

Supreme
Allied
Commander
Transformation



Joint Strategic Foresight Analysis & Framework for Future Alliance Operations Workshop

RADM Peter GUMATAOTAO

DCOS Strategic Plans and Policy

NATO UNCLASSIFIED – Publically Disclosed



ACT – Leading NATO
Military Transformation

Supreme
Allied
Commander
Transformation

Strategic Foresight Analysis



September 26, 2016

Col Tibor SZABO

Mr. Mehmet KINACI

Understanding Security Challenges



TO IDENTIFY, ANALYZE, AND ADDRESS FUTURE CHALLENGES
AND OPPORTUNITIES, OUR WORK:

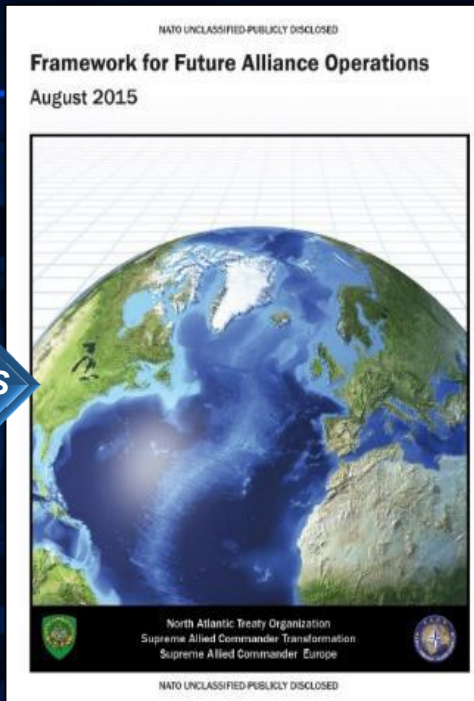
- DRAWS UPON THE PAST
- INFORMS THE PRESENT
- PROVIDES A LONG-TERM TRAJECTORY

Long-Term Military Transformation

Based on the **trends**,
what is the future like?



INFORMS



INFORMS

What **capabilities** will NATO
military forces require in the
future?

NATO Defence Planning Process



SACT 6 FAs

We will complete SFA/FFAO **in time** to inform Military Committee input to NDPP Step 1, Political Guidance as per PO (2015)0624, MCM-0199-2015

The Problem Statement (Why)

Determine how NATO should transform to continue to

- accomplish its core tasks, (Collective Defence, Crisis Management, Cooperative Security)
- address the full range of security challenges,
- establish and apply a unifying vision, and
- advance a conceptual framework
- for forces and capabilities required to succeed beyond the mid-term planning horizon.

Strategic Foresight Analysis (SFA)

- First published in September 2013 with Interim update Dec 2015
- SFA is a collaborative effort: National, international studies and a series of workshops
- Trends that will shape the future strategic context
- Defence and security implications out to 2030 and beyond
- Common understanding of the future
- Foundation for the FFAO



SFA Methodology

Synthesis of NATO & National Studies



Gap/Trend Analysis Workshops in Vienna & Helsinki

Gap/Trend Analysis & interaction with Nations and Think Tanks- 2014

SFA Workshops - 2015

Vienna: 24 NATO, 4 Partner Nations, NATO HQ, NCS, Agencies, 11 COEs, industry and academia.

Helsinki: 22 NATO, 5 Partner Nations, NATO HQ, NCS, Agencies, 12 COEs, industry and academia.

- Continuous assessment of existing and emerging trends
- Collaboration with Nations
- Cross-functional coordination at ACT
- Coordination with NATO HQ and ACO

SFA 2015 Update Report
Coordinated Draft
circulated to NATO and Partner Nations in July 2015

SFA 2015 Update Report
Final Draft circulated to NATO and Partner Nations in October 2015



Political Trends

- The Re-distribution of Geostrategic Power
- Challenges to Governance
- Non-state Actor Influence in Domestic and International Affairs
- Power Politics
- Public Discontent and Disaffection
- Interconnectedness and Polycentricism



Re-distribution of Geostrategic Power

- Challenged cohesion and consensus
- Proactive innovation
- Continued cooperation with other actors



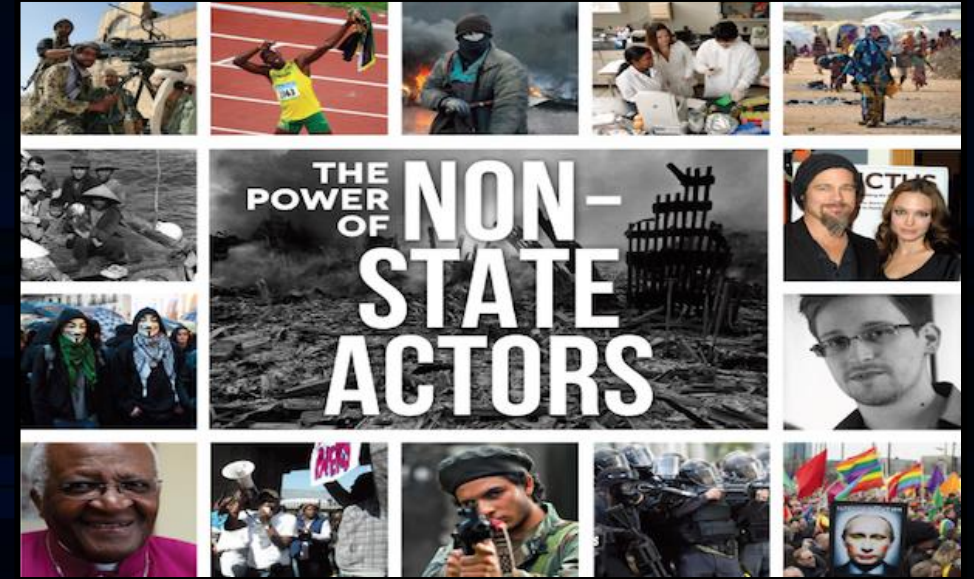
Challenges to Governance

- Increased requirement to address challenges
- Continued cooperation with other actors
- Extremism impact
- Migration caused by instability



