Analysis Report

Prepared by:

Transformation Network Branch
Headquarters Supreme Allied Commander Transformation
North Atlantic Treaty Organization
Executive Summary

The following 2016 Chiefs of Transformation Conference (COTC) summary report is presented as a record of the conduct, discussions and key takeaways of the Conference.

The Conference remains the only venue where national Chiefs of Transformation (COTs) from the Alliance and Partners have the opportunity to interact and collaborate with each other, the senior leadership of Allied Command Transformation (ACT) and with many other actors involved in innovation and transformation. Interest in the COTC continues to grow with over 600 registered participants from 51 different nations attending this year’s event. This increasing interest is indicative of the appetite amongst the nations to develop pragmatic, collaborative solutions to deal with mutual issues of concern. The stated aims of COTC are to discuss transformational initiatives and ideas, exchange best practices and identify actionable areas of potential cooperation. The event also provides many networking opportunities that often reveal a much clearer picture of the issues that are most important to the nations, who remain the guardians of Transformation.

Opening the Conference with a recorded message, NATO’s Deputy Secretary General outlined her near-term vision for NATO. She underlined that these are challenging times for an Alliance confronted by a broad arc of uncertainty and instability. Russia’s aggression against Ukraine and its actions in the South coupled with state failure, civil wars, ISIL and mass migration represent a security challenge to the entire Alliance. She stressed that these challenges are likely to endure and have long-term consequences and, in response, that NATO has made similarly long-term changes to its defence posture. She particularly emphasized that the two overarching themes of the Warsaw Summit, collective defence and deterrence, and projecting stability, will determine NATO’s direction for many years.
Throughout the event, many post-Summit topics were discussed with an eye toward looking past short-term adaptations and focusing on technological innovation, as well as conceptual innovation to examine how existing capabilities could be used differently. These discussions took place in the context of recognising that NATO’s long-term transformation demands institutional adaptation to deal with the rapid rate of change, increased partnership with industry to facilitate innovation, and integrating nations’ long-term direction of capability development to meet future requirements.

For the first time at COTC, a scenario-based discussion took place during the morning of the second day. The discussion, utilising a futuristic scenario and fictional vignettes, exposed the Chiefs of Transformation to the use of federated command and control and logistics networks. These federated networks showed great potential and will be a topic for further study. As in the previous years, the scenario-based discussion was followed by a private Round Table conversation between the NATO COTs and the Supreme Allied Commander Transformation (SACT), General Denis Mercier. Concurrently, a Partner nation COTs Round Table (PRT) took place at the conference hotel, which provided an opportunity for Partner transformational staffs to explore ways in which they might expand cooperation with NATO in areas such as Interoperability, Exercises and Training, Multinational Defence Projects and Defence Capacity Building.

In the afternoon all participants reconvened at the hotel for debriefs from the previous day’s five breakout sessions, summaries of the morning’s discussions at HQ SACT and the hotel, and a final wrap-up and closing statement from General Mercier.

2016 COTC Key Takeaways:

- The security environment continues to evolve from a complicated to a complex environment that demands a proactive posture and greater anticipation through enhanced strategic awareness and understanding.
- A common federated Command and Control network with Nations will be critical to meet future challenges; this will require national commitments to enable a common architecture, standards, appropriate authorities and distributed control.
- NATO’s Defence Planning Process remains a relevant and effective process to align efforts and produce the desired capabilities for the nations. The rapid rate of change must be incorporated into the process and the nations’ long-term direction of capability development integrated to meet future requirements.
- NATO’s exercise programme provides a platform to experiment and develop future capabilities. Furthermore, due to the policy, legal and rules of engagement implications of current and future capabilities, there is a recognized need to exercise all levels from political to the tactical concurrently.
- The Alliance must consider the policy issues associated with artificial intelligence, cloud computing, autonomous systems and organizations that think and act differently. Industry leads in many of these areas so NATO needs to leverage its partnership with them to learn together how best to incorporate these capabilities into NATO operations.
- Industry (traditional and non-traditional) is eager to collaborate with defence to identify and develop future solutions.
- The Alliance must transition from a “risk averse” to a “risk managed” posture. Industry has experience in this area, which NATO should study.
- NATO must train a new generation of leaders who can adapt and innovate in the information age.
Strategic Communications and the use of social media are key enablers in the new security environment and we must refine how we utilize these tools to produce desired effects.

During the scenario-based discussions, the Chiefs of Transformation saw the great potential of federated command and control and logistics networks and the need to commence designing the required architectures.

All agreed the Post Summit priorities support adaptation, but emphasized the need to focus on institutional adaptation to address the speed of acquisition.

Finally, innovation is more than technology; it is also about concepts, for example on how existing capabilities are used differently to adapt them in order to maintain NATO’s edge.

In conclusion, General Mercier stated that COTC had clearly identified many opportunities for innovation, a more dynamic and open engagement with industries, broader partnerships and integration of nations’ capability development into a long-term direction of travel. SACT noted the COTC is not a stand-alone event. 2016 COTC links to many other events and it is therefore critical to build on these discussions and opportunities at the NATO Transformation Seminar in March 2017.
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INTRODUCTION

1. The 2016 COTC was held at the Marriott Waterside Hotel in Norfolk, Virginia, from 13-15 December 2016. In preparation for the event, two COT workshops were held with representatives of the NATO COTs. The first took place in Prague in May as part of the Multinational Solutions Synchronization Workshop with a second held in Rome in early September. Six hundred and nine personnel (including over 80 Flag and General Officers and senior civilian equivalents) attended the 2016 COTC. There were representatives of 27 NATO member nations, 24 Partner nations, 21 NATO Centres of Excellence (COEs), staff from NATO HQ, SHAPE, HQ SACT, NATO Education and Training Facilities, NATO Agencies and the European Union. Additionally, several industry representatives attended, including 15 companies who took part in a dedicated Industry Demonstration period on 14 December. The detailed Conference Agenda is provided at Annex A.

2. The Conference opened with a recorded message from Ms. Rose Gottemoeller, NATO’s Deputy Secretary General. This was followed by a plenary session consisting of two moderated panel discussions. Lieutenant General H.R. McMaster, the Director of the US Army’s Capabilities Integration Center at the Training and Doctrine Command (TRADOC), moderated the first panel “Long-Term Implications from the Warsaw Summit”. Ms. Melissa Hathaway, the president of Hathaway Global Strategies moderated the second panel “Transformation for Long-Term Adaptation”.

3. Session II consisted of five breakout sessions (BoS) that explored the following key topics identified by the nations and ACT during the COT planning workshops (summaries are at Annexes B-F):

   - BoS 1 - Projecting Stability and Reconstruction with Partners.
   - BoS 2 - Transforming NATO’s Forces to support a Long-Term Approach in a Complex Future Environment.
   - BoS 3 - Transforming NATO Project and Sustain capabilities to rapidly enable operations in a complex environment.
   - BoS 4 - Delivering a Relevant, Reliable, Complete and Sustainable NATO Exercise Programme.
• BoS 5 - Exploitation of de-centralized C2 Systems through Federated Cloud and Big Data technologies.

4. On completion of the five BoS, and as direct follow-on from the morning’s discussions regarding innovative technological adaptation, a third plenary session was held entitled “Enhanced Decision Making through Advanced Computing” introduced by Mr. Simon Purton from ACT’s Operational Analysis branch along with representatives from three companies who discussed various aspects of Cognitive Computing, Big Data and Artificial Intelligence. This was followed by the Industry Demonstration period where 15 companies each had the opportunity to display and highlight to the national COTs their various technological developments and innovative solutions.

5. On the second morning, Session IV saw the NATO COTs taking part in an innovative scenario-based discussion at HQ SACT. The discussion, utilising a futuristic scenario and fictional vignettes, exposed the COTs to the use of federated command and control and logistics networks. The scenario-based discussion was followed by a private Round Table conversation between the NATO COTs and the Supreme Allied Commander Transformation (SACT), General Denis Mercier. Concurrently, at the hotel, a Partner nation COTs Round Table (Session V) co-chaired by Admiral Manfred Nielson, Deputy Supreme Allied Commander Transformation (DSACT) and Major General Odd Pedersen, Deputy Chief of Staff Military Partnerships (DCOS MP) provided an opportunity for Partner transformational staffs to explore ways in which they might expand cooperation with NATO in areas such as Interoperability, Exercises and Training, Multinational Defence Projects and Defence Capacity Building (Annexes G and H refer).

6. On completion of the morning’s events, all participants reconvened at the Marriot hotel for lunch and the final conference sessions. In Session VI, the outputs from each of the previous day’s breakout groups were presented. Thereafter, Major General Pedersen presented to the combined audience the outcomes from the morning’s Partner COT Round Table and Lieutenant General Lofgren provided a summary of the morning’s Scenario-Based Discussion at HQ SACT along with the key points highlighted from the previous two days.

7. Finally, in closing the 2016 COTC, General Mercier stated that COTC had clearly identified many opportunities for innovation, a more dynamic and open engagement with industries, broader partnerships and the integration of nations’ capability development into a long-term direction of travel. He noted the consensus that the Post Summit priorities support NATO's adaptation, but emphasized the need to focus on institutional adaptation to address the speed of acquisition. He particularly underlined the following conclusions:

   a. NATO needs a more proactive posture with greater anticipation through enhanced strategic awareness and understanding.

   b. The importance of Nations committing to a common federated Command and Control network that will enable a common architecture, standards, appropriate authorities and distributed control.

   c. NATO’s Defence Planning Process must be more agile to incorporate the rapid rate of global change and the nations’ long-term direction of capability development must be integrated to meet future requirements.

   d. NATO’s current increasing exercise requirements are straining available resources. The NATO Exercise Programme Review, due to be concluded by spring 2017, will assess NATO’s comprehensive requirements and should enable a more innovative, flexible, multi-year Exercise programme from 2019. It will provide a platform to experiment and develop future capabilities and recognizes the need to exercise all levels (tactical up to political) concurrently.
e. The Alliance must consider the policy issues associated with artificial intelligence, cloud computing, autonomous systems and organizations that think and act differently. It needs to train a new generation of leaders who can adapt and innovate in the information age. Industry leads in many of these areas and is eager to collaborate to identify and develop future solutions, so NATO must leverage this partnership to learn how best to incorporate such capabilities. Industry is comfortable with "risk management" and may be able to assist the Alliance to transition from a "risk averse" to a more "risk managed" posture.

f. There is a clear recognition that Strategic Communications and social media are key enablers and NATO must refine its use of these mediums to achieve its desired effect.

g. The NATO COTs witnessed the great potential of federated command and control and logistics networks during the futuristic scenario-based discussion. They further recognized the need to commence designing the required architectures now to meet the Alliance’s future requirements. It must, however, be recognized that innovation is more than technology; it is also about concepts, such as how existing capabilities can be adapted to maintain NATO’s edge.

h. Finally, SACT noted that COTC is not a stand-alone event. Rather it links to many other events and it is therefore critical to build on these discussions and opportunities throughout 2017 and beyond.

