



## **NATO'S LONG TERM MILITARY TRANSFORMATION**

Read Ahead for Long-term Military Transformation Workshop  
19-22 April 2016, Lucerne, Switzerland

### **INTRODUCTION**

1. The world has continued to change in profound ways at an unprecedented rate since the release of the Strategic Foresight Analysis (SFA) 2013 Report. The changes in the global security context and major political, social, technological, economic, and environmental developments continue to challenge decision makers and defence planners. These changes will also significantly alter how NATO will fulfil its role and core tasks in the future. Preparing for the future requires an understanding of the future security environment in which the Alliance will be required to operate. The NATO Long-Term Military Transformation (LTMT) programme addresses the full range of security challenges, applies a unifying vision, and advances a conceptual framework for forces and capabilities required to succeed in future operations. Strategic Analysis Branch will conduct this workshop in two phases, one focused on the SFA and one focused on the FFAO.
2. The first component of LTMT, the Strategic Foresight Analysis (SFA), provides a trend analysis that describes the future security environment in order to derive defence and security implications for the Alliance over a long-term perspective (15+ years). The second component of LTMT, the Framework for Future Alliance Operations (FFAO), uses the SFA as a foundation in development of the instability situations, strategic military perspectives and military implications. The SFA provides SACT's best military advice concerning the future security environment in support of successful transformation of the Alliance. The FFAO is Bi-Strategic Command approved document provides the commanders' best military advice to help provide the long-term direction of NATO's transformation efforts.
3. ACT released the SFA 2015 Update Report in the beginning of the 2016. It provides an in-depth review of the trend monitoring results conducted by the SFA team while taking into account the discussions and findings of the Vienna and Helsinki Workshops.

4. Framework for Future Alliance Operations (FFAO) uses the SFA 2013 as its foundation and ACT developed the document through a series of workshops, where experts from ACO and ACT, Member Nations, Centres of Excellence, Partner Nations, provided their input. The FFAO places the future into an Alliance specific context and proposes those abilities that the Alliance may wish to consider to succeed in the future security environment. The FFAO is Bi-Strategic Command direction and guidance and enables the Alliance to develop and maintain a collective set of forces and a NATO Command Structure (NCS) such that; they are interoperable and possess the full range of capabilities and organizations for the Alliance to meet its Level of Ambition in an uncertain and rapidly evolving security environment. Specifically, this portion of the workshop will address the following problem statement: *What are the recommended additions and deletions in the Framework for Future Alliance Operations (FFAO) in both research methodology and findings from the 2015 report?*

## **AIM**

5. The aim of the SFA portion of the workshop is to review the findings of the SFA 2015 Update report with a particular focus on the ‘trends and ideas that require further analysis’ and to start discussion on the implications based on the insights gained during the development of the SFA 2015 Update Report. ACT will combine the workshop findings with follow-on activities to inform the development of the SFA 2017 Report which will focus on 2035 and beyond.
6. As the desired outcome, there are two products for the FFAO portion of the workshop. First, the workshop will discuss, develop, and refine the overall methodology that ACT will apply to develop the next iteration of the FFAO, FFAO 2018. Following the workshop, ACT will staff this systematic methodology for approval. The second key product of the FFAO portion of the workshop is a list of recommended addition and deletions for consideration. Following the workshop the Strategic Analysis Branch will use this feedback in the development of FFAO 2018.

