



NATO RESILIENCE SYMPOSIUM

2022 REPORT





NATO RESILIENCE SYMPOSIUM

MAY 4-6, 2022/WARSAW, POLAND



"The war in Ukraine has reset the strategic and geopolitical context of NATO, Europe and the wider world. Consequently, the real challenge for the forthcoming NATO's Strategic Concept will be to capture that change and the changes to come by 2030 and beyond and get in front of it. Progressing in building resilience will remain an important part of our efforts to face these challenges.

That is why we have to work together, to succeed as a team."

-General Philippe Lavigne,
Supreme Allied Commander Transformation

INTRODUCTION



The NATO International Staff Defence Planning and Policy Division and Allied Command Transformation (ACT) co-organized the NATO Resilience Symposium 2022. The symposium was hosted by the Polish government in Warsaw, on 4-6 May 2022. The symposium promoted the Alliance's collective commitment to resilience by bringing Allied and Partner civilian and military leaders, policy makers and experts together to address key issue on the resilience agenda to reduce our vulnerabilities and ensure that our militaries can operate in peace, crisis, and conflict.

The symposium was held in the context of the war in Ukraine, which was reflected in discussions and conversations throughout the event.

The on-going conflict clearly illustrates the impact of resilience for a nation and the absence of military resilience in operations. It underpins the requirement for a holistic approach to resilience while acknowledging that resilience is a national responsibility with a collective commitment.

An audience of more than 230 people attended the symposium including senior civilian and military leaders from Allied and select Partner nations, NATO, academia and industry.

The 2022 Resilience Symposium was preceded by two Resilience Conferences organised by ACT in 2017 and 2019. The 2022 Symposium was held in the context of the enhanced resilience commitments at recent NATO summits, the establishment of the new NATO Resilience Committee, the ongoing development of the new NATO Strategic Concept and emerging work on the NATO's military resilience. The Symposium aimed to promote the Alliance's collective commitment to resilience by addressing ways to understand interdependences, reduce vulnerabilities and ensure that our militaries can operate in peace, crisis, and conflict.

To facilitate and promote civil-military nature of NATO's resilience, the Symposium addressed key topics that represent both challenges and opportunities for Allies and Partners: Military Resilience; Emerging and Disruptive Technologies and Cyber; Energy Security; Climate Change and Security; and Partnerships and Societal Resilience. Separate Principals' sessions aimed to facilitate open discussions regarding the impact of the war in Ukraine on Alliance resilience, Energy Security and Climate Change and Security.

Cross-cutting take-aways

All speakers expressed strong support towards Ukraine and the need to leverage lessons from the ongoing conflict that are testing Ukraine's and Alliance's resilience. Furthermore, the speakers highlighted the need to integrate a whole of society approach

to resilience and to build networks capable of coordinating with new and existing stakeholders. NATO and the European Union were emphasised as key organisations to build resilience and to support national efforts in the future.

Future challenges to resilience may be far-reaching and present concurrent threats.

A cross-cutting observation was the potential magnitude of concurrent adverse developments. The multiplying effects across shattered security environment, climate, the energy market and the emerging and disruptive technologies could represent significant challenges to Allied and Partner resilience. If resilience is the ability to absorb strategic shock, we need to reduce the risk of such a shock happening. We must know how to **shape and contest** the environment, to win the war before it happens.

Unity of effort.

Resilience is the collective knowhow and will of our people, our organisations and our technology. However, there are many stakeholders in resilience with varying values, interests and objectives. One of the key identified goals is a need to create unity of effort among all relevant stakeholders in NATO and nations.

Crucial factor underpinning unity of effort is trust. There are two primary ways of establishing trust. First, we must ensure there are transparent aims, realistic objectives and affordable ways to build resilience. This implies

an urgent need to share data across actors and sectors. Second, we must work together in an integrated and coordinated approach to strengthen resilience at national and Alliance levels. This includes finding more focused ways to conduct training, exercises and the exchange of views between military and civilian resilience stakeholders.

Train to fail. Win as a team.

While unity of effort creates the basis for enhanced resilience among all stakeholders, we need to make sure that our people, organisations and processes are fit for purpose. We therefore need to utilise training and exercises, modelling and simulation, as well as wargaming to the maximum extent possible to test our people and validate our processes. Some of the key non-military stakeholders that should be part of military training and exercises include, but are not limited to, civilian agencies, international organisations and non-governmental organisations, commercial actors, and civil defence forces. The training scenarios should include complex current and future environments and threats. Chaos and failure during training and exercises should be embraced as a best way to improvement.

Building resilience by design.

Resilient design implies integrating qualitative and quantifiable resilience requirements from the start into all our systems and structures. Building resilience by design requires a holistic approach and understanding of interdependences between people,

processes and technology. It also requires prioritisation of investments.

We also need to challenge historic thinking of cost efficiency as the core measurement. We need to define the resilience through redundancy needed to meet our core objectives. Additionally, we need to integrate flexibility and adaptability to our designs and use innovative, multi-purpose agile solutions.

We also need to rethink organisation of supply chains and logistics. Strategic competition, the effects of climate change and increased demand could lead to a scarcity of resources. This implies change in stockpiling practices, identifying alternative sources of production, and moving away from "Just in Time" practices to "Just in Need" ones.

Integration of resilience by design must be also applied to energy security. It will be difficult to free our societies from energy dependencies from Russia, but it will be critical to do so. This will require looking at alternative sources of supply as well as transitioning to new fuel sources. However, most current military capabilities are based on traditional fossil fuels and will continue to do so for the foreseeable future. New fuel sources (such as batteries and biofuels) could reduce energy dependency and increase resilience, but will require significant investments for decades.

Projecting resilience.

Resilience as 'deterrence by denial' is one of the foundations for collective and national security. While we perpetually





work together to enhance our collective resilience, we must project our ability and will to withstand any man-made and natural crises. Projecting resilience two components – spatial and temporal. The spatial component essentially means projecting shared resilience forward to non-NATO partners. The temporal one implies thinking and acting forward in time – anticipating disruptive challenges coming our way, and acting to prevent or adapt to them.

**Don't think about future decisions.
Think about the future of today's
decisions.**

The decisions and investments we make today will shape our ability to be resilient in the future. As we observe the war in Ukraine, natural disasters, the strain on the global supply chains and the effects of the pandemic, we must make sure that the actions and investments we make today will be fit for purpose in the future. In all we chose to do, we should “Think Big, Act Small and Fast” and build through a whole-of-society approach.



OPENING SESSION

Mr Mircea Geoana, NATO Deputy Secretary General, Mr Mariusz Błaszczak, Minister of National Defence of the Republic of Poland, and General Phillipe Lavigne, Supreme Allied Commander Transformation, provided opening remarks. They noted:

- The Strengthened Resilience Commitment builds on the 2016 Summit Commitment to enhance resilience made by Heads of State and Government.
- The new NATO Resilience Committee will bring fresh focus with the Deputy Secretary General chairing the inaugural meeting on 19 May 22.
- Resilience of our nations is essential for NATO to deter potential adversaries and defend the Alliance.

- Overall resilience contributes to capable and responsive defence.
- Partnering is essential for building resilience, especially for leveraging the complimentary between European Union (EU) and NATO efforts.
- The concept of resilience is being tested in Ukraine.
- NATO resilience priorities should:
 1. Focus on key areas such as cyber, energy security, emerging and disruptive technologies, and societal resilience.
 2. Strive to develop more effective cooperation, especially with the EU.
 3. Channel efforts to increase resilience of nations at risk (Ukraine, Georgia, Moldova) from hostile states and non-state actors.









SESSION 1: MILITARY RESILIENCE

As the Alliance moves to fulfill the 2021 Strengthened Resilience Commitment there must be a comprehensive understanding of the resilience of the Military Instrument of Power (MIoP). The changing strategic environment necessitates a proactive approach to anticipate and if needed to absorb strategic shocks. The ability to 'out-last' any potential threat to Alliance security is the cornerstone of Alliance deterrence and defence.

To build this capacity to 'out-last' within the boundless and persistent threat environment, the Alliance requires a holistic understanding of its collective resilience, the complexities within the MIoP as well as its interdependencies with the non-military Instruments of Power. Critical vulnerabilities within the MIoP necessitate a detailed examination and assessment to determine their impact on operational capabilities and the risk they pose to the overall deterrence and defence of the Alliance.

The first step in identifying these critical shortfalls lies in identifying and analysing seven thematic areas: Command and Control, Warfighting Capability, Situational Understanding, Logistics, Perseverance, Response Planning and Military Infrastructure. These areas are well-trod ground for NATO. However, the work on Military Resilience must link into ongoing work on resilience across the Alliance – both in NATO HQ and within Allied nations. While nations aim to improve their own individual resilience, the collective work on the Military Resilience imperative will strengthen all.

This panel aims to inform attendees on our current thinking on Military Resilience and explore how NATO can improve it.

- *Under what conditions does Military Resilience influence civil preparedness? How do Military preparations for strategic shocks affect civil preparations to respond to crises? How do those interactions then affect civilian crisis responses?*
- *The complexities of maintaining effective command and control over military forces is a concern for force commanders. How does approaching the problem from a resilience point of view enhance understanding and point towards potential solutions?*
- *Maintaining effective supply chains is critical to ensuring defence production meets the needs of militaries across the Alliance. In a globalised world of just-in-time deliveries, can NATO influence the process to ensure robust supply of critical equipment?*

There's no way in which our adversaries could overtake us, if – and only if – we step up our game, we understand where we also have vulnerabilities and cooperate, all of us together, the ones who share the values of freedom, of liberty, of democracy.

- NATO Deputy Secretary General Mircea Geoana

Moderator: Mr. Kyle King, Managing Director of Capacity Building International, Institute for Security Governance

Panelists:

- 1. Brigadier General Rob Stephenson, Deputy Commander, NATO Special Operations Headquarters*
- 2. Brigadier General Carla Harding, Assistant Chief of Staff, J-4, Supreme Headquarters Allied Powers Europe*
- 3. Dr. Pierre DuBois, NATO Interoperability Advisory Group*
- 4. Brigadier General Maciej Klisz, Deputy Commander, Polish Territorial Defence Forces*
- 5. Brigadier General Didier Polome, Assistant Chief of Staff, Strategic Plans and Policy, Allied Command Transformation*

The first session introduced military resilience and its links to NATO's broader resilience agenda. This work is based on the requirement for a holistic military resilience analysis and understanding as laid out in the NATO Warfighting Capstone Concept (NWCC). The panel aimed to inform attendees on ACT's thinking on Military Resilience and illustrated the thematic approach proposed by ACT in the Layered Resilience Concept Proposal. It highlights implications for the Military Instrument of Power (MloP) and the interdependencies

to existing NATO Policy and the Seven Baseline Requirements (BLRs). Consideration was given to critical shortfalls and vulnerabilities, and how NATO could improve understanding and cooperation to manage the corresponding risks.

Discussion points of note:

- There are challenges to implementing resilience because nations need to choose where to invest; lack of capacity, lack of willingness, or lack of investment in civil and military resilience can result in a less resilient Alliance.
- Nations can contribute to layered resilience through recognition and understanding of their roles (e.g. sending nation, transit nation, receiving nation).
- The MloP is tied to the economic IoP and they cannot be decoupled. The MloP is tied to the amount of resources nations are willing to invest and there is a constant competition for a limited amount of resources. It is about choices, one of which is to determine what the future MloP should look like.

• The change from expeditionary operations back to deterrence and defence of the Euro-Atlantic area has implications for resilience. Logistics is a key element of this change. While 'teeth to tail' ratio is important in any

SESSION 1: MILITARY RESILIENCE

military operation, implications of facilitating this on the Allied soil is significantly different from operations outside SACEUR's AOR.

- For supply chain resilience, industry is key. Supply chains are a shared space between the military and civil sector. Industry is profit driven and responds to the high demands from the civil sector and less to the low demands from the military side. In crises, military demand may increase but civil behaviour may not change, resulting in a competition over resources.

- Resilience is about readiness and redundancy; peacetime preparation is key.

- The way Special Operations Forces (SOF) deal with Command and Control (C2) can inform future resilience work (e.g. through NSHQ Comprehensive Defence handbook).

- The need to interface with different societal groups and to break down barriers that naturally exist between them is a challenge and impediment to improving resilience. SOF's unique skills and attributes can help in that regard, by serving as an interlocutor.

- C2 is conditions-based and needs to be shaped well in advance before a conflict.

- We are dependent on raw materials from non-NATO countries; China alone controls half of the raw materials required for modern military components. That has a significant impact on alliance resilience because supply chains are only as good as access to these raw materials. The NATO industrial advisory group is currently working on a study related to resilience and the vulnerability of the Alliance in relation to the access of rare earth materials.



- Civil Defence is not one organisation, but a network of organisations (preferably a large network). Poland and its Territorial Defence Forces are a good example of military supporting civil authorities and therefore supporting a resilient society, building mutual understanding and trust. This structure and unique formation with its two-fold mission (home defence and support to civil authorities) might not be practical for all Allies, but it could be seen as an example of best practice.

- Practicing together, and regular joint training, are of utmost importance for establishing resilient and trusting civil-military relationship, a cornerstone of a resilient society. The primary focus of NATO exercises is often the certification of forces instead of building and fostering relationships, understanding and practicing how

to work with partners. This needs to change.

- Resilience by design means it starts with capability development. When considering NATO's Minimum Capability Requirement in the NATO Defence Planning Process we have to raise the question if this will lead to resilient capabilities for the Alliance.

- Everything we do, needs to maintain the military edge over any potential adversary (Out-Pace, Out-Last).

- The Layered Resilience Concept is ACT's contribution to the broader resilience agenda of NATO and must be linked into the existing key processes in the Resilience Committee and NDPP.



PHOTO BY TORBJOERN KJOSVOLD, FORSVARETS MEDIESENTER



SESSION 2: EMERGING & DISRUPTIVE TECH AND CYBER

Emerging and disruptive technologies* are increasingly touching all aspects of life – from electronics like phones and computers, to everyday activities like shopping for food in the grocery store and managing money in the bank. Many of these technologies are cyber-enabled. Innovative technologies are also providing new opportunities for NATO militaries, helping them become more effective, resilient, cost-efficient and sustainable.

New technologies are also increasingly being adopted in sectors that are critical to national and collective resilience. They can bring significant benefits in terms of efficiency and continuity. At the same time, they could introduce new vulnerabilities, and present new threats both militarily and to the civil society, especially if security is not considered from the outset.

