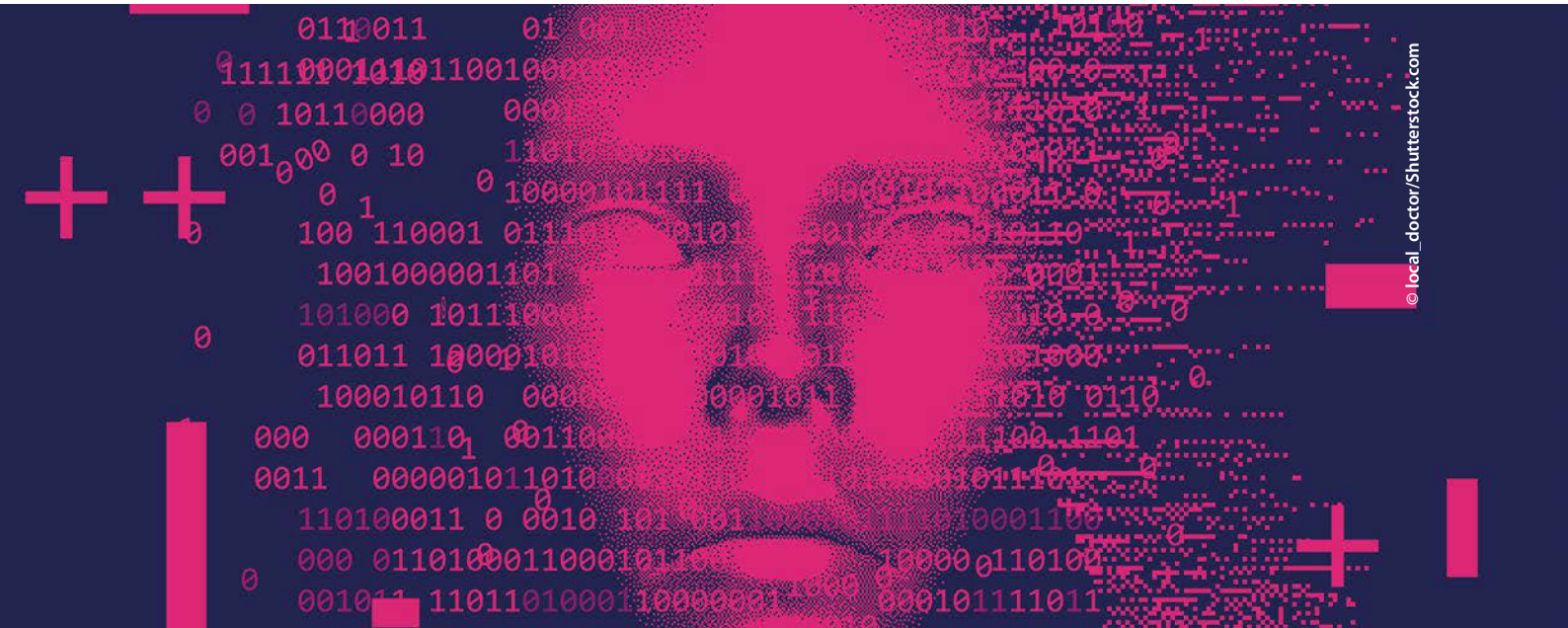
In the face of a threat spectrum ranging from weaponized commercial drones to hypersonic missiles, we will have to catch up fast and realize a system of systems approach to defence with interoperable links across domains. Considering the developments in anti-satellite capabilities, a fully layered defence will have to acknowledge our defences' dependence on space capabilities.

Technology advancement is a crucial driver for our security and defence. Those who can make the best use of available technology will have information dominance, decision dominance, and, engagement and escalation dominance across all operational domains. To achieve this, the Alliance and its partners will have to look for fundamental game-changing technologies but also consider that the right concepts, approaches, and structures must be in place to reap the benefits of technology.

Interoperability through standardization is crucial. It seems that NATO nations have been much better in these aspects before the 1990s. Indeed, our nations have and sometimes pursue different interests. However, for defence purposes, we have to align our efforts and build those capabilities needed to maintain and, in certain areas, rebuild a defensive advantage.

NATO must continue to become more agile and resilient; this is a requirement to establish credible deterrence today and enable SACEUR to win tomorrow's fight, should it ever come.

- **Integrated multi-domain defence.** A joint and flexible approach to a fluid environment.
- **Cross-domain command.** Investing in the art of command, critical thinking, and audacious action.



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Enhancing the Force – Capability Requirements

NATO's Allied Command Transformation focuses on developing our capabilities to succeed in conflict and future combat environments. What do we spend on the war of 2040 against an advanced enemy? The NATO Warfighting Capstone Concept, published in 2021, offers an organizing principle and a guiding rationale to inform the alignment of Alliance warfare development efforts. It sets out the so-called Warfare Development Imperatives to realize operations across domains:

- **Cognitive superiority.** Understanding of the threats, adversaries, and the environment NATO operates in.
- **Layered resilience.** Withstanding immediate shocks and be prepared to persevere in challenging situations over long periods.
- **Influence and power projection.** Being proactive in taking the initiative through various means to reach set objectives.

Having fleets of interoperable – or better yet interchangeable – combat and support platforms, plus the compatible C2, ISR, and operational planning systems, is crucial to succeeding in a future multi-domain operational environment. Moreover, all legacy systems will have to be incorporated to efficiently communicate and operate along with the newer platforms. Modern warfare is information-centric; secure data distribution across domains will be pivotal for success.

Global reach, the possibility to deploy and maintain a capability for long periods and away from home bases, is a crucial element in a world of competition and contest. This broader definition of the traditional element of reach adds to the two other Air Power characteristics of persistence and speed.

