



MULTIPLE FUTURES PROJECT

Navigating towards 2030



FINAL REPORT – APRIL 2009

*"WANT OF FORESIGHT, UNWILLINGNESS TO ACT
WHEN ACTION WOULD BE SIMPLE AND EFFECTIVE,
LACK OF CLEAR THINKING, CONFUSION OF COUNSEL
UNTIL THE EMERGENCY COMES, UNTIL SELF-
PRESERVATION STRIKES ITS JARRING GONG—THESE
ARE THE FEATURES WHICH CONSTITUTE THE
ENDLESS REPETITION OF HISTORY."*

-WINSTON CHURCHILL

House of Commons, May 2, 1935

Foreword

Transforming any institution is an ambitious and complicated process that must begin with a deep grasp of the past and an open mind about the future. To this end, Allied Command Transformation's Multiple Futures Project aimed to strengthen our understanding of the Alliance's future threat environment through rigorous analysis of emerging security challenges. The project was never to become a modern "Oracle at Delphi" for NATO. Rather it provides Alliance leaders with additional considerations for anticipating the shape of future challenges. Our goal is to have the fewest regrets in terms of our readiness to address future security challenges that may confront our political and military leaders. Based upon a well-grounded intellectual framework, the project has benefited from the contributions and active support of Alliance and partner nations, international organizations, and research institutions.



The Security Implications and resulting recommendations contained in this report will provide a solid foundation from which we can build a common understanding of the nature of the risks and threats facing the Alliance and our populations. My aim is for this report to buttress the continuing strategic dialogue, serve as a catalyst to drive policy change, inform defence planning, and assist in prioritizing capability development. If used as intended, it may also be used to evaluate defence plans, update defence scenarios, influence concept and strategy development, and improve training and education curricula. Lastly, it will enhance our individual nations' defence planning and threat analysis efforts. Thus, I am confident that the Multiple Futures Project will improve the Alliance's future security in many ways and at many levels.

J.N. Mattis
General, US Marine Corps
Supreme Allied Commander Transformation

Table of Contents

Executive Summary.....	3
Project Approach	4
Implications.....	5
Security and Defence Challenges	6
Navigating Towards 2030.....	8
Introduction Perceiving Threats to the Alliance out to 2030.....	11
Chapter 1 Drivers for Change	13
BUILDING A COMMON PERCEPTION THROUGHOUT THE ALLIANCE	13
STRUCTURAL DRIVERS OF CHANGE	15
DETERMINISTIC DRIVERS.....	16
Chapter 2 The Multiple Futures.....	17
FUTURE ONE – DARK SIDE OF EXCLUSIVITY	19
FUTURE TWO – DECEPTIVE STABILITY.....	20
FUTURE THREE – CLASH OF MODERNITIES	21
FUTURE FOUR – NEW POWER POLITICS	22
STRATEGIC SURPRISES – THE CHALLENGE OF DISRUPTIONS	23
Chapter 3 Security Implications from Future Risks.....	28
SOURCES OF THREAT.....	28
THREATENING ACTIONS/EVENTS	30
SECURITY IMPLICATIONS.....	31
SECURITY IMPLICATIONS INSIGHTS AND RESULTING CONSEQUENCES	33
MAKING CHOICES – MITIGATION OF SECURITY IMPLICATIONS	39



Chapter 4 Military Implications Preparing Alliance Military Forces for 2030	42
MILITARY IMPLICATIONS	42
MILITARY IMPLICATIONS (TOP 5) ANALYSIS.....	46
MILITARY IMPLICATIONS FOCUS AREAS	47
Chapter 5 Findings and Recommendations	51
THE EVOLVING NATURE OF RISKS AND THREATS	52
INTERACTION WITH NON-NATO NATIONS AND OTHER INTERNATIONAL ACTORS.....	54
ALLIANCE VULNERABILITIES AND CHANGES IN THE CHARACTER OF MILITARY OPERATIONS AND WARFARE.....	55
SHAPING AND INFLUENCING IDEAS, VALUES AND EVENTS IN A GLOBALISED WORLD	55
MILITARY IMPLICATIONS – FOCUS AREAS AND RECOMMENDATIONS	56
ADAPTING TO THE DEMANDS OF HYBRID THREATS	57
OPERATING WITH OTHERS AND BUILDING INSTITUTIONS	58
CONFLICT PREVENTION, RESOLUTION AND CONSEQUENCE MANAGEMENT.....	60
COUNTER PROLIFERATION	61
EXPEDITIONARY AND COMBAT CAPABILITY IN AUSTERE ENVIRONMENTS	62
STRATEGIC COMMUNICATIONS AND WINNING THE BATTLE OF THE NARRATIVE	63
ORGANISATIONAL AND FORCE DEVELOPMENT ISSUES.....	64
Concluding Remarks.....	66



EXECUTIVE SUMMARY

“SECURING, STABILISING AND PROMOTING DEMOCRACY IS OUR CORE BUSINESS AND WILL CONTINUE TO BE SO INTO THE FUTURE”

NATO Secretary-General Jaap de Hoop Scheffer,
45th Munich Security Conference, Munich Germany
7 Feb 2009

In the world of 2030, the inability to react with expediency and purpose to events both expected and unexpected will be costly. In the security context, where such costs are measured against interests, values and public security, every effort must be made to align functions and simplify decision making processes. The Multiple Futures Project (MFP) is designed to support strategic decision makers. It focuses on future challenges, on their relative nature and gravity, and on what the Alliance can do today to prepare for tomorrow. It offers insights into the difficult choices associated with managing risk, in order to protect the most vital element of the Alliance, its population. It is crucial that we build a mutual understanding of the new and uncertain challenges for which NATO must be prepared to respond.

To be open, transparent, inclusive and able to process the widest spectrum of inputs objectively and comprehensively, the MFP was built on the work of national and international organisations and developed through extensive consultation across the Alliance. Twenty-one workshops and strategic engagements were conducted, including combined North Atlantic Council and Military Committee (NAC/MC) sessions. This exhaustive process included

representatives from 45 nations and more than 60 institutions bringing more than 500 political, military, civil and economic experts to the table from the public and private sectors and from both international and non-governmental organisations. These engagements were used to capture the values, ideas, and perspectives that, blended and distilled, make up the core of the report.

PROJECT APPROACH

The MFP starts with a fundamental analysis of the drivers of change that will affect the Alliance over the next 20 years. Nine drivers, all of which are significant in terms of their relevance and potential impact on the Alliance, are the building blocks of the project. Reflecting the inputs from the many workshops, MFP drivers are combined in different ways and with varying weights to create four plausible futures. Futures are tools that help form a shared vision, from which NATO can explore different paths by which the future may unfold. Futures also provide an effective means to assess the potential for strategic surprise, that is, a significant non-linear development that radically changes the future. Two such surprises (a Weapons of Mass Destruction/Effect event and a Global Pandemic) were applied systematically to each of the four futures to assess discontinuities and logical fault lines, and thus help to better define the Risk Conditions and Implications that flow from the futures.

The multiple futures yield some 40 Risk Conditions, ranging from “failed states” and “disruption of access to critical resources;” to “increasing ethnic tension” and “challenges to values and world views.” When considered in the context of potential Sources of Threat and Threatening Actions in 2030, they describe a complex future security environment. From the Risk Conditions, some 33 Security Implications and 26 Military Implications were further derived, discussed and evaluated during the workshops.





Figure 1: Drivers of Change, Plausible Futures

IMPLICATIONS

The Security Implications point to four broad insights and associated consequences. The *first* of these touches upon the cornerstone of Alliance defence structures by discussing why and how the evolving nature of threats will challenge efforts to reach a consensus on what constitutes an Article 5 response. The *second* insight reflects on the need for the Alliance to examine its responsibility to act outside NATO’s traditional areas of engagement, in order to preclude or minimise conflict with pro-active, integrated, and comprehensive approaches. The *third* insight centers on the understanding that readily available advanced technology will enable determined adversaries to attack Alliance vulnerabilities in new and unexpected ways, thus requiring NATO to consider changes in its operating concepts, capabilities, and future force structure. The *fourth* insight suggests that enhanced communications and increased interaction with international partners will be required to positively shape and



influence values, ideas, and events in an increasingly globalised world.

Military Implications point to seven broad focus areas. Five of the focus areas identify potential roles within the military realm that NATO could consider emphasizing for 2030: *Adapting to the Demands of Hybrid Threats, Operating with Others and Building Institutions, Conflict Management (prevention and resolution) including Consequence Management, Counter Proliferation, and Expeditionary and Combat Capability in Austere Environments*. The remaining two focus areas, *Strategic Communications and Winning the Battle of the Narrative*, and *Organisational and Force Development Issues*, represent the essential enablers associated with the roles its member nations envision for the Alliance.

Overall, the implications derived from the multiple futures reveal that the security environment will continue to evolve and be subject to a variety of unforeseeable and dynamic political, social, technological and military developments. Accordingly, the Alliance must strive to achieve a common understanding of perceived risks and threats in order to anticipate and sense important trends, developments and events. By doing so, the Alliance will be better positioned to positively shape and react to the security environment of the future.

SECURITY AND DEFENCE CHALLENGES

Despite potential interstate conflicts in the Middle East, the Caucasus, and East and South Asia, large-scale conventional confrontation is unlikely. The Alliance will need to respond to a wide variety of security challenges that are mainly a consequence of destabilisation and the absence of governance. The MFP forecasts that these challenges will result from unbridled extremism, uncontrolled and illegal migration, and friction caused by resource scarcity.



Burgeoning technology also will increase both the breadth of Alliance vulnerabilities, and the ease with which those who oppose us will be able to use the advancements in technology to disrupt society. The use of technology, especially the technology of WMD/E, therefore will require increasing vigilance and positive control, and close Alliance consultation with partners to protect our vital technological advantage.

Adversaries will focus less on external attack and more on a subversive undermining of what are in essence, the fundamental principles that bind the Alliance. Specifically, adversaries will attack the compact we have with governments, our solidarity, and the values we hold dear – the sanctity of life, individual liberty, and liberal democracy based on the rule of law. These attacks will use both physical and psychological means to weaken the Alliance.

Whether the motives of our adversaries are based on religious extremism, envy of or aversion to our accumulated wealth and resources, or an assertion of power, hybrid attacks will target our fundamental principles. These hybrid attacks will be both interconnected and unpredictable, combining traditional warfare with irregular warfare, terrorism, and organised crime. Psychologically, adversaries will use the instantaneous connectivity of an increasingly effective mass media to reshape or summarily reject the liberal values, ideas, and free markets that characterise the Alliance. They will attempt to gain relative advantage in the world by using our civil norms, legal frameworks and freedom of the media against us, as they manipulate and convince others to reject our way of life. Our adversaries will attack our populations, our centres of commerce, and our integrated global economy, including our social networks and the facilitating, but vulnerable, global commons that we use to connect and prosper. Adversaries will take the initiative and exploit Alliance vulnerabilities in both the virtual and physical domains of the global commons, including the realms of sea, air, space, and cyberspace.

Advocating the values and ideas upon which the Alliance is founded and engaging in the 'battle of the narrative' may be the most effective tools to counter our adversaries. In this more optimistic vein, the future presents NATO with unprecedented opportunities to positively influence ideas, values and events in a globalised world as the Alliance maintains and improves its ability to respond to unpredictable and complex challenges, admittedly some of which remain unknown at this time.

NAVIGATING TOWARDS 2030

It is essential that the Alliance continues to demonstrate its strength and resolve, which are rooted in solidarity. These qualities sustain the Alliance as we work to keep societies informed about the methods of our opponent, to remain vigilant, and to lead in conflict management. We must work tirelessly together to build support for an Alliance that continues to espouse the values and ideas upon which it was founded. To do this, the Alliance must re-evaluate the meaning of an Article 5 attack, and in doing so send a clear signal of deterrence to our adversaries. That signal is in essence the clarion's call that there will be strength behind the response to any attack, whether territorial or not. A comprehensive approach, developed in concert with other international organisations like the EU and UN, is fundamental to the security of this diverse Alliance. It goes without saying, however, that the more comprehensive our approach is, the more our engagements will be affected by actions outside of our geographic boundaries. To be effective in this environment, we must develop better partnerships, leverage relationships and work with other international actors to improve the transparency of information and decision-making. Success will depend on our ability to manage conflict effectively, and to mitigate the consequences that spring from subversive activity.

The Alliance must maintain flexible, adaptable, well-trained, well-equipped, deployable and sustainable expeditionary forces. These forces require an equally adaptable and comprehensive command



structure that is able to integrate and work effectively with other actors to meet threats across the spectrum of conflict, spanning hybrid warfare and the potential use of WMD/E; relief and reconstruction activities; and the mentoring, advising and training of indigenous forces to support longer-term institution building. The Alliance must be able to conduct a full range of operations and missions concurrently, ranging from collective defence to demanding stabilisation and reconstruction operations; and from security sector reform to large-scale high-intensity combat operations. Alliance forces must be ready to operate in WMD/E-contaminated environments while assuring access to and unfettered use of the sea, air, space and cyberspace global commons. This unfettered access will be pivotal to the success of all Alliance operations.