The private sector plays an important role not only in developing innovative technologies, but also in adopting them, especially in sectors critical to national resilience. Therefore, it is important for Allied governments to maintain strong cooperation with the private sector to ensure that security concerns are taken into account and to help protect new technologies from theft or illicit use by potentially hostile actors.

This panel will explore both the opportunities and challenges that EDTs and cyber present for resilience, and stimulate debate on how they can be integrated in essential services in a way that safeguards resilience. The participants in the Emerging and Disruptive Technologies (EDTs) and Cyber session are invited to consider the following questions:

- *In what ways are EDTs already strengthening Allies' resilience in the sectors identified in NATO's baseline requirements? What potential benefits can they bring in future?*
- *What potential vulnerabilities might the use of EDTs in critical sectors introduce? How can they be mitigated?*
- *What implications does the increasing adoption of EDTs have for cybersecurity? Can lessons from Allies' experience in building up their cyber defences over the last decade be applied to EDTs?*
- *How can Allies continue to ensure resilience in the face of rapidly evolving technologies? How can they work with the private sector to ensure that resilience is taken into account as companies develop, leverage and deploy new technologies?*

*NATO has identified seven technology areas: Data, Artificial Intelligence, Autonomy, Quantum Technologies, Biotechnologies and Human Enhancements, Hypersonic and New Missile Technologies, and Space. In addition, Allies have recently decided to deepen their understanding of "Novel Materials and Manufacturing" and "Energy and Propulsion".

“Our potential adversaries – state and non-state – do not hesitate to use these technologies to undermine our security, and also to seek to undermine our democracies, our institutions, our values.”

- NATO Deputy Secretary General Mircea Geoana

Moderator: Mr Tadeusz Chomicki, Ambassador for Cyber and Tech Affairs, Polish Ministry of Foreign Affairs

Panelists:

- 1. Mr. James Appathurai, NATO Deputy Assistant Secretary General for Emerging Security Challenges*
- 2. Ambassador Krzysztof Paturej, President of the Board, International Centre for Chemical Safety and Security*
- 3. Dr. Krzysztof Malesa, Board Member / National Security Officer, Microsoft Poland*
- 4. Mr. Jeffrey McLeod, Specialist Leader for Cyber and Strategic Risk, Deloitte & Touche LLP*

This panel aimed to explore both the opportunities and challenges that

EDTs and cyber present for resilience, and stimulate debate on how they can be integrated in essential services in a way that safeguards resilience.

Discussion points of note:

- At its core, resilience is based on people, organisation and technology. Resilience requires cooperation, but the challenge is to coordinate different resilience stakeholders across NATO and their aims and objectives.
- Cyberspace underpins both military and civilian resilience and we must investigate the role of industry in raising our resilience standards, and question if this is enough.
- Resilience is more a process than a final stage or end-state.
- Cyber is not just about protecting



SESSION 2: EMERGING & DISRUPTIVE TECH AND CYBER

information technology, but also protecting all sectors (government, military, and industry) - "There is no cyber security, there is just security". We need a holistic approach to resilient cyber defence, since a sectoral approach will lead to a dead end.

- To be resilient in the cyber domain we will need forward defence and impose costs because the adversary might not care about attribution.

- When designing requirements for any new capabilities, resilience considerations should be built-in from the beginning. A five step approach to resilience could include the following:

1. Identify critical areas where resilience needs to be built or improved.
2. Invite to cooperate ("big tent approach") and engage widely.
3. Identify risks and threats.
4. Link threats to security areas (physical, legal, business

continuity, etc.).

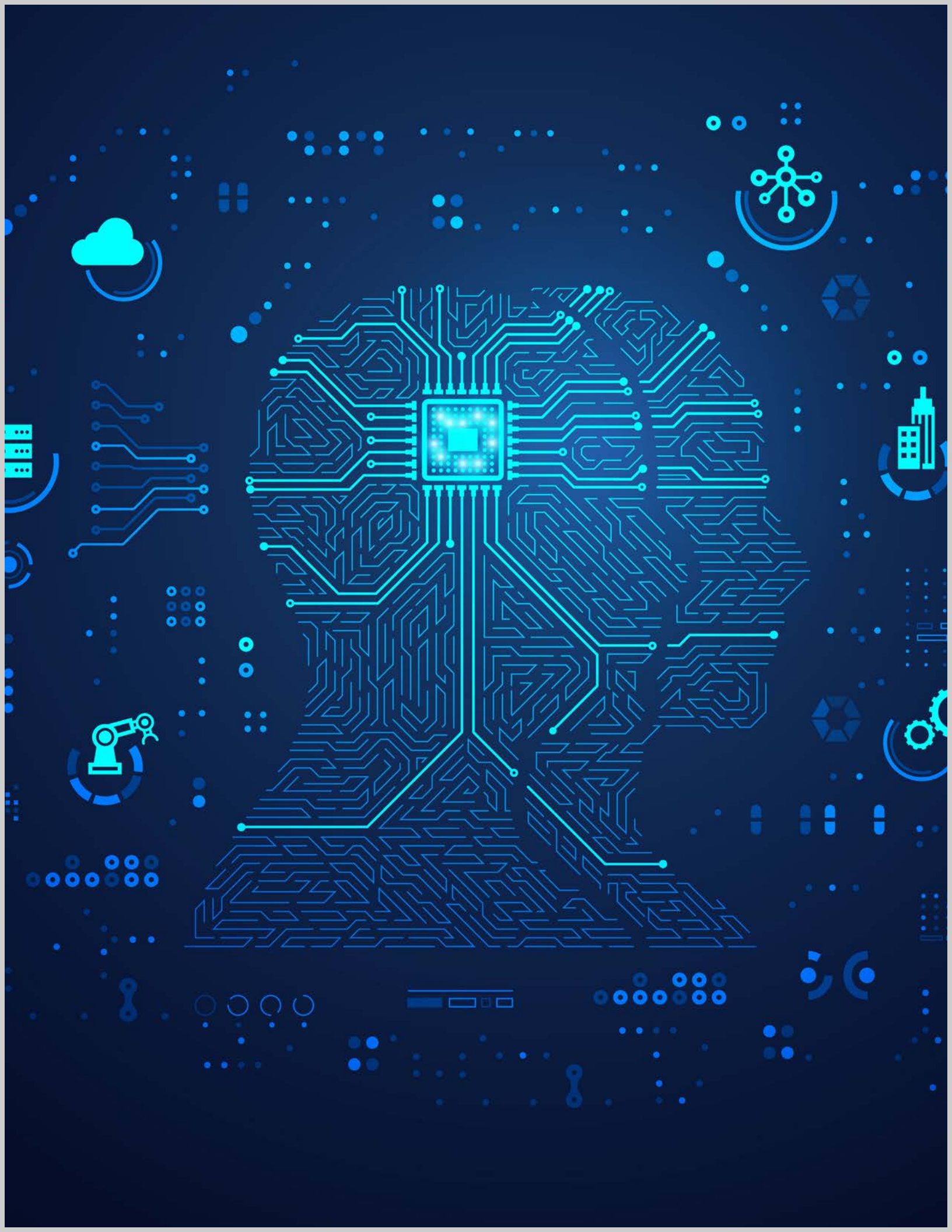
5. Implement steps for risk reduction.

- Quantum Crypto will be a game changer and offers huge advantage but resilience thinking should also include the connected risks and vulnerabilities.

- NATO must improve the civil-military cooperation with start-ups in order to be able to harvest EDTs; NATO's Defence Innovation Accelerator for the North Atlantic (DIANA) offers a key mechanism to deliver this.

- Within the working environment of EDTs and Cyber we have to separate marketing from the actual work. First we need to build trust between civil and military entities and set up the structure later.

- Companies from the private sector are becoming resilience providers and set the standards. There is a key question on whether NATO can have a role in defining these standards.





SESSION 3: ENERGY SECURITY

Energy security plays an important role in the common security of NATO Allies. A stable and reliable energy supply, the diversification of routes, suppliers, and energy resources, including the integration of sustainable energy sources, and the interconnectivity of energy networks are all of critical importance and increase our resilience against political and economic pressure. Conversely, the disruption of energy supplies could affect security within the societies of NATO member and partner countries, and have an impact on NATO's military operations. Energy security is therefore a vital element of resilience.

Energy consumption is also a significant contributor to climate change and many Allies are taking measures to transition to more sustainable and renewable energy sources. This will have an impact on how they ensure a stable and reliable energy supply into the future, including for their armed forces.

In addition, the global energy sector has seen upheavals in supply and demand in recent years, both as a result of the COVID-19 pandemic (and its aftermath) and due to Russia's invasion of Ukraine. These upheavals have led to increased volatility in energy supply and prices, which also has an impact on military deployment and sustainment.

This panel will consider how volatility in the energy sector could affect Allies' ability to ensure resilient energy supplies for both civilian and military use over both the short and longer term, and what additional measures Allies can take to increase the resilience of their energy infrastructure. The participants in the Energy Security session are invited to consider the following questions:

- *As Allies seek to decrease their reliance on Russian oil and gas, what potential implications do new supply sources and routes have for resilience? For the military's access to energy? What role can sustainable energy sources play?*
- *What additional steps can Allies take to increase the resilience of both their energy supplies and the critical infrastructure required to support it? What new resilience requirements will the transition to clean energy bring?*
- *What is the expected longer-term impact of the current volatility of energy supply and prices? What kind of structural shifts might we be seeing in the energy sector?*
- *What potential lessons can be drawn from recent crises to strengthen energy resilience over the longer term? To ensure reliable access to energy sources for the military?*

“Energy security plays an important role in our common security. A stable and reliable energy supply, the diversification of routes, supplies and energy resources, and the interconnectivity of energy networks are of critical importance and increase our resilience against political and economic pressure.”

- Brussels Summit Declaration issued by the Heads of State and Government participating in the meeting of the North Atlantic Council

Moderator: Mr Jakub Wiech, Deputy Editor in Chief, Energetyka24

Panelists:

- 1. Mr. Dariusz Serówka, Counsellor, Polish Secretary of State for Strategic Energy Infrastructure**
- 2. Dr. Bodgan Cwik, Head, Department of Forecasts and Strategic Studies of the Institute of Security and Defence, Military University of Technology in Warsaw**
- 3. Mr. Alan Howard, Associate Chair, Energy Academic Group, United States Naval Postgraduate School**

This panel considered how volatility in the energy sector could affect

Allies' ability to ensure resilient energy supplies for both civilian and military use over both the short and longer term, and what additional measures Allies can take to increase the resilience of their energy infrastructure. Discussion points of note:

- It is obvious that interdependencies in energy supply between Western Europe and Russia did not prevent from Russia from invading Ukraine. The premise that “trade avoids war” is flawed.
- Energy security is the linchpin of everything: security, social, economic, and military. States' sovereignty remains highly dependent on their



PHOTO BY GRATISOGRAPHY

SESSION 3: ENERGY SECURITY

ability to ensure energy security.

- A high degree of self-sufficiency, in terms of energy generation capacity should be given priority over international markets and energy interdependence as the key paradigm of energy security. In this context, interconnections between energy systems of neighbouring states should be viewed primarily in terms of emergency support.

- The military platforms (ships, ground combat vehicles and aircraft) being built today will rely on carbon fuels for their entire lifespan. We have to be realistic in our ability to reduce or remove our reliance on carbon fuels. Nations will need to continue to invest into "old" carbon fuel infrastructure to support military operations while also looking at new energy sources and technologies.



▪ Energy and infrastructure should be considered as a network of systems rather than as individual elements. Infrastructure protection is crucial and the entire system needs to be mapped to understand which areas are most critical and must be protected.▪ Energy security is the linchpin of everything: security, social, economic, and military. States' sovereignty remains highly dependent on their ability to ensure energy security.

▪ Modelling and simulation can determine where to maximize investment to create the greatest effect on infrastructure.

▪ Energy resources are connected to availability, accessibility, affordability, and acceptability. Acceptability in particular, connects directly to cognitive and societal resilience.





SESSION 4: CLIMATE CHANGE AND SECURITY

At the 2021 Summit, NATO Heads of State and Government agreed that NATO should aim to be the leading international organisation when it comes to understanding and adapting to the impact of climate change on security.

Climate change considerations are not new to NATO's military, but globally, climate security has gained increasing prominence amongst the multitude of international security challenges. The accelerated effects of climate change are likely to have a profound impact on the future security environment, becoming a threat to international peace and security and compounding instability.

The rapidly changing climate conditions within which the Alliance will conduct future operations will present an increasingly complex security risk. Many regions across the globe are already fragile and with the physical environment only becoming more unforgiving, the impact on human security will become more acute. Stressors, resulting from migration, energy competition, infrastructure fragility and regional competition over food and water, could serve as a catalyst for tension and possibly lead to conflict.

NATO's military will need to understand climate-related warning signals and their impacts to remain operationally effective. The ability to maintain freedom of operations and manoeuvre across the globe will be paramount and advantage will only come to those that adapt and prepare to meet this complex and interconnected challenge. Defence will need to innovate, ensuring its equipment, people and infrastructure are agile and resilient. To do so, adaptation and resilience measures must be led from the top and consistently applied across all aspects of the Military Instrument of Power. Awareness, adaptation and mitigation will be critical if strategic uncertainty is to be avoided.

NATO's efforts to cultivate a more resilient Alliance have direct reverberations in assisting the Alliance in meeting the challenges related to climate change. This panel will aim to address how NATO can become more resilient to the impact of climate-related threats on systems.

- *What will be the key stressors climate change will have upon civil preparedness? Does this contemporary issue affect all seven resilience baseline requirements?*
- *How can civil preparedness against the increased challenges posed by climate change benefit NATO military operations? What mechanisms for stronger civil-military cooperation and interaction should be set up?*
- *Climate change will affect NATO indirectly through the geopolitical shifts taking place outside the Area of Responsibility. What are the main shifts NATO should anticipate and how can NATO prepare to mitigate them?*
- *Where can NATO's military have the greatest effect in meeting the challenges of climate change and in what area should nations invest to remain agile?*
- *In the context of the current geopolitical challenges, should NATO highlight its climate change policies in the public domain? Would this be beneficial or detrimental to NATO's image?*

“From the High North to the Sahel, Climate change is a crisis multiplier. More extreme weather devastates communities, and fuels tensions and conflicts. Climate change matters for our security, so it matters for NATO.

That is why NATO is determined to set the gold standard on addressing the security implications of climate change.”

