2019 CHIEFS OF TRANSFORMATION CONFERENCE

"NATO Warfare Development: Innovation & Interoperability- Winning Tomorrow's War Today"

The 2019 Chiefs of Transformation Conference took place from Tuesday, 10 December to Thursday, 12 December 2019 in Norfolk, Virginia.

The Conference is the only venue where national Chiefs of Transformation from the Alliance and the Partner Interoperability Advocacy Group have the opportunity to interact and collaborate with the senior leadership of Allied Command Transformation and many other senior leaders involved in innovation and transformation.

The 2019 Chiefs of Transformation Conference sought to interconnect national transformation initiatives with those of Allied Command Transformation, particularly in the areas of innovation, longer-term capability development, and training.

The national Chiefs of Transformation, along with the other senior leaders from across NATO, the Partner Interoperability Advocacy Group, industry and academia, were invited to discuss and exchange innovative ideas and best practices, explore the potential of current and emerging technologies in support of assisted decision-making in NATO, and identify actionable outcomes towards improving interoperability, cooperation and partnership.

The Theme for the 2019 Chiefs of Transformation Conference was "NATO Warfare Development: Innovation & Interoperability- Winning Tomorrow's War Today" and, with this in mind, the conference agenda has been developed to take into account national priorities, opportunities and concerns.

There were four syndicate topics, each led by an Allied Command Transformation's Flag Officer / General Officer with support from Nations, Industry, Academia and others, where attending Chiefs of Transformation Conference Principals shared best practices, views and opinions with the aim to identify follow on activities in specific areas of interest.

The remainder of this report captures each of the syndicate topics' premises, aims, discussion points, and potential outcomes.

Premise:

- During the Warsaw Summit in July 2016, Article 136 specifically mentioned innovation as particularly important for NATO to keep its technological edge by identifying "*advanced and emerging technologies, evaluate their applicability in the military domain, and implement them through innovative solutions*". Simultaneously, NATO encouraged nations to develop capabilities through an innovation lens and to ensure "*such [efforts] will lead to innovation initiatives which will lead to increased cooperation within the Alliance and among Allie*s".

- As part of the NATO HQ functional review, the Secretary General stressed the need to establish an innovation focal point at the political level "*to better integrate the existing work on innovation*" within the Alliance. Whilst an innovation board will help identify priorities to pursue initiatives when it comes to fostering innovation, ACT "*would continue to play the leading role for innovation at NATO*".

- To accomplish this mandate, ACT is seeking to expand and consolidate the NATO Innovation Network. Managed by the ACT Innovation Hub, the goal is to federate the NATO and Allies open innovation entities. In order to achieve this, we need to identify a successful strategy to foster innovation where technology is already available. Understanding how to build, fuel, and drive innovation is the first step to bring all nations on board at the same speed. The NATO Innovation Network offers nations the opportunity to share ideas, best practices, and combine efforts to tackle the future challenges together.

Aim: To share the vision, chart progress, and recognise best practices, in order to identify possible common/shared efforts and to establish a robust network for cooperation in the area of innovation.

Why we should be concerned about innovation:

- Recent decades have seen an unprecedented acceleration of technological development, thanks in a large part to commercial sector investments (especially in the digital domain). As a result, proliferation and availability of knowledge and technologies have provided a number of non-state adversary and non-NATO nations with growing abilities and opportunities to challenge the Alliance and its member nations politically, militarily, and technologically.

- Moreover, most of these technologies emanate from an ecosystem fundamentally different from the traditional defence industrial and technological model, and are characterized by an extremely short time to market.

- The NATO military and technological edges against peer competitors and non-state actors/adversaries is steadily being eroded. To remain relevant, the Alliance needs to urgently reverse this dynamic and re-gain its strategic and military advantage. To do so, it is imperative that NATO and nations embrace innovation to adapt, remain relevant and successfully accomplish its core tasks

- For innovation to occur, there is a need for updating our processes, adapting our organizations and mobilizing the right skills. It is also about having the willingness to change mindsets and creating an enhanced collaboration environment among nations, NATO, and non-NATO stakeholders.

How this Syndicate Session approached these challenges: The benefits of the NATO Innovation Network emphasized the establishment a federation of entities or 'nodes' (from NATO and Nations) able to leverage open innovation, provide mutual support, share best practices, provide subject matter expertise, and solicit audiences and solution proposals. This network is a force multiplier for all its nodes, allowing problems and solutions to be considered within a global ecosystem. During discussion we:

- Encouraged nations to join the NATO Innovation Network will strengthen the collaboration by sharing their work on emerging technologies as well as helping to identify policy issues and solutions.

- Supported nations to consolidate and expand an appropriate culture and develop concepts in order to establish an innovation strategy.

- Helped nations embrace innovation and set-up their own open innovation structure as the engine to adapt, remain relevant, and successfully accomplish its core tasks.

Syndicate Session Questions:
(The breakout session explored the following questions in order to present tangible outcomes in the innovation domain)

- How can nations unlock their innovation capacity? (BUILD)
- How to create an ecosystem?
- What entities should be involved in the project?
- Who should I connect with?
- How can an innovation entity be sustainable? (FUEL)
- How do we finance innovation?
- How do we embody the team?
- How do we cultivate a robust innovation organization - (Innovation: Management, Policy & Practice)
- How can nations join and benefit from NATO Innovation Network? (DRIVE)
- What should the NATO innovation network provide in support of its members?
- How should information (issues to solve and potential solutions) be shared and support mutually provided within the network members?
- How to develop and implement innovative ideas? (DRIVE)
- What are the best practices to identify innovative ideas and turn them into efficient solutions for the operational users?
- How should Agile Development be implemented in defence organizations?