Non-state Actor Influence

- Relations with non-state actors
- Close cooperation with more non-NATO organizations



Power Politics

- Increased use of force
- Protection of national interests over NATO interests
- Review of deterrence measures and decision-making processes



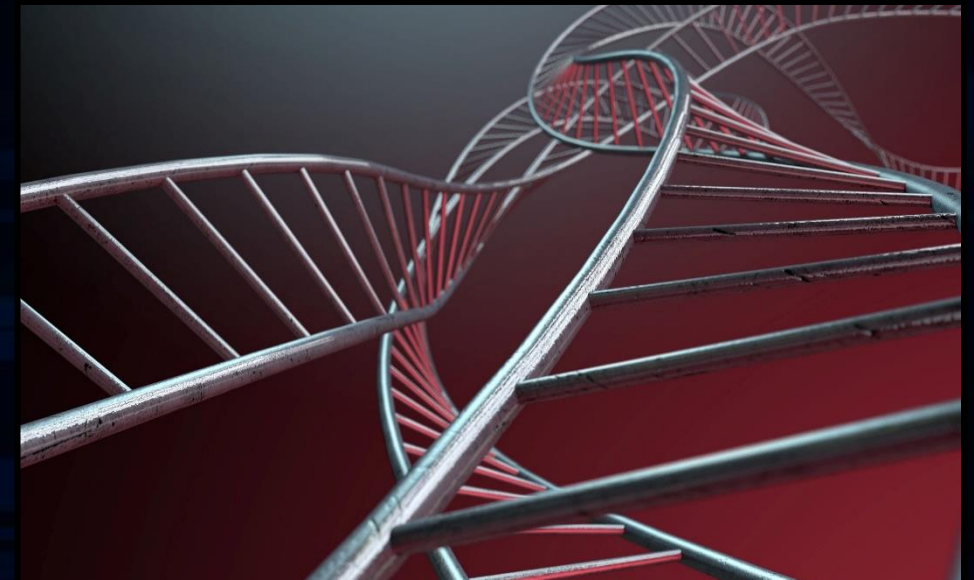
Discontent and Disaffection

- National interests over collective interests
- Decreased defence resources



Interconnectedness and Polycentrism

- Increased complexity and ambiguity
- Quicker innovation
- Higher chances of failure and unintended consequences



Human Trends

- Asymmetric Demographic Change
- Increasing Urbanization
- Fractured and/or Polarized Societies
- Increasingly Connected Human Networks



Asymmetric Demographic Change

- Increased demand for medical and social welfare
- Failed integration of migrants
- Instability in and out of NATO



Increased Urbanization

- Megacity challenges
- Urbanization inequalities
- Contested information domain
- Dominance from the sea



Fractured and/or Polarized Societies

- Distraction caused by factions
- Lack of unity
- Vulnerability caused by lack of trust
- Eroded cohesion complicates governance



More Connected Human Networks

- Increased individualism may decrease STRATCOM effectiveness
- Familiarity with human networks can be beneficial
- Cultural awareness is a necessity
- Close cooperation to monitor human networks



Science & Technology Trends

- Rate of technology advance
- Access to Technology
- Global network development
- Dominance of commercial sector in technological development
- Reliance on certain technologies



Rate of technology advance

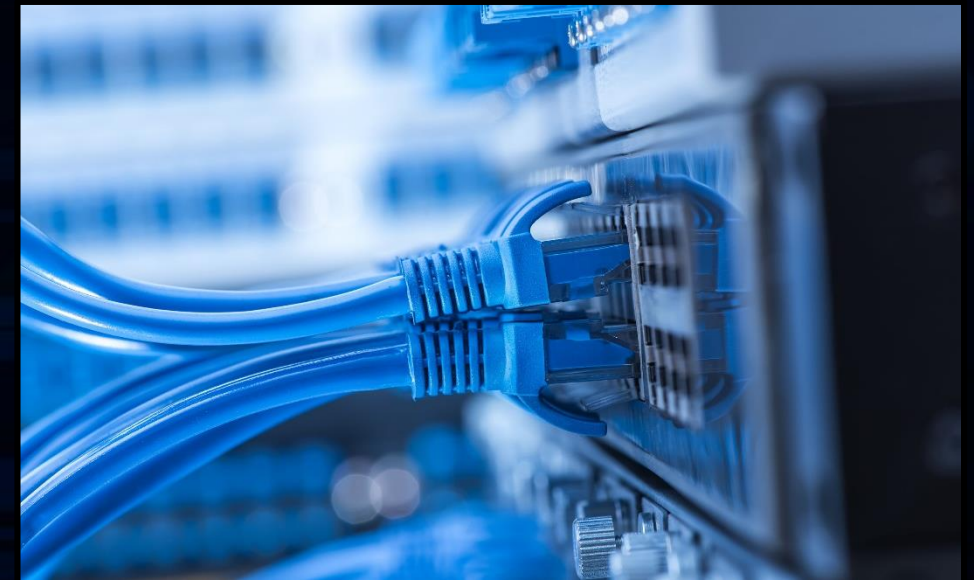
- Challenges of rapidly advancing technology
- Acquisition processes

Access to Technology

- Enables disruptive behaviours
- Non-state actors are less constrained

Global network development

- Increased vulnerabilities
- Lack of knowledge discrimination by end users



Commercial sector dominance

- State acquisition different than commercial sector
- Quality control, security, and fit-for-purpose implications of COTS
- Procurement programmes and regulations will remain a challenge



Reliance on technologies

- Creates vulnerabilities
- Increased necessity to protect critical infrastructure



Economics & Resources Trends

- Increased Competition for Natural Resources
- Decreasing Defence Expenditures in the West
- Increased Global Inequality