PLENARY SESSION AND PANEL DISCUSSIONS

8. The opening plenary session and related panel discussions provided a forum for the Deputy Secretary General and some of NATO’s foremost leaders to outline their visions for NATO.

Figure 3: NATO’s Deputy Secretary General - Ms. Rose Gottemoeller provides the opening keynote video address.

NATO Deputy Secretary General Keynote Address

9. In her video address, Ms. Gottemoeller described the conference as an ideal opportunity to connect, exchange views and collaborate, and to influence the work of the Alliance. She noted that times remain challenging for NATO and its partners with multiple challenges and a broad arc of uncertainty and instability being faced daily. In particular, she highlighted Russia’s continued aggression against Ukraine and its indiscriminate military campaign in Syria and the challenges to the South, from state failure, civil wars, ISIL, and mass migration that represent security challenges that are likely to endure and have long-term consequences for the Alliance.
10. At the Warsaw Summit in July Allies agreed long-term changes to its defence posture and the two overarching themes that will determine NATO’s direction for many years:

   a. **Projecting stability beyond NATO’s borders - both in the east, and in the south.** At the Summit the Heads of State and Government agreed:

      (1) to provide NATO training to Iraqi security and military forces in Iraq;
      (2) to provide direct NATO AWACS support to the Counter-ISIL Coalition;
      (3) to a possible NATO maritime role in support of the EU’s maritime operation SOPHIA in the central Mediterranean;
      (4) to step up the support to NATO partners, in particular those that face difficult security challenges such as Ukraine, Georgia and the Republic of Moldova in the east; and Jordan and Tunisia in the south;
      (5) to reaffirm NATO’s enduring commitment to Afghanistan.

   b. **Strengthening NATO’s collective defence and deterrence.** The DSG emphasized that this has always been at the heart of the Alliance’s mission and purpose and that it is not NATO turning inward to the detriment of its partnerships. As an example, she highlighted the transparency and involvement of partners in the implementation of NATO’s strategy to counter hybrid warfare. She also noted that the Readiness Action Plan is now broadly implemented and has set a new responsiveness baseline, for NATO. Further measures to strengthen NATO’s approach to deterrence and defence were also agreed at Warsaw:

      (1) A visible Enhanced Forward Presence (EFP) to unambiguously demonstrate Allies’ solidarity, determination, and ability to act. The four EFP joint enabled land battlegroups begin deploying early 2017.
      (2) A Tailored Forward Presence, based on a multinational framework brigade in Romania, is also being established for the southeast part of the Alliance. This includes a land element as well as measures to strengthen the air and maritime presence in the area.

11. In Warsaw, Allies had also acknowledged that the NATO Command Structure needed to be robust, agile and able to respond to simultaneous challenges across the full spectrum of missions. A “Functional Assessment” had been undertaken by the Strategic Commanders with the results reported in early 2017.

12. Regarding NATO-EU cooperation, the DSG reported that the previous week the NATO Foreign Ministers had released a public statement on the implementation of NATO’s Joint Declaration with the European Union. It includes a common set of some 40 measures in areas such as defence capacity building, countering hybrid threats, enhancing resilience, cyber defence, maritime security, capability development and exercises. NATO and EU staffs will commence work on these measures taking account of the recent Conclusions agreed by the EU Defence Ministers on strengthening European nations’ capabilities and cooperation. This will provide a unique opportunity, and a necessity, to coordinate capability development between NATO and the EU to ensure that both organizations’ efforts are complimentary, coherent and avoid any duplication.

13. On Alliance defence expenditure, the DSG re-emphasized the need for Allies, especially in Europe, to increase defence spending to 2% of GDP. She remarked that since the Wales Summit in 2014, in a reverse of a long trend of decline, some 24 Allies are now either spending 2% or have made real increases. There is now an expectation to see a 3% real increase in defence spending in Europe and Canada in 2017, essential for fair transatlantic burden sharing and for keeping the transatlantic bond strong. Although this is significant progress many Allies still have a long way to go.
14. In closing, the DSG highlighted that the Warsaw Summit decisions are the basis for NATO’s ongoing adaptation and are focused on strengthening our ability to project stability beyond our borders and strengthening our deterrence and defence within our borders. There has been much success since Wales however; the Alliance needs to maintain the momentum. Long-term transformation demands investment both financially but also intellectually. This includes innovation, and the ability to evolve as the threats faced evolve. However some things never change and include:

a. The unbreakable bond between Europe and North America.

b. Allies’ commitment to defend each other from attack.

c. NATO’s dedication to the enduring fundamental values that keep NATO united and strong and keep nearly one billion citizens safe - democracy, individual liberty, human rights and the rule of law.

Plenary 1 - Long-Term Implications from the Warsaw Summit

15. The first panel discussion was moderated by Lieutenant General H.R. McMaster, the Director of the US Army’s Capabilities Integration Center at the Training and Doctrine Command (TRADOC). In addition to SACT, the panel consisted of Lieutenant General Hugues Delort-Laval (Vice Chief of Staff SHAPE), General Mikhail Kostarakos (Chairman of the EU Military Committee), Mr. Camille Grand (Assistant Secretary General for Defence Investment) and Lieutenant General Steven Shepro (Deputy Chairman of the Military Committee).

16. As an introduction to the subsequent panel discussion, SACT opened by providing his vision for NATO’s Strategic Military Intent and its linkages to the Post-Summit Tasking. He noted that the security environment has shifted from being “complicated” where numerous parameters are analysed and processed towards particular responses, to a “complex” global environment where forecasting is not possible and no one solution will suffice. Consequently, the ever-increasing speed and connectedness that define the 21st century will necessitate swifter reactivity and greater anticipation.

17. He welcomed the strong participation of industry at the conference and suggested that NATO needs to adopt a similar attitude to adaptation as the civilian world. The importance of the Alliance remaining reactive while proactively adapting to future requirements was a key theme and he challenged the national COTs to ask, when implementing short-term solutions, how they can share long-term adaptations and plans so that together a posture can be built that maintains a decisive edge in the future.

18. SACT highlighted ACT’s Futures Work - the Strategic Foresight Analysis (SFA) provides a trend analysis out to 2030 and beyond and the Framework for Future Alliance Operations (FFAO) thereafter defines five Strategic Military Perspectives: operational agility, strategic awareness, security networking,
shared resilience and strategic communications. Based on these principles, NATO needs to identify adaptations to the game changing elements that will shape NATO’s future military capacity and the credibility of its posture. As an example, he mentioned the recent rapid deployment of an Airborne Division from the US to Germany for a Joint Forcible Entry strategic exercise. It had raised the question of whether, in operational circumstances, these troops would subsequently have been able to connect quickly with other NATO forces to establish secure communications, conduct joint fires support and control, or share transnational logistics. It demonstrates that in the past 10-15 years NATO has primarily focussed on expeditionary operations and not enough on preparing for the future.

Figure 5: General Denis Mercier provides his opening remarks.

19. SACT then offered six areas where work has already commenced that lead the implementation of NATO’s military capacity in the long-term through an incremental approach:

a. **Command and Control.** NATO’s Command and Control Structure is the backbone of its political and military capacity. Learning from interoperability shortfalls of C2 systems in operations of recent years, this has led to the development of the Federated Mission Networking programme, which will see the building of a broad network that benefits from innovative progress in digital communications, advanced sensors, faster data processing and artificial intelligence.

b. **Logistics and Sustainability.** In the short-term NATO is adapting its plans for the timely efficient deployment and ongoing sustainment of forces across the Euro-Atlantic area. This includes Force integration Units, pre-deployed troops and equipment stocks. In future, logistics will need to shift from separate nations’ to shared responsibilities across NATO. This will demand further adaptation to enhance federation of nation’s logistical capabilities while leveraging innovations such as 3D printing to create spare parts or using unmanned vehicles for transport.

c. **Capability Development.** To support NATO’s adaptation the right capabilities need to be developed. In the short-term, available capabilities need to be identified that allow NATO to react to the current operational environment. However, in the longer-term the intent is to identify innovative solutions and new technologies that can be adapted to the future security environment. NATO needs to partner with industry to define these future solutions while nations will need to share their long-term plans and ideas and in coordination with the EU.

d. **Partnerships.** The complexity of the new global environment requires the involvement of a wider range of actors and organizations that can work together. NATO’s core tasks stress the importance of building a broader network of partners and the Alliance already has a huge partnership network and many partnership initiatives, but many overlap. Before expanding these networks in the longer-term, NATO needs to streamline the many partnership initiatives in a more comprehensive approach.
e. **Training and Exercises.** This remains a key area to enhance the Alliance’s responsiveness generated by improving the ability to operate together. NATO’s approach is currently evolving to take into account the current focus on Collective Defence and Deterrence, as well as Projecting Stability, and this has necessitated a review of NATO’s exercise programme. In the longer-term, training objectives must be developed that cope with the future complex and increasingly dynamic operational environment. It will require training differently using networking and distributed facilities to combine field exercises with virtual and constructive simulation.

f. **Human Capital.** This area underpins all other efforts. The key is education that provides people suited to all functions throughout the chain of command. As innovative technologies including artificial intelligence or autonomous systems are introduced, the human factor needs careful consideration. In particular how the skills of the future leaders required to take full advantage of an enhanced capacity are trained.

20. In the subsequent panel discussion, Lt Gen McMaster invited each of the other four panel members to provide opening answers regarding the long-term implications from the Summit in their area of expertise before opening the discussion for audience questions using the conference online tool.