Syndicate Discussion Main Points:

- National representatives showed interests and willingness to increase their level of involvement in the process of open innovation lead by ACT. We can identify 3 tiers of nations namely:
  - Those who are already on board and applying open innovation within their organizations.
  - Those who are very interested and willing to embark in open innovation but need a little help.
  - Those who really discover this opportunity and need significant support to get going.

- In order for nations to be successful in innovation they need to:
  - Capture and share user stories/needs/problems (this is a hard step to perform as it is difficult to admit weakness/failure).
  - Look out for solutions from unusual suppliers of solutions such as industry (especially small and medium businesses), academia and potentially through crowdsourcing.

- Cultural change can help in aligning the military and civilian worlds so that they can understand better each other.

- Innovation is not only about technology, but also a change in mind set.

- Challenges to innovation we face:

  - Risk aversion/ and fear of failure mentality within NATO is one of the largest hurdles to innovation.
  - Nations are struggling to identify issues to solve and to involve end-users in the process of identification.
  - Nations unwillingness to share their problem is also a challenge to open-innovation.

- To capture innovation, we need to look both inside and outside and also enable the end-users to convey their ideas.

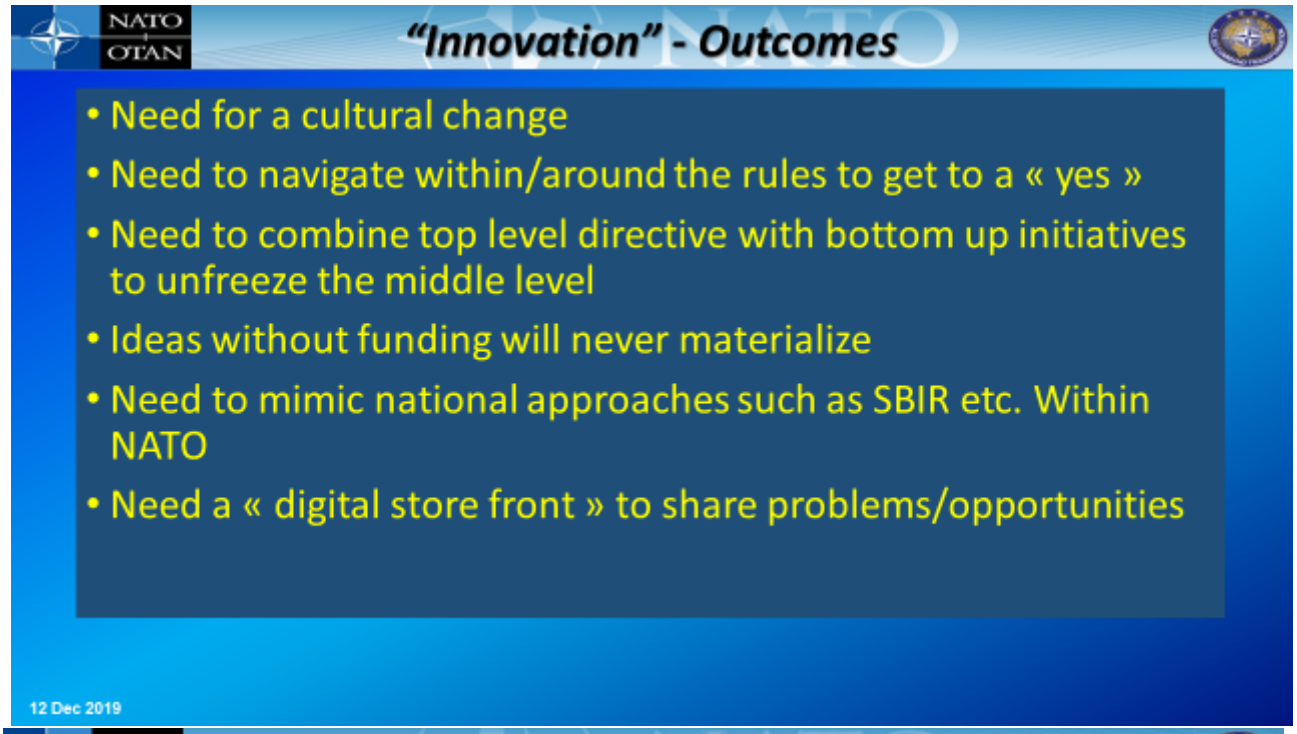
- Nations should leverage ACT/Innovation hub as a vehicle to launch innovation as well as avoid the duplication of national efforts and become aware of other national efforts.

- By engaging academic institutions like universities we expand participation, and the inclusion of totally different ideas can be potential game changers. More participants in the process can equal more innovation.

Syndicate Actionable Items:

- ACT should create an innovation ecosystem. ACT can facilitate the development of national open innovation capabilities by inviting interested parties to observe, then participate and eventually capture the best practices that ACT and some nations have already implemented.
- ACT can help in various ways: some nations propose to ACT to coordinate, collect and publish user needs on a single platform in order for nations to have a better visibility and collaboration opportunities.
- NATO must find better ways to cooperate with partners – this includes sharing data and accepting failures.