- Jens Stoltenberg, NATO Secretary General

Moderator: Dr Elizabeth Chalecki, Associate Professor of International Relations, University of Nebraska at Omaha, Wilson Centre

Panelists:

- 1. Dr. Katerina Oskarsson, Chief Strategy Officer, RISE Resilience Innovation*
- 2. Dr. Elizabeth Rosvold, Senior Research Fellow at the Norwegian Institute of International Affairs*
- 3. Mr. Gary Russ, Program Manager, Real Estate & Environmental Partnerships, United States European Command J4*

NATO's efforts to cultivate a more resilient Alliance have direct reverberations in assisting the Alliance

in meeting the challenges related to climate change. This panel aimed to address how NATO can become more resilient to the impact of climate-related threats. Discussion points of note:

- Climate change impact results in acute shocks, chronic stress and exposed vulnerabilities across systems.
- Climate change is not causing armed conflict but in some contexts contributes to increased conflict risk by being a “risk multiplier”.
- Armed conflicts hamper affected societies' resilience and adaptive capabilities to deal with climate change, further exacerbating both conflict and climate risks.



- Building resilience to climate change goes beyond disaster preparedness and response.

- Advice to NATO:

1. NATO is going to require more capabilities for humanitarian assistance and disaster relief missions in the future.

2. Grab every opportunity to develop resilience

3. While implementing adaptation and mitigation measures, we must not forget to look at the EU to see which nations are prepared to deal with Climate Change.

- Climate change is a forcing function.

- There is a need to develop tools for adaptation, not just mitigation. Innovation will drive down cost and maximize effectiveness of adaptation and mitigation measures. Additionally, climate adaptation brings co-benefits: poverty reduction, economic vitality and resilience.

- There are good examples regarding the impact of climate change at the municipal and city level that can be leveraged. The first-ever Joint Land Use Study in the United States was a joint effort between Cities of Norfolk/Virginia Beach and surrounding military bases that created an action plan focused on interdependencies and vulnerabilities around sea level rise.



PHOTO BY KELLY SIKKEMA



PRINCIPALS' SESSIONS

Select attendees participated in three Principals' sessions that were held concurrent to the main programme. The Principals' sessions were facilitated discussions that investigated the impact of the war in Ukraine on Alliance resilience, explored the topic of energy security, and discussed climate change.



PRINCIPALS' SESSIONS

IMPACT OF THE WAR IN UKRAINE ON ALLIANCE RESILIENCE

FACILITATOR: DR. DAN HAMILTON, JOHNS HOPKINS UNIVERSITY

Discussion points of note:

- State and non-state actors are challenging the resilience of Allies.
- We must change our way of thinking. When we look to build or improve our institutions and plans, we do not include resilience and redundancies; instead we look at them from a cost effectiveness perspective.
- Efforts aimed at mitigating resilience shortfalls should be dynamic and shared amongst Allies and Partners.
- In a competition between great power states, governance becomes critical and Alliance cohesion becomes essential to build resilience.
- Resilience should be projected forward to our neighbours because they affect our collective security. We need to demonstrate this capability to prevent a conflict from happening by creating awareness about what we are doing on resilience. NATO should pursue a strategic initiative to engage more with vulnerable nations such as Georgia and Moldova on defence and resilience.
- Resilience should be a strategic priority and a core task for the Alliance.
- Resilience requires data and information sharing, modernization and transformation. In the world we are in today our connectedness must be protected and this is where layered resilience comes in to create synergy between the civilian and military sectors.
- NATO's Article 2, should be taken under serious consideration. Economic coordination will enhance resilience.
- The idea of civil defence should be brought back into NATO thinking. There are many elements of resilience that need to be considered: the protection of civilians, migration, medical/health services, chemical, biological, radiological, nuclear, civil-military interaction, disinformation, supply chains, strategic dependencies (energy), and information technology. These all impact and are linked to civil defence and the war in Ukraine can offer many lessons.
- Resilience is a key enabler of deterrence by denial.
- "Resilience starts at home, but no one is home alone especially in NATO." We need to start thinking in different parameters.

PRINCIPALS' SESSIONS

ENERGY SECURITY

FACILITATOR: MR. MIŁOSZ KARPINSKI,
THE INTERNATIONAL ENERGY AGENCY

Discussion points of note:

- Energy security isn't new for NATO.
- Freedom comes from resilience, especially since energy has been weaponized and used as a source of tension, conflicts and internal divisions. Freedom from energy dependencies is critical for security.
- Energy requirements will continue to rise and climate change will affect energy resources.
- Disruptions to energy security can be successfully countered with reserves, but energy security from a strategic perspective must be closely managed. Resilience is not only about having an available supply but also includes stable and secure critical infrastructure.
- Biofuels and synthetic fuels are game changing but there is not enough demand. NATO could push this demand for industries to invest in these new types of fuels, thus kick-starting a process of green transition.
- We are at a period where decisions must be made. We need to be cautious not to shift from one energy dependency to another as China has invested a lot in securing critical earth minerals. Stockpiling of traditional energy resources is critical to mitigate risk during a transition period (20-25 years) to newer forms of energy.

PRINCIPALS' SESSIONS

CLIMATE AND SECURITY

FACILITATOR: DR. P. WHITNEY LACKENBAUER,
ARCTIC INSTITUTE OF NORTH AMERICA

Discussion points of note:

- Climate change is the defining interest of our time! Climate trends and regional needs are exacerbating the security challenges already present.
- NATO should be the leading organization when it comes to understanding the threats originating from climate change. However, NATO should not and will not become a primary forum where allied nations will tackle climate change.
- Climate change is a threat multiplier and a constant factor that will continuously transform the strategic environment.
- For NATO to remain operationally effective it needs to understand changes to the environment (temperature, sea level, precipitation, etc.). This requires innovation.
- Climate change leads to geostrategic competition which increases geopolitical challenges, with countries seeking and exploiting resources that will only become more rare.
- NATO needs to reassess the resilience of forces and infrastructure against climate change threats.
- NATO needs to build civil capabilities with dual use to support military requirements and secure freedom of operations against climate change threats.
- Civil-Military cooperation is a prerequisite for mitigating climate change impact on civil preparedness and security.



SESSION 5: PARTNERSHIPS AND SOCIETAL RESILIENCE

Russia's aggression against Ukraine and its impact on the Alliance underlines how vital strong partnerships and resilient societies are to our national and collective resilience. Resilience is not only critical for the Alliance's ability to deter our strategic competitors and potential adversaries, but also to NATO's cooperation with our partners.

Our societies are confronted with a full-spectrum of challenges. From pandemics, to geopolitical competition. From grey-zone conflicts to all-out aggression and war. Crises and conflicts do not evolve along predictable or linear patterns and are no longer distant events, isolated from our countries and societies. Building resilient societies in the face of these challenges requires a different approach. An approach that begins with preparing, empowering and investing in our societies' ability to defend themselves.

Through the Strengthened Resilience Commitment agreed at the 2021 Brussels' Summit, Allied Heads of State and Government called for more engagement with our societies and populations, the private and non-governmental sectors, as well as for closer cooperation with our partners and international organisations engaged in resilience and civil preparedness efforts, especially with the EU.

National resilience is strengthened by citizens' engagement and response. In this context, Allies' efforts to strengthen their national resilience extend beyond individual ministries and agencies and civil-military cooperation as they embrace a more diverse array of societal actors. This shift to more effective partnership within our nations makes government, the armed forces, citizens/societal groups, and the private sector important stakeholders in building resilience.

At the strategic level, NATO's partnerships with countries engaged in similar efforts and with key international organisations, such as the EU, are essential to the resilience of Allies and of NATO. In an increasingly contested international space, partnerships become essential and offer opportunities to reinforce our national and collective resilience through the sharing of information and best practices.

As NATO embarks on a more integrated and coordinated approach to strengthening resilience, at national and Alliance level, this panel will aim to address how can we deliver on our commitments.

- In what ways should NATO enhance its cooperation with, and support to, its partners to strengthen their resilience? What concepts and best practices from partners could NATO draw upon to further advance its own resilience?

- What are the key areas of complementarity between the EU and NATO in the field of resilience? How can NATO and the EU strengthen their cooperation in this field? What are the most important outcomes for NATO-EU cooperation on resilience in terms of the security of the Euro-Atlantic area?

- What are the top two priorities that Allies should focus on to equip their societies for the consequences of strategic shocks?

- What role can and should citizens and the private sector play in national resilience? How do we increase our ability to draw upon these elements of society in crisis and conflict? What does it mean to be a resilient citizen?

We will work across the whole of government, with the private and non-governmental sectors, with programmes and centres of expertise on resilience established by Allies, and with our societies and populations, to strengthen the resilience of our nations and societies.

- Strengthened Resilience Commitment, 15 June 2021

*Moderator: Mrs. Friederike Dahns,
Chair of the NATO Civil Protection
Group/ German Ministry of Interior*

contribute to the military component and enhance deterrence and defence of the Alliance.

Panelists:

*1. Dr. Christian Fjäder, Geostrategic
Intelligence Group*

▪ Disinformation campaigns as part of Hybrid Warfare seek to exploit societal fissures. We are seeking to develop mechanism to; 1) identify, 2) assess and 3) address misinformation that exploits Alliance fissures and will help to build a resilient society.

*2. Dr. Tim Prior, Business Continuity
Manager, Swisscom*

▪ Government often has difficult requirements and unrealistic expectations that hamper public-private partnerships.

*3. Mr Ingvar Lindholm, Deputy
Director for Crisis Preparedness,
Swedish Ministry of Justice*

▪ Multi-stakeholder partnerships are required to build societal resilience.

*4. Mr. Thure Christiansen, Senior
Policy Adviser to Deputy Secretary
General for Interinstitutional and
External Relations, European
Commission*

▪ The State is responsible for the well-being of the Nation, but government cannot do it alone. All stakeholders must do their part, and that is why partnerships are critical. While stakeholders bring with them different capabilities, they also have different agendas/missions/goals that are not always coherent with others.

*5. Mr. Kamil Basaj, Polish Government
Centre for Security*

▪ Partnerships need to be developed pre-crisis to be effective during response. We must have clarity with what we are trying to achieve with partnerships, as well understand exactly what partnerships expectations are.

As NATO embarks on a more integrated and coordinated approach to strengthening resilience at national and Alliance levels, this panel aimed to address how we can deliver on our commitments. While it remained extremely difficult to understand how to measure societal resilience, the discussion points of note:

▪ Areas of cooperation with EU related to resilience (all of these are member state competencies) are: climate defence, cyber, hybrid, military mobility and foreign information, manipulation and interference.

▪ We need to strengthen the civil component to our defence – this will

▪ Need to address what drives businesses to cooperate in Societal Resilience – what is the purpose of the Partnership (i.e. value added)?

SESSION 5: PARTNERSHIPS AND SOCIETAL RESILIENCE

What are their expectations? What do we expect from each other? Clarity is essential for a fruitful relationship.

- Businesses are interested in resilience as they seek a safe and stable (predictable) business environment.

- Characteristics of a stable and resilient society:

1. Society is self-organising (humans are adaptive) and creative. We need to empower and not command society for it to function with distributed control.
2. Society operates as a system and should not be viewed as separate components.
3. There are no 'best-practices' that are easily exportable from one country to another; they need to be viewed in 'local contexts.'
4. We need to expect and welcome chaos as it provides us a means

to confront the unknown.

- The main aim of external influence campaigns is to undermine the decision-making process. We need to protect and secure this, but how to do this remains unclear.

- What should NATO prioritize to withstand shock?

5. Trust - as a product of strong and stable relationships.

6. Societal resilience - not as a 'silver bullet' stopping all threats, but to help anticipate or adapt quickly to threats.

7. Citizens - enable and strengthened its citizens, by clearly communicating what is expected from them and training/preparing them accordingly.



LEADERS WORKING DINNER

Select attendees participated in Leaders Working Dinner. Theme of the dinner was Space. Following SACT's remarks on the importance of Space as a domain, and the summary of the state of NATO's policies on Space, a senior-level executive from SpaceX, Mr Byron Hargis, provided a key note address on the role his company had in delivering Starlink terminals to Ukraine. Highlights from the address reflect on main principals of SpaceX operation enabling their resilience and agility:

-Design for resilience: it is easier for resilience to be included and built in from the start than to be added afterwards.

- Automate failure recovery: to seamlessly recover from system issues, automation is key.

- Expect change: expect that the environment you design for now is not the environment of the future.

- Embrace chaos: exercise the resilience of your system by purposefully forcing failures which improves people, processes and hardware.

- Win as a team: asking for help early and often can enhance outcomes.



The 2022 NATO Resilience Symposium was an invaluable opportunity to discuss the many facets of resilience that NATO must continue to address. The ability to share thoughts and ideas from multiple perspectives was vital to help inform ACT's on-going work on resilience and NATO's wider resilience efforts. The fact that over 230 people attended such an event during a challenging time for Europe attests to the importance of the topic.

The success of the symposium is a direct reflection of the contributions of the moderators, panellists, facilitators and audience. It would not have been possible without our Polish hosts, the NATO International Staff and the multitude of organisations that provided support.

The NATO Resilience Symposium concluded with a key note remark and closing remarks.

Key Note Remarks: So what for NATO? Mr. Hasit Thankey, Head of Enablement and Resilience, NATO IS-DPP

Closing Remarks:

1. *Mr. Giedrimas Jeglinskas, NATO Assistant Secretary General for Executive Management*
2. *Mr. Piotr Naimski, Polish Secretary of State, Government Plenipotentiary for Strategic Energy Infrastructure.*
3. *General Philippe Lavigne, Supreme Allied Commander Transformation*

They noted:

- Resilience is a team sport and we have to invest time, labour, and money in relationships.
- All parties have agency and therefore have a role to play.
- 'Joint and Combined' does not capture the true nature of the civil-military Resilience.
- Civil capabilities have atrophied (just like military) and require a whole of society approach to rebuild.
- Leadership must have the courage to choose. Resilience is less about control and more about empowering people.
- Deterrence by Denial.
- Deterrence has three facets, Capabilities, Partnerships and Societies.
- Leadership, Collaboration and Innovation are key to a resilient life:
 1. Leadership – NATO's political and military domains are seen as inspirational as a values-based organisation. The military because at all levels, the military thinks and acts with resilience and redundancy in mind. At the political level, a decision @30 nations becomes a powerful thing, therefore BLRs are rock-solid and extremely effective tools. Resilience will grow through the Strategic Concept.
 2. Collaboration. While resilience is inspired by the military discipline

and by what we decide at NATO among the Allies, resilience is inherently a whole of government endeavour that tackles whole of society challenges. That's why baseline requirements for national resilience have become effective tools to measure whole-of-nation preparedness to future shocks.