Developing the necessary capabilities and generating the required forces for these myriad operations will remain a core responsibility of the Alliance. We must study ways to re-establish and modernise the NATO committed forces concept. New or dedicated capabilities to protect logistics and major infrastructure nodes will be increasingly important. Included must be the ability to ensure unimpeded access to the electromagnetic spectrum, as well as the appropriate means to detect, identify, locate and engage adversaries intent on impeding our use of space and cyberspace.

Urbanisation also will present challenges to the effective conduct of military operations. In light of present and future demographic trends, it will be a significant challenge for the Alliance to recruit, educate, train and retain a professional force of the highest calibre, able to support these operations in the complex environment of 2030.

In the end, however, we must not lose sight of the fact that, no matter how hard we try, the future is not foreseeable. More importantly, no matter how hard we prepare— we will be surprised. The challenge for NATO, like any complex large organisation, is to



learn how to manage uncertainty. This report calls for that next step – the building of a shared vision of the future through rigorous intellectual debate regarding the conditions, working assumptions, and the framework behind the policies and doctrines of the Alliance.



Introduction

Perceiving Threats to the Alliance out to 2030

NATO is the most successful military alliance in human history, having brought peace and freedom to two continents over six decades. The global security environment we now face is changing rapidly, and demands that we understand and evaluate how the

Alliance will be challenged and threatened in the future. We can reach this understanding only through coherent and structured strategic dialogue. The intellectual rigour that supports this dialogue can facilitate an organisational recognition of the factors that define such challenges and threats.

The Multiple Futures Project (MFP) creates a basis for such a strategic dialogue by focusing on the fundamental question: *In 2030, what are the threats and challenges that will pose the greatest risk to the interests, values and populations of the Alliance?* The goal was to keep this study open, transparent, and inclusive, in order to process objectively and comprehensively the widest available spectrum of inputs. To this end, Allied Command Transformation (ACT) conducted 21 workshops and strategic



engagements, and solicited the direct involvement of representatives from 45 nations and more than 60 institutions to exploit their political, military, civil and economic expertise.

Working with a combination of NATO, national and diverse international organisations, the MFP developed an Intellectual Framework (IF) that produced a set of Security and Military Implications, and corresponding Recommendations. The Intellectual Framework is the process that was developed and applied to obtain the analytical results. It connects the drivers, futures, and implications of the study via two processes by which the futures are built and the implications deduced (Figure 2).

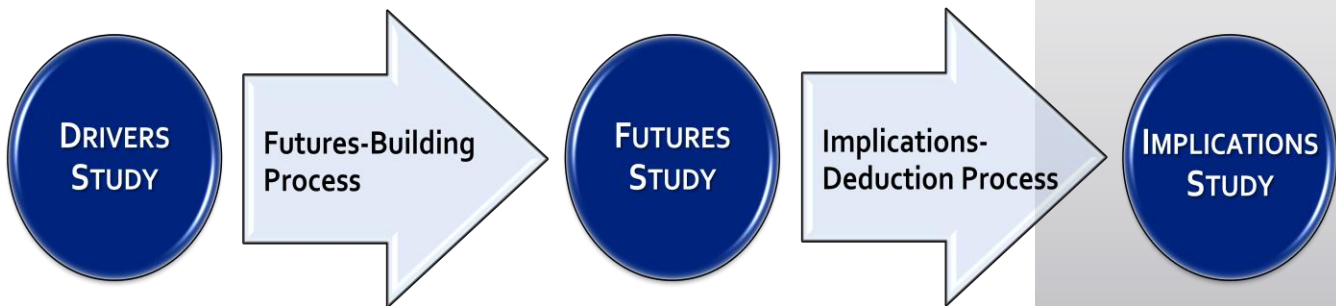


Figure 2: MFP Intellectual Framework

The result of the IF process is the identification of specific Security and Military Implications. These are associated with specific Risk Conditions and Threatening Actions which may materialise within any or all of the considered futures, including the assessment of the strategic surprises.

Chapter 1

Drivers for Change

BUILDING A COMMON PERCEPTION THROUGHOUT THE ALLIANCE

Building a common perception of the relevant drivers was a precondition for the development of the futures and consequent assessment of the possible implications. The MFP study of drivers started with an analysis of 19 national studies on the future security environment and the existing ACT body of work on drivers, futures, and challenges.¹

Using the results of 21 workshops, nine drivers (Figure 3) with a high degree of commonality were identified as most relevant to the Alliance. Some of them have been influential forces throughout history, and are designated in this study as 'structural drivers' of change. In the very long term (centuries, not just decades) it is our assessment that three of these drivers remain historically constant: friction, integration, and asymmetry. A look at the interrelation of these three highlights six key and deterministic drivers that will have the greatest impact on security in the coming decades. They are: changing state capacity, resources (allocation), climate change, use of technology, demographics, and competing ideologies and world views.

¹ Three studies comprise the SACT body of work: 1) The 2007 SACT Future Security Environment (FSE) Study: An examination of trend analyses available from nations and the broader trans-Atlantic community involving industry and academia; 2) The 2006 SACT Long Term Requirements Study (LTRS): This considered plausible future worlds and future NATO's to support capability analysis; and 3) Emerging Strategic Issues: A continuous examination of the future security environment and NATO strategic guidance to identify emerging issues and their impact on possible future military missions and capabilities.

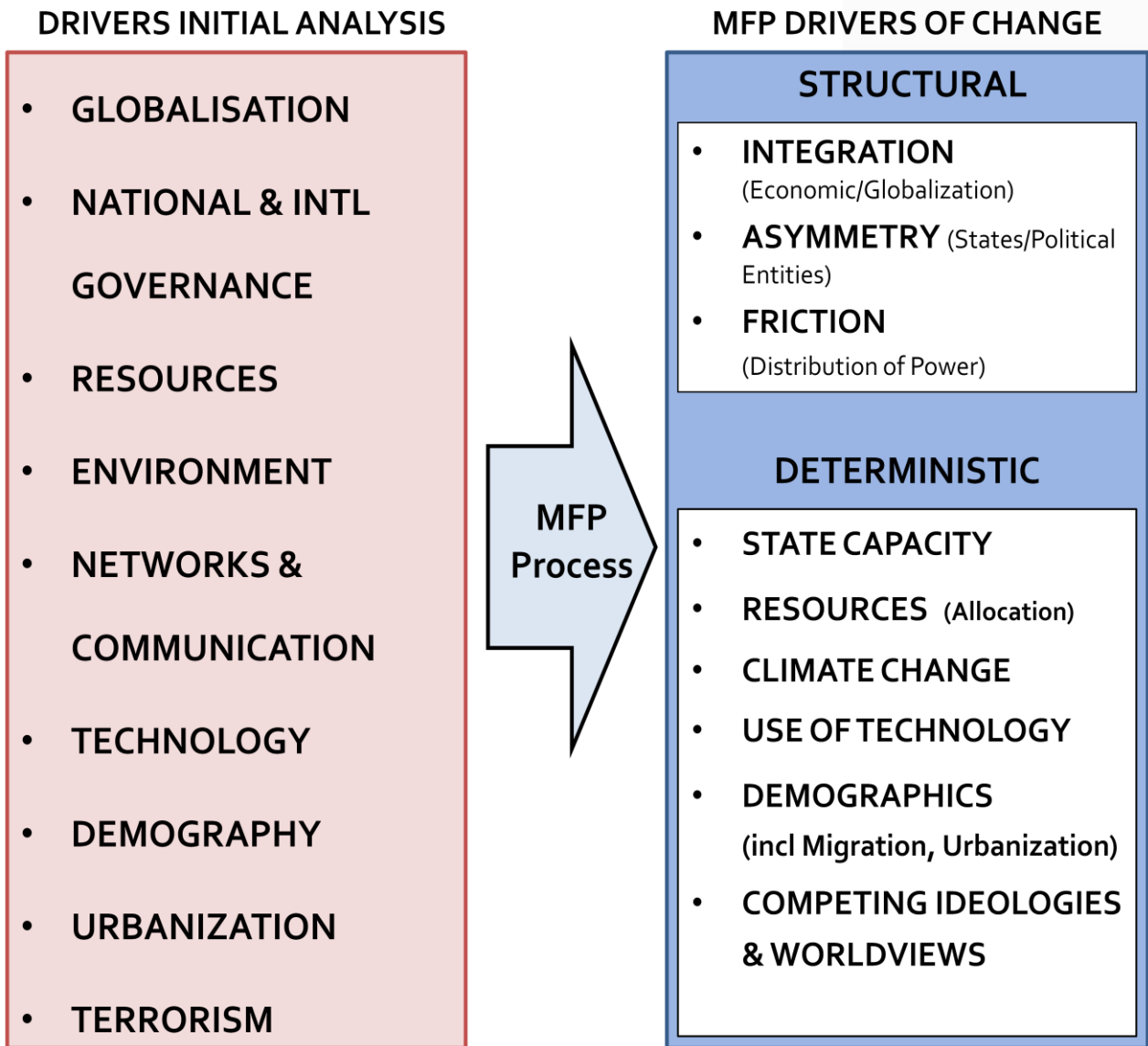


Figure 3: Evolution of MFP Drivers

STRUCTURAL DRIVERS OF CHANGE



FRICION (DISTRIBUTION OF POWER) is the degree of ease with which decisions are made at the international level, functions in essence as a relative power meter, ranging from cooperation to confrontation.



INTEGRATION (ECONOMIC/GLOBALISATION) is the degree to which national and regional economies trade, and their level of functional integration.



ASYMMETRY (STATES/POLITICAL ENTITIES) is the relative discrepancy between states in terms of wealth and power, and influences international relations in terms of both development and security.



DETERMINISTIC DRIVERS

STATE CAPACITY reflects the distribution and management of power at the state level.

RESOURCES (ALLOCATION) encompasses the availability and affordability of, access to, and competition for essential resources, including energy, water, food and other indispensable commodities.

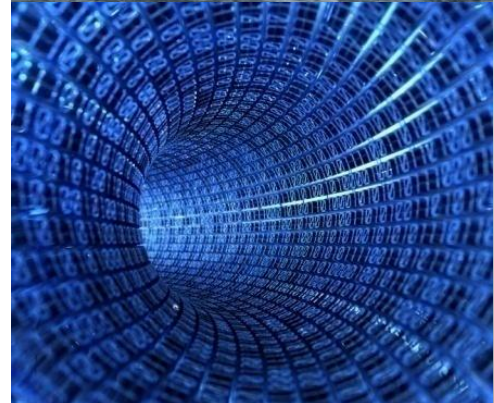
CLIMATE CHANGE is any long-term significant change in the 'average weather' that may have an impact on international relations.

USE OF TECHNOLOGY denotes the evolution and availability of technology up to 2030.

DEMOGRAPHICS (INCLUDING MIGRATION & URBANISATION) reflect domestic population trends related to birth, death, age, income, ethnicity, and the other characteristics of a state's population. It includes migration, urbanisation, and other external factors.

COMPETING IDEOLOGIES AND WORLDVIEWS deal with alienation and confrontation based on different values, religion, and historic geopolitical perspectives.

These drivers represent the building blocks for the multiple futures. The intersection of the relevant drivers shapes the landscape where plausible futures and the effect of strategic surprises can be studied. The following chapter discusses how the drivers and futures were constructed and analysed.



Chapter 2

The Multiple Futures

The multiple futures are only the means, not the end, of this project. They tell a story about plausible worlds in 2030. The future is not predictable, but that does not mean we should not plan for it. From that perspective, the four futures provide a common ground for

structured discussion and debate regarding the risks and vulnerabilities that endanger the populations of the Alliance. Constructed from a series of relevant drivers, each of the futures provides a backdrop for conceptual analysis – a canvas on which to assess the potential risks, threats, strategic surprises, implications, and, of course, opportunities. The study yields a comprehensive set of risk conditions from which security and military implications can be deduced. From implications, we gain strategic insight and better understand the potential

choices the Alliance faces as it addresses the challenges and opportunities of the coming decades.

The future security environment will not develop exactly as described in the four futures. Nevertheless, they are useful as a framework to guide discussion regarding specific Risk Conditions. These conditions will influence decision-making within the Alliance. Risk Conditions refer to vulnerabilities and characteristics that endanger *people, territorial integrity, and/or values and ideas*:



PEOPLE refer to the security and safety of a state's domestic population, both local and abroad.



TERRITORIAL INTEGRITY includes the protection of national borders, domestic property, property abroad, as well as national resources claimed by the state. In a more modern sense, this could be expanded to include communication / computer networks and assets in space.



VALUES AND IDEAS include the preservation and promotion of Western culture, the heritage of social norms, ethical values, traditional customs, and political systems that form the basis for Western civilization.



People, goods and territory tend to be indisputable core responsibilities for the state to protect and defend. Increasingly, in a world of computers and networks, the intellectual property of 'values and ideas,' too, will require vigorous protection by governments. As the Alliance prepares for the future, it is worth noting that as nations improve their ability to protect their people, goods, and territory, then the implications, risks, and opportunities inherent in doing so will become increasingly important.