Syndicate Closing Plenary Slides



CHIEFS OF TRANSFORMATION CONFERENCE: SYNDICATE SESSION 2
"Enhancing Interoperability"

Premise:
"Interoperability of our armed forces is fundamental to our success and an important added value of our Alliance."
—Warsaw Summit Communiqué, 8-9 July 2016

Multinationality is central to the character of the Alliance. Our strengthened deterrence and defence posture is based on multinational combat formations, with multinationality applied at the strategic, operational and even tactical levels. Therefore, NATO interoperability – the ability to act together coherently, effectively and efficiently to achieve Allied objectives – is absolutely essential to the effectiveness in and beyond operations. Interoperability is a strategic imperative to alert, rapidly assemble, deploy, and command and control ready forces. NATO interoperability enables forces, units and/or systems to operate together, communicate with each other, and share common doctrine, procedures, infrastructure and bases. It also reduces duplication of effort, enables pooling of resources and produces synergies among the Allies.

Our changing and evolving environment required significant political, military and institutional adaptation from the Alliance that increased the multinationality of NATO's tactical-level high readiness formations. In turn, this increased multinationality demands commensurate enhanced interoperability efforts. In order to improve the Alliance's ability to deal with the threats and challenges posed by this evolving environment, the NATO Command Structure is adapting to become more robust, agile, and capable. This adaptation increases NATO Command Structure reliance on NATO force structure, which in turn increases the need for interoperability between them.

In addition, the digital age has spawned changes to the environment at increasingly faster rates. Technological developments are emerging more rapidly than ever before. Furthermore, the inclusion of the rest of humanity into the digital age will have profound economic and political consequences, empowering individuals, and accelerating productivity and innovation. Some of the most important changes in the future will come not from new technology, but from a larger number of people having access to something that already exists. With these technological and often disruptive advances will come new challenges to Alliance interoperability that will radically change how ready forces act together.

Aim: To operate at the speed of relevance, the Alliance must adapt quicker than ever before and as a result we will always be solving interoperability challenges. However, ad hoc interoperability workarounds, such as liaison teams or adapted communications systems, tend to dominate the solution space and typically cost additional money, time, or reduced capabilities. NATO requires a mind-set that demands a shift in culture. We must not see interoperable capabilities as an afterthought; we know that it is too late to consider interoperability *after* a crisis has been identified and the men and women of our Alliance forces are on the front line.

How ACT approaches these challenges: The ACT Interoperability Campaign continues to help Allies act together coherently, effectively, and efficiently to achieve tactical, operational, and strategic objectives. As a key element of the ACT warfare development agenda, interoperability is forward looking and enables forces, units and/or systems to operate together and share common doctrine and procedures. Finally, ACT interoperability efforts help reduce duplication, improve pooling of resources, and optimize synergies among Allies.

ACT works with NATO and nations to enhance interoperability along several lines of effort including: Understanding and shaping the future; Capability Development and Defence Planning; Experimentation and Demonstration; Doctrine and Concepts; Training, Exercises and Education, as well as Lessons Learned and Analytics. ACT leverages several tools to promote better interoperability including:

- Forecasting the future operating environment and by applying innovative thinking to determine the impact of emerging and disruptive technologies on future warfare
- Defence Planning to ensure interoperable capabilities to support future NATO missions.
- Doctrine to guide how Allied forces can act together today, and Concepts and that will improve how we act together in the future
- Education & training to prepare and train our people.
- Standards and STANAGS for common and repeated rules to promote and improve interoperability, and; Federated Mission Networking (FMN) that provides a roadmap of technical and procedural specifications for 'day zero' interoperability.
- Policies such as the C3 Interoperability Directive that describe how Allied forces will deliver interoperable C3 capabilities.
- Events such as TIDE Sprint to develop future concepts, requirements and specifications; the TIDE Hackathon to experiment with and understand the impact of disruptive technologies, and; CWIX as an interoperability event to test and verify C2 system to system interoperability.
- Identifying and monitoring lessons and best practices from exercises and missions.

How this Syndicate Session approached these challenges:
We focused on two areas – enhancing interoperability and measuring interoperability.
During our first part of the breakout session, we explored how to enhance NATO interoperability. National perspectives to the following critical question were collected:

- What does NATO do well regarding interoperability?
- What does NATO not do well regarding interoperability
- What does NATO not do, but should do, regarding interoperability?
- How does your nation capture interoperability lessons during Exercises?
- How does your nation consider interoperability challenges resulting from the growth of disruptive technologies such as Artificial Intelligence?

For the second part of the breakout session, we considered the difficult task of measuring NATO interoperability, we used the following questions:

- How does your nation identify interoperability challenges?
- How does your nation then assess the impact of interoperability challenges?
- How does your nation develop and manage interoperability gaps?