Competition for Natural Resources

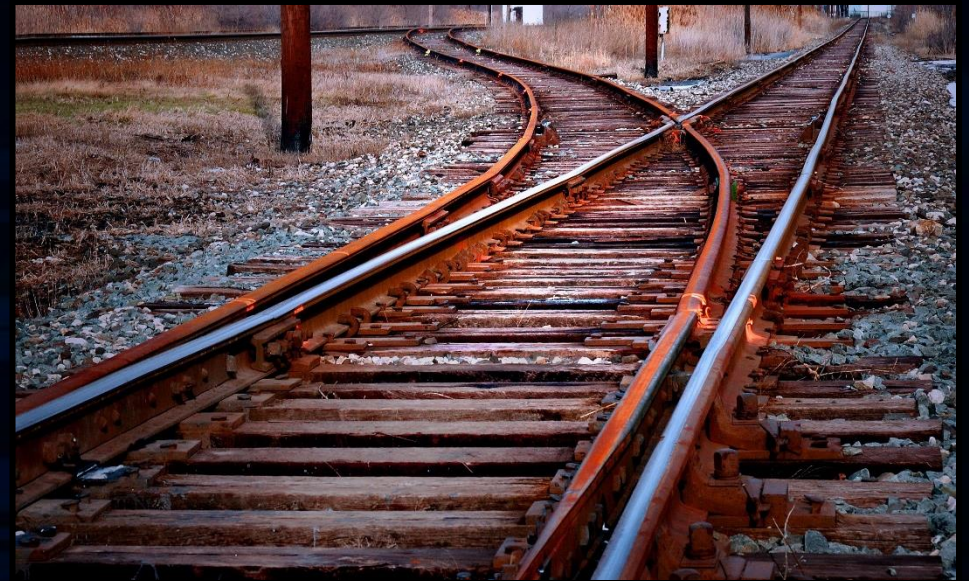
- Instability due to oversupply
- Rare earth resources
- Effects of increased interdependency of resources

Defence Expenditures in the West

- Effects of competition and stressed government budgets
- Need to meet sovereign defence requirements
- Reduced defence spending

Increased Global Inequality

- Instability caused by mass migration
- Terrorism, radicalization, and polarization
- Aging demographics reduces tax revenue



Environment Trends

- Environment and Climate Change
- Natural Disasters



Environment and Climate Change

- Situational awareness
- Comprehensive interoperability
- Power-vacuums or safe-havens
- Defence and security infrastructure



Natural Disasters

- Effect on military availability



Characteristics of the Future

LINEAR → EXPONENTIAL



1996

MarketCap: \$28B

Employees: 140,000



2012

Bankrupt

Employees: 17,000



April 2012

MarketCap: \$1B

Employees: 13

"The New Kodak Moment"



Complexity

Period of
Transition

Rate of
Change

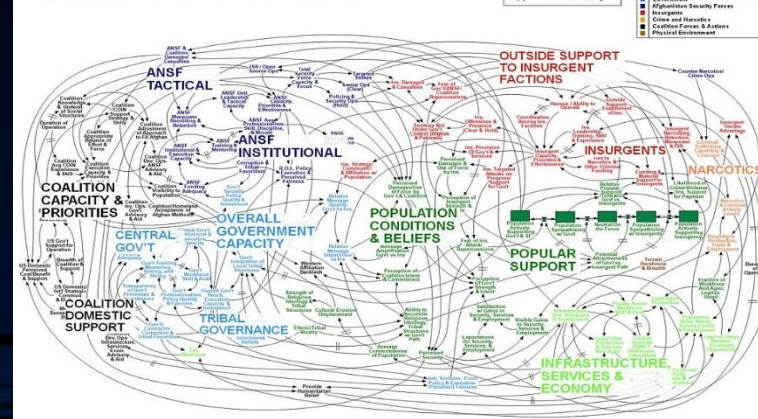


Globalization

Uncertainty

Polycentrism

Afghanistan Stability / COIN Dynamics



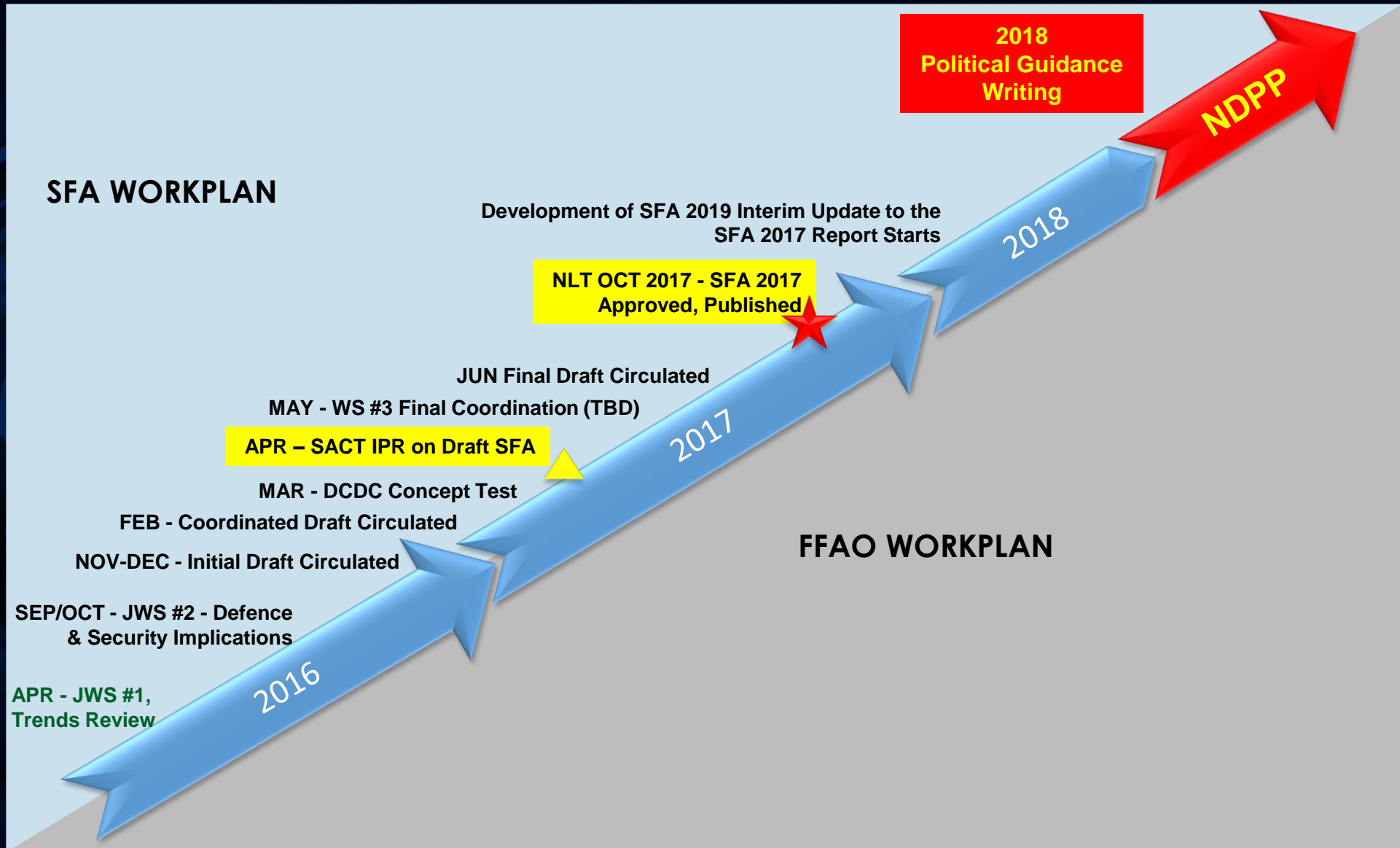
Our Proposal to the Nations Informing:



- Strategic Discussion
- Alignment of National Defence Plans
- NATO Defence Planning
- Capability Development
- Concept Development
- Doctrine, Training, Exercises, Leadership, Education

"The Strategic Commanders recommend that NATO develops operationally agile forces that are resilient, strategically aware, supported by proactive strategic communications, and networked with a wide range of security partners."

LTMT Road Map



Please indicate how much do you agree/disagree with the following Political Theme related statements?

International support to Middle East and North Africa (MENA) and Sahel should be limited to defence capability building

The potential for 'use of force' to influence political outcomes is likely to increase

Nations will increasingly shift scarce resources to protect national interest

There will be an increasing gap in expectations and governments' ability to provide public services to the masses

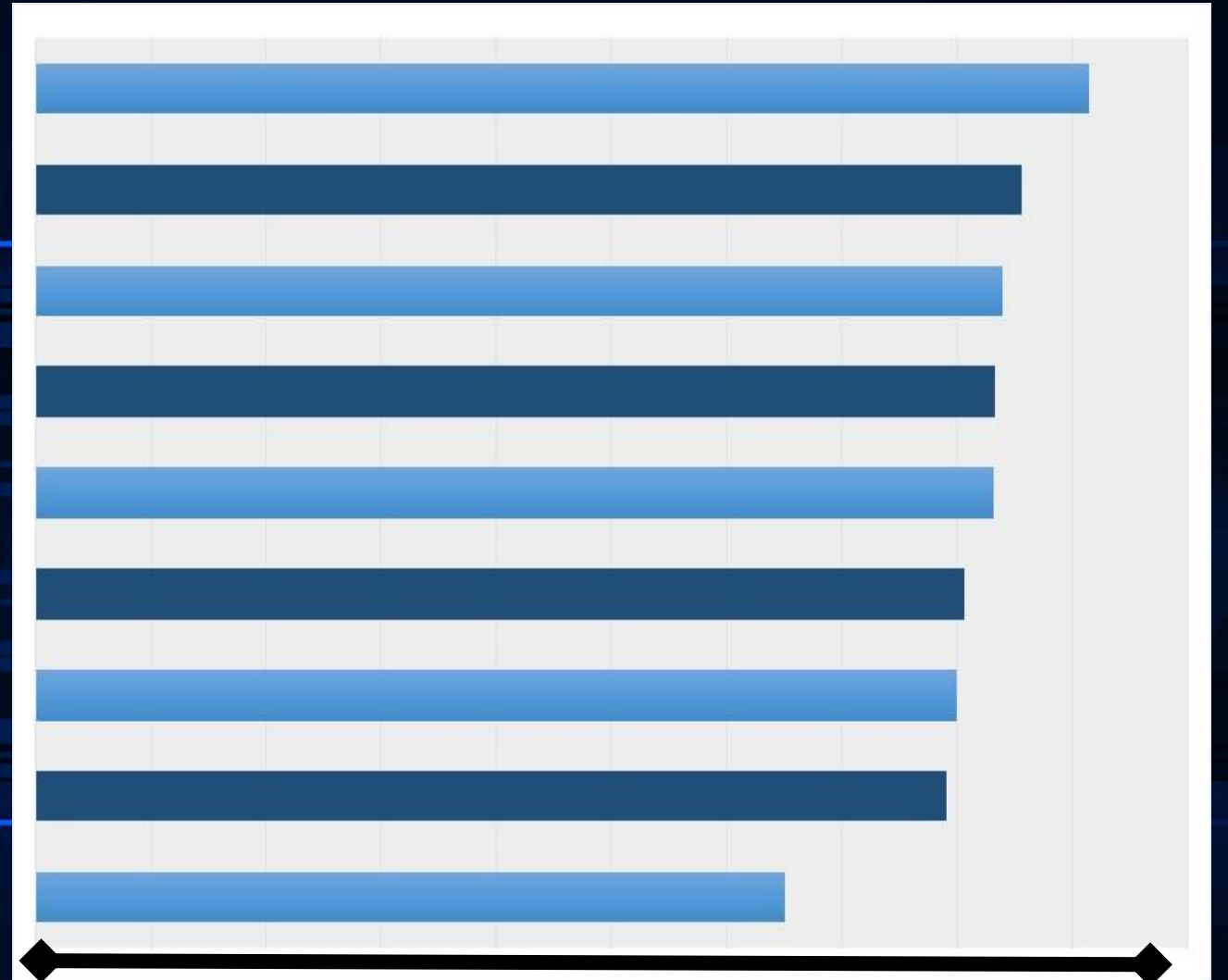
Regional conflicts outside of NATO's area of interest might challenge alliance cohesion

Existing governance structures will be increasingly challenged for maintaining trust in the system

Fractured ideas and polarized societies might lead Allied Nations to become distracted

Developing policy will be required to interact with non-state actors.