FUTURE ONE – DARK SIDE OF EXCLUSIVITY

The relevant drivers in Future One, *DARK SIDE OF EXCLUSIVITY*, are climate change, resource allocation, economic integration, and competing ideologies and worldviews. The *Dark Side of Exclusivity* describes how globalisation, climate change, and the misallocation of resources significantly affect the capacity of states to maintain sovereignty. Weak and failed states generate instability in areas of interest, and present the states of the developed world with strategic choices regarding how to react. This first future concentrates on the friction between the developed or "market" states and the developing states. This future is complicated by nationalism, the misallocation of resources, poverty, frustration, demographic pressure, and deteriorating environmental conditions.

In this future, the following Risk Conditions have been identified:

- Failed Governance
- Proliferation of Radical Ideologies
- Potential spill-over of ethnic, religious, ideological conflict
- Vulnerability of strategic chokepoints and infrastructures in ungoverned spaces
- Potential disputes over previously uninhabited and resource-rich territories
- Consequences from environmental catastrophes/changes
- Proliferation of WMD/WME
- Spread of radical ideologies

- Challenges to state authority
- Uncontrolled migration
- Shifts in population mix

FUTURE TWO – DECEPTIVE STABILITY

The relevant drivers for Future Two – *DECEPTIVE STABILITY* are asymmetry, demographics, resource allocation, and competing ideologies and worldviews. *Deceptive Stability* highlights the requirement to manage the demographic shift resulting from aging populations and young migrants. Additionally, resource allocation is both effective and efficient as the resource-rich parts of the world become part of the dominant system. However, a wide range of problems still persist in the less developed regions of the world that are resource-poor. This dichotomy is further exacerbated by the lack of intervention by liberal democracies absorbed with domestic priorities. Ensuing tensions and poor economic and cultural integration worsen pre-existing domestic and transnational security issues such as crime and terrorism. The overarching theme of this future is preoccupation with domestic concerns in the developed states, which leaves them less able to react to instability and geopolitical risk.

In this future, the following Risk Conditions have been identified:

- Inability to anticipate, sense, and shape external security environment
- Transnational criminal movements
- Strategic inattention
- Potential spill-over of ethnic, religious, and ideological conflict
- Systemic inability to respond quickly to external effects
- Uncontrolled migration



FUTURE THREE – CLASH OF MODERNITIES

The relevant drivers in Future Three – *CLASH OF MODERNITIES* are competing ideologies and worldviews, demographics, and the use of technology. *Clash of Modernities* sketches a world where a strong belief in rationalism coupled with technological innovation has enabled advanced-network societies to connect virtually across the globe. Continued globalisation and technological advances have helped drive urban centres in the developed world to become mega-hubs of wealth and culture. The governance of this developed sector is diffuse, multi-layered, and network-centric where problems are solved, and created, by virtual networks in real time. The disconnected, segregated, and disassociated frontier areas suffer the greatest tension. Further destabilising these regions are organised criminal elements that engage in human and black-market trafficking, intellectual and technological piracy, and illegal arms trading. Authorities within developed states are focussed primarily on keeping these disruptive forces at bay by managing flows of trade, information, resources, and the recruitment of workers that traverse the borders between the urban cores and outlying areas.

In this future, the following Risk Conditions have been identified:

- Complex interdependent computer networks
- Internal tension between technocratic efficiency and civil liberties
- High dependency on constant flow of vital resources
- Extremism of marginalised groups
- Territorial and extra-territorial border disputes
- Technological exploitation by criminal/rogue elements
- Vulnerability of complex interdependent systems and infrastructures
- Conflict between incompatible belief systems
- Shifting loyalties (state vs. non-state actors)
- Alliances of authoritarian states
- Potential spill-over of ethnic, religious, and ideological conflict

FUTURE FOUR – NEW POWER POLITICS

The relevant drivers of Future Four – *NEW POWER POLITICS* are friction in international decision-making; competing ideologies and worldviews; conflict over resource allocation; and a lack of economic integration. New Power Politics describes a growing absolute wealth, accompanied by the widespread proliferation of WMD/E. This future is characterized by power politics, but in a truly multi-polar world that is dominated by competing regional powers. These powers have established a fragile balance in which globalisation and international rules and norms are challenged by competition for resources and influence. These states may not have a global reach, but regionally they play a significant role in shaping world politics by promoting their strategic interests and competitive advantage. Competition and demand for resources, particularly in ungoverned spaces, continues unabated as the most powerful states continuously strive to improve their economies and protect their populations.

In this future, the following Risk Conditions have been identified:

- Shifting spheres of influence
- Competition for ideological supremacy
- Competition for resources
- Proliferation of nuclear and other WME capabilities
- Ungoverned spaces
- Inter-state rivalry
- Inability of the international system to handle large power fluctuations
- Shifting state alliances



STRATEGIC SURPRISES – THE CHALLENGE OF DISRUPTIONS

Futures studies often have trouble dealing with non-linear developments such as large-scale, unpredictable shocks. For each of the four futures, two shocks are applied systematically in order to illuminate structural vulnerabilities and tensions. The two shocks considered in this study are a global pandemic and a WMD/E attack against a large city, posed to have taken place between now and 2030.

GLOBAL PANDEMIC: A global pandemic with hundreds of millions of casualties will cause state failures in undeveloped or weak states and severely damage economies in affected developed states. Radical ideologies will spread and grow further in failed states.



Governments in developed countries will have to focus on ensuring the survival and prosperity of their populations, while overlooking the needs of those with fewer resources. Wealthy countries affected by the pandemic will use their significant resources to develop vaccines; availability, however, will be limited. There will be an

exponential increase in global demand for vaccines that cannot be satisfied through increased production. However, the increase in demand for vaccines will be relatively short lived, while the demand for palliative medicines and clean food and water will last much longer. Organised crime will fill the void to their profit and empowerment. Interstate rivalry will increase as states struggle for medicines in the attempt to protect and defend their populations. The risk for interstate war will increase and may reach unprecedented levels.



IMPACT ON IDENTIFIED RISK CONDITIONS

FUTURE 1 – DARK SIDE OF EXCLUSIVITY: A pandemic on the scale of the 1918 Spanish influenza outbreak will exacerbate internal instability in already weak states and likely lead to a significant increase in the number of failed states. Rich and stable countries will focus their attention and concentrate resources on alleviating the effects of the pandemic on their own populations, and will likely reduce stabilisation efforts abroad. Critical infrastructures located abroad in areas heavily affected by the pandemic will require increased protection to ensure the parent country has continued access to those resources. This will be especially true in failed or failing states that have suffered a very high number of casualties. Organizations based on radical ideologies will exploit the pandemic by promising to care for the sick, and will be rewarded by a surge in followers. Individual national health care systems will be incapable of dealing with the situation or providing sufficient vaccines or palliative care, likely resulting in massive uncontrolled migration.

FUTURE 2 – DECEPTIVE STABILITY: A large-scale pandemic will further increase the preoccupation with internal affairs in many developed nations. Due to the immense demand for medicines and health care, legislatures will be pressed to shift more resources towards the prevention and mitigation of future pandemics, which will put more pressure on defence budgets. The market for vaccines will become very attractive to organised crime. In addition, the short notice scarcity of many vaccines in a global high demand situation will lead to significant internal and external tension.

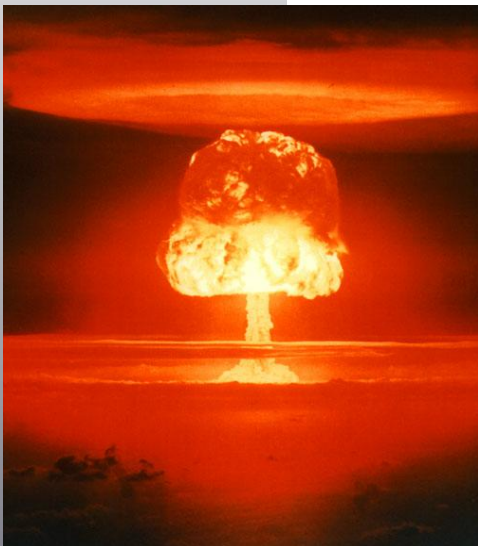
FUTURE 3 – CLASH OF MODERNITIES: The complexity and interconnectivity of infrastructure (health, transport, energy, security, etc.) will lessen the impact of a pandemic in nations that have an integrated system of advanced healthcare. The loss of employees and resources will have a significant negative impact on a state's economy, and increase the likelihood of civil unrest. In such a chaotic situation, large segments of society may shift loyalties



from the state to a non-state actor capable of supplying vaccines and basic life support

FUTURE 4 – NEW POWER POLITICS: With large populations affected by the pandemic, there will be a sharply increased demand for vaccines on the global market. Powerful nations will use all instruments of power to ensure survival of the state’s population. Interstate rivalry will increase, and existing alliances will suffer from and have to respond to increased competition. The security environment will become more volatile as nations consume existing resources to mitigate the negative effects of the pandemic on individual economies. The risk of interstate war will rise as friction between key states increases, heightening old rivalries and exacerbating cultural differences.

WMD/E ATTACK ON A CRITICAL NODE: There are many critical logistic nodes within the Alliance and a WMD/E attack on any of them would have significant impact on the Alliance. The selected strategic shock, however, describes the situation if a major European city is targeted. A WMD/E attack destroying a major European city will cause extreme environmental degradation with immense consequences. Mitigating the effects of a single WMD will exceed one nation’s capability and require multinational assistance. The WMD attack will have significant negative economic effects and the community of European states will take decades to recover. Synchronised WMD attacks on several major cities throughout the Alliance will cause an economic and social crisis of unprecedented scale. Membership in a credible defence and/or security organisation will be seen as increasingly important. On the one hand, the Alliance will be expected to show resolve and wisdom in responding to the attack, and efficient and successful action will increase Alliance cohesion. On the other hand,



failure to respond or a weak response will break the bonds and splinter the Alliance. Obviously, technical preparations, deterrence and defensive regimes, consequence management capabilities, and strong Alliance ethical foundations will be essential factors.

IMPACT ON IDENTIFIED RISK CONDITIONS

FUTURE 1 – DARK SIDE OF EXCLUSIVITY: A WMD attack will destroy a major European logistical hub and surrounding area. Internal migration and intense pressures on the health care system stress societal infrastructure beyond the breaking point. Europe will recover, but in the aftermath the radical actors behind the attack will have earned a strategic victory which will motivate them and increase the number of recruits joining those radical groups.

FUTURE 2 – DECEPTIVE STABILITY: In Future 2 a WMD attack is a logical consequence of the strategic inattention and overemphasis on internal affairs. The likely public demand for an adequate response to the attack will lead to a rejection of current government policies. The importance of being a member of a credible Alliance will return to the agenda and likely lead to increased efforts to enhance the ability of the Alliance to protect and defend its members. Even though the economic impact of the attack will be immense, a single WMD attack will be insufficient to destroy Europe. The developed nations, led by the Alliance, will combine all available resources to speed recovery and increase security measures at an unprecedented level

FUTURE 3 – CLASH OF MODERNITIES: A single critical blow to a major alliance seaport will significantly harm regional economies due to their economic complexity and interdependence. Reduced civil liberties and an increasingly invasive security force will be a consequence of the recovery. Determining the identification and location of specific perpetrators will be a very sensitive and difficult task, making effective retaliation extremely problematic. The nation under attack in most cases will not have sufficient military forces for retribution by itself, and will make a strong demand for an



Article 5 response by the Alliance. Failure to respond rapidly and appropriately will split the Alliance.

FUTURE 4 – NEW POWER POLITICS: In case of a major European seaport being targeted, the impact of the attack will change the balance of power. European power will decrease in the short term, but a measured retaliatory response and a comprehensive recovery plan supported by a unified Alliance will in the long term strengthen the region and the Alliance.