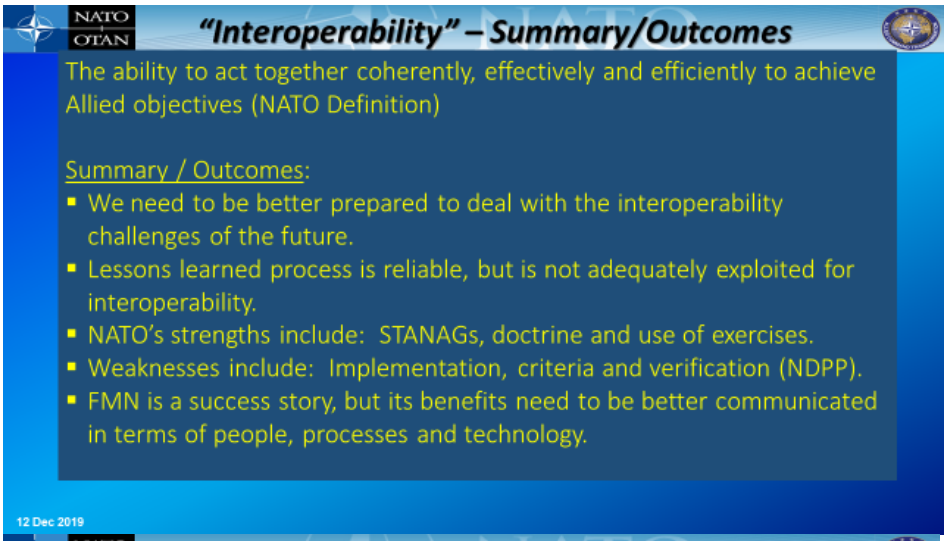
Syndicate Discussion Main Points:

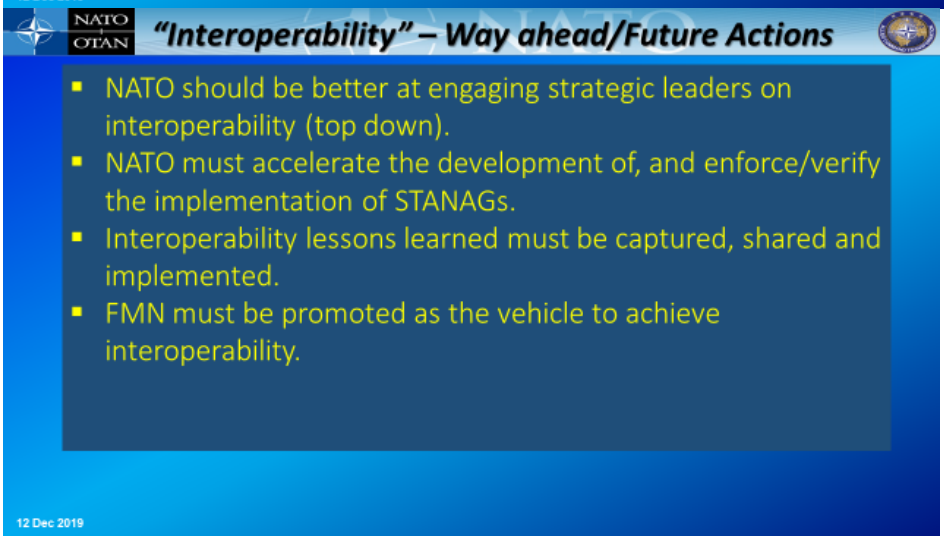
- NATO needs to be better prepared to deal with the interoperability challenges of the future.
- The lessons learned process is reliable, but is not adequately exploited for interoperability.
- One of NATO's strengths is its doctrine and use of exercises to exchange ideas and baseline common operational practices.
- The Federated Mission Network is a success story, but its benefits need to be better communicated.
- NATO must have better cooperation with the COEs.

Syndicate Actionable Items:

- NATO should better engage strategic leaders on interoperability
- NATO must accelerate the development and enforce the implementation of Standard NATO Agreements (STANAGs)
- NATO should be better at engaging strategic leaders on interoperability (top-down approach)
- Interoperability lessons learned must be captured, shared and implemented
- NATO ACT must find a common framework for interoperability to define structures and remain relevant.

Syndicate Closing Plenary Slides





Premise:

"Alliance ability to conduct and sustain operations by preparing for, absorbing, recovering and adapting to the surprise or strategic shock [of Hybrid Attack and/or Terror] through harmonized and resilient structures, systems and processes enabled by the persistent collaboration across public, military and private stakeholders."
—Collaborative Resilience Capstone Concept (CoRe) Vision

The enormous complexity of NATO's security environment includes Allies, Partners, governmental and non-governmental organizations (GO/NGO), commercial entities and the public. NATO is defining its role in Resilience through the Civil Emergency Planning Committee (CEPC) policy, and aligning Counter-Terrorism (CT) and Counter-Hybrid Warfare (CHW) concepts, and action plans. NATO needs to collaborate to prepare, deter, and defend to be resilient against strategic shock, but *how* we work together is the challenge, especially when faced with a diverse community of interest (CoI), classification and national sensitivities. To frame this Resilience discussion we will use NATO's role in CT/CHW. At the core is information sharing.

Information sharing not only provides us the ability to learn from our combined experiences, but is critical for improved decision-making. Information and its derived intelligence is based on aligning civilian-military (CIV-MIL) cooperation. Information reinforces political control, provides indications and warnings, and CIV-MIL options earlier in the current-operations-to-crisis transition. This is vital political and military time to shape events, outcomes, and anticipates CT/CHW opportunities. Armed thus, CIV-MIL leaders provide the CT/CHW resources with the means and permissions to conduct operations (kinetic/non-kinetic), actions (key leader and staff engagements), and investments (OAIs). Key to this program's success is NATO's human capital.