3. Innovation - may not be intuitive but link with disruptive technologies due to volatilities that they imply. Resilient defense and defense capabilities are of essence - but what is needed is investments in disruptive technologies that build other elements of resilience too. NATO Innovation Fund offers a leadership tool, and a menu of options to expand innovation beyond pure defense capabilities.

▪ Civil-military cooperation is critical for resilience to generate unity of effort. This collaboration requires trust between political, civilian and military authorities.

▪ Resilience requires the will and capability to share data; we need to modernize and transform our organizations through digital transformation to have the right tools to share data.

▪ If resilience is a national responsibility, it is also a collective commitment in which we need to leverage our partners. In this area, where military and civilian cooperation is key, NATO and EU efforts must be complimentary.

▪ NATO needs to proactively shape and contest environment before the crisis commences to eliminate the need to resist and recover from shock.

▪ Resilience requires an ability to train all our people, civilian and military together. We require greater cooperation in training and exercises, through war gaming and innovative means such as experimentation, modelling and simulation. This needs to be dynamic and proactive.

▪ Think big, but act small and fast.



KEY NOTE
ADDRESSES





AMBASSADOR MIRCEA GEOANA NATO DEPUTY SECRETARY GENERAL

OPENING REMARKS

Good morning from Brussels.

And thank you so much to General Lavigne and Minister Blaszczak for hosting this important symposium and inviting me to speak today.

Mon General, you and your team at ACT do excellent work to strengthen our Alliance and make it future proof. Resilience is an important area of your work, and I appreciate our collaboration.

As for Poland, it is a highly valued Ally. It contributes significantly to our shared security.

Including with troops for our missions and operations. Regular contributions to air and maritime patrols. And hosting one of NATO's multinational battlegroups. As well as key facilities, such as our Multinational Corps Northeast And a site for our Ballistic Missile Defence.

And you play a leading role in today's crisis in Ukraine. You are showing incredible solidarity at this dangerous time. Opening your borders to the hundreds of thousands of refugees fleeing the conflict. Providing humanitarian assistance. And military assistance.

Many other individual Allies have recently stepped up their assistance to Ukraine.

Since the start of the crisis, Allies have provided and committed at least 8 billion euros for the equipment Ukraine needs.

And we are committed to sustain the economic and humanitarian support so that Ukraine can prevail.

At the same time, NATO has an important part to play to ensure this war does not escalate beyond Ukraine. We cannot risk a direct NATO-Russia conflict because that would lead to more insecurity, more death, and more suffering for everyone.

Our job is to keep our one billion people safe. That's why, since 2014, we have been implementing the biggest increase in our collective defence in a generation.

And now, with the crisis in Ukraine, we have further strengthened our defence, with 40,000 troops under NATO Command from the Baltic to the Black Sea, and hundreds of ships and



planes.

We will continue to do what it takes to defend Poland and every inch of NATO territory.

We must also continue to stand together in the face of Russian blackmail. Moscow has cut gas supplies to Poland, and also to Bulgaria.

This is yet another attempt by Russia to use energy as a tool to coerce and pressure its neighbours. It underlines the need to move away from Russian oil and gas and develop alternative supplies.

This brings me to today's main topic: resilience.

The conflict in Ukraine, but also the pandemic of these past years, the growing geopolitical competition and the many other security challenges we face demonstrate the need to prepare, empower and invest in our nations and our societies' ability to defend themselves.

We must be able to better respond to, and recover from, stress, shock and surprise. For this, we need more societies and infrastructure that can function despite disruption, including through more diverse supply chains and a robust technological and industrial base.

That's why Allied leaders took bold and ambitious decisions at their Summit in June last year to prepare NATO for the challenges of today and tomorrow- these form what we call the NATO 2030 agenda.

Resilience is an important part of this agenda, which was given a special emphasis in the Strengthened Resilience Commitment, which builds on the promise that Heads of State and Government made in 2016 here in Warsaw to enhance their resilience.

NATO's work on resilience is not new.

The concept is grounded in Article 3 of the North Atlantic Treaty, which commits Allies to maintaining and developing their individual and collective capacity to resist armed attack.

Building on the 2016 and 2021 commitments, Allies will do even more to ensure their resilience.

In the NATO 2030 agenda, they have agreed, for instance, to:

- establish nationally developed goals and implementation plans, based on clear and measurable objectives;*
- to designate a senior official to coordinate national efforts; and*
- to create a Resilience Committee at NATO Headquarters to advance our shared efforts into the future.*

But resilience is not a job for NATO alone. And it is not a job for civilians or the military alone. It's a "team sport".

It requires both civil preparedness and military capacity.

It requires the participation of government, the armed forces, the private sector, and empowered citizens who should be seen as assets in the service of national resilience.

And it requires close cooperation with partner countries and international organisations.

And here I want to make specific reference to the position and role of the European Union, which is also embracing resilience as a key area of work that we can further develop in cooperation with one another.

Partnerships offer opportunities to reinforce our national and collective resilience through the sharing of information and best practices.

Like we have done working with our Ukrainian partners for many years before Russia's invasion, providing our best advice and support while Ukraine established its own robust system of national resilience.

A few weeks ago, during the NATO Foreign Ministers' meeting in Brussels, Allies agreed to strengthen the resilience of Ukraine and other partners at risk of Russian aggression, such as Georgia. This assistance would be tailored and delivered with the full consent of the countries in question, and could concern areas such as situational awareness, secure communications, and cyber.

In the years to come, NATO will serve as a platform for Allies to coordinate and unify their efforts, sharing information and exchanging best practices.

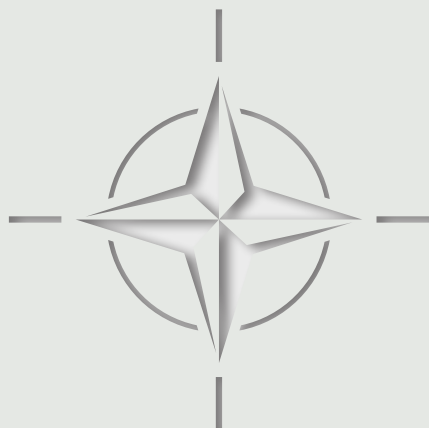
NATO will provide common tools by which individual Allies can develop national policies and assess their resilience, which will ultimately enable them to respond to and recover from challenges, and better support one another.

Your conversations over the next two days will offer important insights, and I would encourage you to think about how individual Allies, NATO as a whole, our partners and all parts of our societies can enhance our resilience in the current security environment.

There are many changes happening and many more are still to come. Allies will need to identify lessons and learn from them not only because of the lasting consequences of COVID-19 or Russia's invasion of Ukraine, but also as a part of our long-term response to climate change and evolving technologies, to name but a few areas.

We must not forget that different Allies will be affected differently and have their own approaches and solutions.

I hope this symposium will help us better understand these challenges and their implications, to share our best practices, to develop crucial relationships, and to think deeply about how we can adapt by design to meet the challenges of what promises to be an unpredictable security environment in the years ahead.



MR. MARIUSZ BLASZCZAK MINISTER OF NATIONAL DEFENCE, REPUBLIC OF POLAND

OPENING KEY NOTE ADDRESS

Ladies and Gentleman,

It is a great honor for me to welcome you in Warsaw at the NATO Resilience Symposium.

We are gathering here in an extraordinary and challenging time for our countries, for Europe, and the whole world, but especially for Ukraine which, since more than already two months, has been resisting brutal Russian aggression.

I am sure that when we started to plan this event last year, maybe a few of us expected that our deliberations would be strongly affected by the most serious security crisis in our continent since the end of the World War II.

The ongoing Russian invasion on sovereign Ukraine shattered our convictions that the horror of full-scale war in Europe belonged to the past. This unprovoked attack, facilitated by Belarus, has confirmed Russia's readiness to pursue its neo-imperial ambitions through military means. Moreover, it has also shown that Kremlin is ready to undertake the risk of military actions which are potentially costly also for Russia.

All of that combined gives us a grim picture of the Russian leadership which will stop at nothing but to achieve its delusional objectives, even at the expense of its own people and regardless of the inevitable international isolation, consequently making Russia and its president Vladimir Putin an international pariahs, as President Biden has accurately pointed out.

From the outset of this conflict, EU and NATO members as well as their partners from all around the world have responded with a package of comprehensive and heavy sanctions restricting economic, financial and individual relations with Russia as well as the access of its state-owned media to our audience.



At the same time, we have engaged in an extensive support to Ukraine providing humanitarian, economic and military assistance.

Our strong and coherent response to Russia's actions has inevitably been a shocking surprise for Moscow and exposed us on retaliatory measures from Russia with unlawful suspension of gas supplies to Bulgaria and Poland as its most recent step in that regard.

We should have no doubts here that the long crafted Europe's energy dependence on Russian hydrocarbons (coal, natural gas & oil) has also played an important role in Russian preparations for the war and was aimed at weakening our response.

The same as Russia's attempts to interfere in electoral processes in some of our countries, cyberattacks that can be dated as far as to 2007 (Estonia) as well as hybrid attack with irregular migration against the EU border that began in the second part of last year.

It's worth to note that the latter is still being waged along the Polish border, despite the unprecedented flow of war refugees from Ukraine who found shelter in Poland (about 3 million Ukrainians have already crossed Polish border since 24th February).

The likelihood of further intensification of Russian activities below the threshold of war against NATO states, in response to politico-military support provided to Ukraine, is significant.

All of that clearly shows us that the change in the security environment of Europe and especially on the NATO's Eastern Flank that has started in 2014 or even earlier, in Georgia in 2008, persists and will persist.

It is very unlikely that Russia, even if defeated in Ukraine, will re-evaluate the anti-Western paradigm of its foreign and military policy as well as its attitude towards the current international order. It will continue to perceive us as adversaries and make deliberate and more sophisticated attempts to weaken our capacities and will to resist its neo-imperial ambitions.

We also still do not know the full extent to which Russian invasion on Ukraine will impact the world's food security. The rising prices of agricultural products may cause another wave of migration to our borders. Poland and Ukraine are already working together in order to increase the use of Poland's transport infrastructure to export Ukrainian agricultural production on the world's markets.

Having all of the above mentioned in mind, the only thing we can be sure of is that our security environment will be more and more challenging and unpredictable, and thus, will require more whole-of-country approach better integrating both civilian and military capabilities in order to make us more resilient.

Poland, as Russia's neighbor and both NATO and the EU flank country, attaches great importance to strengthening its resilience. The recent suspension of gas flow to our country may be the very good example of that as we have been aware of such possibility and

preparing for it for years (with LNG terminal in winouj cie, Baltic Pipe pipeline nearly ready, gas interconnectors with our neighbors as well as our own supplies).

We are also pleased that the concept of resilience plays an increasingly important role in the works of NATO and the EU. As with regard to NATO, an important step was made here in Warsaw during the NATO Summit in 2016, when heads of states and governments issued the Commitment to enhance resilience which made that topic one of the leading ones within NATO.

Although resilience is first and foremost a national responsibility, Poland strongly supports further works within both organizations aimed at coordinating and facilitating that efforts, as strengthening our individual resilience contributes to the resilience of our whole community.

We believe that our future efforts in that regard should be guided by three principles. Firstly, the focus on key areas, such as cyber and disinformation threats; strengthening energy security; impact of the development of new technologies on security and defense; ensuring the security of supply chains and strengthening social resilience.

Secondly, we should strive to further develop cooperation in that regard between NATO and the EU, as both organizations have various, mutually reinforcing tools in that regard.

Thirdly, we should also increase our cooperation and support in building resilience to our partners, especially those facing an aggression or increased pressure from Russia, namely Georgia, Moldova, Ukraine as well as Balkan ones. I am glad in that regard that tomorrow there will be the whole panel devoted to partnerships. Increased support to partners is, and has always been, Poland's priority within both EU and NATO.

Our cooperation with partners cannot be perceived though as a one-way street. We have capacities and instruments to help them but we should be ready to learn from their experiences as well.

Ukraine is the best example here. We all have been heavily involved in defence reforms and defence capacity building in Ukraine since 2014, through NATO and other multilateral mechanisms as well as bilateral activities. That support now clearly pays off for Ukraine.

We are watching with strong admiration how the Ukrainian Armed Forces and the whole society are holding off Russia's offensive. Effectiveness of Ukrainian defence as well as heroism shown on the battlefield inspires respect among people all over the world. Ukrainians have also shown that, despite differences in military potential, Russia can be beaten if proper strategy is being implemented.

The course of the invasion as well as failure of Russia's initial plans are a sign of extraordinary resilience of the Ukrainian state and society. It seems that Vladimir Putin has underestimated not only the will of ordinary Ukrainians to resist and fight, but also the effectiveness of governmental institutions to operate in such circumstances.

Russia has failed to break the spirit of Ukrainian. Pools are showing that a grand majority



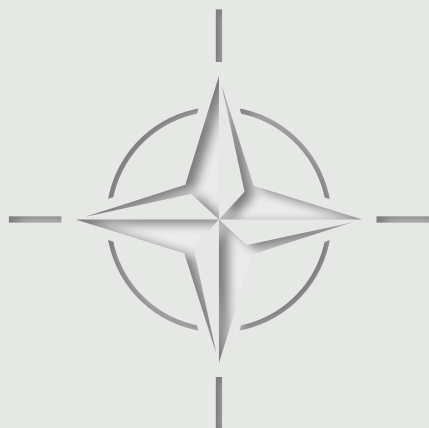
of citizens believe in the final victory over the invaders. Russian propaganda efforts, disinformation and various forms of manipulation in relation to Ukraine's society had fallen on deaf ears. And various state institutions, despite obvious difficulties, are continually carrying out their constitutional tasks maintaining continuity of governance and Ukraine's statehood.

War in Ukraine also shows how the concept of territorial defence is working in practice. Motivated, patriotic and well commanded volunteers may become a highly effective tool in both fighting an enemy and supporting civilians in war-affected areas. It's worth to note that Ukraine builds its Territorial Defence Forces using inter alia Poland's model.

To conclude, let me underline that Ukraine is inevitably a huge testing ground for the concept of resilience and we should learn our lessons from its experience.

That is why, wishing you a fruitful discussion and great time in Warsaw, I hope that the next NATO Resilience Symposium will be held in Ukraine.

Thank you for your attention.



GENERAL PHILIPPE LAVIGNE, SUPREME ALLIED COMMANDER TRANSFORMATION

OPENING KEY NOTE ADDRESS

Mr Mariusz Błaszczak, Minister of National Defence of Poland;

Ladies and gentlemen,

Good morning and welcome (again) to the Resilience Symposium organized by NATO Allied Command Transformation and the Polish Ministry of Defence, and welcome to the wonderful city of Warsaw. I am using this opportunity to warmly thank our hosts for having us in Poland these three days. Thank you.