Chapter 3

Security Implications from Future Risks

SOURCES OF THREAT

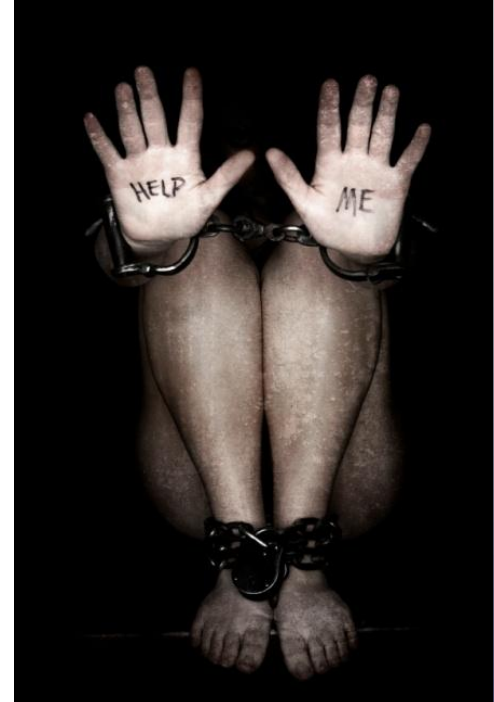
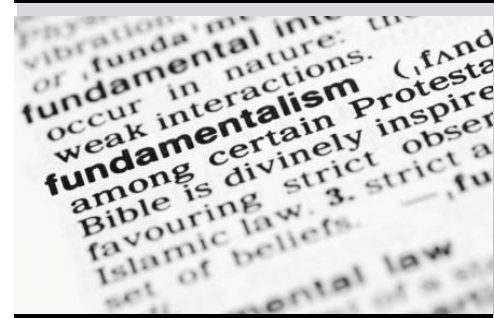
The Risk Conditions discussed in Chapter 2 are most relevant when linked with a corresponding Source of Threat. During the workshops and roundtables, the Sources of Threat were grouped into six categories:

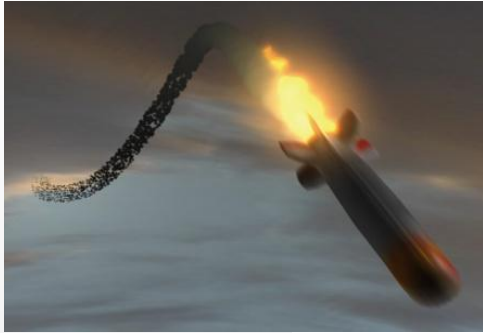
1. **SUPER-EMPOWERED INDIVIDUALS:** individuals who have overcome constraints, conventions, and rules to wield unique political, economic, intellectual, or cultural influence over people and events.²
2. **EXTREMIST NON-STATE ACTORS:** non-sovereign entities expressing extremist values and ideas that exercise significant economic, political, or social power and influence at a national, and in some cases international, level.³
3. **ORGANISED CRIME:** a structured group of three or more persons, existing for a period of time, who act in concert with the aim of committing serious crimes or offenses in order to obtain, directly or indirectly, a financial or other material benefit.⁴

² United States National Intelligence Council Conference Report, "Nonstate Actors: Impact on International Relations and Implications for the United States", August 2007.

³ United States National Intelligence Council Conference Report, "Nonstate Actors: Impact on International Relations and Implications for the United States", August 2007.

⁴ "A Growing Threat to Human Security and Human Rights: Transnational Organised Crime", NATO Defence College 7 December 2007.





4. **ROGUE STATES:** states that act without respect for other states or global norms and rules.



5. **CONFRONTATIONAL POWERS:** those powers that are quick to resort to force or threaten the use of force disproportionately to what is at stake and how it affects their vital interests.⁵



6. **NATURE:** the manner in which the physical world exists and changes of its own accord, such as weather and geology, and the physical forces that shape the world.

⁵ Frankel, Benjamin. *Realism: Restatements and Renewal*. New York: Frank Cass & Co. Ltd, 1996, p. 312.



THREATENING ACTIONS/EVENTS

From the Sources of Threat, we can project Threatening Actions or Events that might emerge from an entity that possesses the will as well as the capability to harm or violate the *people, territorial integrity* or *values and ideas* of the state. Note, 'Events' also cover natural or man-made environmental disasters. An aggregated list is presented below in Figure 4.

- | | |
|--|---|
| <ul style="list-style-type: none"> • DISRUPTION OF ACCESS TO CRITICAL RESOURCES • DISRUPTION OF FLOW OF VITAL RESOURCES • HUMAN TRAFFICKING • HUMAN SECURITY, ETHNIC CLEANSING, GENOCIDE • VIOLATION OF PERSONAL LIBERTIES • ATTACK ON COMPUTER NETWORKS • ATTACK ON POPULATION OR INFRASTRUCTURE • SUBVERSION • TERRORISM • VIOLATION OF TERRITORIAL INTEGRITY • NATURAL DISASTERS • ENVIRONMENTAL DEGRADATION • ATTACK WITH WMD/WME • CIVIL UNREST • CONTESTED POLITICAL LEGITIMACY • STRESS ON SOCIETAL STRUCTURES AND RULE OF LAW • ETHNIC TENSIONS • MASS WELFARE AND HEALTH STRESS • CHALLENGING VALUES & WORLDVIEWS • UNASSIMILATED POPULATION • DRUG TRAFFICKING • SPILL-OVER FROM UNANTICIPATED HUMANITARIAN CATASTROPHES & REGIONAL WARS | <ul style="list-style-type: none"> • RISE OF NEW AND UNKNOWN ADVERSARIES • UNDERMINING OF DEFENCE PREPAREDNESS • UNANTICIPATED LARGE SCALE TERRORIST ATTACKS • PIRACY • STRESS ON SOCIETAL STRUCTURES AND RULE OF LAW • ETHNIC TENSIONS • ABUSE OF PANOPTICAL SURVEILLANCE • ATTACK BY CIVIL LIBERTY GROUPS • ESPIONAGE • ATTACK THROUGH ELECTROMAGNETIC SPECTRUM • TENSION AND INSTABILITY WITHIN AND BETWEEN DIFFERENT POLITICAL SYSTEMS FUELLED BY CHALLENGING BELIEF SYSTEMS • INFORMATION OPERATIONS BY NETWORKS WITH STRONG NON-STATE IDENTITY • INCREASED RELIANCE ON PRIVATE MILITARY COMPANIES (PMC) • PEOPLE OF THE STATE INTERESTED IN RETURNING TO PREVIOUS SPHERE OF INFLUENCE OVER STATE'S WISHES • GLOBAL AND REGIONAL SECURITY INSTABILITY AND CHALLENGES TO STANDARDS OF INTERACTION • NATION STATE SWITCHING ALLIANCE |
|--|---|

Figure 4: Aggregate Threatening Actions/Events



SECURITY IMPLICATIONS

The MFP analyzed each of the four futures and associated Risk Conditions to find the Security Implications that would be generated when exploited by the Sources of Threat and the execution of a Threatening Action. The Security Implications test the fundamental questions of NATO interests: "So what?" and "Why should NATO care?" Overall, the study derived 33 Security Implications that correspond to the four futures portrayed in Figure 5.

DARK SIDE OF EXCLUSIVITY	DECEPTIVE STABILITY	CLASH OF MODERNITIES	NEW POWER POLITICS
<ul style="list-style-type: none"> • NEGATIVE IMPACT ON ECONOMY • ILLEGAL IMMIGRATION • HUMAN EXPLOITATION • ISSUE OF RIGHT/OBLIGATION TO INTERVENE • DANGER TO CITIZENS • VIOLATION OF TERRITORIAL INTEGRITY • LIBERAL-DEMOCRATIC VALUES AND IDEAS AT RISK • NEGATIVE IMPACT ON CRITICAL INFRASTRUCTURE • DIFFUSION OF NATIONAL IDENTITY • DESTABILISATION OF PREVIOUSLY STABLE GOVERNMENTS • INCREASING NUMBER OF POTENTIALLY HOSTILE STATES • CHALLENGES TO DOMINANT VALUES • UNDERMINING NATIONAL AND INTERNATIONAL LAW • POPULATION HOSTILITY AND UNREST • DOMESTIC DISORDER • DECISIONS BY MULTINATIONAL INDUSTRY CHALLENGES INTERNATIONAL ORDER • ASYMMETRIC SECURITY ENV 	<ul style="list-style-type: none"> • NEGATIVE IMPACT ON ECONOMY • DANGER TO CITIZENS • SOCIAL DISORDER • HUMAN EXPLOITATION • ORGANISED CRIME • VIOLATION OF TERRITORIAL INTEGRITY • LIBERAL-DEMOCRATIC VALUES AND IDEAS AT RISK • ISSUE OF RIGHT/OBLIGATION TO INTERVENE • ILLEGAL IMMIGRATION • NEGATIVE IMPACT ON CRITICAL INFRASTRUCTURE • REDUCED WILL TO USE MILITARY POWER • REDUCED SELF-DEFENCE POSTURE 	<ul style="list-style-type: none"> • NEGATIVE IMPACT ON CRITICAL INFRASTRUCTURE • OVEREMPHASISED SECURITY VERSUS PERSONAL LIBERTIES TENSION • DANGER TO CITIZENS • NEGATIVE IMPACT ON ECONOMY • LIBERAL-DEMOCRATIC VALUES AND IDEAS AT RISK • EXPLOITATION OF CORPORATE & STATE SECRETS • CHALLENGED STATE MONOPOLY ON THE USE OF FORCE (PMC) • ERODED STATE-SOCIETY COHESION • EXPLOITATION OF COMMUNICATION SYSTEMS • LOSS OF COMMUNICATIONS SYSTEMS • DECISIONS BY MULTINATIONAL INDUSTRIES CHALLENGE INTERNATIONAL ORDER • DISRUPTION OF VITAL RESOURCE FLOWS • UNCERTAIN ALLEGIANCE OF PMCs 	<ul style="list-style-type: none"> • LARGE-SCALE WARFARE • NEGATIVE IMPACT ON ECONOMY • NEGATIVE IMPACT ON CRITICAL INFRASTRUCTURE • DANGER TO CITIZENS • VIOLATION OF TERRITORIAL INTEGRITY • LIBERAL-DEMOCRATIC VALUES AND IDEAS AT RISK • ILLEGAL IMMIGRATION • HUMAN EXPLOITATION • ISSUE OF RIGHT/OBLIGATION TO INTERVENE • DEVASTATION CAUSED BY WMD/WME • REDUCED ABILITY OF INDIVIDUAL NATIONS OR IOs TO INFLUENCE OR MANAGE CRISIS/EVENTS • ASYMMETRIC SECURITY ENVIRONMENT • DISRUPTION OF VITAL RESOURCE FLOWS • ERODED COHESION OF EXISTING ALLIANCES

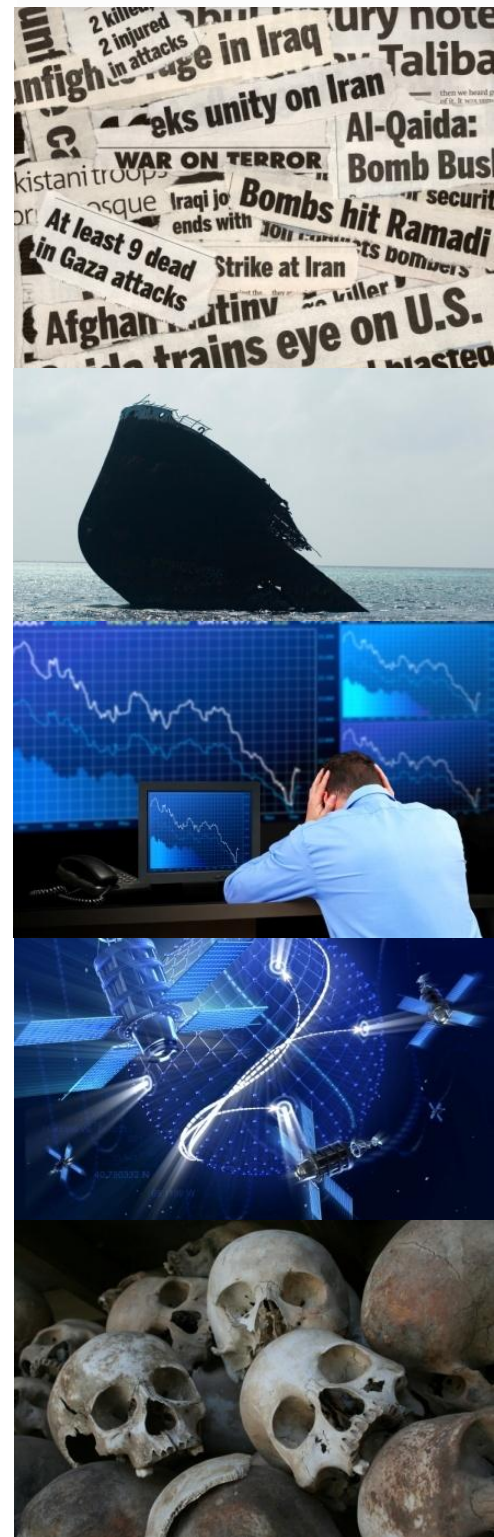
Figure 5: Security Implications



These Security Implications were presented and discussed at workshops and roundtables. Participants were asked to rate each Security Implication for both likelihood and impact on a scale of 1 to 4 (4 being the higher likelihood and greater impact). The resulting importance indicator for each Security Implication was determined by multiplying the average likelihood by the average impact. In addition to that, participants rated each Security Implication with regard to transformational difficulty, adding a third aspect to analysis. These were given scores for ranking and plurality, which were then summed to determine final scores. This resulted in the identification of the Top 5 Security Implications that resonated with the participating audience:

TOP SECURITY IMPLICATIONS

1. ASYMMETRIC SECURITY ENVIRONMENT
2. DISRUPTION OF VITAL RESOURCE FLOWS
3. NEGATIVE IMPACT ON ECONOMY
4. EXPLOITATION OF COMMUNICATION SYSTEMS
5. ISSUE OF RIGHT/OBLIGATION TO INTERVENE



SECURITY IMPLICATIONS INSIGHTS AND RESULTING CONSEQUENCES

Security implications point to four broad insights:

INSIGHT 1: THE EVOLVING NATURE OF RISKS AND THREATS TO VITAL INTERESTS WILL CHALLENGE THE STRATEGIC UNITY, AND SOLIDARITY WITHIN THE ALLIANCE AS WELL THE COMMON UNDERSTANDING OF WHAT CONSTITUTES AN ARTICLE 5 ATTACK.