21. The Panel acknowledged the challenge within nations to fulfil the decisions agreed at Warsaw while considering longer-term requirements, and welcomed the initiative for an increasingly federated approach particularly in the area of capability development. The relationship with industry and how new technology development is shifting quite rapidly from government entities to the private sector was a particular focus of discussion. NATO needs to develop its partnership with industry further to ensure it maintains its technological edge over potential adversaries, a key focus for his area within NATO HQ.
22. There was a detailed discussion regarding the intentions for the development of the EU's military structure. Acknowledging concerns from NATO nations regarding duplication of structures with NATO, it was emphasized that these will not be an additional burden on already stretched resources, but would rather be complementary to existing NATO organizations and would provide assistance in the provision of security requirements within European borders. There was acknowledgement that NATO's post Summit priorities support adaptation, but an emphasis on the need to focus on institutional adaptation through the NATO Command Structure. The recently completed Bi-Strategic Command “Functional Assessment” highlighted current areas that require a re-prioritization that will require the support of the nations to achieve and subsequently allow future developments to be considered.

23. **Key takeaways from the panel include:**

a. The security environment continues to evolve from a complicated to a complex environment, which underpins the necessity for a new approach requiring both a swifter reactivity and greater anticipation to deal with the rate of change.

b. Post Summit priorities support adaptation for strategic enablers such as BMD, JISR and AWACS but we must focus on more than capabilities. The Alliance must have institutional adaptation to address the way we do business, a reformation resulting in the ability to deliver capabilities on time and on budget.
c. Transformation is expensive for everyone and some nations can only afford adaptation. That cannot stop the necessary and expansive transformational efforts of other Alliance Nations. It is critical that the Alliance ensures continuity and interoperability by allowing all nations to leverage these transformational efforts.

d. Current challenges include keeping pace with the high tempo of political guidance, the need for better and more consistent support from the nations to the RAP such as PE support for Cyber, a current vision of what we want in the South, and a plan to implement a strategy for Partner nations in the south with tailored actions and avoiding duplication.

e. NATO’s strength will not rely on the JTF BDE but on the networked strength of our nations. Adapting the command structure and networking existing capabilities will allow the Alliance to be more agile, networked and efficient.

f. The expanded NATO-EU cooperation from the Warsaw Summit and Joint Declaration represents meaningful political progress and provides significant opportunities for cooperation without duplication.

g. The Alliance must relook at the way we manage risk when dealing with industry. Risk is also manifest in missing opportunities. We are not only fighting a war against potential adversaries but a war against antiquated ways of doing things and operating.

Plenary 2 - Transformation for Long-Term Adaptation

24. The second panel discussion was moderated by Ms. Melissa Hathaway, a leading expert in cyberspace policy and cybersecurity and the president of Hathaway Global Strategies. The panel was chaired by Lieutenant General Jeff Lofgren (ACT, Deputy Chief of Staff for Capability Development) who was joined onstage by Mr. Jonathan Parish (NATO, Deputy Assistant Secretary General for Defence Policy and Planning), Ms. Gina Loften (IBM, Vice President Chief Innovation Officer), Mr. Bill Murray (Amazon Web Services, Director of Government Cloud Solutions) and Ms. Mary Miller (US Pentagon, Principal Deputy Assistant Secretary of Defense for Research and Engineering).

Figure 9: Ms. Melissa Hathaway introduces Plenary Panel 2.

25. Ms. Hathaway opened the panel by providing a scene setter based on current global events in the US, Europe and other parts of the world. She explained that, building on the previous panel discussion, the aim was to generate innovative ideas and develop consensus on tangible mechanisms or best practices to leverage industry and national initiatives to achieve successful long-term adaptation. In turn, she asked each member of the panel where, in their own particular area, they saw where the greatest transformation might take place.
26. An update on ACT’s work regarding the focus areas previously briefed by SACT was provided which stressed the need for the Alliance to turn the capability development area model on its head. Whereas in the past developments were led by defence, this now mostly occurs in the commercial world. NATO must learn to deal with this rapid rate of change; innovation is arriving in tremendous volume from industry, which is a paradigm shift from 20 years ago. Critical future innovation will not be better tanks, planes and ships, it will be artificial intelligence, cloud computing, autonomous systems and organizations that think and act differently. Industry leads in this area so nations and the Alliance must work together to engage and leverage this innovation.

27. There was an open discussion regarding the NATO Defence Planning Process (NDPP). It was agreed the NDPP should provide better results sooner and use a more forward-looking approach. Critical enablers such as C2 and JISR have changed the way we think about common funding. However, the 21 NDPP priorities are capabilities for today and some will not be developed for 10-15 years. The Alliance therefore needs to develop capabilities that meet future requirements and not just current shortfalls.
28. Several examples from industry were explored where speed and cost has been paramount to transformation. As an example, cloud computing has significantly helped alleviate the undifferentiated computational burden from the user, and has drastically reduced cost and timelines to develop capabilities.

29. Finally, the panel discussed some of the pioneering work underway by the Pentagon with industry to help speed innovation. This includes the use of rapid prototypes to quickly demonstrate and experiment with a theory, co-creating on the fly which allows “fast failure in a safe environment”, and using data sets in different ways to find intersections between what is being sought to be accomplished in the future and what is thought the future will look like.

Figure 12: Plenary 2 - Ms. Mary Miller (US Pentagon) responds to an audience question.

30. Key takeaways from the panel include:

a. Innovation is arriving in tremendous volume from industry. Critical future innovation will be in artificial intelligence, cloud computing, autonomous systems and organizations that think and act differently. Industry leads in this area so nations and the Alliance must work together to engage and leverage this innovation.

b. NDPP needs to provide better results sooner and use a more forward-looking approach. Some of the current 21 NDPP priorities will not be developed for 10-15 years. Capabilities need to be developed that meet future requirements and not just current shortfalls.

c. In industry, speed and cost are paramount to transformation. Cloud computing takes the undifferentiated heavy lifting off the user’s shoulders and drastically reduces cost and timelines to develop capabilities. Other industry techniques to speed innovation include the use of rapid prototypes to quickly demonstrate and experiment with a theory, co-creating at speed which allows them to “fail fast in a safe environment”, and using data sets in different ways to find intersections between what they want to accomplish in the future and what they think the future will look like.

d. NATO can overmatch opponents in the area of hardware. In order to turn a force structure into a capability, the virtual, cyber and cognitive domains need to be bridged.

e. Innovation is not just about technology but a comprehensive approach to how the Alliance thinks and the ability to see 365 degrees to maintain the edge. Innovation requires a common architecture with common standards to help interoperability. An open system’s architecture is faster, cheaper and allows interoperability through plug and play.

f. Industry must be engaged earlier by bringing them in at the conceptual phase to identify issues and potential solutions earlier and speed up the acquisition process. Early engagement with Industry removes the Alliance from the competition and helps identify solutions faster.
Plenary 3 - Enhanced Decision Making through Advanced Computing

31. The third panel discussion, which took place on completion of the five Breakout Sessions during the afternoon of Wednesday 14 Dec, was introduced by Mr. Simon Purton Allied Command Transformation’s lead for the Cognitive Computing and Advanced Analytics concept. He was joined onstage by Dr Tod Carrico (Cougaar Software), Mr Tim Paydos (IBM) and Col (Ret) Brian Sweeney (Planet Risk).

![Mr Purton briefs the NATO Chiefs of Transformation in plenary on the implications of advanced computing on decision making](image1)

32. The session began with a brief history of the area of advanced computing, covering its roots in computerised games through to its contemporary employment in in sports, medicine, and manufacturing. Cognitive computing was described as the simulation of human thought processes in a computer model. Such capabilities involve self-learning systems that use data mining, pattern recognition and natural language processing to mimic the way our brains work. The panel noted that while Allied intelligence services have been adopting these technologies to undertake analysis, their real value is in supporting, and enhancing, decision making.

![Mr Purton in plenary uses the crash of US Airways Flight 1549 as an illustration of the difficulty of programming computers to anticipate all situations](image2)

33. The panel also discussed the use of big data and analytics in predictions. This discussion highlighted how advances in computing are allowing decision makers to identify critical strategic indicators and warnings in a complex and interconnected world; particularly when such indicators might lay outside of the military domain. By way of example, it was noted how such prediction tools were able to link a crop failure to potential civil unrest in a country.
34. The use of advanced computing in planning was another area of interest for the panel, which described the concept of the living plan. A living plan changes how we think about planning and execution. It reduces staff effort because it eliminates the requirement for looking after or maintaining a plan. The plan can be viewed at Strategic, Operational, or Tactical levels, but it does not exist at those levels - it exists at all levels. It contains views for J2, J3, and J4 but it is not a J2, J3, or J4 plan - it is all of them. It contains a view for planners and execution, but it is not a J3 or J5 tool - it is both. The living plan automatically digests inputs, constantly conducts predictions, and provides enhanced guidance to decision makers by identifying courses of action in a rigorous and objective manner.

35. Finally the session concluded by covering the impact of cognitive computing on defence and intelligence organizations. Discussion revolved around how early adopters are enhancing the digital intelligence cycle and effectively and significantly reducing the time from collection to situational understanding. This point was illustrated with several case studies and concluded with a message that cognitive computing was no longer a science project, but that these technologies were mature and available for use now.

36. At the conclusion of the plenary presentations, the Chiefs transitioned to Industry Demonstrations in a round robin format. The Chiefs were shown a range of industry products applicable to military operations covering prediction, planning, and general cognitive capabilities all aimed to support decision makers. Fifteen companies attended, all on a voluntary basis. The companies that participated were: Amazon Web Services, Aria Acoustics, Blue Canopy, Booz Allen Hamilton, Cambridge Semantics, Cougaar Software, IBM, Intel with Saffron, Northrop Grumman, NVIDIA with Survive, Planet Risk, Sentrana, Thales Air Operations, Thales Raytheon, and Third Evolution.

Figure 15: Col (Ret) Sweeney takes the stage in plenary to discuss advances in prediction in a complex world

Figure 16: The 15 participating companies at the 2016 COTC.
37. In summary, the NATO Chiefs of Transformation received excellent information regarding advanced computing, with a particular emphasis on systems with cognitive computing and deep learning capabilities. The Chiefs were briefed in detail about how this area of technological innovation is assisting decision makers to generate better and more informed courses of action.

38. The overall impression and feedback from the session was that it was a great opportunity for industry to mix with a large number of senior national staff. There were clearly a few very significant engagements with the Chiefs.