Non-state actors will increasingly use technology focusing on weakness in cyber security



Strongly
Disagree

Strongly
Agree

Please indicate how much do you agree/disagree with the following Human Theme related statements?

The willingness to commit new resources to defence could decrease due to competing domestic priorities (i.e. health education, education, social services)

Migration might lead to destabilisation in the countries of origin

The demographic shift from rural to urban should also be considered as a transformation of governance

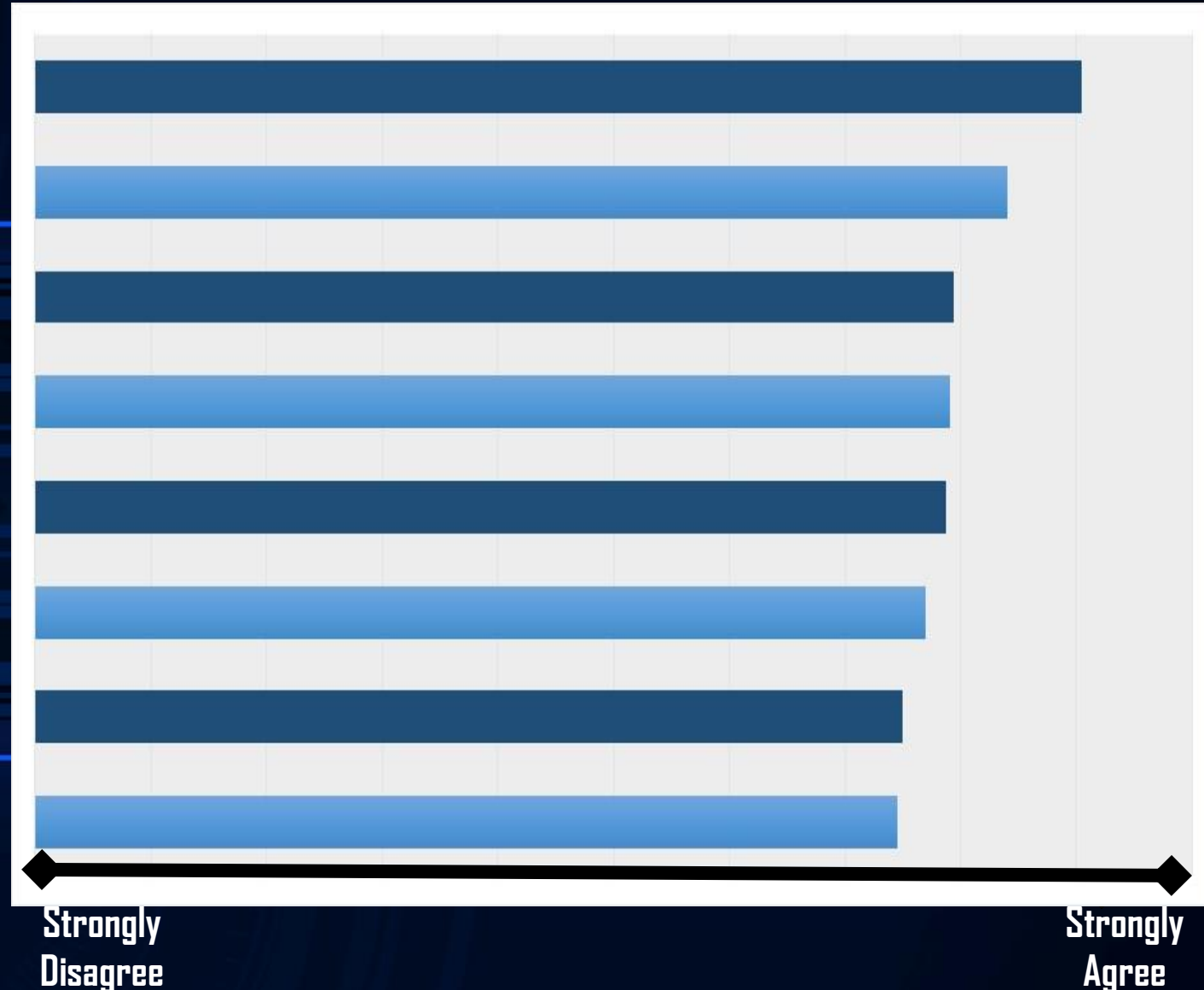
Human networks might contest the intelligence domain to challenge the alliance's cohesion and will

Mass migration is likely to affect countries approach to human rights

Fractured ideas and polarized societies might lead Allied Nations to become distracted

Human population dynamics are likely to create asymmetric changes between developed and developing Nations

Failed integration of migrants within NATO Nations may increase potential for fractured identities, radicalisation, extremism and fanaticism