After having had two successfully organized Resilience Conferences by Allied Command Transformation in recent years, we are continuing in this, symposium format, aiming at outreaching to a broader audience, particularly civilian, including academic and scientific.

It is because resilience requires a comprehensive, holistic approach, and because of strong interdependencies. To be successfully built, resilience requires successful collaboration between civilian and military stakeholders and must consider these two mutually reinforcing layers.

In NATO, we realized the significance of building resilience, as a measure to respond to, and to protect against the threats of hybrid warfare, incarnated in Russian behaviour in shaping international relations, which culminated with the so-called Ukraine crisis, in 2014.

However, it was not the first time resilience had been introduced in NATO. The principles of resilience were already built into the NATO founding act, the North Atlantic Treaty, in its Article 3, in 1949.

In Article 3, parties agree to “separately and jointly, by means of continuous and effective self-help and mutual aid, will maintain and develop their individual and collective capacity to resist armed attack.”

Accordingly, resilience is recognized in NATO as a national responsibility but, also, as the



collective imperative, because it underpins deterrence and defence. And, credible deterrence and defence is NATO's first and foremost concern, which, arguably, depends on the stability and functionality of our societies and our economies.

We are aware that democracy and values we hold dear bring opportunities, but also risks. Our openness, political, economic and individual freedoms may sometimes be exploited by our adversaries, who target our vulnerabilities. And, resilience is, in a practical sense, about the ability and capacity to fill the vulnerability gaps.

It is, as we define it, the capacity to resist and recover from shock, absorb the damage, and resume functions as quickly and efficiently as possible. Resilience is, therefore, about adaptability, agility, and, ideally, the ability to undertake alternative ways, which requires flexibility.

It is, therefore, of ultimate importance to have a holistic understanding and recognition of where shortfalls and vulnerabilities exist, and of the factors and trends that shape them. This will help the Alliance determine risks, prioritise mitigation, and strengthen enablement, readiness and responsiveness.

And, effective resilience is, as we witness that in the example of Ukraine, as well as in Poland and many other European countries, also dependent on peoples' spirit.

I would draw a parallel here with the military instrument of power. To be effective, it, roughly, needs to comprise the right capabilities (means to fight), right strategies and doctrines (ways to fight), and the fighting spirit.

That means: motivation, discipline, commitment, courage, leadership, or, shortly, willingness to sacrifice for the nations' political ends.

There is no better example today than Ukrainian people and its leadership that shows how superior morale, determination, and adaptive strategies and tactics can match overwhelming military capabilities.

I believe, these constitutive elements are equally important for resilience. We need capacity (to ensure the "backup"), we need procedures (to recover), and we need that "spirit", to ensure commitment, adaptability and creativity that will make resilience "alive" and successful.

As you can see, I touched here on one delicate topic, which we may call "cognitive dimension", which is also worth examining. It is about ethical and moral aspects that we need to have not only in our governments and specialized services but in the whole society.

Societal resilience, in order to succeed rests on, above all, inspired, dedicated, and committed people.

This cognitive dimension, the perception and decision process of our citizens, is, however, also exposed to malicious influence. Spread of fake news, relativisation of truth and facts, sowing the seed of mistrust in democratic institutions and traditions ... are among the risks

we have to take into account.

So, and this is a rhetorical question, how can we counter these negative influences, and not lose any freedom we have achieved (such as freedom of speech, freedom of the press etc.)?

Today, we see that the risks for our societies are not coming only from state or non-state actors but also from what we may call “threats without threateners”, such as pandemics and rising challenges of climate change, which all puts an increasing importance on resilience.

In ACT, my command, we are very aware of that. And, although we focus primarily on developing assessments to support military resilience, we take into consideration resilience as a whole. So, while we progress in building resilience in areas such as command and control, warfighting capability, situational understanding, logistics, military infrastructure, among others, we approach resilience by constantly keeping in mind the broader context.

We, therefore, take into consideration the changing strategic environment, including climate change, energy security, Emerging and Disruptive Technologies, and demographic change, to name a few.

Here I want to take energy security as an example. It, obviously, emerged as a very important topic since relations between the West and Russia deteriorated, after Russia’s invasion of Ukraine. This topic is an example of complexity related to security, and it affects us all, and the military is not exempted from that.

Our operational energy, the blood of our combat capabilities, which is still based mainly on fossil fuels, are also dependent on the energy supplies of our nations.

While we (especially European countries) face risks in supplies and prices, this situation should also be seen as an opportunity. An opportunity to transition towards renewable sources of energy wherever possible. This direction would minimize dependencies and also benefit efforts to counter negative consequences of climate change, by decreasing the carbon footprint.

We, in ACT, understand and develop military resilience as a layer of the broader Alliance Resilience, and it has a renewed emphasis in NATO Warfighting Capstone Concept (NWCC). This is why ACT works on so-called Layered Resilience, as one imperative of the Warfare Development Agenda, which serves as an implementation plan of the NWCC.

This way, Layered Resilience is one of the priorities alongside other key activities in ACT, including development of the Resilience Network, Net Assessment, Digital Transformation and Multi-Domain Operations. And, it will be developed through 8 agreed Thematic Working Groups. I also want to emphasize that the Allies’ Chiefs of Defence recognized Layered Resilience as a priority in the NWCC framework.

NWCC advocates that resilience requires a layered approach comprising mutually

reinforcing layers of military and civil resilience, with numerous connecting points and interdependencies. And, it is precisely civil preparedness and civil resilience, the two aspects that ACT is seeking to influence, and where we offer our support and are eager to cooperate.

Partnering is vital to strengthening resilience. Cooperation and team work are, therefore, the best ways to achieve meaningful results.

This is where ACT has already achieved some results, in partnering with the UN[1], and the EU[2], in particular.

During this event, ACT staff will be demonstrating our Modelling and Simulation Training Technology resilience tool, and Resilience Integrated Project Team's display during the Symposium, and I proudly invite you to join these presentations.

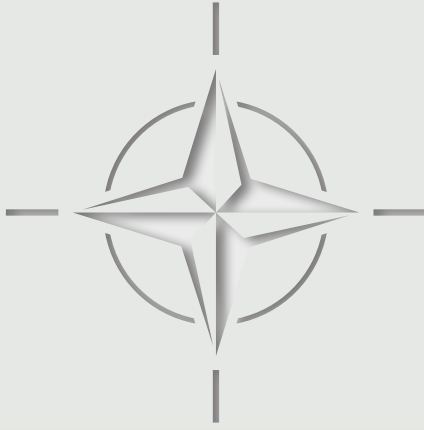
Ladies and Gentlemen,

Thank you all for participating. I am sure that the outcomes of our discussions during these two days will be beneficial and will open some new perspectives. I hope, and I am sure, we will learn some new ideas from each other.

Moreover, I invite all of us to use the best of our knowledge and creativity to discuss all the different topics on our agenda. This will help us develop our way ahead and plans afterwards.

I expect that this symposium will allow us, at ACT, to expand our views and perspectives on resilience and to further improve our Resilience Concept. I also expect we, together, will be able to identify priorities and areas of closer cooperation between military and civilian stakeholders.

Thank you for your attention and I wish you two fruitful and exciting days.



GENERAL PHILIPPE LAVIGNE, SUPREME ALLIED COMMANDER TRANSFORMATION

CLOSING REMARKS

Mr Giedrimas Jeglinskas, NATO Assistant Secretary General for Executive Management, Mr Piotr Naimski, Secretary of State, Colonel Konrad Korpowski, Director of the Government Centre for Security, Ambassadors, Representatives of allied and partner nations and organizations, Distinguished guests, Ladies and gentlemen,

Here we already are at the end of this symposium!

Let me first thank my team for organizing this event, and also thank the Polish Ministry of Defence for hosting this event and making it so informative and enjoyable, from the beginning to the end! A special thanks to you Konrad and your team, Ms Marta Podkowska and Mr Slawomir Lazarek. Also, thank you Vlasta and all your ACT team. Thank you!

At the opening session, I said that I hoped we would learn new ideas from each other, which we could adopt to further improve our work in this important area of resilience. I certainly learned a lot and we can say that this symposium has been a huge success!

There have been many interesting topics discussed during these two days, and good lessons identified. We have shared a lot, and we have to continue to build upon it.

Thank you, Mr Thanky for your takeaways from this symposium.

I would like to share with you some of my thoughts on resilience and potential way ahead.

First - resilience is first and foremost a national responsibility. It requires political commitment, dedicated organization, money, choices, and prioritization.

Second - civil-military cooperation is of the utmost importance for strong resilience, in order to generate unity of effort. This collaboration requires trust between political, civilian and military authorities. It also requires the will and the capability to share data in a whole-of-government approach.

Third - since resilience is the ability to absorb strategic shocks, we need to reduce the risk of such a shock happening. We must know how to shape and contest the environment, to win war before it happens.

Four - about the effect of the war in Ukraine on our resilience: we need to be dynamic rather than static; proactive rather than passive. This war has also demonstrated the importance of the Space domain for state resilience, with solutions that can be brought by partner nations and also by non-state actors, such as Space X.

Five - to deter an enemy, we need to project force and strength; and we also need to

project resilience.

Six – resilience requires training our people. We have to focus on the “dynamic part” of our exercises, but also on interagency cooperation, including civilian participation in military exercises. We also need to consider using new ways of training and education to strengthen our resilience, including experimentation, wargaming, modelling and simulation, and other modern tools.

Seven – regarding Energy Resilience: we need to adapt and rethink (e.g. fuel inventory and procurement) and we need to transform (e.g. consumption patterns, new energy sources).

Eight – societal resilience, a question of trust, of “distribution” of resilience and education of our youth. Because resilience is also a question of spirit.

Finally, while resilience is a national responsibility, it is also a collective commitment in which we need to leverage our partners.

Hence, we need to modernize and transform our organizations through digital transformation, to have the right tools to share data. We also need to educate our people on new technologies and innovation.

In this area, where military and civilian cooperation is key, NATO needs to take advantage of complementarity with the European Union. We need this cooperation to be more resilient as a team!

Let me reiterate the method we must follow in building resilience too:

“Think big, Act Small and Fast”.

The war in Ukraine has reset the strategic and geopolitical context of NATO, Europe and the wider world. Consequently, the real challenge for the forthcoming NATO’s Strategic Concept will be to capture that change and the changes to come by 2030 and beyond and get in front of it. Progressing in building resilience will remain an important part of our efforts to face these challenges.

That is why we have to work together, to succeed as a team.

Thank you for your participation and attention.

BIOGRAPHIES
IN ORDER OF APPEARANCE





MIRCEA GEOANA

NATO DEPUTY SECRETARY GENERAL

Mircea Geoana became NATO Deputy Secretary General in October 2019, after a distinguished domestic and international career. Mr Geoana is the first Deputy Secretary General from Romania, and the first from any of the countries that joined the Alliance after the end of the Cold War.

Mr Geoana was born in Romania on 14 July 1958. He studied at the Polytechnic University in Bucharest, the Faculty of Law of the University of Bucharest, the Ecole Nationale d'Administration in Paris, and he holds a PhD from the Economic Studies Academy of Bucharest. Mr Geoana has served as a diplomat and a politician, and in 2009 was his party's candidate to be President of Romania.

- 1991-1995: Director at the Ministry of Foreign Affairs, Romania
- 1993-1995: Spokesperson of the Ministry of Foreign Affairs
- 1996-2000: Romanian Ambassador to the United States.
- 2000-2004: Minister of Foreign Affairs
- 2001: President in Office of OSCE
- 2004-2016: Senator
- 2004-2008: Chair of the Senate Foreign Policy Committee
- 2005-2010: President of the Social Democratic Party
- 2008-2011: President of the Romanian Senate
- 2012-14: High Representative of the Romanian Government for Strategic Economic Projects and Public Diplomacy
- 2012-2014: Chair of the Parliamentary Committee for Romania's accession to the Schengen Area

Mr Geoana is a strong advocate of transatlantic integration and has held a number of international positions, including OSCE Chairperson-in-Office in 2001 and personal representative of the OSCE Chairperson-in-Office for Georgia in 2005. He is President and founder of the Aspen Institute Romania and has published extensively on domestic and international affairs.

In 2000, he was made a Commander of the National Order, The Star of Romania. He has also been awarded the French Legion d'Honneur and the Italian Stella della Solidarieta.

Mr Geoana is married to Mihaela, an architect by training and former President of the Romanian Red Cross. They have two children, Ana Maria and Alexandru.

He is fluent in English, French, Spanish and Italian.



MARIUSZ BIASZCZAK

MINISTER OF NATIONAL DEFENCE OF POLAND

Responsible for all activities of the Armed Forces of the Republic of Poland, as well as their structure and development, and the preparation of national defence concepts.

Born on 19 September 1969 in Legionowo. Deputy of the 6th, 7th, 8th, and 9th term Sejm.

Mr B aszczak graduated with a degree in history from the University of Warsaw; he also graduated from the National School of Public Administration and completed postgraduate studies in the field of Local Government and Local Development and Management in Administration.

He belonged to the Independent Students' Association, the Association of Catholic Academic Youth, and the Centre Agreement.

Between 2002 and 2004, he served as the deputy mayor of Warsaw's Wola district. He supported numerous development initiatives, including ones focused on establishing sports facilities at schools. In December 2004, he was appointed mayor of the Śródmieście district of Warsaw.

Endorsed by Jarosław Kaczyński, Chairman of the Law and Justice Party, Mr Błaszczak served as the Chairperson of the Law and Justice Parliamentary Club between August 2010 and November 2015. In March 2009, he became the press spokesman of the Law and Justice Parliamentary Club. In March 2007, he was appointed Minister - Member of the Council of Ministers by Lech Kaczyński, President of the Republic of Poland. In October 2005, he was appointed Chief of the Chancellery of the Prime Minister in the Law and Justice party's government.

Between 2015 and 2018, he served as the Minister of the Interior and Administration, and from 9 January 2018 until 15 November 2019, as the Minister of National Defence.

Mr Błaszczak was re-appointed Minister of National Defence on 15 November 2019.



PHILIPPE LAVIGNE

SUPREME ALLIED COMMANDER TRANSFORMATION

The nomination of General Philippe Lavigne to the post of Supreme Allied Commander Transformation was approved by the North Atlantic Council on 28 May 2021.