Consequences

- In an increasingly complex security environment, the nature of risks and threats will continue to evolve, and so will the understanding of collective defence. This will complicate the Alliance's ability to reach a timely decision regarding when, where and how to respond.
- Alliance solidarity will be threatened by competing values and ideas from actors who promote alternatives to democracy, human rights, and the rule of law. Maintaining solidarity in the face of shared threats must remain the Alliance's highest priority.
- Risks and threats to the Alliance's territories, populations and forces will be hybrid in nature: an interconnected, unpredictable mix of traditional warfare, irregular warfare, terrorism and organised crime.
- The Alliance may face attacks that do not fit the traditional interpretation of Article 5. These attacks will have a direct effect on the Alliance through, for instance, massive communications disruption, pandemics, or cyber attacks on economic or social infrastructure. These attacks may emanate from states, or from non-state actors, who by definition are individuals and/or small groups that are difficult to identify, highly adaptable and willing to operate outside internationally accepted laws, values, norms and conventions.

- Some nations with different ideologies and worldviews will rise as economic, technological, and military powers. While a few will cooperate, others will reject or try to reshape the international system. These nations will generate competition for influence, values, and ideas in areas of strategic interest for the Alliance.
- Shifting demographics and corresponding value systems will make it much more difficult to achieve a unified response to diffuse and complex threats.
- Changing interpretations of national identity, softening allegiances, eroding social cohesion, and demographic shifts will influence member nations' perceptions of threat and their preparedness to use military force.
- Nations will face recruitment and sustainment problems, and substantially less national support for the defence sector as a whole.



INSIGHT 2: INCREASED INTERACTION WITH NON-NATO NATIONS AND OTHER INTERNATIONAL ACTORS WILL CREATE OPPORTUNITIES FOR THE ALLIANCE TO EXTEND ITS ROLE IN ENHANCING SECURITY AND STABILITY OUTSIDE TRADITIONAL AREAS OF ENGAGEMENT.

Consequences

- The Alliance will have to transform itself from a predominantly defence-based military alliance into a comprehensive political and military security community.
- The network of global governance designed to meet 21st century challenges will continuously adapt to demands that derive from the evolving threats discussed in previous insights. This includes the establishment of new governing bodies; adapting roles, responsibilities, and authorities within the present governing structure; and the corresponding changes in international law.
- The trends point to a multi-polar world where numerous actors will take an increasing role in global governance. Each of these changes will affect the Alliance. NATO will need to continuously review the governance landscape to ensure clarity in its supported/supporting roles; in its responsibilities related to defence/security, civil/military, and public/private partnerships; and in relationships with other nations.
- The Alliance may have to decide whether to act outside the traditional NATO roles due to growing competition in ungoverned areas such as the Arctic; denial of access to resources and the maritime, air, space, and cyberspace commons; and spill-over from regional conflicts where one or more of the actors have nuclear weapons. Likewise, NATO will be threatened by radical nations and non-state actors who are willing to use nuclear and tailored biological weapons, or are ready to create chaos to destabilize fragile governments.
- The destabilisation of, or absence of governance in, strategically significant areas may require NATO to

intervene to protect vital Alliance interests or avoid further regional instability; mitigate the proliferation of WMD/E; prevent the disruption of vital resources; and address large-scale migration, regional wars, ethnic cleansing or genocide.

- The legitimacy that underlies NATO actions will need to be reinforced to deter opportunistic actors through a clear and credible threat of military force.
- Alliance nations must forge new, or strengthen existing, relationships with government agencies -- notably law enforcement, border protection services, judiciaries, and public health authorities. This action will help form a comprehensive approach to crisis resolution.
- NATO will also need to adapt its internal organisational structures, authorities, composition and decision-making process to new conditions, and revise its policies for sharing information and cooperating with non-NATO bodies.
- The Alliance must strengthen its ability to fulfil its mandate in increasingly complex crisis areas, such as hybrid warfare and support to humanitarian relief operations. NATO will increasingly find itself working alongside various international organisations in an effort to establish a safe and secure environment.
- The Alliance needs a comprehensive partnership policy that will engage its full expertise in the fields of Security Sector Reform (SSR), Education, Training, and Exercises, to increase cultural awareness and improve interoperability through the use of the NATO education and training centres.
- The Alliance will need to clarify its supported/supporting roles and responsibilities as it finds enduring solutions in failed states, i.e., institution-building, security assistance, police training, security for ungoverned areas, infrastructure and energy security, non-proliferation of WMD, and associated consequence management. Additionally, the delineation of roles, in cooperation with the EU, will be essential when addressing security threats involving hybrid warfare.



INSIGHT 3: DETERMINED ADVERSARIES ENABLED BY READILY AVAILABLE TECHNOLOGIES WILL ATTACK ALLIANCE VULNERABILITIES IN UNEXPECTED WAYS REQUIRING THE ALLIANCE TO CONSIDER CHANGES IN THE CHARACTER OF MILITARY OPERATIONS AND WARFARE.

Consequences

- The ready availability of advanced technology and WMD/E proliferation will enable adversaries like never before. Alliance nations must therefore maintain and secure their technological advantage.
- The enemy will focus his efforts against perceived Alliance weaknesses, which will magnify and compound uncertainty, ambiguity and surprise. The combination of information networks, miniaturisation, robotics, swarming, precision, and nanotechnology will pose new and unexpected challenges to conventional warfare. Easily developed, concealed, and transported disruptive and destructive capabilities will render individuals and small groups more effective and lethal.
- Adversaries can and will take the initiative, in any domain, to attack Alliance populations, territories, or interests. Threats will come through a hybrid form of warfare, in which conventional, irregular, and criminal capabilities are integrated operationally and tactically at the lowest level possible in urban environments, and in locations where the Alliance lacks established support systems.
- NATO's military posture must not be geared to a single preclusive vision or doctrine of future warfare. The Alliance will need to build sufficient responsive and sustainable conventional and nuclear capabilities to deter and defeat those who threaten Alliance security. These capabilities will need to be flexible and adaptable in the face of surprise and the threat of hybrid warfare.
- Future risks and threats demand appropriate new concepts and doctrines from the Alliance. Areas for study include maritime security, the use of space and the protection of

space assets, and the continued expansion of cyber defence capabilities.

- The nature of future operations will emphasise the importance of multinational, joint, and expeditionary capabilities able to succeed in extreme landscapes and climates. As such, efficient military operations will require flexible, adaptive, deployable forces with a clear understanding of how enemies may use technology against them, and the ethical and moral grounding to work in populated settings.
- NATO's level of ambition must ensure the Alliance's ability to conduct the full range of its operations and missions concurrently, from collective defence and a greater number of demanding stabilisation and reconstruction operations to large-scale high-intensity operations.
- Success in the future demands that the Alliance educate and train its forces, especially the military and civilian leadership to be knowledgeable and capable of strategic foresight, and well-grounded in the history of past, present, and future warfare.



INSIGHT 4: INCREASED INTERACTION WITH OTHER INTERNATIONAL ACTORS WILL PROVIDE NATO THE OPPORTUNITY TO POSITIVELY SHAPE AND INFLUENCE IDEAS, VALUES AND EVENTS IN A GLOBALISED WORLD.

Consequences

- The Alliance must ensure that it can anticipate, sense, and shape the security environment; achieve a common understanding of perceived risks and threats; and effectively share these perceptions with the Alliance populations.
- A credible defence posture and corresponding military capabilities will continue to be imperative. The lack of a well-defined and unifying adversary, and increased pressure from domestic non-security concerns, can weaken concern for and attention to matters of defence.
- Enhanced strategic communications, both internal and external to the Alliance, will promote public understanding of the Alliance's positive contributions to peace and stability. They are necessary to ensure that NATO can maintain a credible defence posture with the proper mix of military capabilities.
- NATO will need to communicate at the strategic level both the inter-relationship between security and defence, and NATO's role in both Alliance and non-Alliance governance bodies.

MAKING CHOICES – MITIGATION OF SECURITY IMPLICATIONS

One of the clear messages of this Multiple Futures study is that NATO's security environment will continue to evolve. It will be subject to a variety of unforeseeable and dynamic political, social, technological, and military developments. This evolution will not occur in a vacuum. Conversely, these developments will present



NATO with unprecedented opportunities: to positively influence ideas, values, and events in a globalised world; while at the same time it maintains and improves its agility and flexibility to respond to unpredictable and complex challenges.

The Alliance must consider the consequences of these challenges as it works toward a consensus on how to redefine many of the assumptions and strategies that NATO has been operating under for the last decade. These consequences highlight several key issues that need to be considered in the ongoing strategic dialogue:

- There is a strong need for a clear, pragmatic discussion and debate regarding NATO's future roles, missions and direction.
- The Alliance will maintain collective defence at its core; however, the nature of the challenges that could prompt an Article 5 response will continue to evolve.
- NATO must develop new concepts to deal with the hybrid threats that increasingly will dominate the operational environment.
- A Comprehensive Approach will form the foundation for NATO's success. Only improved partnerships can enable the Alliance to meet the complex threats of a rapidly changing security landscape.
- The Alliance will have to transform itself from a predominantly defence-based military Alliance into a comprehensive political and military security community.

The Alliance has to determine to what extent it is willing to broaden its range of tasks and its cooperation with other international actors. How the Alliance evolves will have a fundamental impact on its nature and role in 2030. Functionally, NATO will need to evaluate its roles in both defence and security, and create balanced tools to deal with both. The endeavour will at times be contentious and worrisome; it is nevertheless paramount that the leadership of the Alliance find this balance and adjust the supporting structure and processes accordingly. While the future may create new



responsibilities, the Alliance must be careful not to dilute its ability to carry out both functions effectively. Simultaneously, Nations need to understand that Military Implications correspond to and flow from the mitigation of the Security Implications. How the military forces of the Alliance prepare for these challenges is addressed in the next chapter.



Chapter 4

Military Implications Preparing Alliance Military Forces for 2030

MILITARY IMPLICATIONS

The final step in the futures process spotlights Military Implications by asking the overarching question: “How and for what should the militaries of the Alliance prepare in the future?” These Implications result directly from the Risk Conditions and Security Implications discussed in Chapter 3.

Twenty-six Military Implications were deduced and further refined using the analytic principles of the ‘Five Operational Functions’: Command, Sense, Act, Shield, and Sustain (CSASS)⁶. Twenty-one workshops helped develop and analyse the Implications, with the goal to better understand each Implication and its relative effects on the Alliance. Specifically, the process clarified what may need to change militarily in the Alliance as we look towards 2030, as well as potential new areas of engagement that would have particular consequence for military operations. Figure 6 shows how the Military Implications connect to the four futures.