## **ENCLOSURES**

- A – SFA Workshop Read-Ahead Material
- B – FFAO Workshop Read-Ahead Material

## Enclosure A – SFA Workshop Read-Ahead Material

### CORE DOCUMENTS

1. The SFA 2013 and SFA 2015 Update Reports are accessible at the following links.
  - Strategic Foresight Analysis (SFA) 2013 Report: <http://www.act.nato.int/sfa-report>
  - SFA 2015 Update Report: <http://www.act.nato.int/images/stories/media/doclibrary/160121sfa.pdf>

### SUMMARY OF THE SFA 2015 UPDATE REPORT FINDINGS

2. **Political Theme** trends and ideas that require further analysis:
  - a. Trends:

Trends	Description	Findings
Shift of Global Power	Rebalance of power from the West to other regions will present political and economic challenges to NATO members.	All indicators suggest that this trend is still valid and the rebalancing of power across a multi-polar world is gathering momentum.
Shifting Political Structures	The transition of autocratic / theocratic regimes towards democracy will continue.	Although this trend remains valid, its rate of development is slowing.
Polycentric World	The world is becoming increasingly interconnected and polycentric.	Polycentrism has been suggested as one of the key characteristics of the future and may be moved.
Increasing role of non-state actors in domestic and international affairs	Non state actors play an increasing role in domestic and international affairs.	Although it has been widely covered, non-state actors and their increasing role deserve to be monitored as a separate trend.
Return of power politics, challenges to the	Although it was considered a valid trend, there were different interpretations of it mainly	Further analysis required.

liberal world order and increasing potential for interstate conflict	because of different understandings of the term 'Power Politics'.	
Increasing democratic discontent	Increasing democratic discontent exists in both old and new democracies due to income inequality and the governments' inability to enable employment opportunities and provide social security to the masses.	Further analysis required.

b. Ideas that require further analysis:

<b>Ideas</b>	<b>Description</b>
Tensions within the West	As a result of the financial crisis and the current refugee crisis, tensions within the West and their implications on the transatlantic relationship will be monitored.
Resurgence of regional dynamics	Emerging regional hegemons may strive to change regional dynamics and establish regional structures to support their objectives.
Shifts in Global Institutional Structures	In parallel with the increasing role of non-state actors, shifts in global/regional institutions may warrant a separate trend as the existing multilateral institutional framework appears to be called into question.
Potential retreat or disengagement of the West	This emergent trend has a direct impact on the Alliance's Cooperative Security core task.
New challenges to NATO's decision-making process	Recent use of hybrid techniques illustrates the possibility of increasingly aggressive behaviour that lies below the Article 5 threshold.

3. **Human Theme** trends and ideas that require further analysis:

a. Trends

<b>Trends</b>	<b>Description</b>	<b>Findings</b>
Changing Demographics	The effects of population change will become more evident than they are today and will	Future demographics will be driven by diverse effects such as youth bulges, aging

	challenge the ability of states to provide for the needs of their populations.	populations, and imbalance in proportions of male to females in society. Changing Demographics as a trend is still valid.
Urbanization	By 2040 cities will contain 65% of the world's population and 95% of urban population growth will occur in mega-cities within developing nations.	Urbanization as a trend is still valid and increasing but at a slower rate.
Human Networks	Alliances of socially connected individuals who are involved in activities to achieve some form of common social, political, monetary, religious, or personal goal gain more importance.	Human networks are expanding at an exponential rate with many varying effects. This trend is still valid.
Fractured Identities	Several contributing factors may lead to a fracturing of national identity.	This trend is still valid and will increase in influence and complexity as it involves a greater number of actors.
Transparency	Intertwined with the increase of democratization of technology, the process by which access to technology rapidly continues to become more accessible to more people, the drive for increased transparency is expected to be significant enough to be considered as a stand-alone trend.	Further analysis required.
Ideological Polarisation	Self-radicalisation and the individual's perceived identity seems to be a consequence of the trend "Fractured Identities".	This trend should not be considered as a stand-alone trend.

b. Ideas that require further analysis:

<b>Ideas</b>	<b>Description</b>
Migration	Migration as a cause of crisis is not only an ongoing challenge but might have long-term effects, thereby presenting a potential test not only for Allied Nations but the Alliance itself.
Gender issues	Gender is a cross-cutting issue that has the potential to function as a driver in different security-related issues.
Human enhancement	There will continue to be controversial perspectives concerning the intertwining of human enhancements with biotechnology.
Increased privatisation of security forces	Privatisation of security forces will not only provide military capabilities but enable nation states as well as non-state actors to influence the security environment or exploit power vacuums.