General Lavigne has accumulated a particularly diverse and robust operational experience. Having joined the French Air Force Academy in 1985, he qualified as a pilot in 1989, flew the Mirage 2000 during operations in the former Yugoslavia and in Iraq before assuming command of the 1/5 Fighter Squadron "Vendée" in 2001. He subsequently served within the Paris-based Joint Strategic Planning and Command Operations Centre (CPCO) where he contributed to the planning of several peacekeeping and humanitarian operations from 2003 to 2005.

After serving in the Planning Office of the French Air Force Staff, where he was tasked with issues related to space and European cooperation in the field of simulation, he was selected to attend the Centre for Higher Military Studies (CHEM) in 2008 and the "Defence Policy" course at the Institute of Advanced Studies in National Defence (IHEDN). He was appointed Deputy Director at the General Secretariat for Defence and National Security in Paris in 2009, where he served for three years dealing with a number of sensitive and complex issues in an interagency setting with multinational entities.

He served twice in high-level joint positions, first as the Information Director within the Joint Staff of the Armed Forces between 2012 and 2014 and then as Director of the French Chief of Defence's front office from 2016 to 2018. Between those two postings, he commanded the Kabul International Airport with its 5000 staff and 57 nationalities and supervised the transfer of military responsibility for the airport to the Afghan civilian authorities. On 31 August 2018, he was appointed Chief of Staff of the French Air Force, renamed as the French Air and Space Force in 2020, whilst under his command.

General Lavigne was made a Commandeur in both the Légion d'honneur and the ordre national du Mérite, and awarded the Croix de la Valeur Militaire. He has accumulated over 2800 flight hours and flown 46 combat missions on the Mirage 2000. He is married to Isabella and they have three children. He continues to play rugby, a long-held passion, whose cherished values have inspired his motto: "Win as a Team".



GIEDRIMAS JEGLINSKAS

ASSISTANT SECRETARY GENERAL FOR EXECUTIVE MANAGEMENT, NATO HQ

Giedrimas Jeglinskas is the Assistant Secretary General for Executive Management. He has overall responsibility for management of the NATO headquarters, and is the Secretary General's primary advisor for NATO-wide management issues.

Before assuming his current post, Mr. Jeglinskas served as the Vice-Minister of Defence of Lithuania beginning in 2017.

From 2010 to 2017, Mr. Jeglinskas worked as Vice President in Corporate Banking at Citigroup, most recently in Warsaw, Poland. His earlier roles at Citigroup included capital markets origination and corporate finance in New York, Tokyo, Singapore, and Sydney, Australia.

A former Lithuanian Army officer, Mr. Jeglinskas served as a platoon commander with the Lithuanian Grand Duke Algirdas Mechanised Infantry Battalion and as a senior intelligence analyst in the Ministry of National Defence.

Mr. Jeglinskas graduated from the U.S. Military Academy at West Point with a BSc in Political Science and Computer Science. He holds an MA in National Security Studies from Georgetown University's School of Foreign Service in Washington, DC and an MBA in Strategy and Finance from Columbia Business School in New York.

Mr. Jeglinskas speaks English, Russian, French and Polish.



PIOTR NAIMSKI

SECRETARY OF STATE, GOVERNMENT PLENIPOTENTIARY FOR STRATEGIC ENERGY INFRASTRUCTURE

He is a graduate of the Faculty of Chemistry of the University of Warsaw. He defended his PhD dissertation in natural sciences at the Institute of Biochemistry and Biophysics of the Polish Academy of Sciences, where he worked as a researcher from the mid-1970s until 1981. He was an activist of the Workers' Defence Committee, the Solidarity Trade Union, and the ZChN, the Polish Reconstruction Movement, and the Catholic National Movement. From 1981 to 1984, he worked at the New York University Medical School.

He was employed as the Assistant Professor, Deputy Dean, and then Dean of the Faculty of Political Studies at the Wyższa Szkoła Biznesu - National-Louis University in Nowy Sacz (2003-2009).

He acted as the Head of the State Protection Office (1992), a security advisor in the Chancellery of Prime Minister Jerzy Buzek (1999-2001), the Secretary of State responsible for energy security in the Ministry of Economy (2005-2007), an advisor to the Head of the National Security Bureau, and a member of the energy security team in the Chancellery of President Lech Kaczyński (2008-2010).

As a Member of the 7th - 8th term Sejm from 2011, he worked in the economy and the European Union Affairs committees. Since November 2015, he has been the Secretary of State in the Chancellery of the Prime Minister and the Government Plenipotentiary for Strategic Energy Infrastructure.



MODERATOR AND PANELLIST BIOS

Konrad Korpowski

Colonel, Polish Army, Director of Government Centre for Security

Konrad Korpowski is an experienced soldier of special forces, a veteran of the second Gulf War, with three missions in Iraq and two missions in Afghanistan. PhD student in political science. On November 20, 2020 appointed by the Prime Minister of Poland to the position of the Director of the Government Center for Security.

A graduate of the University of Warsaw and the Tank and Vehicle Training Center in Pila. He also completed postgraduate studies in state defense at the National Defense University and postgraduate studies in defense policy at the War Studies University in Warsaw. In addition, he completed many foreign courses and trainings, including at NATO School Oberammergau, UK Defense Intelligence and Security Center, US Department of Justice Federal Bureau of Investigation, LTU National Defense Academy and US Joint Special Operation University. He has the certified abilities of Projects In Controlled Environments and Managing Successful Programmes. Until 2017, he was the head of the training team in the Bureau for the Establishment of TDF, then the head of training at the Territorial Defense Forces Command.

Decorated with: the Military Cross, the Bronze Cross of Merit, the Military Cross of Merit with Swords, the Bronze Medal for Long Service, the Star of Afghanistan (twice), the Star of Iraq four times, the ISAF Medal (twice), the Silver Medal of Merit for the Police and the Milito Pro Christo Medal.

Robert Głab

Major General, Polish Air Force, Deputy Chief of Staff Resources and Management Supreme Allied Command Transformation

Konrad Korpowski is an experienced soldier of special forces, a veteran of the second Gulf War, with three missions in Iraq and two missions in Afghanistan. PhD student in political science. On November 20, 2020 appointed by the Prime Minister of Poland to the position of the Director of the Government Center for Security.

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Bryon Hargis

Director, Government Sales, Space Exploration Technologies

As Director of Government Sales, Bryon leads the identification and pursuit of early US Government opportunities related to SpaceX's forthcoming commercial broadband constellation, Starlink. Bryon joined SpaceX in early 2017 with more than 15 years of experience in space systems and related applications for the Defense and Intelligence communities. Prior to his current role, Bryon worked at OmniEarth, an Earth observation and analytics startup, where he was responsible for product definition, business development and sales, and has also served as a senior member of the technical staff and program manager at The Johns Hopkins University Applied Physics Laboratory. Bryon holds a MS in Applied Physics from The Johns Hopkins University as well as a BS in Mechanical Engineering from the Georgia Institute of Technology.

Hasit Thankey

Head, Enablement and Resilience, Defence Policy and Planning Division, NATO HQ International Staff

Hasit Thankey leads the NATO International Staff team responsible for policy and planning support for national resilience through civil preparedness and for the logistics enabling capabilities and services required to support Alliance military forces.

Before joining the International Staff, Mr. Thankey spent more than fifteen years in the Policy Group of Canada's Department of National Defence. He has previously served as Defence Counsellor at Canada's Joint Delegation to NATO and as Political Advisor at the Canadian command element supporting the NATO enhanced Forward Presence battlegroup in Latvia.

PANEL 1: MILITARY RESILIENCE



Kyle King

Founder and Managing Director of Capacity Building International

Kyle King has spent 28 years in the emergency services and international security field with 8 of those years being with NATO. Certified in the US Department of Defense as a Chief Fire Officer, he helped design and build the first international DoD Fire and Emergency Services Certification Program for international students, and also served as the first Civil Emergency Advisor to support NATO Operations. Among his other accomplishments he worked to contribute to the development of NATO's Security Force Assistance program and wrote NATO's capacity building education and training program for Kosovo. Locations where he has worked in missions includes Bosnia, Afghanistan, Kosovo, and Ukraine. Mr. King holds a Masters in Diplomacy and Terrorism Studies as BS/BA in Public Administration as well as numerous certifications from US Department of Defense, NATO, and other institutions.

Rob Stephenson OBE

Brigadier General, NATO Special Operations Headquarters

Brigadier Rob Stephenson commissioned into The Parachute Regiment in 1987. During his time at Regimental duty he commanded a Rifle Platoon, the Recce Platoon and a Rifle Company in the 2nd Battalion as well as serving as an instructor at The Parachute Regiment Training Depot.

During his career he has deployed on numerous operational tours in Northern Ireland under Op BANNER and also on various overseas operations both with the Parachute Regiment and with other units including to Bosnia, Macedonia, Iraq and Afghanistan. In 2009 he was awarded the OBE for his unit command appointment which included operational deployments to Afghanistan and North Africa.

As a junior staff officer, he conducted a tour within the UK Ministry of Defence, Operations Directorate with a responsibility for the coordination of both Domestic Counter Terrorism and overseas contingency plans. In 2009 he completed the Advanced Command and Staff Course and was awarded an MA in Defence Studies from Kings College. He then deployed on a two-year Liaison Officer appointment in Washington DC working from the British Embassy with routine engagement to both the Pentagon and US State Department.

On promotion to full Colonel he was appointed as the Head of the Special Projects Liaison Staff seconded to the FCO for three years and most recently has been in an appointment responsible for developing the Recruiting, Selection and Training Plans and Policy for a number of specialist military units.

Brigadier Stephenson is married and has two sons.

Carla Harding

Brigadier General, CAN Army, Supreme Headquarters Allied Powers Europe, Assistant Chief of Staff, J4

Born and raised in small-town Saskatchewan, Brigadier-General Harding joined the military out of high school in June 1990. She enrolled as an Army Supply Officer, with a view to completing her education at Royal Military College in Kingston. Upon graduation from RMC in 1994, Brigadier-General Harding was posted to 2 Service Battalion in Petawawa, where, throughout the years, she is proud to have served alongside the exceptional soldiers of 2 Canadian Mechanized Brigade Group and the Army writ large, both at home and abroad. While at 2 Service Battalion, Brigadier-General Harding had the privilege of leading the superb technicians and soldiers of the unit as a platoon commander, company commander and culminating as the 24th Commanding Officer of the Battalion from 2013-2015.

In 2001, just prior to 9/11, Brigadier-General Harding was posted to the National Defence Logistics Coordination Centre, which was the start of many joint logistics opportunities throughout her career. In addition to supporting deployed operations as both a J3 and J4 desk officer, she also has operational experience with NATO in

Bosnia, two tours in Afghanistan and a year-long posting to Israel and Palestine as a member of the United States Security Cooperation team. Key highlights of her career include postings as the Army G4 Operations, Commander of the Canadian Forces Joint Operational Support Group and, most recently, the Director General Support at Canadian Joint Operations Command. Her passion for tactical and technical excellence is a driving factor for demanding the best from the soldiers, sailors and aviators who serve within the greater operational support community.

Brigadier-General Harding has a Masters of Arts in Defence Management, Security and Policy, a Masters in Defence Studies and most recently a Masters of Science in National Resource Strategy. She is a graduate of the Canadian Forces College and a Distinguished Graduate of the Eisenhower School. She was awarded the Order of Military Merit in December 2015.

Brigadier-General Harding currently serves as the Supreme Headquarters Allied Powers Europe J4 in Casteau, Belgium.

On a personal note, she is an avid traveler, often pairing outdoor adventure off the beaten track with a quest for the local foodie experience.

Pierre Dubois

Programme Manager, Strategic Pursuits, Advanced Technology Rockwell-Collins France

Mr. Dubois has been working for Rockwell-Collins France since 2001. Previous position in the company before my current assignment was Technical Director on Advanced Products and Research & Technology Manager. I have been into my current role for 3 years, with a strong focus on NATO and EDA activities.

His responsibilities and activities below include:

- *Identification of Disruptive Technologies to provide the Warfighter with best in-class solutions.*
- *NLO Appointment for the NIAG (Aviation Committee) in 2021*
- *Fostering Collaboration between EU industries for the Development of new Defense Capabilities*
- *Participation as Chair/V-Chair into several NIAG groups (Joint Air Power SG-240, EDT Study SG-252).*
- *Participation into EDA Workings Groups*
- *Preparation and participation to large scale NATO events (Tide Sprint, COTC, Trident Juncture I3X)*
- *Debrief about Hypersonic given to the NATO Air and Missile Defense Committee (AMDC) in June 2021*
- *Invited Speaker at the NATO Industry Forum for Disruptive Technologies (2018)*

Mr. Dubois has a Master degree in Applied Mathematics and Computing Science, a Bachelor degree in Computing Science and a Bachelor in Mathematics.

Maciej Klisz

Brigadier General, Deputy Commander of the Polish Territorial Defence Forces

Brigadier General Maciej KLISZ enlisted in the Polish Armed Forces as a cadet in the Officer School of Mechanized Infantry in 1991. Upon graduation in 1995, he has commissioned a second lieutenant. Then he was assigned to the 6th Airborne Brigade, where he served as a rifle platoon leader, staff officer, and rifle company commander. In 2001 he successfully completed the AIRBORNE School, PATHFINDER School, and RANGER School in Fort Benning, USA. Later, in 2005 he graduated from the National Defence Academy in Warsaw, subsequently he completed the Post-Graduate Operational and Tactics Studies.

In 2006, BG KLISZ joined the Polish Special Operations Forces, where he served for eleven years in strategic (the General Staff of the Polish Armed Forces), operational (the Polish Special Operations Command), and tactical (the JWK COMMANDO Unit) level positions. He was also assigned to the NATO and European Union Response Forces Operations Command (RFOC) in Germany (2007-2010), where he served as a Special Operations Forces Advisor (SOF Advisor). Furthermore, BG Maciej KLISZ graduated from the Program on Terrorism and Security Studies (PTSS) in the George Marshall Center in Germany and various courses, including NATO Operational Planning, NATO Special Operations planning courses, Special Operations Aviation Planning Course, as well as the strategic projects' management courses.

In 2016 BG Maciej KLISZ entered the newly-created Polish Territorial Defence Forces, and within the 2016-2019 timeframe, he served as a Chief of Staff. In 2020 he became a superior graduate (as a first Polish officer in history) after completing studies in the US Army War College, Carlisle, USA. In July 2020, he was assigned as a Deputy Commander of the Polish Territorial Defence Forces. Subsequently, in August 2021, he was promoted to the rank of Brigade General.