⁶ Canadian Army Operational Functions

DARK SIDE OF EXCLUSIVITY	DECEPTIVE STABILITY	CLASH OF MODERNITIES	NEW POWER POLITICS
<ul style="list-style-type: none"> • CONDUCT DETERRENCE OPERATIONS • CONDUCT EXPEDITIONARY OPERATIONS TO PROTECT LINES OF COMMUNICATIONS • PREVENT THE DISRUPTION OF FLOW OF VITAL RESOURCES • SUPPORT COUNTER-PROLIFERATION EFFORTS • PROTECT CRITICAL INFRASTRUCTURE • CONDUCT COLLECTIVE FULL SPECTRUM DEFENCE OPERATIONS • CONDUCT EXP OPS IN SUPPORT OF HUMANITARIAN ASSISTANCE • PROVIDE AID TO CIVIL AUTHORITIES • ENHANCE CIVIL-MILITARY OPERATIONS • ADDRESS THE PRESENCE OF PRIVATE MILITARY COMPANIES • PROTECT AGAINST ASYMMETRIC THREATS • CONDUCT MILITARY OPERATIONS AGAINST NON-STATE ACTORS • CONDUCT COHERENT INFORMATION OPERATIONS • CONDUCT OPERATIONS IN COHERENT COMPREHENSIVE FRAMEWORK • CLARIFYING ROE IN ALLIANCE OPERATIONS • INTERVENE TO PREVENT ESCALATION (FORCE PROJECTION) • PROVIDE MILITARY LOGISTIC SUPPORT TO HUMANITARIAN ACTIVITIES • TRAIN INDIGENOUS FORCES • SUPPORT & COOPERATE WITH MULTIPLE ACTORS IN MULTI-NATIONAL RESPONSE EFFORTS TO NATURAL DISASTERS 	<ul style="list-style-type: none"> • IDENTIFY EMERGING FOREIGN SECURITY THREATS • PROVIDE AID TO CIVIL AUTHORITIES • CONDUCT COLLECTIVE FULL SPECTRUM DEFENCE OPERATIONS • CONDUCT DETERRENCE OPERATIONS • CONDUCT EXP OPS IN SUPPORT OF HUMANITARIAN ASSISTANCE • SUPPORT SHAPING OF SECURITY ENVIRONMENT • ADAPT RECRUITMENT PROCESSES • ADEQUATELY ADDRESS THE USE OF NON-LETHAL FORCE • SUPPORT & COOPERATE WITH MULTIPLE ACTORS IN MULTI-NATIONAL RESPONSE EFFORTS TO NATURAL DISASTERS • PROVIDE MILITARY LOGISTIC SUPPORT TO HUMANITARIAN ACTIVITIES 	<ul style="list-style-type: none"> • PROTECT C4 SYSTEMS AND MILITARY NETWORKS • PREVENT THE DISRUPTION OF FLOW OF VITAL RESOURCES • CONDUCT EXP OPS TO PROTECT LINES OF COMMUNICATIONS • PROTECT CRITICAL INFRASTRUCTURE • CONDUCT DETERRENCE OPERATIONS • CONDUCT COLLECTIVE FULL SPECTRUM DEFENCE OPERATIONS • MITIGATE NEGATIVE IMPACT OF DISRUPTIVE TECHNOLOGIES • PROTECT AGAINST ASYMMETRIC THREATS • PROTECT ELECTROMAGNETIC SPECTRUM • TRAIN INDIGENOUS FORCES • ADEQUATELY ADDRESS THE PRESENCE OF PRIVATE MILITARY COMPANIES • CONDUCT OPERATIONS IN A COHERENT COMPREHENSIVE FRAMEWORK 	<ul style="list-style-type: none"> • CONDUCT DETERRENCE OPERATIONS • PROTECT CRITICAL INFRASTRUCTURE • SUPPORT COUNTER-PROLIFERATION EFFORTS • CONDUCT COLLECTIVE FULL SPECTRUM DEFENCE OPERATIONS • CONDUCT EXP OPS IN SUPPORT OF HUMANITARIAN ASSISTANCE • CONDUCT EXP OPS TO PROTECT LINES OF COMMUNICATIONS • PREVENT THE DISRUPTION OF FLOW OF VITAL RESOURCES • PROTECT C4 SYSTEMS AND MILITARY NETWORKS • MITIGATE NEGATIVE IMPACT OF DISRUPTIVE TECHNOLOGIES • PROTECT ELECTROMAGNETIC SPECTRUM • PROTECT AGAINST ASYMMETRIC THREATS • TRAIN INDIGENOUS FORCES • CONDUCT OPERATIONS IN A COHERENT COMPREHENSIVE FRAMEWORK • INTERVENE TO PREVENT ESCALATION (FORCE PROJECTION) • PROVIDE MILITARY LOGISTIC SUPPORT TO HUMANITARIAN ACTIVITIES

Figure 6: Military Implications



At the workshops, quantitative data were collected to support analysis of the individual implications. Participants were asked to rate each Military Implication for likelihood and impact on a scale of 1 to 4 (4 being the higher likelihood and greater impact). The resulting indicator for each Implication was determined by multiplying the average likelihood by the average impact. In addition to that, participants rated each Implication with regards to transformational difficulty, adding a third variable to the analysis. These were given scores for ranking and plurality, which were then summed to determine final scores, resulting in the identification of the Top 5 Military Implications that resonated most strongly with the audience:

TOP MILITARY IMPLICATIONS

1. PROTECT AGAINST ASYMMETRIC THREATS
2. CONDUCT MILITARY OPERATIONS AGAINST NON-STATE ACTORS
3. PROTECT C₄ SYSTEMS AND MILITARY NETWORKS
4. PREVENT THE DISRUPTION AND FLOW OF VITAL RESOURCES
5. ENHANCE CIVIL-MILITARY COOPERATION

The primary concern among all national subject-matter-experts who participated in the MFP was protecting the populations of the Alliance, especially their interests and values. Future adversaries intent on destroying our societies and values will be innovative in exploiting advanced technologies as they confront the Alliance in ways that will seem asymmetric to us. In response, the Alliance will have to adjust quickly to the specific nature of these asymmetric attacks.

The ability of the Alliance to conduct military operations against non-state actors was a significant concern. The ability of adversaries to co-opt non-combatants into conducting attacks will make it



extremely difficult for militaries to distinguish enemy combatants, especially on urban battlefields.



Significant advances in technology will cut both ways, increasing the capabilities of the Alliance, while also improving the enemy's ability to attack NATO systems and networks. NATO forces will have to operate in every medium – air, land, sea, space, and cyberspace– to defend command, control, communications, and computer (C4) systems and networks. Protecting these networks ranked consistently high as a priority amongst the participants of our workshops.



Another significant concern was how to prevent the disruption of the flow of resources across the commons. The continuous movement of indispensable resources such as oil, food, water, and minerals is vital to the basics of life and commerce. Military assets may be called upon for ISR to support situational awareness or to deploy (by air, land and sea) to areas where the flow of these vital resources is compromised as a result of natural disaster, instability, or sabotage.



Rounding out the Top 5 was a call to enhance civil-military cooperation. International and non-governmental organisations will in the coming years increase their level of involvement in areas of tension, crisis and conflict. Accordingly, the military will be required to increase its civil-military cooperation (CIMIC) efforts, especially its ability to plan and liaison/coordinate with IOs and NGOs at the operational level.



MILITARY IMPLICATIONS (TOP 5) ANALYSIS

From the analysis, it is clear that the distinctions between civil and military operations, types of warfare, and organisational structure need to be better defined and organised to create the operational flexibility required of our forces in the future operating environment. Figure 7 below highlights new areas of potential Alliance engagement with military consequences.

MILITARY IMPLICATIONS	ANALYSIS
<i>PROTECT AGAINST ASYMMETRIC THREATS</i>	<ul style="list-style-type: none"> • Develop adaptable command structures that can quickly respond to a variety of modes of warfare and support civilian authorities • Anticipate vulnerabilities and potential threats through continuous, effective intelligence information-sharing with all who may be called on to act • Promote awareness of potential threats among populations, and pro-active measures through training and experimentation • Be prepared to both support and lead according to the magnitude of attacks and the effectiveness of civilian responses • Prepare responses that are unrestricted across the full spectrum of warfare and stability operations.
<i>CONDUCT MILITARY OPERATIONS AGAINST NON-STATE ACTORS</i>	<ul style="list-style-type: none"> • Develop a well defined Commanders' intent and clearly established common Rules of Engagement (ROE) for all forces involved • Interact with local population to gain cultural and situational awareness and build/maintain support for the mission
<i>PROTECT C4 SYSTEMS AND NETWORKS</i>	<ul style="list-style-type: none"> • Develop a strategic concept for Cyber Defence • Leverage technological advances to both develop and improve capabilities to detect, identify, locate & engage source(s) of cyber attacks • Develop offensive cyber capabilities (Counter-Cyber Attack) • Avoid development or reliance on single point of failure systems and networks.
<i>PREVENT DISRUPTIONS TO THE FLOW OF VITAL RESOURCES</i>	<ul style="list-style-type: none"> • Identify resources and corresponding infrastructures that are deemed vital to the Alliance and its member nations • Develop a concept and legal framework to ensure the Alliance has the ability and resources to respond to threats aimed at preventing the flow of vital resources. The location and type of resources and infrastructure will be the key drivers that define needed capabilities • Establish communication and coordination with civil authorities to assist in crisis planning if access to resources has been disturbed.
<i>ENHANCE CIVIL-MILITARY COOPERATION</i>	<ul style="list-style-type: none"> • Prepare for increased involvement of NGOs in areas of tension, crisis and conflict • Develop framework for comprehensive planning and liaison with NGOs

Figure 7: Military Implications Analysis



As mentioned previously, the Military Implications were deduced from the individual Security Implications, where they had a direct and traceable link to the four insights and conclusions. Accordingly, there were continuity and coherence between a political debate on Security Implications and a strategic military debate on Military Implications. The insights and consequences of the interim report answered the “so what?” question for Security Implications, and formed a basis for specific actionable political issues. To elicit the best military advice and support subsequent discussions regarding NATO, the Military Implications were segregated into seven focus areas in which NATO may have a role.

MILITARY IMPLICATIONS FOCUS AREAS

1. Adapting to the Demands of Hybrid Threats. Throughout history, the “paradox of war” reveals that thinking adversaries avoid strengths and gravitate towards areas of perceived weaknesses. In this tradition, enemies will avoid conventional military operations in which they are unprepared to confront NATO forces. Instead they will attack in ways NATO might consider irregular or asymmetric, but are anything but asymmetric to them. The security environment will include conventional, irregular, terrorist and criminal elements in mixed modes of operations. Adversaries show no respect for distinctions drawn between civil and military operations, and exploit them to threaten the Alliance’s territories, populations and forces. The Alliance needs to develop those training, doctrine, education and capabilities necessary to confront an opponent that uses these elements at the strategic, operational and tactical levels.

2. Operating with Others and Building Institutions. Cooperation and collaboration with non-NATO nations and other international actors are necessary to create opportunities for the Alliance to enhance security and stability. Focusing on Security Sector Reform as a tool of conflict prevention will strengthen cultural awareness,

and improve interoperability. Over time, doing so may decrease the need for military intervention.

3. Conflict Prevention, Resolution and Consequence Management. Nations must establish and maintain relationships by encouraging government agencies to develop a comprehensive approach to conflict management. At the international level, the Alliance has to fulfil its mandate in increasingly complex areas of conflict alongside a varied mix of international actors. It can succeed only by forming strategic partnerships that are transparent, informed, and mutually respected and understood.

4. Counter Proliferation. Alienated state and non-state actors will increasingly create, sell, acquire, and use WMD/WME. In addition, the failure (or structural weakness) of a nuclear state will also pose a significant risk to Alliance security.

5. Expeditionary and Combat Capability in Austere Environments. The nature of future operations will emphasize the ability of multinational, joint and expeditionary forces and capabilities to succeed in demanding geographical and climatic environments.

6. Strategic Communications and Winning the Battle of the Narrative. The continuous demands for information will require that the Alliance compete vigorously, both nationally and internationally, to communicate effectively and build support for its core mission, purpose and operations.

7. Organisational and Force Development Issues. Future risks and threats will challenge the Alliance's ability to achieve strategic unity, maintain solidarity, and reach a common understanding of collective defence and the threats that could trigger an Article 5 response. Shifting demographics within the Alliance and differing perceptions of threat and security will influence national force generation, readiness and capabilities. The Alliance therefore needs



to adapt its internal organisational structures and decision-making processes to meet these realities.

The executable elements of the Military Implications are reflected in actionable military issues for each of the focus areas. The focus areas indicate relationships between groups of Military Implications. They are not prioritised as those decisions are left to Nations. With this in mind, these areas are classified as either potential roles for NATO in 2030, or as essential enablers (Figure 8).

POTENTIAL ROLES FOR NATO	ESSENTIAL ENABLERS
<ul style="list-style-type: none"> • ADAPTING TO THE DEMANDS OF HYBRID THREATS • OPERATING WITH OTHERS & BUILDING INSTITUTIONS • CONFLICT PREVENTION, RESOLUTION AND CONSEQUENCE MANAGEMENT • COUNTER PROLIFERATION • EXPEDITIONARY AND COMBAT CAPABILITY IN AUSTERE ENVIRONMENTS 	<ul style="list-style-type: none"> • STRATEGIC COMMUNICATIONS AND WINNING THE BATTLE OF THE NARRATIVE • ORGANISATIONAL AND FORCE DEVELOPMENT ISSUES

Figure 8: Military Implications Focus Areas

The potential roles are those areas in the future which the Alliance must commit to action by either establishing a new role or adapting an existing one. With such a commitment, the essential enablers help to define the manner in which these roles should be supported



via internal and external communication, and through organisations that improve the effectiveness of the Alliance.

As noted in the Insights from Chapter 3, the future security environment will provide numerous opportunities for NATO and will place greater demands on the military capabilities of the Alliance. Decisions on future roles and missions largely will determine the size and types of forces, capabilities, and command and control structures needed by NATO. Doing so will ensure that it is properly organised to adapt to the demands of hybrid threats, while also maintaining its conventional and nuclear capability. The following chapter expands on the seven focus areas in further detail, and provides findings and recommendations to support the strategic dialogue on how NATO needs to operate and partner in the future.



Chapter 5

Findings and Recommendations

The MFP is meant to inform and support strategic dialogue on challenges the Alliance will face and the corresponding security and military implications. It does not predict the future or presume political decisions that will determine future Alliance roles and required capabilities. Rather, it provides Alliance leaders with a broad set of ideas and information with which to plan for the future security environment.