4. **Science & Technology Theme** trends and ideas that require further analysis:

a. Trends:

<b>Trends</b>	<b>Description</b>	<b>Findings</b>
Technology Accelerates Change	Accelerating cycles of exploration, discovery, and exploitation of technologies, along with the innovative fusion of existing, emerging, and new technologies, will combine to bring about rapid change in the future.	All indicators suggest that this trend remains valid.
Increased Access to Technology	Commercial research and technology continues to outpace that of governments in the development of new technologies.	All indicators suggest that this trend is still valid and it needs to be monitored at global, regional, and local levels.
Centrality of Dynamic Networks	A globally connected and networked world creates a universal availability of information.	All indicators suggest that this trend is still valid.
Proliferation of autonomous systems enabled	An autonomous system does make choices on its own. It tries to accomplish its objectives locally, without human	Further analysis required.

by Artificial Intelligence <sup>1</sup>	intervention, even when encountering uncertainty or unanticipated events.	
Breakthrough in Energy Technologies	Ground-breaking technological advances in safe, reliable, and affordable energy solutions have the potential to radically impact the future of energy.	Further analysis required.

b. Ideas that require further analysis:

<b>Ideas</b>	<b>Description</b>
Loss of state/government monopolies over advanced technology	This could be brought about due to technological advances and the exponential increase in the use of technology by non-state actors.

5. **Economics & Resources Theme** trends and ideas that require further analysis:

c. Trends:

<b>Trends</b>	<b>Description</b>	<b>Findings</b>
Globalization of Financial Resources	The financial networks and communication systems that manage the world's critical resources are increasingly intertwined.	All indicators suggest that globalization of financial resources as a trend is still valid and the potential threats to the financial system are increasing.
Increased Resource Scarcity	Nations need increasing amounts of energy and raw materials to sustain growth and maintain an advantage in the globalized world.	Energy security will remain a major concern with large resource deposits located in unstable regions of the world.
Decreasing Defence	Governments faced with slow or non-existent growth, rising unemployment and increasing debt burdens will	All indicators suggest that this trend is still valid.

<sup>1</sup> An *intelligent autonomous system* makes choices using more sophisticated mechanisms than other systems. These mechanisms often resemble those used by humans. Ultimately, the level of intelligence of an autonomous system is judged by the quality of the choices it makes. CHAD R. FROST, Challenges and Opportunities for Autonomous Systems in Space, presented at the National Academy of Engineering's U.S. Frontiers of Engineering Symposium, Armonk, New York, September 23-24, 2010

Expenditures in the West	continue to have competing priorities.	
Global Inequality	While material conditions for most people are likely to improve over the next 30 years, the gap between rich and poor is likely to increase.	Further analysis required.

b. Ideas that require further analysis:

<b>Ideas</b>	<b>Description</b>
The rise of a network-based smart economy	The developments in disruptive technologies are expected to transform societies, economic organizations and decision-making in the economic systems.

6. **Environment Theme** trends:

a. Trends:

<b>Trends</b>	<b>Description</b>	<b>Findings</b>
Environmental and Climate Change	Global environmental change and its impacts are becoming readily apparent and are projected to increase in the future.	All indicators suggest that the trend is still valid and increasing in regards to severity of extreme weather events and other impacts such as melting polar and glacial ice.
Natural Disasters	The impacts of natural disasters (e.g. storms, floods, earthquakes) are becoming more devastating.	This trend is still valid and increasing in frequency and intensity.