BG Maciej Klisz deployed to Bosnia-Herzegovina twice as a platoon leader and rifle company commander (1996-1997 and 1999-2000). Then, he deployed to Afghanistan as a Chief of Staff of the NATO Special Operations Component Command (NSOCC-A) in 2015. His awards include the Afghan Star Campaign Medal, the Military Cross of Merit with Swords, the US Bronze Star Medal, the Medal of Merit for National Defence, the Medal of the Armed Forces in the Service of the Fatherland, the Medal for Long Service, the Medal of the Slovak Special Operations Forces, and several NATO Medals.

BG KLISZ is also an author of numerous articles, analyses, and papers on special operations policies and operational employment, professional military education, international military cooperation, strategy development, and territorial and volunteer formations.

Didier Polome

Brigadier General, BEL Air Force, Assistant Chief of Staff, Strategic Plans and Policy, Supreme Allied Headquarters Transformation

Brigadier General Didier Polomé started his fighter pilot career in 1988 at the Belgian Royal Military Academy followed by ENJJPT in Sheppard AFB. He joined the 350th Fighter Squadron in Florennes in 1997, and subsequently participated in NATO operations above former Yugoslavia.

In 2004, Brigadier General Didier Polomé was appointed as an A3 staff officer in NATO HQ AC Ramstein. His duties included the coordination of Baltic Air Policing and the operational planning of multiple NATO large scale flying exercises. In 2006, he was deployed to ISAF HQ in Kabul as Mission Director in the ASOC.

In 2007, Brigadier General Didier Polomé assumed command of the 350th Fighter Squadron and led the first Belgian F-16 detachment to Kandahar in support of ISAF in 2008. Upon completion of his command tour in 2009, he was selected for the U.S. Air War College in Maxwell AFB.

Brigadier General Didier Polomé was assigned in 2010 as Chief, Crisis Response Planning in the Belgian Joint Staff. This gave him the opportunity to lead the operational planning for the Belgian contributions to different operations such as ISAF, Unified Protector in Libya, Serval in Mali, and Baltic Air Policing. Three years later, he attended the U.S. National War College in Washington D.C.

During the following two years, Brigadier General Didier Polomé fulfilled the duties of Commander of the Air Ops Division (A3) in the Belgian Air Force staff. His responsibilities included the planning and preparation of all Belgian air combat, transport, helicopter, and ISR assets for operations such as Operation Inherent Resolve (OIR) above Iraq and Syria.

In June 2016, Brigadier General Didier Polomé became the commander of the 2nd Tactical Wing at Florennes Air Base. During the three following years, the wing participated in numerous operations both abroad, as in Jordan, in the Baltic states and in Mali, and on the national territory, with the contribution of its unit to the reinforcement of the police in the fight against terrorism.

Finally, after a three-year mandate as base commander, he was appointed to become Assistant Chief Of Staff Strategic Plans and Policy and Defense Planning (ACOS SPP / DP) at the NATO Supreme Allied Command Transformation (SACT) HQ in Norfolk, USA.

PANEL 2: EDTs AND CYBER



Tadeusz Chomicki

Ambassador, Cyber & Tech Affairs at the Polish Ministry of Foreign Affairs

Tadeusz Chomicki is a career diplomat and currently the Ambassador for Cyber & Tech Affairs at the Polish Ministry of Foreign Affairs. Previously, he served as Director of Asia Pacific Department, Director of Export Policy Department, Director of the Minister's Office, and as a Deputy Director of Security Policy Department. He also served as Ambassador to the Republic of Korea (2001- 2005) and as Ambassador to China and to Mongolia (2009-2015).

In the past, he led Polish delegations in many organizations and mechanisms related to export controls of conventional arms and dual-use goods as well as to non-proliferation and control of WMD – like Wassenaar Arrangement (WA), Missile Technology Control Regime (MTCR), Australia Group (AG), Nuclear Suppliers Group (NSG), Zangger Committee (ZAC), Organization for the Prohibition of Chemical Weapons (OPCW), and Proliferation Security Initiative (PSI). He also participated in activities of relevant working groups and bodies of the EU, NATO, OSCE, and the UN. While working for the MFA, also served as a member of supervisory boards of companies in the defense sector.

He was also a UN civil officer during a peace operation in Cambodia (UNTAC, 1993), MFA Advisor to the Poland – China Parliamentary Group (2015-2019), Chairperson of the Program Council of the Poland – China Education Foundation (2015-2020).

Mr. Chomicki also worked as an academic teacher, researcher and visiting

professor. He studied at the Warsaw University, Oxford University, and the European University Institute and was awarded an honorary doctorate in Hong Kong. For his service, he received orders and medals from governments of Poland, the Republic of Korea, Mongolia and honorary citizenships of Seoul, Harbin and Chengdu. Member of Oxford Society, Oxbridge Society of Poland, Polish Sociological Association. His interests include music, dancing, photography, skiing, scuba diving, golfing and travelling.

James Appathurai **Deputy Assistant Secretary General for Emerging Security Challenges, NATO Headquarters**

James Appathurai was appointed to this post in September 2021. As DASG, he works on policy development and implementation in the fields of Emerging and Disruptive Technologies, cyber security, counter-terrorism, the security implications of climate change, and hybrid defence. Mr. Appathurai previously served as DASG for Political Affairs and Security Policy, as well as Special Representative to Central Asia and the Caucasus. He was NATO's Spokesperson from 2004 to 2010. He served as Deputy Head and Senior Planning Officer in the Policy Planning and Speechwriting Section of NATO's Political Affairs Division from 1998 to 2004. He served in the Canadian Defence Department from 1994 to 1998.

Jeffrey McLeod **Deloitte & Touche LLP**

Jeff is a specialist leader in Deloitte's Cyber and Strategic Risk practice where he advises public sector clients on cyber emergency management, crisis response, and strategic risk. Prior to joining Deloitte, Jeff served as director of the National Governors Association's Homeland Security and Public Safety Division where he supported governors and their senior advisors—including cabinet secretaries, legal counsel, and policy staff—in developing data-driven, evidence-based solutions to enterprise-wide security and safety challenges. At NGA, he also directed the bipartisan membership association of governors' homeland security advisors—the Governors Homeland Security Advisors Council. He has served on the boards of the U.S. Election Assistance Commission, the U.S. Department of Justice Global Advisory Committee, and Cure Violence, and he has testified before the United States Congress and state legislative bodies. His writing has been published in the University of Virginia Journal of Social Policy and the Law, the University of Pittsburgh Law Review, as well as The Hill, Government Technology, and other media outlets. Each fall, Jeff teaches a course on federalism at Georgetown Law School.

Krzysztof Malesa

Board member and National Security Officer at Microsoft Poland

Dr. Krzysztof Malesa - expert in the field of crisis management, protection of critical infrastructure and resilience. In 2010-2021, he worked in managerial positions at the Government Center for Security, performing tasks related to servicing the Council of Ministers, the Prime Minister and the Government Crisis Management Team. He was the head of the Polish delegation in the NATO Civil Planning Committee and the national delegate in the working group preparing the European Union Directive on Critical Entities Resilience (CER).

Krzysztof Malesa graduated in Baltic philology at the University of Warsaw, where he also obtained a PhD in linguistics. He is a sworn translator of the Lithuanian language.

At Microsoft Poland, he is a board member and National Security Officer.

Krzysztof Paturej

Ambassador and President of the International Centre for Chemical Safety and Security (ICCSS), Warsaw, Poland

Paturej is a former diplomat, former chair of the Policy Making Organs of the Organisation for the Prohibition of Chemical Weapons (OPCW) and former senior official (D-2 Director for Policy Special Project) at the OPCW Technical Secretariat (2006-2013).

Amb. Paturej is a recognized international figure in international security, chemical and environmental safety and security, efforts against CBRN terrorism, result based management and risk management strategies, and industrial cybersecurity and reliability.

He initiated the International Centre for Chemical Safety and Security (ICCSS) which offers integrated solutions in chemical and environmental safety and security and cybersecurity at national, regional and global levels. The ICCSS operationalizes and internationalizes chemical security culture best practices and capacity building among the governments, international organisations, chemical industries, academia and civil society.

Amb. Paturej developed and runs a series of international projects on civil protection against chemical and environmental threats in Eastern Europe, with emphasis on Moldova and Ukraine. He initiated the Middle East Chemical Safety and Security Program, which resulted, inter alia, in the establishment of ICCSS led Regional Centre for Chemical Safety and Security (ChemReg) in Amman, Jordan.

PANEL 3: ENERGY SECURITY



Jakub Wiech **Editor in chief Energetyka24**

Jakub Wiech is a lawyer, journalist and publicist, deputy editor-in-chief of the Energetyka24. He was awarded with the Student Nobel Prize in the Journalism and Literature category (2017) and with the Platinum Megawatt Prize for the best publication regarding the electricity market (2020). In 2021 he was awarded with the Good Journalist Media Award. Nominated in the MediaTory competition and for the Grand Press award. James S. Denton Transatlantic Fellow. He is the author of "Energiewende. A New German Empire" and "Global Warming. A Manual for the Green Conservatives".

Dariusz Serówka **Counsellor, Office of Poland's Secretary of State for Strategic Energy Infrastructure**

2019 – present - Counsellor Office of Poland's Secretary of State for Strategic Energy Infrastructure

2017 - Advisor to Chairman of ITRE Committee Secretariat General of the European Parliament

2015 – 2017 - Administrator for a parliamentary body: Legislative Coordination Unit in DG IPOL. DG for Internal Policies, Secretariat General of the European Parliament

2012 -2014 Administrator responsible for capacity-building support programmes in MENA region, Office for the Promotion of Parliamentary Democracy, European Parliament

2009 - 2012 Adviser, External Relations Team, Cabinet of the President, European Parliament

2004 - 2009 Assistant lecturer, Department of International Relations and National Security, College of Political Studies, Wyzsza Szkola Biznesu - National-Louis University, Nowy Sacz, Poland

Alan Howard

Deputy Director, Energy Academic Group, Naval Postgraduate School

Mr. Alan Howard has served as the Deputy Director of the Energy Academic Group (EAG) at the Naval Postgraduate School (NPS) since its formation in 2013. The EAG was formed by mandate from SECNAV to create an Energy Center of Excellence at NPS, and to focus on the Navy's Energy mission.

The EAG focuses on six critical areas of energy security; Engineering and Technology, Supply Chain and Logistics, Critical Energy Infrastructure Protection and Resilience, Cyber/Energy Nexus, Geopolitics of Energy, and Environment and Climate Security.

He previously served as Deputy Director for the NATO Partnership Training and Education Center (PTEC) designation of NPS. Prior to joining the faculty at NPS in 2009, he spent 15 years in International Shipping and Logistics and, as Director of eBusiness Development for a large multinational with over 10B Euro in annual revenue, had global responsibility for strategy, product development, and operations in the online space. Having spent most of his career based in Europe, Mr.

Howard returned to his native Monterey, California in 2002. His responsibilities include international outreach and partnering efforts, business process review, program management, and leveraging opportunities to match academic and research resources across Department of Defense, State Department, and NATO partner capacity building goals and objectives.

Mr. Howard received a Bachelor of Arts degree in Economics with Minors in German Language and Chinese Studies from Wheaton College in 1994 and received his MBA/MIM in International Management from Thunderbird in 2000. In 2007 and again in 2010, Governor Arnold Schwarzenegger appointed him to serve on the Osteopathic Medical Board of California. In 2013 he was reappointed by Governor Jerry Brown.

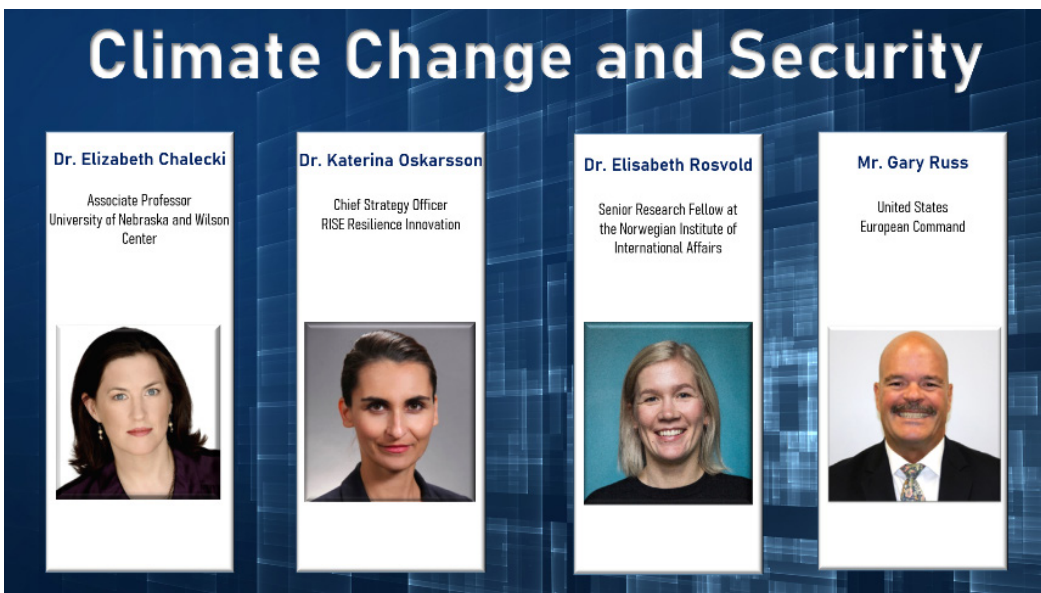
Mr. Howard is a recipient of the Navy Meritorious Civilian Service award.

Bogdan Cwik

Institute of Security and Defense, Military University of Technology, Warsaw. Dr Eng.

Bogdan Cwik, Dr Eng., assistant professor at the Faculty of Security, Logistics and Management, Head of the Department of Forecasting and Strategic Studies, Institute of Security and Defence. His scientific interests focus on issues of threat warning and energy security in the area of alternative energy sources. Creator and editor-in-chief of a scientific journal "Defence Science Review". Author and co-author of nine monographs and over seventy scientific articles.

PANEL 4: CLIMATE CHANGE AND SECURITY



Elizabeth L. Chalecki

Associate Professor of International Relations at the University of Nebraska Omaha. PhD.

Elizabeth L. Chalecki is an Associate Professor of International Relations at the University of Nebraska Omaha, a Research Fellow in the Environmental Change & Security Program at the Woodrow Wilson Center, and a Research Chair with Fulbright Canada. Her expertise lies in the areas of climate change and security, international environmental policy, and the intersection of science/technology and IR. Dr. Chalecki has authored groundbreaking research on geoengineering and just war, and has published over 25 books, articles, and book chapters on diverse topics

such as climate change and Arctic security, environmental terrorism, climate change and international law, public perceptions of environmental issues, and water in outer space. She also serves as an environmental security subject matter expert for NATO.