The basis for the strategic dialogue is the fundamental question: *What are the future threats and challenges that could pose risk to the*



interests, values and populations of the Alliance? In responding to this question, we created an analytical framework, developed four futures, and deduced 33 Security and 26 Military Implications. The analytical framework stands as an enduring product of the MFP. It is simple enough to understand and use, yet sophisticated enough to capture the complexity of the task. As the drivers of change evolve, and the impact of

events and trends become better known, the framework can be used to revisit the multiple futures and reassess implications for the Alliance.

The implications deduced for 2030 will support both political and military debates regarding the future of the Alliance and how to prepare it for forthcoming challenges. The analysis of the Security



Implications yielded broad insights as well as detailed recommendations. These recommendations are meant to stimulate the ongoing debate, while recognizing that capability-related decisions result from political guidance and reside within the agreed defence planning processes.

The future roles and missions that NATO adopts will largely determine the nature of its force structure and command and control infrastructure. These must be configured to assure that NATO will be ready to confront hybrid threats while maintaining its nuclear and conventional strengths.

From the Insights we derive consequences, followed by recommendations for changes in concepts and doctrine as well as capability enhancements. The recommendations constitute SACT's military advice, which can be used to inform strategic dialogue, policy considerations, and subsequent guidance to Alliance planning disciplines.

THE EVOLVING NATURE OF RISKS AND THREATS

The security agenda of nations will continue to include the consequences of failed states, poverty, famine and expulsion; amidst this turmoil, however, new state and non-state adversaries will emerge, empowered by the rapid development and incorporation of easily accessible and innovative technologies. The Alliance will face rivals for strategic influence, values and ideas; its vulnerabilities will be exploited on and beyond Alliance territory; and its populations and forces attacked in unexpected ways. The common understanding of what constitutes an attack on the Alliance and how the Alliance responds, will be questioned and potentially altered. In this environment, the Alliance must maintain collective defence at its core, acknowledging that challenges that prompt a response under Article 5 will continue to evolve.



Maintaining strategic unity, solidarity, commitment and a strong transatlantic link in the face of a range of risks and threats must remain the Alliance's highest priority. This understanding will impact directly the priorities regarding defence planning, capability development, resource allocation, burden-sharing, operational engagement, and the sharing of risk.

The indivisibility of Alliance security and the ability to support each other fully will remain both the glue that binds the Alliance, and the fundamental precondition of collective defence. Fulfilling this commitment requires the development and maintenance of necessary capabilities and a sovereign decision to make them available when called upon. This commitment remains the cornerstone of NATO's defence planning process and the foundation upon which Alliance solidarity is built.

The collective boundaries of the Alliance are well defined by the external borders of Allied nations. The maritime spaces surrounding these borders and encompassing the vital economic interests of the Alliance are vast; ranging from the Arctic Ocean in the North to the coastal seas of Africa in the South and from the Pacific Ocean in the West and through the Atlantic Ocean and Mediterranean to the Black Sea. Maintaining this awareness among Allies strengthens the understanding of the challenges each region poses.

It is more likely the Alliance will be threatened by instability and the weakness of others, than by invading conventional forces. Interstate conflicts in different regions of the world will remain likely: while they may not threaten NATO directly, the consequences of such conflicts may have a significant impact on the security of the Alliance.



INTERACTION WITH NON-NATO NATIONS AND OTHER INTERNATIONAL ACTORS

The trends point to an international system of governance at a crossroads. In this evolving world, numerous actors will take a role in global governance. Each of these changes will affect the Alliance, and it will need to review continuously its role in international governance. Doing so will ensure clarity concerning the roles of NATO, and its responsibilities related to defence/security, civil/military relations, public/private partnerships, and relationships with other nations.

The importance of other international actors will increase, and NATO's members will have to rely heavily on the successful implementation of a comprehensive, cooperative approach to security operations. Increasingly, NATO will be responsible for the planning and execution of operations alongside other international organisations. An early decision concerning with whom and under what arrangements the Alliance will cooperate in the global environment could ease the burden of maintaining international security. Strategic partnerships with other international organisations, most notably the EU and UN, could help optimize the use of resources and capabilities. The use of Security Sector Reform, enhanced training, and exercise tools to strengthen defence reforms could potentially reduce the need to deploy military forces.

The Alliance may have to decide whether to act outside the traditional Alliance areas of engagement, in response to growing resource competition; the increased exploitation of space, cyberspace, and the maritime commons; as well as the spill-over of regional conflicts. Threats to NATO may also stem from radical nations and non-state actors who are willing to use nuclear and biological weapons.

The common members of NATO and the EU have a single set of limited resources and capabilities, which allow for neither duplication nor institutional competition with regard to force generation and capability development. Interoperability,



transparency of information and decision-making will be crucial in the face of a common threat, as will common standards and definitions, the identification and elimination of gaps in capability development, cooperation on research and technology, and the development of mutually reinforcing capabilities.

ALLIANCE VULNERABILITIES AND CHANGES IN THE CHARACTER OF MILITARY OPERATIONS AND WARFARE

Adversaries will focus their efforts against perceived vulnerabilities within the Alliance. To prepare, the Alliance will need to face the emerging challenges associated with energy, cyberspace, space and maritime security, as well as regional instability and potential conflict in areas such as the Caucasus, the Greater Middle East, the Mediterranean and the High North. To succeed in a range of demanding landscapes and climates, future operations will emphasise the importance of multinational, joint and expeditionary capabilities.

In parallel, the combination of advanced networks, miniaturization, robotics, swarming, precision, and nanotechnology will pose new and unexpected challenges to conventional warfare. Individuals and small groups will be more mobile, lethal and effective using commercially developed, and easily concealed and transported, disruptive and destructive capabilities. Threats will come in hybrid form, as adversaries integrate conventional, irregular, terrorist, and criminal assets operationally and tactically at the lowest possible level. These threats will dominate urban environments and locations where the Alliance lacks established systems of support.

SHAPING AND INFLUENCING IDEAS, VALUES AND EVENTS IN A GLOBALISED WORLD

Advocating the values and ideas on which the Alliance is founded, defending basic human rights that grew out of the Enlightenment, and engaging in the battle of the narrative may be some of the most



effective tools to counter those who may oppose the Alliance. In a future of greater integration, cooperation and globalisation, the Alliance will have unprecedented opportunities to counter disruptive forces through its promotion of values and ideas that are respected widely.

The continuous demand for information will require that the Alliance compete vigorously, both nationally and internationally, to communicate effectively and build support for its core mission, purpose and operations. A strong understanding of the threat amongst Alliance populations and governments will be crucial to prevent substantial erosion of national support for the defence sector in general and national capability development in particular.

NATO will need to communicate effectively the inter-relationship between security and defence, which includes the role of NATO in relation to other governance bodies, both internal and external to the Alliance.

MILITARY IMPLICATIONS – FOCUS AREAS AND RECOMMENDATIONS

As noted in the Insights, the future security environment will both provide numerous opportunities for NATO and place greater demands on the military capabilities of the Alliance. Decisions on future roles and missions will have significant implications for the size and types of forces, capabilities and command and control structures needed to address effectively hybrid threats, while maintaining the conventional and nuclear prowess of NATO.

The Military Implications that derive from the Security Implications point to seven broad focus areas, each of which is followed in this Report by recommendations concerning changes in concepts and doctrine as well as capability enhancements. The recommendations reflect SACT's military advice, which the Alliance can use to inform the strategic dialogue, policy considerations, and subsequent guidance to Alliance planning disciplines.



ADAPTING TO THE DEMANDS OF HYBRID THREATS

Concepts and doctrine recommendations

- Enhance, and where required develop, both offensive and defensive concepts, strategies and legal frameworks to deter, respond to and counter an attack in ungoverned areas and in sensitive mission areas such as the space, cyberspace, maritime and information domains. Strengthen cooperation with partners and other international organisations to protect critical infrastructure, and guarantee the flow of vital resources, including in the electromagnetic spectrum.
- Re-evaluate the ability of the Alliance to collect, share and fuse all sources of intelligence among nations, international organisations, and partners in order to detect, track, identify, target and engage threats.
- Develop a comprehensive concept and strategy that strengthens the Alliance's strategic partnership with industry and shortens the time that elapses between the emergence and use of a technological innovation.

Capability enhancement recommendations

- Develop a culture where leaders and capabilities are well suited for irregular warfare or the hybrid threat, while simultaneously maintaining NATO's conventional and nuclear competency. This is not an either/or proposition: forces must be flexible and adaptable enough to operate across the spectrum of conflict. Train forces to improvise on the battlefield to make up for any failure to anticipate the actions of a sophisticated adversary.
- Re-examine the combination of conventional and nuclear capabilities to ensure the Alliance can present a credible threat of force to deter and effectively respond to potential adversaries in the areas of space, cyberspace, land, sea and air. Deterrence should include the development, maintenance and adaptation of appropriate capabilities, and a regular show of force through exercises.

- Institutionalise a robust and effective lessons learned capability that effectively and responsively identifies and shares both lessons identified and lessons learned across the Alliance and with partners.
- Retain the technological advantage. Develop the ability to rapidly assess rapidly emerging technologies and their potential use against the Alliance. The development of capabilities to detect, identify, locate and engage sources of cyber attacks and for cyber counter-attack are necessary to assure access to the flow of critical information. Ensure C2 systems are agile, configurable and push decision making to the lowest appropriate level.
- Develop advanced Joint Intelligence, Surveillance and Reconnaissance (JISR) capabilities to protect the force. This will require improvements in human intelligence and the Alliance's ability to detect and engage over the horizon. Strengthen NATO's Network-Enabled Capabilities so that nations may better share information, enhance situational awareness and improve Alliance command and control down to the lowest tactical level.

OPERATING WITH OTHERS AND BUILDING INSTITUTIONS

Concepts and doctrine recommendations

- Establish a working group with other international actors to examine areas of cooperation and clarify roles. Plan for the exchange of liaison officers with government and international organisations to improve planning and execution, and minimise duplication of efforts and capabilities in stabilisation, reconstruction and nation-building.
- Implement fully the Comprehensive Approach. Significantly strengthen the areas of good governance by mentoring and advising other nations; conducting integrated civil-military relations; enhancing information-sharing procedures and practices; and improving role integration, comprehensive planning and operational support.



- Re-evaluate the Alliance's various partnership mechanisms to ensure that partners are more involved in NATO's defence policy initiatives, especially with regard to the Mediterranean Dialogue and Istanbul Cooperation Initiative, as well as in partnerships across the globe. Particular emphasis needs to be placed on the transformation of national security postures and the management of non-conventional threats and risks, interagency cooperation, coordination of reforms across national security systems and the development of relevant capabilities.
- Implement fully the UN-NATO Joint Declaration and expand cooperation between the two organisations at all levels. Strengthen UN-NATO planning, information sharing, lessons learned and early-warning cooperation.
- Use the lessons learned in Afghanistan and other engagements to develop an Alliance concept and doctrine on mentoring and advising indigenous forces in order to support the stabilisation, democratisation, and self-sufficiency of a nation's security sectors.
- Determine whether the Alliance would be willing and able to outsource aspects of security, stabilisation or reconstruction to private military companies (PMC), and if so, which aspects. This will require NATO to develop a comprehensive policy on the Alliance's engagement with and relationship to PMCs.

Capability enhancement recommendations

- Develop Alliance standards and procedures, along with national capabilities, to conduct security assistance missions and security sector reform, and to ensure cultural awareness among the forces of the Alliance.
- Enhance the ability to partner with non-military organisations; support the establishment of a military police force; enhance the CIMIC capability; and train and equip construction engineers and military medical personnel to provide public security, temporary



governance and essential services in a conflict zone. Expand situational awareness in order to reduce casualties, fratricide and the collateral damage that may occur as non-military organizations, including private military companies, engage in the same theatre of operations as NATO forces.

- Strengthen the strategic relationship between NATO, the EU, and the UN by adapting the communications, training and interoperability standards necessary to support a flexible command structure.
- Develop an ability to rapidly assess how opposing forces might leverage operational lessons learned, commercial off-the-shelf technology and emerging technologies to attack gaps and vulnerabilities within the Alliance. This would include a robust evaluation mechanism that translates new technological developments into solutions for NATO.

CONFLICT PREVENTION, RESOLUTION AND CONSEQUENCE MANAGEMENT

Concepts and doctrine recommendations

- Adapt Alliance organisational structures, authorities and decision-making processes to successfully implement a comprehensive approach to conflict resolution, stabilization and reconstruction. To this end, nations will have to establish and maintain an interconnected web of government agencies, e.g., law enforcement, border protection services, judiciaries and public health authorities that can work alongside and in support of Alliance missions.
- Develop a legal framework and policy for the use of non-lethal force, as well as common standards regarding the use of non-lethal force in support of law enforcement and security operations.
- Implement fully NATO's partnership with the EU at the strategic, operational and tactical levels. Improve the NATO-EU partnership



on issues of non-proliferation and consequence management, with agreed terms of reference that delineate the role of each organisation in a crisis.

- Establish an agreed NATO-EU framework for comprehensive planning and liaison with civilian actors, especially humanitarian relief organisations and NGOs. In this regard, make full use of the NATO-EU working groups to evaluate and prepare recommendations for how military forces will plan, prepare and exercise alongside their civilian counterparts.