## **DELIVERABLES**

7. At the end of these two-day of discussions, we will have reviewed and finalized the ‘trends and ideas that require further analysis’ and the breakout sessions will provide recommendations to maintain, merge or remove trends to form the foundation for the development of the SFA 2017 Report. Recognizing that in some Themes the work will be more developed and need less discussion, any spare time in breakout sessions will be used to commence analysis of the trends to determine the defence and security implications: the “So what?” question for NATO and Euro-Atlantic Security. The

Moderator/SMEs will lead the discussions to make sure trends are finalized and initial discussion on the implications is started.

## **Enclosure B – FFAO Workshop Read-Ahead Material**

### **CORE DOCUMENTS**

1. The full text of the FFAO is available at: <http://www.act.nato.int/ffa-report-2015>

### **FFAO WORKSHOP OVERVIEW**

2. The FFAO workshop will focus on the following problem statement: *What are the recommended additions and deletions in the Framework for Future Alliance Operations (FFAO) in both research methodology and findings from the 2015 report?* To develop a prudent and suitable answer to this question the workshop will divide into four syndicate groups each focused on one of the following sub-questions:
  - *What is the general feedback on the document and in development of the 2018 FFAO what should the research methodology be? (Syndicate 1)*
  - *In the FFAO 2015 report, what are the recommend additions and deletions for Chapter 1 - The Future Security Environment Towards 2030 and Instability Situations? (Syndicate 2)*
  - *In the FFAO 2015 report, what are the recommend additions and deletions for Chapter 2 - Strategic Military Perspectives? (Syndicate 3)*
  - *In the FFAO 2015 report, what are the recommend additions and deletions for Chapter 3 - Military Implications? (Syndicate 4)*

### **DELIVERABLES**

3. As the desired outcome, there are two products for the FFAO portion of the workshop. The workshop will discuss, develop, and refine the overall methodology that Strategic Analysis Branch will apply to develop the next iteration, FFAO 2018. Following the workshop, Strategic Analysis Branch will staff this systematic methodology for approval. The second key product of the FFAO portion of the workshop is a list of recommended addition and deletions for consideration in the development of FFAO

2018. Following the workshop the Strategic Analysis Branch will use this feedback in the development of FFAO 2018.

## **SUMMARY OF FFAO 2015**

4. The first iteration of FFAO was Bi-SC approved on 21 August 2015. During October 2015 the Military Committee acknowledged the FFAO's utility for defence planning and concluded that the FFAO should be taken into consideration by defence planners as they expanded the NDPP into the long-term. In addition, the Military Committee directed that ACT develop the next versions of SFA and FFAO in time to inform all steps of the following cycles of the NDPP, and should be delivered in time to be taken into account during the development of MC input to political guidance. On 20 November 2015, the North Atlantic Council noted the MC's advice regarding FFAO. In accordance with MC direction, the development of the next version of FFAO will begin in 2016 with an expected delivery date of summer 2018 one year prior to the next NDPP cycle. Overall, FFAO 2015 is composed of three components:

- **Instability Situations.** Generic descriptions of future events, crises or conflicts that may lead to NATO military involvement.
- **Strategic Military Perspectives.** Military guiding principles that inform long-term NATO defence planning and other processes, such as concept development, education, training and exercises. Strategic Military Perspectives identify the abilities and characteristics that NATO forces require to be successful in the future security environment.
- **Military Implications.** Military-specific deductions, derived from the Strategic Foresight Analysis, Instability Situations and Strategic Military Perspectives, which may drive change in how the military prepares for and executes operations to accomplish NATO's core tasks.