She was a Visiting Mellon Scholar for Environmental Studies at Goucher College, and has taught at Boston College, Cal State Hayward and the Monterey Institute of International Studies, and worked for the Pacific Institute, Environment Canada, the U.S. Department of Commerce, and the Brookings Institution. She holds a Ph.D. in International Relations from the Fletcher School of Law & Diplomacy at Tufts University, and an M.Sc. in Environmental Geography from the University of Toronto. She directs the Sustainability Academic Program for UNO.

Elisabeth Rosvold

Senior Research Fellow, Norwegian Institute of International Affairs. PhD.

Elisabeth L. Rosvold is a Senior Research Fellow at the NUPI in the Research group for peace, conflict and development, and works on the Climate-related Peace and Security Risks (CPSR) project.

Elisabeth holds a PhD in Political Science from the Norwegian University of Science and Technology (NTNU), and her research focuses on the linkages between disasters, armed conflict, aid and institutions. Elisabeth is also affiliated with the Department of Economic History and International Relations at Stockholm University.

Her expertise covers Climate conflict resolution, humanitarian issues and development policy in international organizations.

Education

2019 PhD, Political Science, Norwegian University of Science and Technology (NTNU)

2015 Master of Science, Political Science, Norwegian University of Science and Technology (NTNU)

2015 Master of Arts, International Political Economy, Kings College London

2012 Bachelor, Political Economy, Norwegian University of Science and Technology (NTNU)

Katerina Oskarsson

Chief Strategy Officer at RISE Resilience Innovation. PhD.

RISE Resilience Innovation is a U.S.-based non-profit with a mission to accelerate innovation and business growth around adaptation solutions to climate change. She also works as an independent consultant on climate resilience, and as Adjunct Assistant Professor at Old Dominion University, where she teaches courses on interdependence, climate change, and geopolitics of energy. Prior to joining RISE, Dr. Oskarsson served as Deputy Chief Resilience Officer for the City of Norfolk where she worked on the development and implementation of the City's Resilience Strategy as part of the Rockefeller Foundation's 100 Resilient Cities initiative, and a winning proposal of \$120 million from the U.S. National Disaster Resilience Competition.

Previously, Dr. Oskarsson worked as Analyst and Knowledge Manager at the NATO Civil Military Fusion Center. She also served as a doctoral researcher on energy security with the Institute for the Analysis of Global Security, Old Dominion University and the Joint Forces Staff College. Before relocating to the United States from the Czech Republic, Dr. Oskarsson worked at CEZ Group, one of the largest energy conglomerates in Central Europe.

Dr. Oskarsson's work has been published by the Stanford University Press, NATO, and a range of policy and academic journals. She earned her B.A., M.A. and Ph.D. in International Studies from Old Dominion University in Virginia, U.S.

Gary Russ

Real Estate & Environmental Partnerships Specialist, US EUCOM J44

Mr. Gary Russ is a native of Arizona. He holds an MS from University of Kansas and a BS from Kansas State University. His military education includes Engineer basic and training up through the Air War College.

Retiring from the Army as a COL, Mr. Russ's assignments included combat engineer squad member up through his final assignment as the Commander of 2502nd Liaison Detachment to 2ND Operational Command in the Republic of Korea. His operational deployments include Operation Desert Shield/ Desert Storm Kuwait, Iraq; Operation Iraqi Freedom, Iraq; and Operation Enduring Freedom, Afghanistan.

His civilian career began at Dames & Moore in 1994 as a regulatory compliance specialist followed by Manager of Environmental Services for Ninyo & Moore in January 2000 through July 2003. In between two military deployments, Mr. Russ was employed by Kellogg Brown & Root and Jason Associates. Afterwards, he was employed by USAREUR as an engineer project manager and an environmental engineer. Subsequently, he served as J4 Director, for Engineering, Logistics and Housing supporting U.S. Military Training Mission, Saudi Arabia followed by Chief of Operations & Maintenance for the Okeechobee Waterway and Herbert Hoover Dike, Florida.

PRINCIPALS SESSIONS

Daniel S. Hamilton

Austrian Marshall Plan Foundation Professor and formerly Executive Director of the Center for Transatlantic Relations. Johns Hopkins School of Advanced International Studies. PhD.

Dr Hamilton also directs the Global Europe Program at the Woodrow Wilson International Center for Scholars.

Past positions include Austrian Marshall Plan Foundation Professor and Founding Director of the SAIS Center for Transatlantic Relations; Richard von Weizsäcker Professor at Johns Hopkins SAIS, fellow of the Robert Bosch Academy in Berlin, senior diplomatic fellow in the German Foreign Office, executive director, American Consortium on European Union Studies, US deputy assistant secretary of State for European Affairs, US special coordinator for Southeast European stabilization and associate director of the Policy Planning Staff for two secretaries of State, senior associate with the Carnegie Endowment for International Peace and deputy director of the Aspen Institute Berlin; consultant to Microsoft, RAND, National Geographic Society, Business Roundtable and Transatlantic Business Dialogue.

Dr. Hamilton is a member and former chair of the selection committee for the Robert Bosch Foundation fellows program bringing young American professionals to Germany. He has been a member of the academic and advisory boards for a variety of US and European foundations, research institutes and business associations. He testifies regularly before the US Congress and European parliaments, and is a regular commentator for US and international media. Dr. Hamilton has also taught graduate courses in US foreign policy and US-European relations at the Hertie School of Governance in Berlin, the University of Innsbruck and the Free University of Berlin. He has been presented with Germany's Cross of the Federal Order of Merit (Bundesverdienstkreuz); France's Knighthood of the Ordre des

Palmes Académiques; and Sweden's Knighthood of the Royal Order of the Polar Star. He holds the State Department's Superior Honor Award. PhD, American foreign policy, Johns Hopkins SAIS





Milosz Karpinski **Energy Analyst, International Energy Agency**

Mr Milosz Karpinski deals with issues of energy security, with particular emphasis on security of supply, crisis management, energy systems resilience and security of clean energy transitions with a focus on critical minerals. Prior to working for the International Energy Agency in Paris, Mr Milosz Karpinski had 15 years of experience working in the energy sector both in central government, foreign service and private sector.



Whitney Lackenbauer **Canada Research Chair (Tier 1) in the Study of the Canadian North and a Professor in the School for the Study of Canada at Trent University, Ontario, Canada. PhD.**

He is network lead of the North American and Arctic Defence and Security Network (NAADSN - www.naadsn.ca) and served as Honorary Lieutenant Colonel of 1st Canadian Ranger Patrol Group, with more than sixty patrols across Canada's Northern territories, from 2014-2020. He is an adjunct professor at the Center for Arctic Security and Resilience at the University of Alaska Fairbanks and the Mulroney Institute for Governance at St. Francis Xavier University. Previously, he has been Killam Visiting Scholar at the University of Calgary, Distinguished Visiting Professor at Canadian Forces College, and a Fulbright Scholar at Johns Hopkins University. He has (co-)written or (co-)edited more than fifty books and more than one hundred academic articles and book chapters. His recent

*books include *The Joint Arctic Weather Stations: Science and Sovereignty in the High Arctic, 1946-72* (2022); *The Canadian Armed Forces' Eyes, Ears, and Voice in Remote Regions: Selected Writings on the Canadian Rangers* (2022); *On Thin Ice? Perspectives on Arctic Security* (2021); *Breaking Through? Understanding Sovereignty and Security in the Circumpolar Arctic* (2021); and *China's Arctic Engagement: Following the Polar Silk Road to Greenland and Russia* (2021). He is married with three children. www.lackenbauer.ca*

PANEL 5: PARTNERSHIPS AND SOCIETAL RESILIENCE



Friederike Dahns

Head of Counter Intelligence in the Federal Ministry of the Interior, Berlin, Germany

Friederike Dahns is Head of Counter Intelligence in the Federal Ministry of the Interior in Berlin, Germany. Since 2016, she is the Chair of the NATO-Civil Protection Group. Mrs Dahns is an expert in capacity building and civil defence. From 2010 to 2017 she covered all NATO-related issues in the field of Civil Preparedness and Crisis Management between the capital and the HQ in Brussels. Mrs Dahns has represented Germany at NATO as Civil Emergency Planning expert.

In addition, she has headed expert teams in Jordan and Tunisia, projecting resilience abroad in all fields of civil protection. As a member of the Multilateral Resilience Policy Group, she co-published "Strategies for Supporting Community Resilience."

Thure Christiansen

Senior Advisor, European Commission Secretariat General, Brussels, Belgium. Coordination of Foreign, Security and Defence Policy Implementation

Professional experience

2019-present: Senior Advisor, European Commission Secretariat General, Brussels, Belgium. Coordination of Foreign, Security and Defence Policy Implementation.

2014-2019: *Counsellor, Permanent Representation of Denmark to the EU, Brussels, Belgium. Deputy PSC Ambassador.*

2012-2014 *Senior Advisor, Royal Danish Ministry of Foreign Affairs, Copenhagen, Denmark. Africa Advisor.*

2010-2012 *University of Copenhagen, Copenhagen, Denmark, Faculty of Law. Head of Finance and HR.*

2007-2010 *Senior Advisor, Royal Danish Ministry of Foreign Affairs, Copenhagen. Deputy Director, Finance.*

2006-2007 *Head of Section, Royal Danish Ministry of Foreign Affairs, Copenhagen. Bilateral relations to Iraq.*

2001-2004 *Counsellor, Permanent Representation of Denmark to the United Nations. General Assembly, Security Council, Vice President UNDP/UNFPA.*

1996-2001 *Head of Section, Royal Danish Ministry of Foreign Affairs, Copenhagen, Denmark. Climate Change.*

1993-1996 *First Secretary, Embassy of Denmark, Harare, Zimbabwe.*

1992-1993 *Head of Section, Royal Danish Ministry of Foreign Affairs, Copenhagen, Denmark. Development Cooperation.*

1989-1992 *Danish Red Cross, Copenhagen, Denmark. International Consultant.*

Educational experience

2012 *University of Copenhagen, Copenhagen, Denmark. Business Administration and Management.*

1989 *University of Copenhagen, Copenhagen, Master, History.*

Ingvar Lindholm

Deputy Director Ministry of Justice Division for Crisis Preparedness, (Capt, SweCG)

- *Incoming chair for Working party for EUMSS (EU Maritime Security Strategy) during the Swedish presidency in 2023*
- *Head of Strategic Planning and Analysis Unit. Swedish Coast Guard, HQ*
- *Head of Surveillance and Control Unit. Swedish Coast Guard, HQ*
- *Head of Law Enforcement Unit. Swedish Coast Guard HQ*
- *Head Maritime Analyst. Swedish Coast Guard HQ*
- *FP7 Evaluator. European Research Executive Agency*

Kamil Basaj

Founder and president of the INFO OPS Polska Foundation

He manages the work of incident response teams in the IERT information environment. Creator of information environment security processes. CEO of the IERT incident response team.

He was an advisor to the Minister of National Defense. Member of the advisory team of the Senate of the Republic of Poland in the field of consultations on the manipulation of the information environment. Consultant of research and scientific projects on the phenomena of information, psychological impact, security of the information environment, security of the decision-making process. Lecturer at the Expert Cybersecurity Training Center. He conducts lectures and workshops on information and psychological operations at universities and in state administration. He conducts training in the field of information warfare for teams with the ability to conduct non-kinetic activities. He conducts research on cognitive processes, including models of bruised control.

The originator and coordinator of the first in Poland exercises in information environment security INFO OPS EXE covering activities in the field of active and passive recognition skills, active defense, information and psychological operations, including the protection of the decision-making process in the virtual, physical and cognitive dimensions.

He is one of the originators and initiators of the establishment of the CYBEROT, CYBERON, and Disinfo Digest organizations that conduct activities for the security of the information environment.

He is a speaker at national and international conferences on the security of the information and cognitive environment.

Tim Prior

Resilience & Business Continuity Manager, Group Security, Swisscom (Switzerland) Ltd. PhD.

Professional Appointments

2020 – present Resilience & Business Continuity Manager, Group Security, Swisscom (Switzerland) Ltd. Initiated and implemented a Business Continuity Management System for Switzerland's primary telco. Planned and conducted Disaster Recovery Exercises.

2012 – 2019 Team Leader, Risk and Resilience Team, Center for Security Studies ETH Zürich, Switzerland.

Strategic leadership of an applied research group of 13 multicultural, multilingual, and multidisciplinary security policy specialists. Policy advice for International Organisations, national governments, and the private sector.

2009 – 2012 Research Principal, Institute for Sustainable Futures, University of Technology, Sydney, Australia. Research and consulting with government and the private sector in the fields of disaster management, resource management and sustainability.

2005 – 2009 PhD – Resilience, Decision-making, Environmental Risk, University of Tasmania/Bushfire CRC, Australia. Researched householder preparedness decision making with respect to bushfire hazard.

2003 – 2005 Extension Officer, Co-operative Research Centre for Tropical Rainforest Ecology and Management/ CRC for the Ecological Sustainability of the Great Barrier Reef, Townsville, Australia. Management of research communication and stakeholder engagement elements of the “Catchment to Reef” multi-stakeholder research project.

Education

2010 PhD University of Tasmania: Resilience, Decision-making, Environmental Risk, Hazard Preparedness

2004 M.App.Sci James Cook University: Natural Resource Management, Environmental Science

1998 B.Sc. (Hons) James Cook University: Quantitative Marine Ecology

Christian Fjäder **Senior Research Fellow at the Finnish Institute of International Affairs. PhD.**

Dr. Christian Fjäder is currently a Senior Research Fellow at the Finnish Institute of International Affairs (FIIA) working on geo-economics and security of supply related projects and CEO of Geostrategic Intelligence Group (GIG) Ltd, a boutique geostrategic risk and resilience research and advisory firm. Prior to FIIA and GIG Christian was the Director for Policy Planning and Analysis at the National Emergency Supply Agency (NESAs) in Finland, with responsibilities in strategy development, international relations, analysis and research coordination. He also has extensive corporate experience in security, risk and resilience leadership in regional and global leadership roles. He has for instance headed Nokia's regional corporate security function in the Asia Pacific region and the corporate resilience functions as the global Head of Risk and Resilience. Christian has a PhD in International Relations from the University of Sydney, MBA from Bond University, Master of Arts (International Relations) and Bachelor of International Studies from Flinders University, Australia. Christian has also published scholarly articles in international security, geo-economics, resilience and strategic risk.



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