The SOF adage, "people are more important than hardware", resonates in the Resilience enterprise. The Resilience CoI requires CT and CHW experts to provide sound CIV-MIL advice and to conduct CT/CHW OAIs to meet the NATO strategic ends.

Aim: The success of Resilience/ CT/CHW OAIs is structure; a comprehensive approach which includes:

1. Resilience/CT/CHW Situational Awareness for decision makers;
2. A CIV-MIL information collecting and sharing architecture;
3. A CT/CHW human capital plan to include Education and Training;
4. Interoperability (Standards, Agreements, Assessments, Resources, Exercises)

Why the concern over Resilience, Counter-Terror, and Hybrid Warfare: Working closely with NATO HQ, ACT will align the Resilience/CT/CHW concepts and action plans with emerging CEPC policy. Cross-functional action teams will incorporate the findings from the Chiefs of Transformation Conference to refine these processes. The strategic documents will in turn create a clearer picture of *what* NATO needs to do and *how* NATO supports Resilience/CT/CHW information collecting/sharing, investing in human capital and setting the standards for interoperability not only within the Alliance, but with our Partners, and including governmental and non-governmental organizations, commercial entities and the public.

How this Syndicate Session approached these challenges:

This session was facilitated by Dr. Robert Weaver and moderated by Dr. David Kilcullen, a critically acclaimed expert in this subject. Through elicitation and response, the audience was actively involved in sharing best practices, lessons learned and proposing solutions to the questions posed, below.

Questions we answered:

- What CT/CHW data does NATO need to collect/share to improve Resilience?
  - Military to Military
  - Civilian (to include private sector) to Military
  - Military to Civilian (to include private sector)
- What are the biggest challenges/opportunities with regard to information sharing?
- How does NATO Create Trust, Transparency, and Shared Awareness with the Private Sector?
- Resilience is more than civil preparedness: what process(es) does your nation use to assess national CT/CHW military-civil-private sector vulnerabilities? Do you have best practices and lessons learned to share?

Information Sharing Architecture

- How should the Alliance information sharing framework look?
- What innovative technologies should the Alliance / nations use to information share?
- How does NATO incorporate civilian and private sector into its information sharing architecture?

Human Capital

- What changes should NATO make to CT/CHW/Resilience human capital systems today, in 10yrs?
- Resilience is whole-of-government focused, how does a nation prepare its civil and private sector human capital in the face of CT/CHW?

Interoperability

- How do NATO nations increase:
  - Authorities (permission to train/operate with mil-civ-private sector);
  - Access (for leader/staff exchange to conduct engagements/assessments to include SME from mil-civ-private sector);
  - Resources (trained personnel, equipment, logistics, mobility, contracts); and,
  - Appropriations (funding)?
- What scenarios need to be created for exercises to address potential Resilience vulnerabilities; what best practices can NATO adopt from non-NATO exercises (national, regional, bi-lateral).
- What civil-military-private sector agreements does your nation/organization have in place to maintain resilience in the face of CT/CHW? How did you put them in place (contract, legislation, other)? What best practices, lessons can you share with the group?

Syndicate Discussion Main Points:

- Resilience is a whole of government function that is typically not led by the military. NATO planning/structure must be cognizant of that and the impacts of local culture on resilience planning/operations.
- Hybrid, resilience and counter terrorism priority information requirements (PIR) are not effectively shared and Nations do not have common agreement on actions PIRs should prompt.
- Hybrid, resilience and counter terrorism strategic communications are critical to gain and maintain public support for individual, community and national response programs including human capital.
- Utilize synthetic environment to certify military requirements along the 7 Baselines. Taking SJO and MJO force composition to simulate force movements.
- Critical thinking helps to create reliable information and a culture of trust.

Syndicate Actionable Items:

- To facilitate information sharing Nations (NATO) needs:
    - ACT to develop a synthetic information environment; able to be used by whole of DIMEFIL (PMESII) to early detect imminent threats/risks using a deviation from baseline process and assist whole of government./ whole of society in a proactive and reactive response.
    - A system of linked fusion centres across regions or nations.
    - Regional forums for discussions among Nations and other stakeholders on information sharing.
- Create minimum guidelines against each of the 7 baseline resiliency requirements for Civil Preparedness listed in the Warsaw Agreement.
- NATO must establish a common language and definitions for resilience and hybrid.
- There are three areas where NATO ACT can play a role in counter terrorism (CT), counter hybrid warfare (CHW) and resiliency:
    - Identify best practices for military integration/partnerships with civilian/private sector agencies/organizations that have a resilience/CHW role, i.e., law enforcement, industry, etc.
    - Identify best practices for military involvement in education of the public and elected leaders on CT/CHW awareness and response.
    - Provide a forum for human capital discussions on how to bring CHW skills into the military through non-traditional ways.