Capability enhancement recommendations

- Adapt Headquarters and command and control structures, including rapid reaction capabilities, for a comprehensive approach that would include the integration of personnel from other government agencies, the EU, the UN and other international organisations.
- Adapt NATO's force structure and planning processes to emphasise non-combat missions, such as humanitarian relief, maritime security, infrastructure protection and support for multinational responses to natural disasters.

COUNTER PROLIFERATION

Concepts and doctrine recommendations

- Enhance the preparedness of armed forces to support national civil authorities through the harmonisation of command, control and information systems. This will help mitigate the vulnerabilities that result from risks and threats to populations and vital infrastructure, and the potential use of WMD/E weapons in terrorist attacks.



Capability enhancement recommendations

- In collaboration with other IOs and national organisations, analyse and develop the capability to detect, track, identify and target state and non-state actors who are engaged in the illicit development, diversion, storage, or transport of WMD/E.
- Develop a robust consequence-management capability in collaboration with other IOs and national organisations.
- Enhance the capability (equipment and training) of NATO and the nations to aid first responders and recovery efforts, as well as to survive and fight a war conducted with WMD/E.

EXPEDITIONARY AND COMBAT CAPABILITY IN AUSTERE ENVIRONMENTS

Concepts and doctrine recommendations

- Review policy guidance to improve coordination between defence and operational planning, and by doing so better align defence planning capabilities with evolving political-military requirements.
- Develop a comprehensive maritime strategy to address the threats to Alliance security on the maritime commons presented by demographic shifts, energy scarcity, organised crime, technology-savvy adversaries, terrorism and the proliferation of WMD.

Capability enhancement recommendations

- Maintain the ability to conduct the full range of operations and missions concurrently, ranging from collective defence operations and demanding stabilisation and reconstruction operations to large-scale high-intensity combat operations.
- Develop the capability to conduct expeditionary operations in a flexible manner, with the ability to switch seamlessly between lead



and supporting roles when working with IOs and NGOs acting in the same area.

- Improve operational planning to account for the increasing complexity of Rules of Engagement.
- Prepare to deploy mobile, credible, interoperable and sustainable forces to remote locations on short notice in response to humanitarian contingencies.
- Deliver modern, capable air-mobility for rapid response and transport in urban environments. Ensure the protection of air assets, especially with regard to control of the electromagnetic spectrum.
- Explore a sea-basing capability to improve operational responsiveness, reduce exposure to land-based and missile threats, enhance medical evacuation capabilities and reduce host nation support requirements.

STRATEGIC COMMUNICATIONS AND WINNING THE BATTLE OF THE NARRATIVE

Concepts and doctrine recommendations

- The Alliance will need to develop coherent messages and an engagement strategy that both reflect its strategic goals and support its core values, ideas, missions and operations. This strategy will help foster broad public and governmental understanding of NATO's roles and why it needs to develop, manage and deploy robust civil and military capabilities.

Capability enhancement recommendations

- Improve strategic communications in an area of engagement by broadening cooperation within the international community, especially the UN, EU, AU and NGOs. The capability must include ongoing engagement on the Alliance narrative.

- Develop a systematic long-term process to communicate NATO's purpose and operational commitments, both domestically and internationally.
- Improve communications support for Alliance operations and objectives, and better use the profusion of new media supported by instantaneous transmission capabilities. Doing so will require an increase to the number of fully trained Public Affairs and Information Operations personnel.

ORGANISATIONAL AND FORCE DEVELOPMENT ISSUES

Concepts and doctrine recommendations

- Ensure concepts and doctrine support the requirement for flexible command and balanced force structures that can respond to the evolving nature of risks and threats to the vital interests of the Alliance.

Capability enhancement recommendations

- There is a clear need for general purpose forces that can operate in a disaggregated fashion when confronting those who use methods that appear asymmetric. Flexible, adaptive organizational structures and training requirements will empower these high-performing small units. To prepare forces for the new realities, the Alliance should use distributed training with enhanced modelling and simulation capabilities that replicate the fast-paced, chaotic conditions of future battlefields in the training environment.
- Formulate plans that allow NATO's command structure to respond quickly to a variety of warfare models, ranging from high-end operations to the conduct of security assistance missions, to an advisory role in support of civilian authorities. Adapt command structures to be flexible and culturally aware in response to hybrid threats.



- Adapt the force structures of NATO and its nations, including non-military capabilities, to support Security Assistance missions.
- Encourage nations to adapt recruitment processes, identify recruitment opportunities, and develop key messages that will encourage both non-traditionally and traditionally willing groups within the society to serve. Share best practices amongst nations.
- Establish training and education standards that promote the development of highly educated, culturally aware forces, capable of operating within the rapidly changing tactical, operational and strategic environments.



Concluding Remarks

The Multiple Futures Project examined common perceived threats to the populations of the Alliance, and found that the unpredictability and complexity of the future security environment will strain the Alliance’s most powerful tools: strategic unity of values and ideas, solidarity among Allies, burden-sharing, and commitment to its decisions. No nation can meet the challenges alone, and the credibility and capability of the Alliance depend on every nation doing its part.

It is, therefore, essential that the Alliance continue to demonstrate its strength and resolve, which is rooted in solidarity. These qualities sustain the Alliance as we work to keep societies informed about the methods of potential adversaries, to remain vigilant, and to lead in conflict management. We must be tireless as we work together to build support for an Alliance that continues to espouse the values and ideas upon which it was founded. To do this, the Alliance must maintain a common understanding of what constitutes an attack and how the Alliance would respond, thus sending a clear signal of deterrence. That signal is in essence the clarion’s call, showing that there will be strength behind the response to any attack, whether territorial or not.



A comprehensive approach, developed in concert with other international organisations like the EU and UN, is fundamental to the security of a diverse Alliance. It goes without saying that the more comprehensive our approach, the more our engagements will be affected by actions outside of our geographic boundaries. To be effective in this environment, we must develop better partnerships, leverage relationships and work with other international organisations to improve the transparency of information and

decision-making. Success will depend on our ability to manage conflict effectively and mitigate the consequences that spring from subversive activity. Burgeoning technological developments will contribute both to the breadth of Alliance vulnerabilities and to the ingenuity of potential adversaries who will use technology to disrupt our society. The use of technology, especially the technology of WMD/E, therefore will demand increasing vigilance and positive control, and highlights the need for the Alliance to consult closely with our partners to protect our technological advantage.

Anticipation is crucial to NATO's preparation for the future. Investment in long-term awareness and long-term analysis will give NATO a significant role to play as it works with national governments to discern forthcoming challenges. This includes the need to develop early warning systems, especially with regard to the proliferation of WMD. A maneuverist stance can help NATO become a catalyst for identifying problems and analysing solutions, thereby outthinking potential adversaries. Intelligence processes must adapt and improve, and our leaders must be both well-versed in current trends and grounded in history in order to make informed decisions. To respond effectively in this environment of surprise, the capabilities of the Alliance, not solely military but across the range of comprehensive responses, will always need to be flexible and adaptable.

Historically, every military that has transformed successfully has done so by clearly identifying specific military problems that need to be addressed. To this end, the Alliance will have to maintain and improve existing capabilities, and in some cases develop new ones, to address emerging security challenges. The insights and recommendations in this report are the basis of SACT's military advice, and are meant to stimulate dialogue and inform decisions on what needs to change. Furthermore, the findings may support the development of political guidance that will address NATO's role in the future security environment.



Exploration of the future is always risky, as trends change in magnitude and direction. By scanning the horizon periodically and reviewing our assessments, we increase our ability to adapt and respond. The goal is not to be perfectly right in this exploration. However, it is vital that the Alliance gets it sufficiently right, so that it has the fewest regrets when Alliance leaders are faced with the surprises that inevitably accompany conflict. Ultimately, the men and women who make up the force embody the Alliance's greatest operational strength. It is they who give NATO the ability to improvise rapidly to unexpected situations. It is incumbent on NATO and the nations to ensure that these men and women receive the doctrine, training, education, and material they need to succeed in their mission.



Insights	Focus Areas	Concepts & Doctrine Recommendations	Capability Enhancement Recommendations
<p>Insight 1: The evolving nature of risks and threats to vital interests will challenge strategic unity and solidarity within the Alliance, as well as the common understanding of what constitutes an Article 5 attack.</p>	<p>Adapting to the Demands of Hybrid Threats</p>	<ul style="list-style-type: none"> Enhance/develop offensive and defensive concepts, strategies and legal frameworks to deter, respond to and counter attacks in ungoverned/sensitive mission areas. Re-evaluate the ability to collect, share, and fuse all sources of intelligence. Develop a comprehensive concept/strategy to strengthen partnerships with industry and shorten acquisition time for new technologies. 	<ul style="list-style-type: none"> Develop culture suited to countering hybrid threats. Maintain conventional and nuclear competency. Operate across the spectrum of conflict. Present credible force to deter in all domains. Retain technological advantage - rapidly assess emerging technologies. Detect, identify, locate, and engage cyber attackers. Ensure C2 systems are agile, configurable, with decision making at lowest appropriate level Develop advanced Joint ISR capabilities. Strengthen NATO Network Enabled Capabilities (NNEC).
<p>Insight 2: Increased interaction with non-NATO nations and other international actors will create opportunities for the Alliance to extend its role in enhancing security and stability outside traditional areas of engagement.</p>	<p>Operating with Others & Building Institutions</p>	<ul style="list-style-type: none"> Examine cooperation, roles and exchange of liaison officers with non-NATO actors. Implement fully the Comprehensive Approach. Strengthen support to good governance; mentor and advise other nations. Ensure partner involvement in operational planning. Implement fully the UN-NATO Joint Declaration. Implement policy to mentor and advise indigenous forces. Understand and evaluate outsourcing of security. 	<ul style="list-style-type: none"> Develop standards for security assistance missions, security sector reform, and the force's cultural awareness. Enhance capability to partner with non-NATO actors. Strengthen the strategic relationship between NATO, the EU, and the UN. Rapidly assess opposing forces' use of technology. Create an aggressive capability to translate new technological developments into solutions.
<p>Insight 3: Determined adversaries enabled by readily available technologies, will attack Alliance vulnerabilities in unexpected ways, requiring the Alliance to consider changes in the character of military operations and warfare.</p>	<p>Conflict Prevention, Resolution, and Consequence Management</p>	<ul style="list-style-type: none"> Adapt organisational structures, authorities and decision-making processes. Legal framework, doctrine for non-lethal force. Implement fully NATO's partnership with the EU. Improve the NATO-EU partnership on non-proliferation and consequence management. Establish framework for NATO –EU comprehensive planning and liaison. 	<ul style="list-style-type: none"> Adapt Headquarters C2 Structures for Comprehensive Approach, including integration of Governmental and International Organisations. Adapt force structure and planning to include newer missions, and response to natural disasters.
<p>Insight 4: Increased interaction with other international actors will provide NATO the opportunity to positively shape and influence ideas, values and events in a globalised world.</p>	<p>Counter Proliferation</p>	<ul style="list-style-type: none"> Enhance force preparedness to better support national civil authorities. Harmonise C2 and information systems. 	<ul style="list-style-type: none"> Develop, with GO & IO, capability to detect, track, identify, target, & engage WMD/E actors. Develop robust consequence management with GO/IO. Develop the capability to aid first responders and recovery efforts, and to survive and fight a WMD/E war.
	<p>Expeditionary & Combat Capability in Austere Environments</p>	<ul style="list-style-type: none"> Ensure better coordination between defence and operational planning. Better align defence planning capabilities with evolving political-military requirements. Develop a comprehensive maritime strategy to address the threats presented by population shifts, energy scarcity, organised crime, technology savvy adversaries, terrorism and WMD proliferation. 	<ul style="list-style-type: none"> Maintain the ability to conduct the full range of operations and missions concurrently. Switch seamlessly between lead and supporting roles. Improve operational planning to take into account the increasing complexity of Rules of Engagement. Deploy mobile, credible, interoperable and sustainable forces to remote locations on short notice. Deliver modern, capable air-mobility for rapid response and transport in urban environments.
	<p>Strat Comms & Winning Battle of Narrative</p>	<ul style="list-style-type: none"> Develop coherent messages and an engagement strategy that reflects strategic goals and supports core values, ideas, missions and operations. 	<ul style="list-style-type: none"> Broaden cooperation to deliver the Alliance narrative. Communicate NATO's purpose and operational commitments, both domestically and internationally. Improve communications support to operations.
	<p>Organisational & Force Development Issues</p>	<ul style="list-style-type: none"> Ensure concepts and doctrine support the requirement for flexible command and balanced force structures, to respond to the evolving nature of risks and threats to Alliance vital interests. 	<ul style="list-style-type: none"> Develop distributed training with enhanced modelling and simulation capabilities. Adapt C2 for improved responsiveness, flexibility. Adapt force structure for Security Assistance missions. Adapt recruitment processes and share best practices. Establish education & training standards to develop highly educated, culturally aware forces.