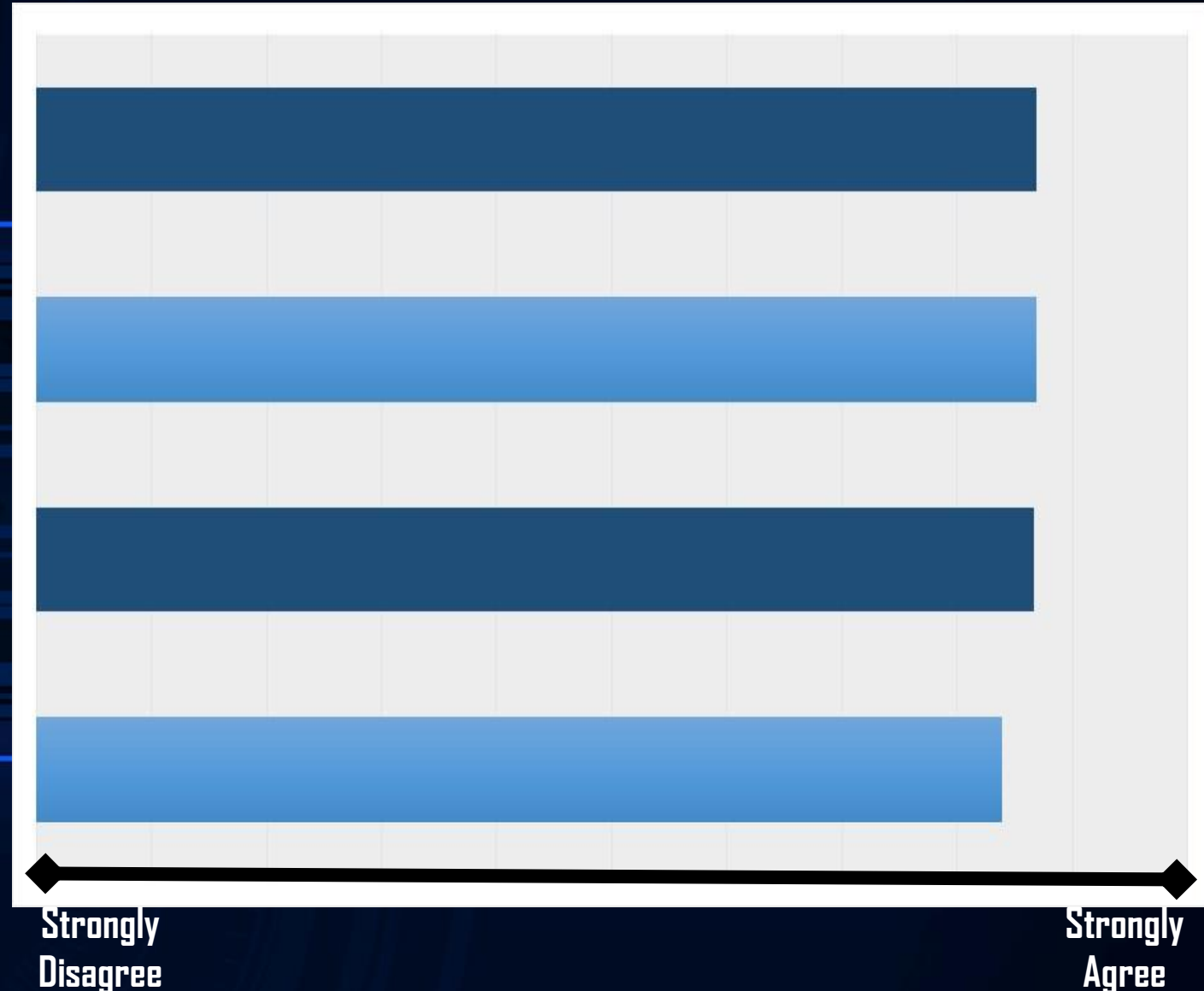
Please indicate how much do you agree/disagree with the following Science & Technology Theme related statements?

Global networks will have the ability to promote the transfer of knowledge at an unprecedented rate without discrimination based on the intent of the end user

Non-state actors may be less constrained as to how they employ technologies

Defence and security organizations' acquisition processes are challenged to keep pace with the rate of technology advance

Maintaining state-of-the-art capabilities may require serious changes in national R&D and acquisition policies



Please indicate how much do you agree/disagree with the following Economics & Resources Theme related statements?

The rise of Bitcoin-like on-line, unregulated currencies may erode states' economic strength

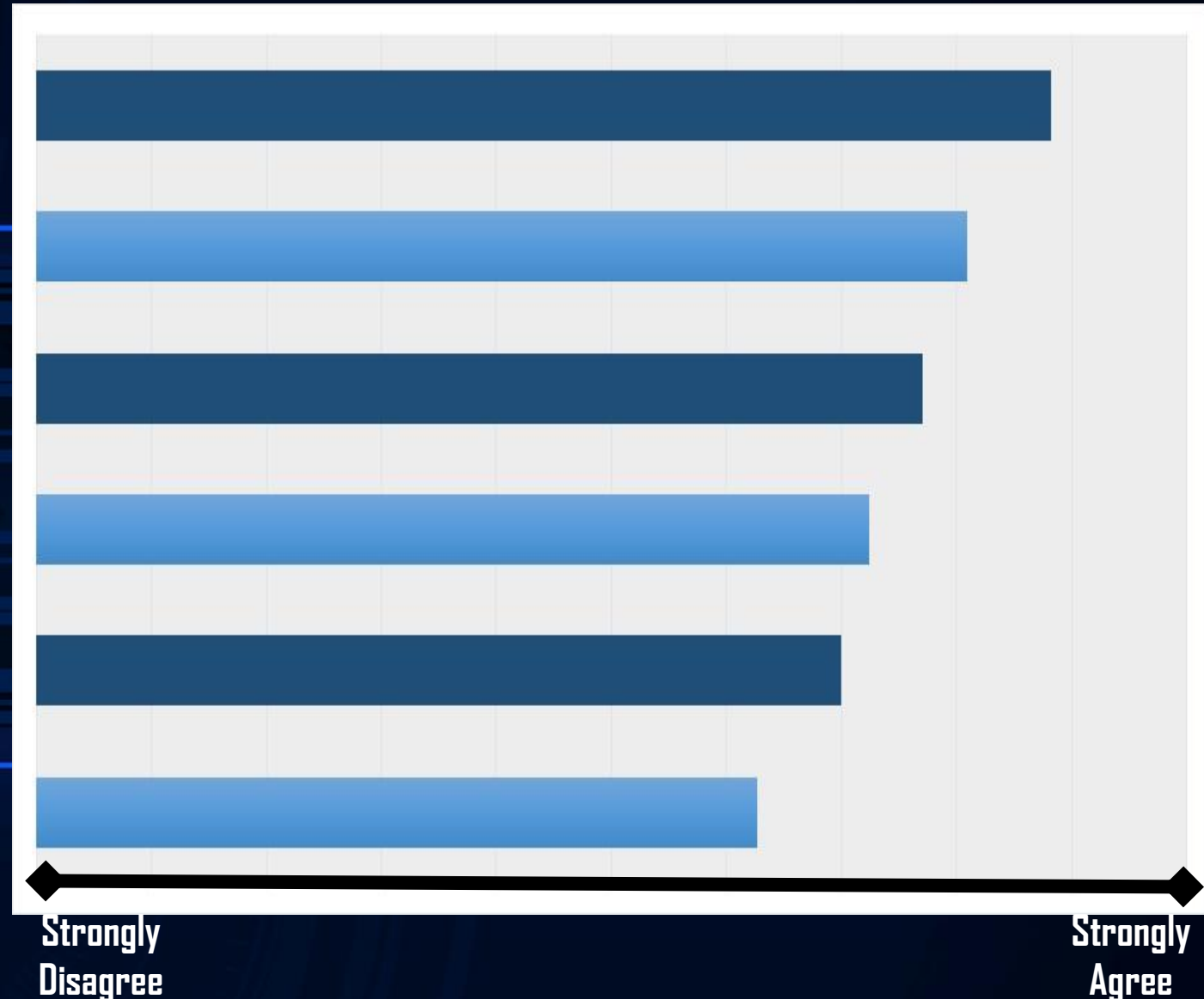
Financing of terrorism and organized crime will become less visible