Uncrewed vehicles and controlled levels of autonomous operations offer persistence and add to sustainability and resilience by creating additional combat mass acceptable for attrition.

Cyber and space capabilities will have to be developed from both defensive and offensive points of view. Cyber already is a battlespace domain; and space is at least a battlespace domain in the making, as Russia demonstrated anti-satellite capabilities.

The need for information superiority in a hostile environment requires us to invest in all technologies, sensors, effectors, and transmission systems which allow us to transform data and information into an operational advantage, thus achieving dominance over the electromagnetic spectrum. In a situation where every mobile phone can support intelligence gathering, the collection and exploitation of open-source information is relevant. Therefore, investing in those dual-use technologies for defence is paramount.

Towards a More Effective Defence Planning and Quicker Procurement

The defence budgets of NATO nations sum up to one trillion euros. Eight nations meet the 2 % of GDP defence spending goal, and other nations are getting there. For over seven consecutive years, ten nations already exceeded NATO's 20 % investment target for defence spending. Ten nations are also meeting the NATO capability targets. These are promising numbers.

In Europe, we still operate 20 different fighter planes – compared to the US with six – and 28 different types of helicopters. As long as every nation develops and buys its own systems and subsystems, we are subsequently forced to make them interoperable – what we have done for a long time. Instead of continuing that way, an approach to ensure interoperability by design should be considered. This will require precise standards, at least for the software components, that allow the industry to follow a product approach instead of a very costly system approach.

The NATO process of defence planning coordinates national developments of capabilities and offers perspectives to consider developing common capabilities. NATO Airborne Early Warning (NAEW) and

Alliance Ground Surveillance (AGS) are examples where nations acquired a capability together. On the EU side, the Joint Procurement Task Force will support smarter approaches to defence spending. Unfortunately, the European Defence Agency (EDA) missed its goal of having 25 % of members' equipment procured through the agency's framework. The trend was the opposite, with figures dropping to 11 %. If this is not changing, there is a high chance that European nations will not get the required capabilities.

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Overall, NATO has established an impressive structure that manages defence planning. However, the national defence management and planning processes are concurrent with the NATO process and the separate EU defence planning process. However, the links and connections between the EU and NATO defence planning processes are not sufficiently clear. There is an urgent need to harmonize these processes or even bind them together to enable smoother and swifter planning to assure that targets are met.

Reliable Investment in Defence and Cooperative Competition

To enable faster delivery of capabilities, extant processes must be streamlined and more agile ways to contract must be identified. The defence industry needs reliability through clear signals to develop the desired capabilities. This will have to include robust and reliable planning of armaments procurement based on long-term, not short-term, demands. The industry has already proactively invested in capacities

and people. Now, they need increased reliability through firm, long-term contracts to incrementally increase quantity and quality and assure tailored stock requirements.

The Western Air and Space industry is highly capable and eager to contribute to deterrence and defence. In the past, many nations have not invested robustly in defence capabilities and infrastructure. However, this is a prerequisite to making the defence industry resilient. The defence market is different from the consumer market; the necessary investments to create the required capabilities cannot be provided by industries alone. Governments have to invest their share.

A crucial point to be considered is: How much competition can we allow and afford in the defence industrial sector? A first guess proposes that competition is still the way forward to achieve high-quality results, even a cooperative competition. Industry wishes to work with their customers to simplify things and, together with defence institutions, find the right balance to get the required capabilities fast and in

time. Thus, a common industrial base in Europe seems favourable for improving interoperability and adaptability while retaining sufficient competition to provide redundancy and multiple options to customers.

Setting interoperability standards has been a core issue for NATO since its inception. A combined force will only work with clear and appropriate standardization. Clear standards are also necessary for developing interoperable capabilities upfront through effective industrial cooperation. Open architecture approaches are a way to achieve a faster process than we see today.

Additionally, the safety standards for a platform should be separated from the tactical functionality. This would allow hardware changes in weeks rather than months and enable fast software updates to expedite capability development (e.g. the integration of new weapons). The benefits of digitalization also allow the creation of digital twins to transition quicker from development to testing without building several platforms. Accreditation and certification authorities will certainly have to support these approaches.





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The JAPCC Director, General Hecker's opening conference remarks, focusing on the demands of a challenging security environment, the necessary development of capabilities, and the ways to deliver them.

Investing in People

The conference focused on the demands of a challenging security environment, the necessary development of capabilities and the ways to deliver them. It emphasized the need for deterrence, defence, and the related resolve and resilience. Capability development and procurement processes will have to be adjusted and better aligned to ensure quicker availability of platforms and systems.

Beneath our technology, capabilities, and infrastructure investments, we should remember to invest in people. Dealing responsibly with the newest emergent technological software and devices, enhanced by artificial intelligence and automation, will require

smart, educated personnel. In the end, equipment by itself does not fight. The Ukrainians demonstrate that will, imagination, and commitment can take you an awfully long way, in a manner that pure mass often does not. We should, therefore, always remember the importance of the conceptual and the moral components.

As NATO's Centre of Excellence for Air Power, the JAPCC relies on the mastery, experience, and innovative capacities of its personnel. We thank everybody who participated in the 2022 Joint Air and Space Power Conference. We look forward to meeting you again in Essen from 10 to 12 October 2023, where we will examine the near-term imperatives to achieve deterrence and defence. ●

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started his military career in 1989 and was trained as a ground-based air defence officer. He went through general staff training at the German Armed Forces Command and Staff College and the UK's Joint Services Command and Staff College and has subsequently served in national and international positions at various levels of command, including in the German CHOD's office and for the SACEUR. He earned master-level degrees in Economics and in Defence Studies. Until December 2022, he was the Assessment, Coordination and Engagement Branch Head in the JAPCC and served as the Conference Director for the annual Joint Air & Space Power Conference.