39. Next steps; after the Conference it will be necessary to return to developing the Cognitive Computing and Advanced Analytics concept. It will be important to incorporate industry and consider how best they can contribute to both the development of the concept - particularly in the application / implementation parts - and in validating the concept during an experiment or exercise. There are a small number of specific use cases that are of interest and the plan remains to set up a cognitive computing enabled operational headquarters at Trident Juncture 2018 or a similar venue. Such an activity might be better as Future Command and Control - and therefore will be coordinated and synchronized with the other elements of the C2 Focus Area.
BREAKOUT SESSION (BoS) SUMMARIES (Annexes B-F provide further detail)

40. Breakout Session 1 - Projecting Stability and Reconstruction with Partners.

Table 1 - Projecting Stability and Reconstruction with Partners (PSR): Takeaways

<table>
<thead>
<tr>
<th>PSR</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSR-1</td>
<td>Common Alliance understanding of what comprises Projecting Stability</td>
</tr>
<tr>
<td>PSR-2</td>
<td>Align NATO tools, processes and Command Structure to “Projecting Stability”</td>
</tr>
<tr>
<td>PSR-3</td>
<td>“Best Fit” - NATO, EU, UN, … roles</td>
</tr>
<tr>
<td>PSR-4</td>
<td>Guide Host Nations in preparing for NATO forces</td>
</tr>
</tbody>
</table>

41. Breakout Session 2 - Transforming NATO’s Forces to support a Long-Term Approach in a Complex Future Environment.
Figure 21: Lieutenant General Jeff Lofgren (ACT, DCOS CAPDEV) introduces the BoS 2 panel.

Table 2 - Transforming NATO’s Forces (TNF): Takeaways

| TNF-1 | Understanding the Allies’ long-term (+20 years) strategies will assist NATO to guide the Nations in the long-term direction of travel. |
| TNF-2 | NATO will capture Nations long-term capability plans to inform all nations. |
| TNF-3 | Being too provocative (innovative) in development creates a risk of institutional friction. |
| TNF-4 | Being provocative in your transformation requires:  
  - Being aware of the requirement  
  - Overcoming institutional resistance  
  - Find a Champion |

42. Breakout Session 3 - Transforming NATO Project and Sustain capabilities to rapidly enable operations in a complex environment.

Figure 22: Admiral Manfred Nielson (Deputy SACT) provides opening remarks at BoS 3.
Table 3 - Transforming Project and Sustain Capabilities (TPSC): Takeaways

| TPSC-1 | Improve the Velocity of Logistics |
| TPSC-2 | Cooperate among Nations and with private industry for logistics. |
| TPSC-3 | Develop Common Operating Picture between operators and logisticians. |
| TPSC-4 | Establish Common Logistics Processes and Procedures. |
| TPSC-5 | Re-establish Host Nation Support experience lost during period of expeditionary logistics out of area. |
| TPSC-6 | Importance of 3-D manufacturing in Future Logistics operations |

43. **Breakout Session 4 - Delivering a Relevant, Reliable, Complete and Sustainable NATO Exercise Programme.**

![Figure 23: BoS 4 - Delivering a Relevant, Reliable, Complete and Sustainable NATO Exercise Programme panel.](image)

Table 4 - NATO Exercise Programme (EP): Takeaways

| EP-1 | NATO must improve its ability to prioritize training requirements. |
| EP-2 | Exercises will be multi-layer but must be balanced against exercise control size and Subject Matter Expert availability. |
| EP-3 | Lessons learned must have a single responsible owner with the authority and resources to improve the outcome. |
| EP-4 | Exercise design process must carefully consider Partner requirements. |
| EP-5 | The NATO Exercise Programme Review must re-examine the current Certification process. |
| EP-6 | ACT to implement “active programming” to improve NATO-National exercise coordination. |
44. **Breakout Session 5 - Exploitation of de-centralized C2 Systems through Federated Cloud and Big Data technologies.**

![Image](image_url)

*Figure 24: BoS 5 - Exploitation of de-centralized C2 Systems through Federated Cloud and Big Data technologies.*

<table>
<thead>
<tr>
<th>DC2S-1</th>
<th>Cloud Computing is a new paradigm, requiring new approach (including acquisition processes) but offering huge opportunities (agility, scalability)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC2S-2</td>
<td>Need cultural change to promote sharing and re-use of services</td>
</tr>
<tr>
<td>DC2S-3</td>
<td>The future of cloud computing is a hybrid model: mixture of private (on premise) and public clouds</td>
</tr>
<tr>
<td>DC2S-4</td>
<td>In a NATO mission environment, federation is the only way to achieve mission goals in a cost effective and timely way</td>
</tr>
<tr>
<td>DC2S-5</td>
<td>Successful federated cloud deployments can be based on industry standards and open architectures</td>
</tr>
<tr>
<td>DC2S-6</td>
<td>Move from infrastructure-based security towards information-based security</td>
</tr>
<tr>
<td>DC2S-7</td>
<td>Military environment is fundamentally no different than other industries and might adopt solutions developed for them</td>
</tr>
<tr>
<td>DC2S-8</td>
<td>Internet of Things will be the next game changer, enabled and supported by cloud computing</td>
</tr>
</tbody>
</table>
The NATO COT Scenario-Based Discussion took place at HQ SACT during the morning of Thursday 15 December. The event aimed to build a shared understanding of technological aspects of the future military and security environments and facilitate thought regarding transformation in preparation for that future. The discussion took place within the context of a future focused Article 5 scenario with vignettes addressing aspects of the Command and Control and Logistics and Sustainability visions of the future drafted by ACT. The command and control vignettes addressed cyberspace superiority, use of manned, unmanned, and autonomous systems, and command and control in a contested environment. The logistics and sustainability vignettes covered bio-response, strategic support hub, and end user distribution. The participants were organized into four separate teams to allow for maximum participation and broader coverage of topics for discussion.

The scenario based discussion proved useful to foster a lively discussion on topics that affect NATO and national capability development and transformation work. Key takeaways are outlined below. Further detail on the NATO COT Scenario-Based Discussion is provided at Annex G.
Table 6 - Scenario-Based Discussion (SBD): Takeaways

<table>
<thead>
<tr>
<th>SBD-1</th>
<th>Development and/or procurement of any potential technological solutions must consider access and affordability for all Nations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBD-2</td>
<td>Persistent and timely engagement with industry is critical for capability development and transformation.</td>
</tr>
<tr>
<td>SBD-2</td>
<td>Practice through experimentation and exercise in multinational and NATO environments is necessary for effective transformation.</td>
</tr>
<tr>
<td>SBD-3</td>
<td>Experimentation and exercising in the cyber domain should foster trust and assurance in cyber capabilities and expose operators to cyber domain decision-making.</td>
</tr>
<tr>
<td>SBD-4</td>
<td>Real-time exploitation of publically available information and federated ISR is essential for command and control in an anti-access / area denial environment.</td>
</tr>
<tr>
<td>SBD-5</td>
<td>Practice with unmanned and autonomous systems in conjunction with manned systems is necessary to break paradigms of human / machine trust.</td>
</tr>
<tr>
<td>SBD-6</td>
<td>Bio-response demands effective practice in partnership with national governments and non-military partners.</td>
</tr>
<tr>
<td>SBD-7</td>
<td>Common standards for key supplies are crucial to enhanced logistics and sustainability.</td>
</tr>
<tr>
<td>SBD-8</td>
<td>Exercising ideas related to “just-in-time” logistics and unit self-sufficiency is necessary to foster confidence and trust in operators.</td>
</tr>
</tbody>
</table>

PARTNER CHIEFS OF TRANSFORMATION ROUND TABLE

Figure 27: Admiral Manfred Niels (Deputy SACT) provides opening remarks at the Partner Round Table.

47. The Partner Chiefs of Transformation Round Table was chaired by Deputy Supreme Allied Commander Transformation (DSACT) Admiral Manfred Nielson and co-chaired and moderated by Deputy Chief of Staff Military Partnerships Directorate (DCOS MP) Major General Odd Egil Pedersen.
48. The Partner Round Table comprised 24 partner nations from the Partnership for Peace (PfP) and the Mediterranean Dialogue (MD) framework as well as Partners across the Globe (PatG) and was divided into two sessions, the first with four partner focused briefs, with the second containing four panels with moderated discussions.

49. The first session contained the following briefs followed by short Question and Answer periods:
   a. ACT post Warsaw: Do we need a new Partnership approach?
   b. Global partnerships beyond the North Atlantic.
   c. Enhancing NATO-Partner capabilities.
   d. The NATO-Georgia Joint Training and Evaluation Centre.

50. The second session consisted of four moderated panels and discussed the following:
   a. Contributions to Partner Interoperability from “Day 1”.
   c. Partners in Multinational Defence Projects.
   d. Partner Contributions to the Future DCB Initiatives.

51. The Partner Interoperability Advocacy Group (PIAG) expanded on their contributions to Partner interoperability. Various SMEs set the stage for in-depth and frank discussions and DCOS MP will analyse and, where possible, take forward the Round Table observations and recommendations. Further detail on the Partner COT Round Table is provided at Annex H.

Table 7 - Partner Round Table: Takeaways

<table>
<thead>
<tr>
<th>PRT-1</th>
<th>Partner nations have specific military cooperation interests and outcomes. Tailoring solutions through Individually Tailored Roadmaps (ITRs) will potentially be an effective vehicle.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRT-2</td>
<td>Projecting Stability may represent a large “tent” within which many initiatives could be grouped. This will require clear policy/political guidance within goals represented in MC D&amp;G.</td>
</tr>
<tr>
<td>PRT-3</td>
<td>Interoperability and Capacity Building are both seen as key to Projecting Stability. Should clear policy and priorities be articulated, resources will be assigned.</td>
</tr>
<tr>
<td>PRT-4</td>
<td>ETEE opportunities must be reconfirmed annually, as not all nations are clear on what access they are authorized.</td>
</tr>
</tbody>
</table>

NATO UNCLASSIFIED
Publicly Disclosed
2016 Chiefs of Transformation Conference

“Innovate, Adapt, Transform - Prepare Now for 2030”

13-15 December 2016

Venue: Norfolk Waterside Marriott Hotel.