5. FFAO begins by modelling specific instabilities of the long-term future security environment. Building upon the SFA's shared view of the future security environment, cross-domain teams develop areas of instability that can be expected in the future and that may cause NATO to act in support of the Core Tasks. The Instability Situations do not describe an entire future world but rather focus only on a specific set of

anticipated instabilities. The Strategic Commanders approved these ten **Instability Situations**:

- **Access and Use of Global Commons Challenged:** substantial increase of threats to global flows, increasing lack of resources and climate change create new contested areas, lines of communication/commerce threatened, access to global commons is threatened.
- **Conflict in Euro-Atlantic Region:** expansionism at NATO borders, large-scale insurgency within NATO borders, decreasing defence expenditures encourage challenges to the Alliance, imbalance of military power, breakdown of a NATO member caused by internal factors or external actors, war-like situation in Europe, NATO Alliance weakened or ineffective, imbalance between availability of defence resources and security challenges, testing of NATO/partner territory.
- **Disruptive Impact of Migration:** Massive migration causing instability, uncontrolled refugees, displaced persons and economic migration.
- **High-Impact Cyber Threat:** large-scale cyber-attack on NATO member or affecting NATO, cyber challenges, cyber warfare, false identity.
- **Large-Scale Disaster:** large-scale disaster occurs; opportunistic actors take advantage of chaos, pandemic strikes NATO Nations, natural disasters, weak state challenge, and disaster relief in a world financial centre.
- **Megacity Turmoil:** turmoil in a megacity, inability of the nation state to provide security / basic needs in megacities, rising urbanisation and resource competition.
- **Non-State Actors Rival State:** attack on critical infrastructure, virtual organisations, climate change, competition in gaining the best security policy/market positions, changes in society which conflict with the national position, decline in existing systems – establishment of new ones, dependence on critical infrastructure, failing/shifting political structures, state versus non-state actors, use of disruptive technology by groups with different mind-sets.
- **Space Capability Disruption:** loss of space use, space resilience and vulnerability.

- **State-on-State Conflict:** spill-over of conflict from neighbouring countries along NATO borders, interstate conflict over access to resources, state-on-state conflict, resource wars, frozen conflict, new spheres of influence.
  - **Weapons of Mass Destruction/Effect use/threat:** attack from terrorist groups possessing Weapons of Mass Destruction/Effect (WMD/E) affecting NATO, using WMD/E to create a crisis on the edge of NATO.
6. The Strategic Commanders approved five **Strategic Military Perspectives** that provide guiding principles to prepare the development of Military Implications.
- **Operational Agility.** Making military forces more flexible, adaptable, and responsive will provide more options to Alliance leaders.
  - **Security Networking.** Increasing capacities, opportunities, and influence within the security environment by expanding the number and type of partnerships and through continuous partner interaction.
  - **Shared Resilience.** The ability to retain credible forces and conduct successful operations in spite of surprise or strategic shock.
  - **Strategic Awareness.** Providing more time for leaders to make decisions by conducting timely analysis of future instabilities.
  - **Strategic Communications.** Developing, coordinating, and disseminating an Alliance narrative that sets the conditions for the success of its military operations and activities, and enhances their positive effects through the information domain, and countering adversary narratives coming through fabrication and deception.
7. The **Military Implications** are best military advice expressed as abilities, to inform Alliance transformation, including development of policies, long-term requirements, and capabilities. Military Implications are not defined requirements, nor are they expressed as required capabilities. Military Implications are informative and not prescriptive. Developed in close coordination with defence planners to best fit NDPP, military implications provide military-specific deductions, which propose future abilities NATO may need to accomplish the Core Tasks in the future. Derived from the

SFA, Instability Situations and Strategic Military Perspectives, these deductions are categorised under the seven Capability Hierarchy headings: Prepare, Project, Engage, Sustain, C2 (Command and Control), Protect, and Inform. Military Implications are recommendations based on efficiencies in scale, effects, performance and cost.

#### **FFAO 2015 METHODOLOGY SUMMARY**

8. Using the SFA 2013 as its foundation, FFAO is based on the outcomes of a series of ACT-led workshops, where experts from ACO and ACT, Member Nations, Centres of Excellence, Partner Nations, provided their input. ACT and ACO collected, refined, and elaborated this input in the format of the following three sections: Instability Situations, Strategic Military Perspectives and Military Implications.