Economic inter-dependencies is likely to increase the threshold for state on state major conflict

Nations that have an advantage in rare earth resources can leverage power politics

Increasing inter-dependencies between energy, raw materials, water and other resources can have a destabilizing effect

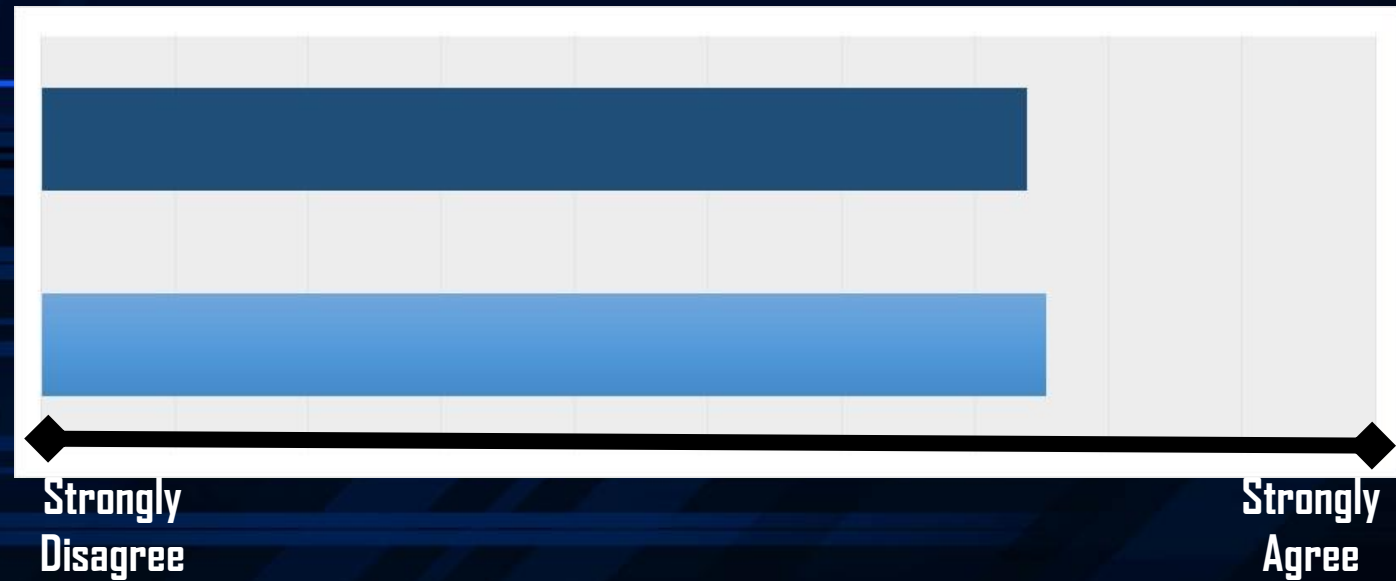
Aging demographics will give rise to an increased social welfare burden



Please indicate how much do you agree/disagree with the following Environment Theme related statements?

Climate migration away from certain areas may open up ungoverned space and leave power-vacuum or safe-havens for others to fill

A large scale, environmentally-triggered disaster within a NATO Nation could affect the collective abilities of the Alliance



In your opinion, what other trends and their implications are likely to challenge future security environment out to 2035 and beyond?

- **TECHNOLOGY:** Artificial Intelligence - Synthetic biology - Uncontrolled genome editing - Cyber Space Media - Cyber Terrorism - Quantum computing (encryption, radar technology, etc...) - Significant levels of embedded software and cyber aggression leading to hybrid conflict & NATO nations having many vulnerabilities in infrastructure and essential military and civilian technologies
- **POLITICAL:** Rising power of megacities - Super-states agglomeration - Decline of the dominance of the Western world.
- **ECONOMIC:** Collapse of existing world financial system.
- **HUMAN:** Religious tensions - Extremism - Nationalism - Gender relations - Populism and protest electorate votes in developed countries - uprightness of human being will obscure the distinction between right and wrong - Diaspora groups affecting NATO nation's approach to conflicts
- **SECURITY:** Hybrid tactics - Terrorism at home limiting military intervention for stability else where - Escalation in the seas - militarization of space - black swan events - non state actor use of nuclear weapon - A2/AD - Lack of insight in history leading to poor decision making.
- **ENVIRONMENT:** Environmental stresses influence continue migration towards urban littorals as well as the reduction in food production causing greater governance issues and resource competitions.