Tuesday, 13 Dec 2016

Dress code:
Military Personnel: Service Dress.
Civilian Personnel: Business Suit.

10.00-19.00 Conference check-in.

19.00-21.00 Icebreaker.
Hosted by General Denis Mercier.

Wednesday, 14 Dec 2016

Dress code:
Military Personnel: Service Dress.
Civilian Personnel: Business Suit.

07.00 Conference check-in.

Session I

08.00 Welcome and Administrative Remarks.
Assistant Chief of Staff Capability Engineering & Innovation (ACOS CEI): Brig Gen Henrik Sommer.

08.10 Keynote Address (video) - NATO Deputy Secretary General (DSG): Ms Rose Gottemoeller.

08.30 Plenary 1 - “Long-Term Implications from the Warsaw Summit.”
Moderator - Lt Gen H. R. McMaster.

- Supreme Allied Command Transformation (SACT): General Denis Mercier.
- Vice Chief of Staff Supreme Headquarters Allied Powers Europe (VCOS SHAPE): Lieutenant General Hugues Delort-Laval.
- Chairman of the European Military Committee (CEUMC): General Mikhail Kostarakos.
- Assistant Secretary General Defence Investment (ASG DI): Mr Camille Grand.
- Deputy Chief of the Military Committee (DCMC): Lieutenant General Steven Shepro.
10.00 Coffee break.

10.30 **Plenary 2 - “Transformation for Long-Term Adaptation”**. 
Moderator - Ms. Melissa Hathaway. 
- Deputy Chief of Staff Capability Development (DCOS CD): Lieutenant General Jeffrey Lofgren. 
- Deputy Assistant Secretary General for Defence Policy and Planning: Mr. Jonathan Parish. 
- Vice President Chief Innovation Officer, IBM: Ms. Gina Loften. 
- Director of Government Cloud Solutions (GCS), Amazon Web Services (AWS): Mr. Bill Murray. 
- Principal Deputy Assistant Secretary of Defence for Research and Engineering, US Pentagon: Ms. Mary Miller.

12.00 **Group picture - all Chiefs of Transformation** *(stairs in lobby).*

12.15 -13.30 Buffet lunch.

**Session II**

13.30 **Breakout Sessions.**
2. *Transforming NATO’s Forces to support a Long-Term Approach in a Complex Future Environment.*
3. *Transforming NATO Project and Sustain capabilities to rapidly enable operations in a complex environment.*
4. *Delivering a Relevant, Reliable, Complete, and Sustainable NATO Exercise Programme.*
5. *Exploitation of de-centralized C2 Systems through Federated Cloud and Big Data technologies.*

15.00 Coffee break.

**Session III**

15.30-16.30 **Plenary 3 - “Enhanced Decision Making through Advanced Computing”** 
Plenary Introduction / Practical Examples.

16.30-18.00 **“Enhanced Decision Making through Advanced Computing”**
Industry Demonstrations / Round Robin for NATO and Partner COTs.

16.30-17.00 Coffee break for all other COTC attendees.

17.00-18.00 **“Enhanced Decision Making through Advanced Computing”**
Industry Demonstrations / Round Robin for all other COTC attendees.

18.00-20.00 **SACT-hosted Reception** *(in area of Industry Demonstrations / Booths).*
Thursday, 15 Dec 2016

Dress code: All Participants - Civilian Attire (Jacket, No tie).

07.30 NATO Forum / COTs Executive Session attendees transport from Marriott Hotel to HQ SACT.

NATO Forum at HQ SACT (NATO attendees only)

**Session IV - NATO Forum / COTs Executive Session**

08.00-12.10 NATO Forum Scenario-Based Discussion (SACLANT, BRUSSELS and LONDON Conference rooms, HQ SACT Auditorium and Gallery).
  - *Scenario-Based Discussion employing Vignettes / Disruptive Technology Assessment.*

As required Coffee Breaks (Auditorium Lobby).

12.10 Transport to Hotel (for those not attending NATO Executive sessions).

12.10-13.10 **NATO Executive Sessions:**
  SACT with NATO COTs only (SACLANT CR).
  COS with other Senior NATO personnel (BRUSSELS CR).

13.10 Transport to Hotel.

13.30-14.30 Buffet lunch at Marriott Hotel.

**Partner Chiefs of Transformation Round Table at Marriott Hotel**

**Session V - Partner Chiefs of Transformation Round Table**

08.30-13.00 **Partner Chiefs of Transformation Round Table.**
  **Co-Chairs:** Admiral Manfred Nielson, Deputy Supreme Allied Commander Transformation (DSACT) and Maj Gen Odd Pedersen, Deputy Chief of Staff Military Partnerships (DCOS MP).

08.30-10.00 **Partner-focused briefs.**
  - *ACT post Warsaw: Do we need a new Partnership approach?*
    Mr. Jeffrey Reynolds, HQ SACT SPP, SIE.
  - *Global Partnerships beyond the North Atlantic.*
    Mr. Ruben Diaz-Plaja, NATO HQ IS, PASP.
  - Enhancing NATO-Partner capabilities.
    Mr. Halidun Bora Onen, NATO HQ IS, DCB Cell Chief.
  - *The NATO-Georgia Joint Training and Evaluation Centre.*
    LTC Giorgi Dumbadze, GEO-A.

10.00-10.30 Coffee Break.
10.30-13.00 **Panels and Discussion.**
- Contributions to Partner Interoperability from “Day 1”.
  Lt Gen Guenter Hoefer, Austrian Military Representative to NATO and the EU, Chairman PIAG.
  MGen Gavan Reynolds, Australian Military Representative to NATO and the EU, Outgoing Chairman PIAG.
  Dr. John Manza, NATO HQ IS, DASG OPS.
- Partners in the Future of NATO Education and Training
  BGen Athanasios Tsouganatos, HQ SACT JFT ACOS JETE
  Mr. Paul Thurkettle, HQ SACT JFT.
  Col Luca Massimi, HQ SACT JFT.
  Cdr Dave Stoffell, HQ SACT, JFT.
  Cdr Paul Francoeur, HQ SACT JFT.
  Ms. Anna Hires, HQ SACT MPD SENF.
- Partners in Multinational Defence Projects.
  Mr. Ross Riddell, HQ SACT, CAPDEV DP
  Maj Tommy Steen Nielsen, DNK-A, NORDEFCO.
- Partner Contributions to the Future DCB Initiatives.
  Mr. Halidun Bora Onen, NATO HQ IS, DCB Cell Chief.
  Mr. Haluk Cetinkaya.
  LTC Giorgi Dumbadze, GEO-A.

13.00-14.30 Buffet lunch at Marriott Hotel.

**All NATO and Partner Attendees at Marriott Hotel**

**Session VI - Breakout Session Outcomes**

14.30 **Breakout Outcomes and Questions.**
Presented by Breakout Leads.

**Session VII - 2016 COTC Wrap-up**

15.30 **2016 COTC Wrap-up (DCOS MP / DCOS CD).**
SACT Closing Remarks.
BoS 1 - PROJECTING STABILITY AND RECONSTRUCTION WITH PARTNERS

(Chair & Moderator: MGen Odd Egil Pedersen, DCOS Military Partnerships, ACT)

Panellists:  
Dr. John Manza (NATO IS, DASG Operations)  
Mr. Ruben Diaz-Plaja (NATO IS, Political Affairs & Security Policy Division)  
LTC Vittorio Stingo (HQ SACT, Capability Development Branch)  
Mr. Halidun Bora Onen (IS, Defence & Related Security Capacity Building Cell Chief)  
LTC Herman Maes (HQ SACT, Strategic Issues & Engagement Branch)

DISCUSSION

1. At the Warsaw Summit, NATO Heads of State and Government agreed, “if NATO’s neighbours are more stable, NATO is more secure”. They underlined the fact that NATO is facing long term challenges and NATO seeks to contribute more to the efforts of the international community in projecting stability and strengthening security outside its territory. At Warsaw, NATO demonstrated how it is already contributing to “project stability” through various efforts: by deepening partnerships, stepping up capacity building (including through the Defence and Related Security Capacity Building Initiative - DCB), launching and maintaining crisis management missions (including in the domain of training and maritime security), and deepening cooperation with international organisations, including the EU (through the NATO-EU Joint Declaration at Warsaw).

2. Against this backdrop and on the eve of the NATO training mission in Iraq, the breakout session sought to take stock and share the current planning state of “projecting stability”. The Session was very well attended and saw frank, open and productive exchanges. Discussions included the overall place of “projecting stability” in NATO’s document and programme landscape, NATO’s role as well as the role of other organisations such as UN, EU, ICRC as well as Partners’ contribution to the overall concept.

3. The Breakout Session was designed to highlight 3 different aspects of “projecting stability”:
   a. How to “project stability”: Lessons learned from the planning process of NATO training and capacity building activities in Iraq.
   b. Achieving long-term stability in NATO’s neighbourhood and beyond by projecting stability and focussing on support for defence institution building.
   c. The need to develop an “expeditionary stability policing” capability in order to “project stability” and strengthen security beyond NATO’s borders.

4. The NATO training mission in Iraq has been in the planning phase for over 4 month and will focus on security sector reform and strategic tactical assistance. Throughout the planning, the main question is how to deploy civilian and military personnel into a semi-permissive theatre. The necessity to have skillsets that are essential to develop activities in order to achieve “projecting stability” was highlighted as well as the situational awareness necessary on the theatre security environment. The issue of host nation support, which needs to go alongside the invitation of that country for a mission, is critical since NATO needs freedom of movement and acts on the behalf of the respective government. At the same time NATO with its different bodies, need to have the same mission, objective and leadership in order to create the desired effect.

5. Conceptually the need for long-term planning was highlighted. The functional assessment of the NATO Command Structure will need to find an answer on how to administer a long-term approach. The realisation, that Defence & Deterrence and Projecting Stability are two faces of the same coin and cannot
exist without each other, must be the first step. Allies and partners need to join up in the effort to make better use of existing tools and mechanisms. The partnership toolbox contains a vast number of activities and tools, however it remains to be discussed how the political and implementation level can be better integrated as well as how a closer cooperation between NATO-UN/EU may develop.

6. Stability Policing as a tool for “projecting stability” is recognized and the capability will be developed through a CD&E campaign in HQ SACT over the next year. The aim to engage as soon as possible, even before a conflict erupts is undisputed and could have led to less complex planning for the coming Iraq training mission. The necessity for a clear definition is apparent and will enable “projecting stability” by providing a safe and secure environment as the onstage for further progress.

7. Summarizing the different angles on the topic of “Projecting Stability” the need for a clear definition and a delineation of the concept within the existing NATO tools, structures and initiatives was obvious to all participants. The case study of the upcoming Iraq mission was appreciated and gave outstanding impulses for further discussions on the transformational agenda in NATO’s partnerships domain.

8. The key takeaways of the Breakout Session include:
   a. A common Alliance and Partner understanding of what comprises “Projecting Stability” is needed.
   b. NATO’s tools, processes and Command Structure need to be aligned in order to effectively “Project Stability”.
   c. The roles of NATO, EU, and UN need to be planned where they best fit in order to mutually reinforce and support the effort.
   d. Host Nations need to be guided and need to be willing to prepare for NATO forces; otherwise, the intended effect cannot be achieved.
BoS 2 - TRANSFORMING NATO’S FORCES TO SUPPORT A LONG-TERM APPROACH
IN A COMPLEX FUTURE ENVIRONMENT

(Chair & Moderator: Lieutenant General Jeffrey Lofgren, DCOS Capability Development, ACT)

Panellists: Mr. Jonathan Parish (NATO DASG IS/DPP)
Vice Admiral Kevin Scott (US, Director of Joint Force Development, JCS J7)
Vice Admiral Duncan Potts (UK, DG Joint Force Development)
Mr. Ari Popper (Founder and CEO of SciFutures)

DISCUSSION

1. Since the introduction of the new NDPP, the role and relevance of the long term (+20 years) has been frequently discussed among NATO stakeholders and parties of interest. Transforming the current pool of NATO forces requires transformational efforts bridging the present and the future, the harmonization of NATO and national efforts, and a common Alliance vision concerning futures-related opportunities and implications.

2. The group discussed the relationship between NATO and national level defence planning as it relates to; the long term; the frictions related to transformation versus adaptive change; a culture of innovation as it relates to the institution and the talent it attracts. We are now in an era where the pace of technological change is exponential whilst our procurement process and governance have not evolved to account for this speed of change. As such, it potentially can hamper our agility in fielding new battle-winning capabilities. The challenge and complexity is increased as NATO works to align national efforts across the Alliance.

3. The session was well-attended and provided frank and productive exchanges. The Key Takeaways were identified as:

   a. **Transparency and a Common Direction of Travel.** Transparency in the Allies’ long term defence strategies and programs is essential if Allies are to coordinate their activities to maintain and improve interoperability and capability to meet shared future security aims. NATO must work with Allies to understand their future planning and R&D efforts. From this NATO will summarize these efforts and share them across the Alliance. The objective being to raise the awareness of future planning efforts and make possible opportunities through knowledge the effectiveness of future investment to develop and deliver coherent capabilities while maintaining interoperability.

   b. **NATO’s Ability to Change at the Speed Required.** The critical factor identified is the challenge for large organisations, operating within a complex framework of governance, resource and legal constraints, to adapt at the speed required by the exponential rate of technological advance. The Alliance’s agility and adaptability in outpacing adversaries attempting to exploit technological advantage is critical. Failure to adapt at the speed required will present potential adversaries with the opportunity to seize an advantage.

   c. **Industrial and Legal Engagement.** The complexity of future change is such that we will need to broaden the intellectual base consulted in the early stages of concept and capability development in order to understand the art of the possible; at the very least, this should include early engagement with industry and the seeking of legal advice at every stage. Legal aspects related to future technologies are complex and potentially require a synthesis of military, political, social, economic, and ethical perspectives.
d. **Empowering Innovative Thought.** Innovation is not constrained to technology - it is equally important to invest in developing innovative thinking though education. Much of the discussion revolved around how to achieve truly innovative thinking within and throughout NATO.

**DEDUCTIONS**

4. To deliver NATO a comprehensive understanding of national defence programs and R&D initiatives ACT will engage across the Alliance to identify national-level contacts and develop enduring programs of consultation.

5. In 2017, ACT will conduct workshops and engagements with industries and nations to conceptually understanding of how to solve defence planning priority area problems through innovative ways of thinking and/or incorporating technologies into future capability requirements to increase the speed of delivery.
BoS 3 - TRANSFORMING NATO PROJECT AND SUSTAIN CAPABILITIES TO RAPIDLY ENABLE OPERATIONS IN A COMPLEX ENVIRONMENT

(Chair & Moderator: Admiral Manfred Nielson, Deputy Supreme Allied Commander Transformation)

Panellists: Mr. Timo Koster (Director of Defence Policy and Capabilities, NATO)  
Mr. Bruce A. Busler (Director, Joint Distribution Process Analysis Center, U.S. Transportation Command)  
Brigadier General Charles R. Hamilton (Commander, Defense Logistics Agency Troop Support)  
Major General (Dr.) Joseph Caravalho, Jr. (U.S. Joint Staff Surgeon)  
Ms. Kirstin Knott (Managing Director, FedEx Government Services)

Discussion

1. The aims of Breakout Session 3 were:
   a. to reinforce the importance of maintaining a militarily credible posture for deterrence and assurance,
   b. to inform participants on the direction of logistics transformation within NATO allowing nations to make futures-based requirements decisions today,
   c. and to ensure participants foster the linkages between post-Summit logistics tasks and our vision for rapid response and sustainment.

2. We achieved this by addressing these aims through the lens of NATO logistics transformation, with panellists providing unique perspectives on logistics transformation through their different areas of expertise including joint distribution, joint sustainment, joint medical care, and industry innovation.

3. Following a brief presentation of the Logistics and Sustainability Future Sustainment Concept and panellist introductions, discussion topics focused on the following.
   a. **Logistics is not a commander’s top priority in operations.** While true, it is becoming more important to meet the identified needs of readiness and responsiveness as seen through the last two NATO summits. US TRANSCOM offered to consider some of their operating model examples to help ensure logistics continues to be available to the Alliance. Medical support, as the sustainment of the human dimension, is something that over time commanders have come to want, not just feel they need. The lack of prioritization of logistics can extend into our industrial bases, eroding them over time to affect their ability to provide what is required when it is required.
   b. **Assembling multi-national military units, particularly at the battalion and brigade level, can cause an exponential growth in the logistics ‘tail’ associated with those units. What are ways to reduce this effect?** One way to address this challenge is through development and employment of modular support unit structures. These are tailorable and expandable, helping to ensure the right amount of the right support can be provided to meet the needs of the operators. Additionally, we need to rethink who, when, where, and how support gets accomplished to meet those operational needs.
   c. **What is the applicability of 3D printing (additive manufacturing) to logistics?** Through recent experience, the applicability lays mostly in providing short-term fixes quickly as opposed to long-term fixes. While the field is very promising and continues to develop, thus far...
there are known issues with the durability of the goods able to be produced with available materials. NATO must continue to leverage private industry in this field, as that is where the innovation is occurring.

d. **What are the best ways to protect logistics hubs in the initial stages of an operation, when building operational forces is the priority?** Resequencing multi-national deployment plans is an option, if all of the sequencing information is shared and coordination between national military staffs is enabled. Relearning lost skills, making units more self-reliant and self-sufficient can mitigate against low prioritization of logistics enablers. Additional consideration also needs paid to where across force structures logistics capability resides. Is there sufficient logistics capability kept at readiness to meet the needs of other high readiness forces?

4. The Key Takeaways were identified as:

a. **Improve the velocity of logistics.** Panellists suggested that ‘speed of assembly’ is necessary for NATO, and inherent within that is ‘speed of authority’.

b. **Cooperate among Nations and with private industry for logistics.** Develop supplemental capacities across nations, industry, and logistics functions.

c. **Develop Common Operating Picture between operators and logisticians.** This common picture must be useable and value added across multiple regions (i.e. all theatres of operation) and multiple domains (e.g. cyber can disrupt sustainment), and it must be multi-functional across the spectrum of conflict.

d. **Establish common logistics processes and procedures.** This is key for interoperability and logistics federation.

e. **Re-establish Host Nation Support experience lost during the period of out-of-area expeditionary operations and logistics.** Where applicable, rediscover Cold War policies, procedures, etc… that once enabled us to do what we now need to be able to do.

f. **The importance of innovation, like 3-D manufacturing.** It is promising in its ability to enable aspects of the logistics of the future, but further development is still required to realise the benefits of much innovation.

Conclusion

5. Breakout Session 3 was a great event for the Logistics and Sustainability Focus Area, the panellists, and the Chiefs of Transformation and their representatives in attendance. It allowed us to share different and unique perspectives on challenges associated with projecting and sustaining Alliance forces. It also provided a platform to further socialise ideas and initiatives originating from this headquarters. We believe continued inclusion of similar sessions at a wider variety of ACT events would also be a valuable way of furthering our objectives.
**BoS 4 - DELIVERING A RELEVANT, RELIABLE, COMPLETE AND SUSTAINABLE NATO EXERCISE PROGRAMME**

*(Chair & Moderator: Air Marshal Graham Stacey, Chief of Staff, ACT)*

**Speakers:**
- Colonel Sean Killeen (Branch Head Training and Exercises, ACT)
- Mr. Frank DiGiovanni (Director Force Training, US OSD)

**Panellists:**
- General (ret.) Karl-Heinz Lather (NATO Senior Mentor)
- Lieutenant General Hugues Delort-Laval (VCOS SHAPE)
- Major General Stefano Salamida (DCOS Joint Force Trainer, ACT)
- Mr. Frank DiGiovanni (Director Force Training, US OSD)
- Brigadier General Henrik Sommer (ACOS Capability Engineering & Innovation, ACT)

**DISCUSSION**

1. Air Marshall Stacey opened the breakout session with a brief overview of the topic and the rules of engagement for the breakout session. He stressed the importance of receiving input from everywhere and at all levels within the NCS, NFS and the Nations in order to ensure we are exercising the right things, and exercising those things in the right way.

2. After brief opening remarks from the panel members, the session was provided the current situation within the exercise programme to underpin the upcoming discussion. The update described a situation where Exercises are designed for one, or all, of three purposes: to increase or maintain readiness, as a vehicle for transformation, or to convey a particular message to a given audience. Today’s Collective Training and Exercise Programme is, as a rule, effective. It largely achieves the three stated purposes, but there are fundamental issues that need to be addressed. In general, the current NATO Exercise Programme has a baseline, but it is resource intensive, demanding, and can be inflexible. It does not optimize the use of national exercises, exploit technology, and is handicapped by the lack of a centralized management system for NATO’s varied requirements. Due to the Readiness Action Plan (RAP) and other ad hoc programme additions, the NATO exercise programme, as it is currently mechanized, is unsustainable given the available resources (manpower, funding, time, equipment, etc.) and cannot meet the current NATO level of ambition within the constraints of acceptable risk.

3. The panel emphasized that people will continue to be the centre of gravity in future exercises. NATO should focus on cognition and the ability of its people to think adaptably and develop relationships and trust among its leaders. With regard to exercises in the future, it is all but impossible to predict the future; rather we must define what we want in the future, and plan and work to invent that future now.

4. Following the opening presentations there were 60 minutes of questions and discussion with the audience.

5. The key issues identified were:
   a. **NATO Exercise Requirements Continue to Grow and Strain Available Resources (especially manpower)**. The discussion confirmed we are in a time of stress in the exercise world. Over the past several years we have multiple drivers such as the Readiness Action Plan and the outcomes of the Warsaw summit that have added requirements to the Exercise Programme. These requirements include follow-on-forces, nuclear, Anti-Access/Area Denial, 360 degree coverage, multi-domain threats, and a wide mission spectrum. This has added more exercises into the programme but has also driven us to more complex and multi-layer exercises.
which are straining the available resources. All of these requirements compete for a single, finite pool of resources, which are challenged to keep pace with the demands. This includes constrained budgets, force reductions, tight timelines for implementation, and the competing demands levied on the forces to both conduct their own training and facilitate the support of others training. The most significant gaps are augmentees and subject matter experts to support the exercise programme and the availability of forces to be trained. In order to address this challenge it is necessary to baseline the programme, identifying all necessary requirements, prioritizing those requirements, and designing an exercise programme that optimizes the use of available resources and minimizes risk. Together with Allied Command Operations, we are conducting a review of NATO’s exercise requirements process, with the intent of defining, rationalizing and prioritizing requirements, and ultimately achieving a Bi-Strategic Command assessment in order to address the challenges with NATO’s exercise programme. Specifically, ACT and SHAPE are engaged in a detailed review to assess NATO’s comprehensive requirements, to make best use of training resources and to adapt the programme to meet current and future challenges. The NATO Exercise Programme Review is due to be concluded by spring 2017 and should enable a more innovative, flexible, multi-year Exercise programme from 2019.

b. **The lessons learned process in exercises is not effective.** Lessons learned in exercises were discussed at length with the conclusion that we are still not effective as we should be. The lessons learned process is too splintered with as many as sixteen multiple databases and lines of effort. To be effective there must be a single responsible owner that has the resources and authority to improve the outcome.

c. **Shift to Article Five exercises is impacting our ability to work with Partners.** As we have shifted from out of area non–Article Five to more focus on Article Five MJO Plus we have experienced an unintended consequence where it is more difficult to include Partners in some of our exercises. With regard to partners we must start every Exercise planning and design process with the assumption that Partners will participate and we will design the exercise and the scenario to allow that to happen. This may not always be possible be it should be a guiding principle for each and every exercise.

d. **Certification in exercises impacts ability to innovate and Train.** We also discussed the impact of our current certification regime and how it impacts our ability to innovate and train within exercises. As part of the NATO Exercise Programme review, we will go back and examine the Certification requirements and processes to make sure we have this right and to mitigate any unintended consequences we are currently living with.

e. **Coordination between NATO and National exercises needs to be improved.** Lastly we discussed the relationship between NATO and National Exercises and how to improve in this area. As we seek new methods to achieve NATO’s strategic objectives there may be an opportunity to better capitalize on the National exercise programmes that have been offered under the Military Training and Exercise Programme. We have seen dramatic growth in the number of NATO member state exercises proposed to the Alliance. In order to take advantage of this, ACT will mature its “active Programming” initiative so NATO and National programs can be more mutually supportive and can also address assurance and deterrence in a more holistic manner.
BoS 5 - EXPLOITATION OF DE-CENTRALIZED C2 SYSTEMS THROUGH FEDERATED CLOUD AND BIG DATA TECHNOLOGIES

(Chairman: Rear Admiral Önder Çelebi, ACOS C2DS, ACT)

Panellists:  Mr. Leendert Van Bochoven (IBM & NIAG SG-216 Chair)
           Mr. Harold Vermanen (Microsoft, Business Director NATO)
           Mr. Gernot Friedrich (NCI Agency, Principal Enterprise Architect)
           Mr. Johan Goossens (Branch Head, Technology & Human Factors, C2DS ACT)

Discussion

1. The session commenced with a presentation introducing ACT’s C2 Capstone Concept and C2 2030 Vision. These documents set the foundation for defining the Alliance’ future C2 capability, embracing Command, Control, Communications, Computers, Information, Intelligence, Surveillance, Reconnaissance. Such a C2 capability will be based on federated networking that is broader than just technology and will include networks of people, and networked processes. The C2 Vision for 2030 identifies twelve functional concepts and defines their role in the context of the four phases of ACT’s C2 Model: Collecting, Decision Making, Effecting and Connecting. Two of these concepts were a subject of the discussion during a session: Ubiquitous Communications and Plug-and-Play Federation of Clouds.

2. ACT’s C2 Capstone Concept and C2 2030 Vision presentation was followed by a presentation providing an overview of the preliminary results of the NIAG SG-216 Study on Ubiquitous Communications and Plug-and-Play Federation of Clouds. Before going into a broader discussion with the audience, the panel members also discussed how to apply the “cloud” business model of the commercial world to the “combat cloud” in the military domain and how to increase operational agility by delivering interoperable applications and services by bringing developers of different systems together in the “cloud”. The two presentations and the discussion set the scene for Q&A session.

3. The discussion identified the following primary issues related to cloud computing adaptation:
   a. Military is no longer driving technology advancements, military technology superiority at least in the cyber space is over. Instead, it needs to catch up with a very fast pace of industry developments: big data, internet of things, artificial intelligence, machine learning to name a few.
   b. Compared with other industries the adoption of cloud computing in military environments is progressing at a slow pace. There is also a reluctance to embrace the new “cloud” paradigm due to risks such as loss of control and security.
   c. Sharing and reusing of the services offered through clouds is thus very limited and hence the benefits cannot be exploited.
   d. Military actors seem to be very reluctant when it comes to the use of public or community clouds. The fear is driven primary by security concerns to give out a control to own resources to somebody else. Accessing cloud services through communication channels, which in many cases are provided by third parties (Internet providers, mobile operators) was also considered as a potential vulnerability.
   e. Constrained and degraded communication channels in a military environment, might limit the usage of cloud technologies especially in a tactical domain.
   f. Current security accreditation processes are at odds with new technologies like Cloud and will require adjustments.
4. The discussion identified the following major takeaways:

a. Cloud Computing is a new paradigm that has transformed industry and still is. Using cloud computing in the military domain requires new thinking, including changes in operational processes and system and security architectures. It offers huge opportunities to improve performance, flexibility and scalability of the solutions. It enables a more agile approach for capability developers as well as for military commanders and warfighters.

b. Cloud computing, by its nature, promotes the breakdown of monolithic systems into smaller services, which may be used in multiple different scenarios and contexts by variety of applications (including mobile). It enables sharing and reusing of services beyond the borders of single enterprises; in future operations ICT capabilities and services will be “force generated” individually rather than each participant having to bring everything to the mission.

c. The future of cloud computing in the military enterprises is a hybrid model: a mixture of private and public/ community clouds. This model, already broadly adopted by other industries promotes sharing of workloads (data and processing) between on premise and off-premise private clouds. Challenges in the military environment may be overcome by new, more flexible cloud capabilities that allow moving computing services to the edge. This enables processing of big datasets at the sensor level and avoids moving large amounts of raw data through constraints networks into data centres.

d. In the Alliance, clouds will need to be federated. Successful federated cloud deployments will be based on industry standards and open architectures.

e. The cloud environment demands a new approach to security and security accreditation. Instead of focusing primarily on protecting and controlling access to the ICT infrastructure the emphasis will shift towards protecting the information itself, using combination of data encryption, data labelling and access control measures and will rely on the cloud service providers to protect underlying, infrastructure services.

f. In general, the military environment is comparable to other industries and could adopt commercial roadmaps (like for the Internet of Things) and solutions.
NATO CHIEFS OF TRANSFORMATION SCENARIO-BASED DISCUSSION

1. The Chiefs of Transformation for NATO’s member countries visited Headquarters Supreme Allied Commander Transformation on Thursday 15 December 2016. The visit included a scenario-based discussion (SBD) in the areas of Command and Control (C2) and Logistics and Sustainability (L&S) with emphasis on the need to innovate, adapt, and transform in order to prepare now for 2030.

2. The aim of the SBD was to build a shared understanding of technological aspects of the future military and security environments and stimulate thought regarding transformation in preparation for that future. In keeping with the role of the NATO Chiefs of Transformation, importance was placed on exploring technologies as potential capability solutions with consideration to the implications that might influence and shape both NATO and national capability development / transformation efforts that seek to bridge the gap between current and future security environments. The technologies were discussed within the context of an unclassified future focused Article 5 scenario with vignettes addressing aspects of the C2 and L&S future visions in development at HQ SACT.

3. The following are the key NATO UNCLASSIFIED takeaways from the SBD that may contribute to future implementation of C2 and L&S related transformation efforts:

C2
- Experimentation and exercising in the cyber domain should foster trust and assurance in cyber capabilities and expose operators to cyber domain decision-making.
- Real-time exploitation of publically available information and federated ISR is essential for command and control in an anti-access / area denial (A2AD) environment.
- Practice with unmanned and autonomous systems in conjunction with manned systems is necessary to break paradigms of human / machine trust.

L&S
- Bio-response demands effective practice in partnership with national governments and non-military partners.
- Exercising ideas related to “just-in-time” logistics and unit self-sufficiency is necessary to foster confidence and trust in operators.
- Common standards for key supplies are crucial to enhanced logistics and sustainability.