Syndicate Closing Plenary Slides

"Resilience" – Summary/Outcomes

- **Resilience**: In many Nations, this is a whole of government responsibility with a non-military agency in the lead. The current NATO resilience lead is the Civil Preparedness Policy Directors working to the Civil Emergency Preparedness Committee (CEPC). This situation can complicate the emphasis on resilience as a counter hybrid / counter terrorism tool.
- Information from our breakout sessions will inform and elevate ACT's input on the policy framework for civ-mil interaction in support of enablement and resilience; prepared by CEPC, for NAC approval and DEFMINS in June 2020.

12 Dec 2019

"Resilience" – Way ahead

- Additionally, information received at this conference will inform and shape the upcoming ACT workshop designed to create ACT's input on the development of minimum guidelines for the 7 baseline resilience requirements agreed to at the Warsaw Summit.
- NATO doctrine on counter hybrid / counter terrorism and resiliency must be designed to maintain relevance in the rapidly changing counter hybrid / counter terrorism environment.

12 Dec 2019

CHIEFS OF TRANSFORMATION CONFERENCE: SYNDICATE SESSION 4
"Human Capital- Decision Making in a Complex Security Environment"

Premise:

"We continue to ensure the Alliance's political and military responsiveness, including through more regular exercises. To this end, we will continue to actively and coherently manage the Alliance's overall posture, and to enhance our intelligence, strategic awareness, advance planning, and decision-making. To face evolving security challenges, we have taken steps to ensure that NATO can continue to act at the speed required."

—2018 Brussels Summit Declaration

The interconnected world brings enormous complexity linking millions of individual entities resulting in a complex, adaptive environment with unpredictable behaviours. This phenomenon presents large-scale challenges and opportunities. It simultaneously empowers and threatens both civilian populations and the States in which they live, meaning it has never been more important to understand all dimensions of the security environment in which missions and operations are conducted and the second and third order effects of decisions before NATO chooses to act and during the conduct of operations.

Whilst technology has and always will play an integral part in how we fight, emergent and disruptive technologies can and do change the dynamics of the security landscape asymmetrically. This is exacerbated by some States and armed actors who intentionally and consistently violate international norms, including International Humanitarian Law (IHL), as well as those who seek to undermine the rule of law and good governance. Furthermore, with increasing globalisation, interconnectedness and urbanisation, the impact of the asymmetry on the civilian population is a security dynamic that must be considered.

Future conflict will be further characterised by increasing peer, or near peer, competition and complex networks of proxy actors, many not necessarily immediately obvious. The use of asymmetric tools and hybrid warfare will increase and inevitably result in adversaries exploiting civilian populations and infrastructure as a strategy of war. Furthermore, diverse, interconnected, multipolar populations will result in increasingly blurred boundaries between combatants and non-combatants, especially in the cyber domain, but also by the dual-use of facilities such as transportation networks and utilities.

Adversaries will compete with the Alliance, using increasingly sophisticated tools to support and inform their own decision making and leverage the cyber domain and the information domains to deliver tactical-through-strategic-effects amongst the civilian population as a strategy that increasingly blurs the threshold of what constitutes an armed attack.

These strategies will include a more capable intelligence-gathering apparatus using complex forecasting and predictive tools built on Artificial Intelligence and Machine Learning supported by broad data analytics. NATO must leverage these same technologies to develop its Human Capital and enhance their decision making.

Aim:

- To exchange ideas/views on how NATO leaders can adapt their approach to decision making to meet future complex security challenges and;

- Build common understanding/consensus that investing in Human Capital is a critical capability in warfare development.

Why we should be concerned about decision making in complex security environments: In today's security environment, complex and dynamic decision making cycles are being continually compressed. Furthermore, our adversaries invariably have the advantage of unity of purpose which puts a consensus based organization at a disadvantage. Therefore NATO's leaders need to seek innovative approaches including leveraging advanced technologies now in order to mitigate these challenges.

How this Syndicate Session approached these challenges: The session was moderated by Major General (Ret) Roger Lane CBE FCMI, Royal Marines, a former Senior Mentor to ACT and Senior Exercise Advisor to Joint Warfare Centre as well as a leader in the field of human capital development. The interactive session focused on how NATO leaders can adapt their approach to decision making using a complex security environment as a scene setter and analyzing the different aspects of the decision making process.

Questions this Syndicate Session answered:

- Are the processes and tools that support today's strategic decision makers fit for purpose?
- How can NATO integrate technology into the decision making processes; what obstacles need to be overcome?
- To what extent can, and should, technology be used to help understand the 2nd and 3rd-order effects of strategic decisions?
- How can NATO develop future strategic leaders through innovation in education, training and exercises?

Syndicate Discussion Main Points:

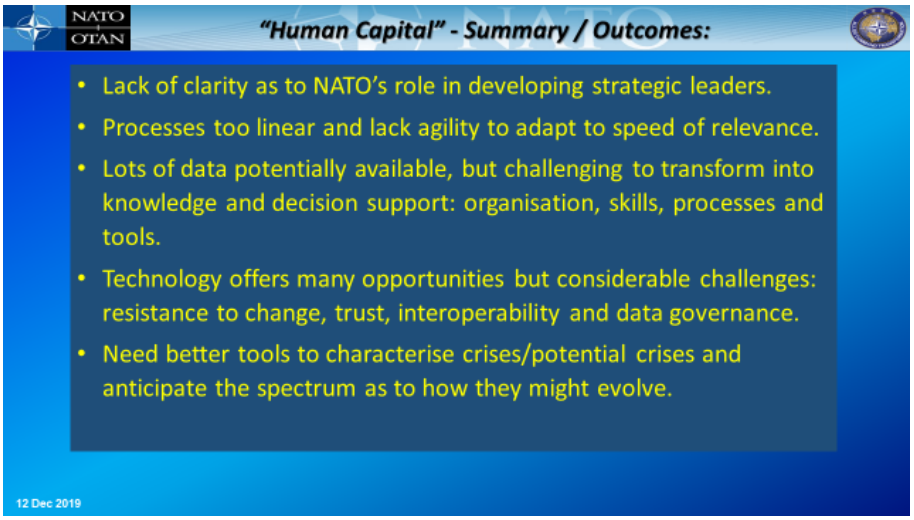
- Educating and training leaders is critical before integrating technologies into the decision making cycle which will also build the leaders trust in using the data/information the technologies provide to support decision making. Creating an environment where leaders can learn from failure.
- Information sharing barriers across Nations could hamper the ability to fully integrate technology into the decision making process.
- Improve decision making at the speed of relevance by improving data analytics to include storage, processing and the sharing of information.
- There is a lack of clarity regarding NATO's role in developing strategic leaders.
- The human capital development process is too linear and lacks agility to adapt to the speed of relevance.
- Lots of data potentially available, but challenging to transform into knowledge and decision support: organisation, skills, processes and tools.
- Technology offers many opportunities but considerable challenges: resistance to change, trust, interoperability and data governance.
- Need better tools to characterise crises/potential crises and anticipate the spectrum as to how they might evolve.

- Human capital has also the aim of bridging the military and civilian world. There is room for improvement in this regard within NATO.

Syndicate Actionable Items:

- NATO should create a culture of continuous learning among NATO leadership to effectively integrate technologies to maintain our competitive edge in a complex security environment.
- NATO should improve interoperability with regards to technology since it is critical to ensuring relevant data and information is available in support of strategic decision making.
- Create a NATO strategic leadership development programme that prepares potential candidates for future NATO appointments.
- Accelerate the introduction of technology with a focus on data collection, processing and exploitation in order to support enhanced decision making.
- Research to understand the second and third order effects of military operations better in order to sustain a campaign focus by strategic leaders.
- NATO must set up definition and a common language so that Nations can have more answers and less questions.

Syndicate Closing Plenary Slides



Scope: NATO Nations' CHOD/Armed Forces level Command Senior Enlisted Leaders/ Command Sergeant Majors (NATO CSELs/CSMs) attendance at COTC 2019 was a new initiation and a disruptive way to deliver ACT's message and achieve sweeping changes to the perception of the challenges of the Alliance.

The CSEL program discussed and gained understanding of the future warfighting environment to identify possible solutions that can develop the future warfighters of the 20-year horizon Warfighting Perspective (20yhWP). This creative thinking of the NATO CSELs/CSMs group, resulted in a common perception on the threats and propose solutions, answering the most asked question within NATO's NCO community: *What NATO expects form the NCOs?*

Aim: Aim to adapt approach to NCO/JO development to meet future complex security challenges

CSEL Program Discussion Points:

Trends and Threats

- Adversaries will contest the rules and norms that define international order.
- Persistent disorder will result from state failure to provide governance.
- Declining demographics will endanger human resource availability.
- Climate change will increase and disrupt operations.
- Disruptive technologies will require force adaptation and preparation.
- Hybrid threats that use an array of measures including cyber and disinformation.

NCO Attributes

- A reactive, thinking and value added team member
- A constant learner, of how, not what, to think
- Creative and innovative through self-development
- Competency rather than task based objectives

CSEL Program Outcomes:

Process and Tools

- Inform the PD model throughout Bi-SC directive review to empower NETFs and PETCs throughout ACT Global Programming -075-002, -075-003, -075-007, -075-015 (Guidelines)
- Review NATO Job Descriptions, informed by change to Allied Force Standards and NDPP through SPRC,
- Adapt LL collection system to share training/education knowledge so as to baseline best practices.

Decision Making

- Use a Networked approach in communication to allow the transfer of mass information quickly (Tact, Op, Strat, LL)
- Invest in tactical leaders education/ training at the small group level.
- Empower NCOs in the decision space to be a force multiplier in all domains.