SFA - Workshop Schedule

26 September

07:45 Check-in/Registration

08:40 Admin Remarks

- JFTC Bydgoszcz Protocol

09:00 Welcome & Introductory Remarks

MG Wilhelm GRÜN

RADM Peter GUMATAOTAO -Video

Col Tibor SZABO

09:30 SFA Overview of Lucerne WS Findings

- Mr. Mehmet KINACI

10:15 Coffee Break

10:45 Unconference

12:00 Lunch

13:15 Breakout Sessions

- Political: Dr Kristi RAIK & Dr Guillaume LASCONJARIAS
- Human: Mr. Jeff BECKER & Dr Gitanjali ADLAKA-HUTCEHDN
- Technology: Mr. Mark TOCHER & Dr Timothy POVICH
- Economics/Resources
 - Economics Dr Adrian KENDRY &
 - Energy Dr Frank UMBACH
- Environment: Mr. Chris HOUGH & Ms. Swathi VEERAVALLI

(coffee breakout at discretion of the Moderators)

17:00 SME, Moderator, Facilitator Meeting

17:15 Icebreaker

27 September

08:00 Welcome

- Coffee and Welcome

08:30 Global Strategic Trends Out to 2050

- UK MOD DCDC

09:15 Strategic Horizons

- French MOD DGIRS

10:00 Coffee Break

10:20 Breakout session continued

- Continue to work on Defence and Security Implications

12:00 Lunch

13:00 Breakout session continued

- Discussion on Implications

14:30 Coffee Break

15:00 Plenary Out-briefs

- The findings of each breakout session will be debriefed in plenary using panel setting by SME & Moderators

17:00 Closing Remarks

- Col Tibor SZABO

17:10 SME, Moderator, Facilitator meeting

Trends, Defence and Security implications will be finalized in development of the SFA 2017 Report

The Unconference Topics

- Will Polarization continue? Ideology & Religion – Fractured identities (CDR Gro Deen)
- What does happen when we run out of water? – Water Scarcity (Ms Swathi VEERAVALLI)
- Changing demographics – Impacts of migration (LTC Sven SZABO)
- The Future of the State (Dr. Kristi RAIK)
- The Future of Money- Blockchain & Bitcoin (Dr. Adrian KENDRY)
- Superman 2.0 - Is Human enhancement ethical (Dr. Stefan RESCHKE)
- Income inequality – Growing War between the Haves and Have Nots (CDR Chuck CORDON)
- Challenges to the International Norms-South China Sea (LTC Darry GROSSNICKLE)

The Unconference Topics

- End of the world as we know it - Black Swans (Maj. Bora ASLAN)
- Will it destroy us? – Artificial Intelligence (CDR Jean-Luc DEVILLERS)
- “I’ll be back” – Future of Robotics (LTC Aaron BAZIN)
- Brexit – EU Disintegration/ Integration (CDR Dave SHERRIFF)
- Who owns the Moon/Space? – Space exploration (LTC Richard PLEIJSANT)
- Impacts of 3D/4D Printing (Dr. Timothy POVICH)
- Can we save the world? – Climate change (Mr. Chris HOUGH)

The Unconference Rules

- The aim of this session is to allow participants to engage topics which they are interested.
- There will be three sessions.
- Every session completes in 20 mins and 5 mins moving to another table.
 - 20 mins – Table 1 (5 mins rotation); 20 mins – Table 2 (5 mins rotation); 20 mins Table 3
- Maximum 10 participants at each table.
- Open discussion - Capture 3-4 key implications in each area.
- Participants are the lead – We'll moderate!

Work Shop Outbrief

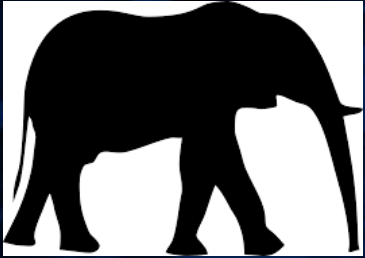
- Panel Discussion
- SME/Moderators
- Outcome of Trend Review
- Key Take-aways



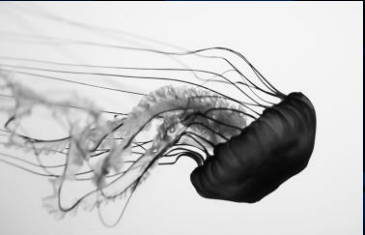
Political Theme (Example)

Trends	Implications	Key Takeaways
The Re-distribution of Geostategic Power	• Challenged cohesion and consensus	Alliance cohesion will be challenged due to increasing use of “coalition of willing”
	• Proactive innovation	Potential for further improve innovate strategic narrative
	• Continued cooperation with other actors	Comprehensive approach helps to increase legitimacy
	• Potential conflict in power transition	Emerging power may challenge status quo by use of force
Challenges to Governance – The Future of the State	• Increased requirement to address challenges	Establishing TRUST in governance structures – Comprehensive approach
	• Extremism impact	Radicalization will continue in failed and failing states causing local and regional instability
	• Migration caused by instability	Lack of effective governance and security in MENA and other regions in crisis will cause further migration

Black Elephant, Black Swan & Black Jellyfish



A black elephant is a cross between “a black swan” (an unlikely, unexpected event with enormous ramifications) and the “elephant in the room” (a problem that is visible to everyone, yet no one still wants to address it) even though we know that one day it will have vast, black swan like consequences.



Black jellyfish is all about the scale – simultaneous predictable developments causing disruption when converge through innovation.

Contact Information

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Mr. Mehmet Kinaci, S. A. Branch, SFA Team Lead

LTC Aaron Bazin, S.A. Branch FFAO Team Lead

SFA Report 2013: http://www.act.nato.int/images/stories/events/2012/fc_ipr/sfa_security_implications.pdf

SFA Update Report 2015: <http://www.act.nato.int/images/stories/media/doclibrary/160121sfa.pdf>

FFAO 2015: <http://www.act.nato.int/images/stories/media/doclibrary/ffao-2015.pdf>



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