Other
- Development and/or procurement of any potential technological solutions must consider access and affordability for all Nations.
- Persistent and timely engagement with industry is critical for capability development and transformation.
- Practice through experimentation and exercise in multinational and NATO environments is necessary for effective transformation.

1 The information in this report has been maintained at NU level. For further details at a higher classification, please contact the HQ SACT OPEX Branch on NSWAN: poc SACT CAPDEV CEI OPEX Hughes K NIC <Kathleen.Hughes@act.nato.int>.
Summary

4. In summary, the discussion allowed ACT to inform the NATO Chiefs of Transformation about the Command’s on-going work and stimulate discussion regarding the importance of future collaboration regarding enhanced capability development to enable successful long-term transformation. SACT closed the SBD expressing his sincere thanks to all for the quality of the discussions and lively engagement. On completion of a refreshment break, the NATO COTs had a closed private audience with SACT. Given the nature of this engagement, and the original intent that the topics should remain private, no record of the discussion is provided under this cover.
PARTNER CHIEFS OF TRANSFORMATION ROUND TABLE

(Chairman: Admiral Manfred Nielson, Deputy Supreme Allied Commander Transformation; Co-Chairman / Moderator: Major General Odd Egil Pedersen, DCOS Military Partnerships, ACT)

1. The Partner Round Table aims to be a synergistic event, which focuses on identifying and addressing issues that are important for Partner nations and the transformational cooperation with NATO.

2. The Partner Round Table comprised 24 partner nations from the Partnership for Peace (PfP) and the Mediterranean Dialogue (MD) framework as well as Partners across the Globe (PatG). Furthermore, the Chairman of the Partners Interoperability Advocacy Group (PIAG) Lieutenant General Hoefler attended the Round Table.

3. The Round Table comprised of two sessions: The first featured four partner focused briefs with a short Questions and Answer period, while the second session comprised four panels with moderated discussions on a broad variety of partner related matters.

ACT post Warsaw: Do we need a new Partnership approach?

4. This session began with a brief on the ongoing effort to substantially improve the partnership activities in NATO. Throughout the Alliance there is a general agreement regarding the increasing importance of partnerships. Projecting Stability has several implications for military commanders: improving long-term planning, increasing situational awareness, adopting a more modular and holistic approach to cooperation and developing the right capabilities today that will be required tomorrow.

5. NATO’s community of partners is increasing to become sufficiently broad and diverse to meet the challenges of the future. The game changing feature of NATO’s future partnerships community is its scale, underpinned by a broad and diverse group of partners that can work together with NATO on an array of mutual challenges. Allies and partners must plan operate together simultaneously in all domains.

6. A more strategic and coherent approach to military partnerships will streamline the administration of partnerships and offer an easier means to plan military-related activities with the Alliance.

Global Partnerships beyond the North Atlantic.

7. The partners discussed the current work on NATO’s long term pursuit on establishing a network of global partnerships that will contribute to projecting stability, preventing crisis, managing conflicts and stabilizing post-conflict situations.

8. NATO’s global partners contribute to the effort of projecting stability by an array of additional resources. They generally broaden NATO’s situational awareness, bringing their own regional perspective and understanding of current crises. These partners have been, and continue to be, a significant contributor to stabilizing efforts, for example in the Gulf of Aden and off the Horn of Africa, and to building long-term stability in Afghanistan. Information exchange has deepened in recent years to a mutual benefit, for example in cyber defence or training efforts.

9. Looking to the future, interoperability with partners will become even more critical in order to utilise the global partner network for “projecting stability”. The Interoperability Roadmap generated various taskings that are due completion in early 2017. The outcomes of this work should help to shape and adapt transformation tools to support NATO-partner interoperability and are therefore linked directly to the current efforts to “project stability”.

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NATO UNCLASSIFIED
Publicly Disclosed
Enhancing NATO-Partner capabilities.

10. An update was provided on the consequences of the new emphasis on deterrence and defence and the implications for reacted partner capabilities.

11. NATO’s capacity to conduct deterrence and defence is supported by a mix of capabilities. These capabilities are identified through the NATO Defence Planning Process (NDPP) for the Allies. While there are many partnership tools and programmes that support stability efforts, the Planning and Review Process (PARP) and the Defence and Related Capacity Building Initiative (DCB) stand out.

12. The PARP process with its aim to promote the development of forces and capabilities and to guide their defence and military transformation. The DCB initiative is providing support to nations requesting defence capacity assistance from NATO. The support ranges from strategic advice, to development of local forces through education and training, or advice and assistance in specialized areas. All these requests are agreed at the political level and formulated in partnership goals.

13. 2017-2018 will see the implementation of both, the NATO capability targets for Allies and the Partnership goals for partners. The DCB recipient nations, will receive an intensified package in 2017. The experience gained in these activities may drive further the alignment of activities with partners to improve the resilience, capabilities and capacities.

The NATO-Georgia Joint Training and Evaluation Centre.

14. An overview of the current DCB package for Georgia provided a unique partner’s perspective on the topics discussed. The NATO-Georgia Joint Training and Evaluation Centre, as one of the flagship projects of the “Significant NATO-Georgia Package” was introduced.

15. The NATO-Georgia Joint Training and Evaluation Centre was funded through the DCB Initiative and supports the transformation of Georgian Armed Forces through training and evaluation in order to enhance Georgian defence capability and improve NATO interoperability. JTEC aims to contribute to regional stability by offering relevant training opportunities for NATO and partner nations.

Contributions to Partner Interoperability from “Day 1”.

16. The session then addressed the added value of the Partner Interoperability Advocacy Group (PIAG) to NATO by providing a partner’s point of view on several interoperability related issues. The Panel, consisting of Lt Gen Hoefler, MGen Reynolds (AUS-A) the previous chairman of PIAG, and Dr. John Manza (NATO’s Deputy Assistant Secretary General Operations) discussed several related topics.

17. PIAG is an informal group that represents the interests of seven non-NATO-nations (Australia, Austria, Finland, Ireland, New Zealand, Sweden and Switzerland) by advocating for interoperability between NATO and partners. PIAG’s mission is to enhance effective interoperability with NATO, adapted to the needs and levels of ambition of the individual members of the group, building upon existing modalities and decision making processes in NATO.

18. The recent activities of the PIAG focused on the revision of the Partner Staff Element Concept and the Capstone Concept for Individually Tailored Roadmaps, a process that PIAG is committed to assist within its means and capabilities in all the phases of its development.

19. With regard to day 1 connectivity (D1C), it was noted that there is no unified definition of D1C in NATO currently. Greater clarity and understanding of the steps and requirements should help partners to focus their effort and join NATO-led operations from the initial phase. It has to be noted that D1C has a political dimension and requires an earliest involvement of selected partners in the political consolidation and decision process in operations planning.
Partners in the future of NATO Education and Training.

20. Under the moderation of Mr. Paul Thurkettle, a panel comprising Subject Matter Experts from ACT’s Joint Force Trainer (Mr. Paul Thurkettle, Col Luca Massimi, BGen Athanasios Tsouganatos, Cdr Dave Stoffell and Cdr Paul Francoeur) and the Military Partnerships Directorate (Ms. Anna Hires) discussed the need to focus on the “Human Capital” element and provide Education and Training opportunities by the most economical and efficient means available.

21. A short introduction into the Human Capital Focus Area work in ACT highlighted the need to enhance the skillset of our personnel proactively, such that NATO will be suitably postured to meet the goal of providing the best prepared people, in the right place, at the right time, every time.

22. The Production Planning Process of Education and Training for NATO has been revised and was introduced to the audience. With the e-ITEP software and the Education and Training Opportunities catalogue (ETOC), two new and capable software tools have been introduced. The future connection between these tools and the electronic Partnership Real time Information Management System (ePrime) was discussed and will be carried forward as a result.

23. Advanced Distance Learning and e-learning as a tool for the future of education and training was introduced. Closely tied with the results of the Human Capital Working Focus Area, e-learning seeks to find the tools for the future courses and learning habits. The continuous work to enhance e-learning capabilities within partner nations, the economical aspect as well as the vast opportunities for partners currently existing where highlighted.

Partners in multinational defence projects.

24. Work on multinational defence projects was introduced and discussed in this session. The group discussed how to include partner activities as we attempt to prioritize and synchronize across all multinational initiatives in order to allow visibility with other capability development actors while maximizing efforts to address critical capability shortfalls and minimize duplication.

25. The Nordic Defence Cooperation (NORDEFCO) organization was introduced as one example of a multinational cooperation. NORDEFCO has the aim and purpose to strengthen the participating nation’s national defence, explore common synergies and facilitate efficient common solutions. This session highlighted achievements in the areas of armament, capabilities, human resources, training and education as well as operations.

26. The coming year will see the release of the Multinational Solutions Capability Development Handbook and convening the second Multinational Solutions Synchronisation workshop that will be open for partners. Currently 400 multinational projects and programmes are represented during the workshop. The NATO Defence Planning Process will be the backbone of the future development.

Partner Contributions to the future DCB Initiatives.

27. This session informed the audience on the current DCB activities and facilitated a discussion on how to involve partners in DCB both as a recipient and as a provider to ensure that countries at risk enhance their resilience and provide for their own security and that partners’ experience and capabilities are utilised in these activities.

28. While the Wales Summit focused on the three NATO core tasks, Warsaw ended with the call for deterrence & defence and projecting stability. The DCB initiative launched in Wales has proven to be an important tool in projecting stability beyond NATO’s borders. Efforts through the DCB packages enable NATO’s partners to enhance their resilience and to provide for their own security.

29. The four current DCB packages (Georgia, Iraq, Jordan and Moldova) were introduced and gave a good overview of the wide range of opportunities and possibilities for partners. The discussion showed
that the support, which goes beyond what is offered through the other partnership programmes, was not known by all attendees.

30. A unique perspective as a representative of a DCB recipient country was provided, underlining the importance that the DCB initiative has for the transformation of the Georgian armed forces and future NATO-Georgia cooperation.

**Summary**

31. Summarizing the Partner Round Table, the Deputy Supreme Allied Commander Transformation, Admiral Manfred Nielson, thanked all participants for their lively and valuable contribution. He reminded everyone that transformation is an ongoing process and NATO will need to evaluate carefully, if all the partnership tools are still fit for purpose. He encouraged everyone to continue working with NATO in order to improve partnerships for the long-term.