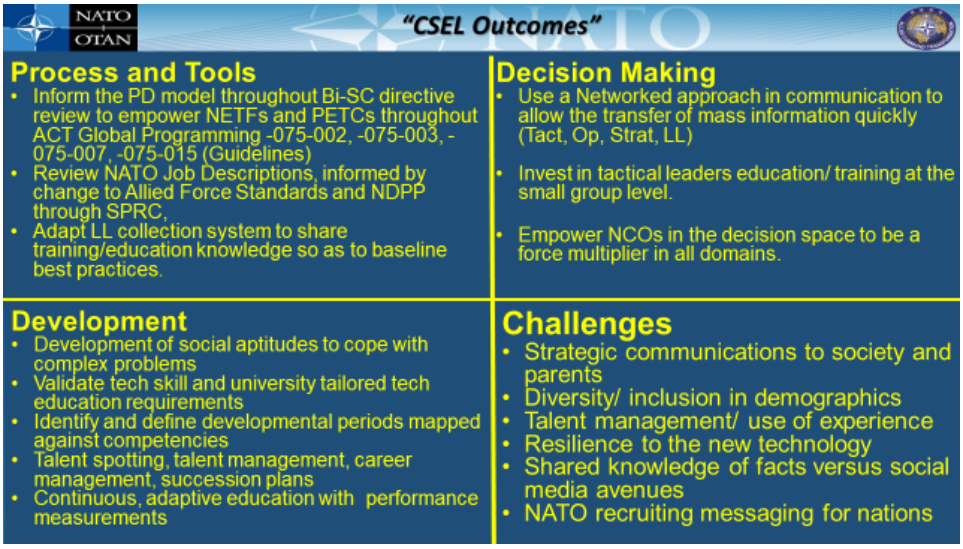
Development

- Development of social aptitudes to cope with complex problems
- Validate tech skill and university tailored tech education requirements
- Identify and define developmental periods mapped against competencies
- Talent spotting, talent management, career management, succession plans
- Continuous, adaptive education with performance measurements

Challenges

- Strategic communications to society and parents
- Diversity/ inclusion in demographics
- Talent management/ use of experience
- Resilience to the new technology
- Shared knowledge of facts versus social media avenues
- NATO recruiting messaging for nations

CSEL Program Closing Plenary Slides:



Background:
COTC 2018 was conducted with the young disruptors separated with their own forum. For COTC 2019 the young disruptors were integrated into each of the syndicate sessions. The young disrupters also conducted a separate meeting with DSACT in order to exchange views on innovation and receive information regarding ACT activities and responsibilities.

Premise:
NATO needs to find better ways to cooperate with partners. This also includes actors outside of the military world such as industry that are essential in identifying problems and finding compromises, solutions and opportunities. Cooperation also includes data sharing. To achieve this, it is important to define a minimum level of classification of data and understand what data needs to be protected and which needs to be shared. Overall, there is a need for a cultural shift that can be facilitated by cultivating human capital and implementing trainings.

Aim: To share the vision, chart progress, and recognise best practices, in order to identify possible common/shared efforts and to establish a robust network for cooperation in the area of innovation.

Young Disruptors Discussion with DSACT:

Topic: Human capital: bilateral cooperation between Nations but no coherent structure between 29 Nations. How can we create this structure?

- Human capital initiative from NATO aims at pulling resources together.
- Innovation work needs to go through a mindset change both at senior leader level and at the young leader level.
- How to better combine and share info to deliver capabilities in human capital arena?
- Young Disruptors initiatives needs to be spread around the Nations, expand the Young Disruptors network and ask also other Nations and Partners to the network.

Topic: Views and perspectives on NATO

- ACT open to incorporate academia, industry, private sector, civilian world.
- Rust within NATO starts to be overcome when NATO invites young people to these fora.
- Exposure to younger audiences like high-school student: NATO should let them know what NATO is and what does, so that young people become more familiar with NATO from the beginning.
- Innovation initiatives between NATO and national innovation centers. ACT needs to support the Innovation Hub.
- Human capital: educate leaders in diversity thinking. Also teach to think bottom-up.
- Communication gap: NATO needs to be more receptive and learn to communicate to public opinion the info that matters and is relevant. Improve public diplomacy.

Topic: NATO Model Event with University of Bologna, George Washington University, ODU, Wesleyan University.

- Innovation hub can be utilized with students and other stakeholders. Innovation Hub synergies with Norwegian Defense Programme: students in accelerating programs to focus

on what are the real problems in the defense fields, and link the various stakeholders that can fix the problem.

Topic: There seems to be lack of awareness of what NATO is and does even within the military.

- Need to integrate younger officers more into the decision-making process to avoid indoctrination.

Proposal: create exchange programs between national militaries to experience other national military environments.

- This stays at national level but NATO should be the sponsor of this program and the initiative should come from NATO itself. This also allows to have a mix of Nations and interaction between different cultures, and also to discover that Nations have common problems and common solutions (e.g. logistics could be coordinated at international level so that Nations can pool resources together).

Topic: Need to promote more what whole NATO structure is doing (e.g. NATO ACT is not well known around among public opinion).

Topic: Next priority ACT: NWCC in next 20 years.

- Is a living document that reacts to changes in technology and geopolitics. Assumptions change over time, so the document will be regularly updated. Part of document will be classified and part of it unclassified and releasable.

Young Disruptor Main Points:

- The divide between the military and civilian mind set still very visible and tangible. Need to get the two worlds closer together.
- Finding ways to share data with key stakeholders is essential to enhance cooperation.
- Innovation can be more effective if it develops a culture that is accepting of failure.

Young Disruptors Closing Conclusions

- Foster a culture of innovation through building a platform where Nations could share best practices and experiences
- NATO must make it easier for end users to access people and resources to help them solve the needs and requirements
- NATO must encourage the use of standards and common definitions across all member nations
- NATO must use creative technologies, such as games, to attract non-traditional people and expertise in order to harness different perspectives in solving problems, i.e. Sims + Overwatch
- NATO must facilitate more exchanges with junior officers so that the junior officers- the next generation of leaders- can build their own capabilities
- NATO must be better at strategic communications and clearer narratives with various groups

Young Disruptor Closing Plenary Slide: