Welcome to the first HQ ACT Strategic Foresight Workshop, held at the Dolce in La Hulpe, Brussels. Below is some administrative information you may find helpful as you prepare to join us for this look at the World in 2030 and beyond.

Venue:

The Dolce is approximately a 20 min ride from the airport. Transportation will not be provided and will have to be procured individually. Pick-up service can be coordinated through the hotel (for a charge), or a taxi can be hired for about €50.

Timing:

The workshop will begin at 09:00 on Wednesday, 24 Oct 2012, and will conclude at 14:00 on Thursday, 25 Oct 2012. There is no ice-breaker scheduled for the evening of 23 Oct. (Full agenda is enclosed)

Dress:

Civilian – Business Attire
Military – Working Uniform

Preparation:

Below is a link to two questionnaires that we will use to frame the discussion. To ensure we have a valuable discussion, please review and complete these questions ahead of time.

http://questionpro.com/t/AJK4cZOTfm http://questionpro.com/t/AJK4cZOM9q

Conference Fee:

For those who have made reservations through the link provided, you may have noticed that the room rate for the night of the 23rd included an additional €90 fee. This is the conference fee that covers unlimited refreshments in the “Nourishment Hub” for both days, and the lunch buffet on 23 Oct. For those participants who are not staying at the Dolce, this fee, if you choose to partake, can be paid directly to the hotel during the workshop. Please note that you are in no way obligated to
pay this fee unless you choose to partake of the refreshments and lunch. A statement explaining this conference fee will be provided upon request.

**Assistance:**

For assistance, please contact LCDR Russell Czack at russell.czack@act.nato.int or at 757.747.3726/Cell: 215.421.0147
The World in 2030 and Beyond
Themes, Drivers and Challenges

Strategic Foresight Analysis Workshop #1

24-25 October, 2012
Dolce, La Hulpe, Belgium

Organized by
Allied Command Transformation, Norfolk

In partnership with
Atlantic Council of the United States, Washington DC
Security and Defence Agenda, Brussels
**Purpose:** To frame a shared perspective of the world in 2030 and beyond.

**Wednesday, 24 October 2012**

**0900-0915 Welcome & Administrative remarks**
*LCDR Russell Czack*
Workshop Coordinator

**0915-0930 Opening Remarks – The Shadow of Future**
*Colonel Janos Szonyegi, Chairman*
Strategic Analysis Branch Head, ACT Strategic Plans and Policy Directorate

**0930-1030 “Towards Persistent Foresight”**
*Mr Stephan de Spiegeleire, Senior Scientist The Hague Centre for Strategic Studies*

**1030-1100 Coffee Break**

**1100-1200 “Developing a Shared Perspective”**
Dr Michael Jackson, President and Founder Shaping Tomorrow

**1200-1300 Lunch**
La Dolce Hotel Dining Room

**1300-1400 “Exploring Themes and Drivers”**
*Mr Mark Tocher, Long Term Requirements, ACT Capability Development Directorate*

**1400-1500 Inquiry Discussion – Foresight and Strategy**
Moderator

**1500-1530 Coffee Break**

**1530-1700 Inquiry Discussion – Themes and Drivers vs Missions**
Moderator

**1700-1730 Daily Wrap-up**
Moderator
**Thursday, 25 October 2012**

**0900-0915 Review Day 1**  
Moderator

**0915-1100 Discussion – Impact/Influence of Common Drivers**  
Moderator

**1100-1130 Coffee Break**

**1130-1300 Panel Discussion – “Sociology vs. Technology”**  
Panellists: *Mr Stephan de Spiegeleire, Cdre Philip Thickness, Dr. Stephanie Babst*  
Moderator

**1300-1330 Summary**  
Moderator

**1330-1345 Closing Remarks**  
*Colonel Janos Szonyegi, Chairman*  
Strategic Analysis Branch Head, ACT Strategic Plans and Policy Directorate

**Expected Outcome:** Identified common themes, trends, drivers of change and potential wild cards, which will shape the future security environment.
The World in 2030 and Beyond
Themes, Drivers and Challenges

Strategic Foresight Analysis Workshop #1
Read Ahead Package
INTRODUCTION

The world is changing in profound ways. These changes will significantly alter how NATO will fulfill its role in the future. Preparing for the future requires thought-provoked action that is both creative and collaborative, so that together NATO can move forward in the important work of building a strong and vibrant military force that will continue to secure the Alliance for years to come. The strategic thinking required to enable continuous military transformation of the Alliance must consider future challenges and their impacts.

With strategic thinking, ACT seeks to prepare NATO for an uncertain future and a range of potential threats, challenges, and opportunities by developing and promoting emerging strategic-level ideas to clarify how NATO might transform its forces. In close dialogue with NATO Headquarters, and in co-operation with SHAPE, International and Non-Governmental Organizations, research and defence institutes, think-tanks and universities, ACT identifies strategic issues that SACT and NATO senior leadership can use to inform future NATO roles and missions, through analysis of strategy, plans, guidance, and global trends. It is absolutely imperative that the voices of the entire Alliance are heard as part of this process: all Nations, NATO organizations and commands must contribute to facilitate success.

Transformation of the Alliance is a deliberate, iterative and collaborative process with a continuous loop that produces forces and capabilities for the near, mid and long-term. NATO’s deliberate planning process, the NATO Defence Planning Process (NDPP) is complemented by transformational initiatives such as Smart Defence (SD) and the Connected Forces Initiative (CFI) in addition to a host of other programs is principally focused on delivering “NATO Forces 2020”.

However, maintaining future military readiness in a complex and constantly evolving security environment demands a planning horizon beyond the current mid-term 2020 focus. It requires anticipation of a different future and a shared perspective of the future security environment, its military implications and the resulting broad strategic operating requirements. NATO must assess the future and identify future requirements. The results of these two activities could inform NDPP and other programs and policy work.

To meet this objective, ACT is coordinating a Strategic Foresight Analysis (SFA). Foresight Analysis is simply gaining and maintaining a shared perspective of the future through continuous examination. SFA’s aim, therefore, is straight-forward: to seek an understanding of how the world around us is changing, and how those changes may drive the future capability requirements of the Alliance. Our goal is to promote expanded strategic thinking and planning for the future by engaging the diverse futures community in a collective exploration of issues, trends, and other factors that could impact the future environment.

Fundamentally, the Strategic Foresight Analysis seeks two outcomes: (1) NATO Forces prepared for whatever challenges the future holds; and (2) a shared sense of direction and urgency that will drive actions necessary to meet our shared future needs – starting today.

Thinking more broadly, rigorously, and over a longer timeframe will help us:

• Hedge against uncertainty;
• Avoid strategic surprises;
• Promote information sharing across disciplines and organizations;
• Understand what changes could affect cooperative security, collective defense and crisis management; and
• Plan so the Alliance can operate more effectively, in consensus, within the range of potential future environments.

ENGAGEMENT

This first event has invited a broad section of the futures community, select subject matter experts in relevant academic areas, select international agencies, and other key stakeholders to participate in a “scoping workshop.” At this event participants will begin to identify, define, and refine key issues and drivers of change that may impact the future of NATO operations.

The second event will be held 13-14 November 2012 to continue developing a better understanding of emerging trends, drivers and future directions in key issue areas. The aim of this workshop is to identify the implications of potential impacts on force planning.

Through this evolving process, the Strategic Foresight community will be invited to participate through additional forums during which other community members will discuss the drivers of change and their confluences. On 3 December 2012, representatives will be invited to attend a Scenario Workshop to explore alternative future operating conditions, their impacts and implications on future operations to identify challenges, opportunities and strategic needs. The workshop results will help provide an emergent picture of key security intersections and will help inform eventual Alliance-wide strategies.

THE WAY AHEAD

NATO is focused on understanding drivers that will shape the future security environment. In order to identify strategic needs facing a complex and uncertain future work must be done to reach true consensus on common drivers that influence the future the most. SFA’s way ahead will involve several key components, including:

• Refreshing and expanding the research to explore new, compelling questions and ideas;

• Aligning strategies and planning selected actions to meet future needs; and

• Continuing to engage stakeholders to broaden the SFA community and build on existing collaboration.

META-ANALYSIS

A meta-analysis of more than 175 open source documents and abstracts, drawn from governments, industry, think tanks and academia, were reviewed for common themes, trends
and drivers that could influence plausible futures beyond 2030. The goal of the Meta-analysis was to develop the basis for arriving at a shared perspective in order to set the conditions for later workshops that would look more deeply at trends and drivers for future security implications.

ACT’s Multiple Futures Project 2009, NATO Joint Operations 2030-Final Report and the European Community’s State of the Art of International Forward Looking Activities (FLA) Beyond 2030 served as benchmark documents to examine the idea of establishing a shared perspective of the future. That is to say; all of the documents taken under review supported or were supported by the benchmark documents. Many of the documents shared overlapping themes while many held a single perspective only. However, none were found that materially opposed the viewpoints of others (to date).

Documents from International Organizations, National Organizations and Governments, Academic Institutions and Industry have all made contributions to futures work. Among all of the literature there are certain commonalities, slight differences and gaps predicated upon the mission of the organization.

The EC 2030 paper best summarizes the goal of the meta-analysis. “The aim … is to identify and collect forward looking studies (FLA), visions and prospects from national, international, and corporate provenience focussing a time horizon 2030 and beyond, and to cluster and explore the collected material along four dimensions:

1. The social dimension (such as aging, health, demography,...),
2. The geopolitical dimension (including global power shifts, international terrorism, ...),
3. The functional dimension (including economics and technology); and the
4. The ecological dimension (including the three big critical trends of depletion, degradation and disruption).”

PRELIMINARY FINDINGS

During the literature review, the nine drivers listed in the Multiple Futures Project were frequently identified. Of those nine original drivers, implications of Climate Change seems to appear most frequently, followed by the implications of Globalization and the subset of outcomes resulting from them.

Commonalities

After completing the literature review, the drivers of change that these articles referenced the most frequently are:

- Globalization or the Global Economic Interdependency; Population Growth;
- Population Migration, more often than not to urban areas. This leads to:
  a. Greater urbanization (theme); and

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1 State of the art of international Forward Looking Activities beyond 2030, Paper drafted for the European Commission DG Research and Innovation (Social Sciences and Humanities), Anette Braun, including inputs from several members of the “Global Europe 2030-2050” Expert Group, Düsseldorf, August 2010 (Braun)
b. Changing demographics throughout the future world, most especially in the new/larger urban centers;
   - Growing fragmentation of the international order and the rise in non-state actors;
   - Scarcity of Resources. This includes access to:
     a. Energy resources and the means to generate energy;
     b. Fresh water;
     c. Food and the means to generate food (agriculture); and
     d. Raw materials for all industries.
   - The empowering effects of information technology and communications and what that does for individuals and communities;
   - The advances of technology and the importance of information;
   - Climate change;
   - The rise of the middle class juxtaposed with the remaining inequality of wealth;
   - Access to education; and
   - Corruption and Organized Crime.

One example of Climate Change notes that global warming has already rendered the Northwest Passage navigable most of the year. This raises the questions concerning what extent Russia’s Arctic Brigades will drive NATO to maintain a presence in the region and its subsequent affect funding or allocation of resources. An example of Globalization describes how this driver has displaced thousands of workers in Sri Lanka, resulting in radicalization of those displaced. If the Sri Lankan diaspora in Europe also becomes radicalized, how prepared should NATO be for such a contingency?

Oil Majors Shell and Exxon are focused on the energy demands driven by globalization and demographics. The World Food Organization is focused on the availability of grains and cereals. The two organizations appear to have different goals and outlooks. However, they still share common drivers. The availability of fuel for agriculture machinery and chemicals for pesticide use tie the two together.

**Differences**

Only one instance that could be considered a true difference of opinion occurs in the use of Friction as a theme. Joint Vision 2020 – America’s Military: Preparing for Tomorrow, defines sources of friction within broad five categories as potential contributors to future security. These are: Effects of danger and exertion; Existence of uncertainty and chance; Unpredictable actions of other actors; Frailties of machines and information; and humans. That no other piece of literature considers these factors is viewed as a distinct difference in themes and will likely be a major area of discussion during the workshop.

**Gaps**

Unpredictable multipliers are generally not addressed in the reviewed literature and the consequences of catastrophic events were not found. Events like Japan’s recent 

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earthquake/tsunami/nuclear disaster are not frequently addressed, which leads us to a discussion of Black Swans and Wild Cards.

Specifically, as Nassim Taleb asserts, “What we call here a Black Swan (and capitalize it) is an event with the following three attributes. First, it is an outlier, as it lies outside the realm of regular expectations, because nothing in the past can convincingly point to its possibility.

Second, it carries an extreme impact. Third, in spite of its outlier status, human nature makes us concoct explanations for its occurrence after the fact, making it explainable and predictable.”

While we know they are generally unpredictable, we tend to rely on monitoring “weak signals” to determine the likelihood of an “unknown-unknown” occurring. One of the goals of this and subsequent workshops is also to consider these events and determine their impact on strategy as well as identify what the Alliance may require to address them when they arise.

**Drivers**

Drivers are major forces or trends that could positively or negatively shape or influence the future. Drivers have a complex relationship with each other; some drivers are an outcome of other drivers. Some are reasonably predictable, others are uncertain.

The Comparison Matrix below captures the overall findings. For the greater part there is a fairly consistent, common view of potential futures. These themes would be considered as green; general consensus among all contributors. A yellow cell denotes where there was a theme gap; the topic was not discussed within the specific organization. The only true ‘red’ or difference was noted in a government document specifically focused on the theme of friction while no other literature work dealt with this theme.

**Driver Comparison Matrix**

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PEST⁴

PEST is a widely used mnemonic that’s been designed to help us remember key driver categories or headings used when carrying out strategic analysis:

- political
- economic
- social
- technological

These are factors in the external environment. Sometimes it’s represented as PESTEL (the L and the E stand for legal and environmental); or STEEPLE (same as PESTEL with the addition of ethical). The challenge is to identify those which will have security implications and influence future Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities, and Integration (DOTMLPFI) requirements. The following tables list the drivers identified during previous and current investigations.

### Previously Identified Drivers

<table>
<thead>
<tr>
<th>Old Drivers</th>
<th>Description</th>
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<tr>
<td><strong>Friction</strong></td>
<td>Limited use in all literature reviewed by three groups. Friction is the inability to decide or work towards a decision. Friction is also the speed of decision making.</td>
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<tr>
<td><strong>Economic Integration, Economic Disparity, Globalization, Economic Transnationalism</strong></td>
<td>Economic globalization refers to increasing economic interdependence of national economies across the world through a rapid increase in cross-border movement of goods, service, technology and capital⁵</td>
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<tr>
<td><strong>Asymmetry of Wealth</strong></td>
<td>Un-equal distribution of wealth between regions, states, sub-states and localities. Asymmetry of wealth leads to poverty, a frequent theme in NGO literature.</td>
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<tr>
<td><strong>Changing State Capacity</strong></td>
<td>All the drivers point to a shifting of the world power centers over the period leading up to 2050. There is a common trend away from the US leadership, a emerging of powers such as China and India and a statement of concern about weak / failed states.</td>
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⁴ [http://www.3s4.org.uk/looking-out/map-strategic-drivers](http://www.3s4.org.uk/looking-out/map-strategic-drivers)
Resource Allocation

Competition for Energy Resources, demand for new & alternate sources; demands for improved Energy distribution (shipping & grid) Competition for resources (water, food & raw materials)
This includes access to energy resources and the means to generate energy, access to fresh water, the access to food and the means to generate food (agriculture) and access to raw materials for all industries.

Competing Ideology and World View

Radical Ideology will utilize terrorism to promote their ideal. Potential access to WMD makes Ideology a driver given the greater role in Non-State actors such as Al Qaeda.

Climate Change

Climate change may force future entities to modify their behavior. Increased incidence of catastrophic natural disaster.

Use of Technology

Accelerated pace of scientific develop and innovative technology will drive change.

Demographics

Includes migration and urbanization. Population Migration for economic reasons & the resulting issues with changing demographics. Also includes Transmigration.

Newly Identified Drivers

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<th>New Drivers</th>
<th>Description</th>
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<tr>
<td>Urbanization</td>
<td>Migration to cities for economic purpose will be more probable, a form of demographic but used frequently and arguably a separate driver.</td>
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<tr>
<td>Population Growth</td>
<td>Population Growth in general (25% by 2040), broken out as a driver apart from Demographics.</td>
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<td>Education</td>
<td>Better access to education across all social spectrums will create expectations for jobs.</td>
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<tr>
<td>Multinational/Multilateral Organizations</td>
<td>Multinational, Multilateral Organizations may play a greater role in the world of 2030, including cartels, diasporas and criminal networks in all domains.</td>
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<tr>
<td>Health/Disease/Weather</td>
<td>Unpredictable event that cannot be predicted but serve as a negative force multiplier.</td>
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Literature Review

The table below provides a summary of the documents reviewed while preparing for the workshops. It should be noted, however, that many other documents were considered, as well as internet site reports, blogs and articles. This is considered the best representation of the
current futures work, but it is not exhaustive and its content also can be discussion at the workshop to ensure consensus.

**Literature Review Summary**

<table>
<thead>
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<th>Reference</th>
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<tbody>
<tr>
<td>1 Projecting Power: Canada’s Air force 2035 (2009)</td>
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<tr>
<td>4 Future Character of Conflict UDCDC Strategic Trends (?)</td>
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<tr>
<td>6 Environmental Change- Strategic Foresight- Impacts on Military Power (2010)</td>
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<tr>
<td>8 Future Land Operating Concept (2012)</td>
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<tr>
<td>10 Global Strategic Trends - Out to 2040 (2010)</td>
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<tr>
<td>11 India Vision 2020 (2002)</td>
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<td>13 Outsiights 21 Drivers for the 21st Century (?)</td>
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<tr>
<td>14 NATO Command Structure, Considerations for the Future</td>
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<tr>
<td>15 The Development, Concepts and Doctrine Centre (UK MOD) Global Strategic Trends Programme (2006)</td>
</tr>
<tr>
<td>17 2012 The Outlook for Energy: A View to 2040, ExxonMobil (2010)</td>
</tr>
<tr>
<td>18 Peak Oil German MOD, Centre of Transformation of the Armed Forces of Germany (2010)</td>
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<tr>
<td>19 Signals &amp; Signpost: Shell Energy Scenarios to 2050 (2011)</td>
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<tr>
<td>21 The International and Strategic Evolutions Faced by France (2012)</td>
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<tr>
<td>22 Strategic Assessment of the Security Environment, 2008-2030</td>
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<tr>
<td>23 The Future of NATO</td>
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<td>24 Global Strategic Trends – Out to 2040</td>
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<td>25 Future Joint Force Operating Concept 2030</td>
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<td>26 2012 State of the Future, Executive Summary</td>
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<td>27 Strategic Trends 2012, Key Developments in Global Affairs</td>
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<td>28 Global trends 2030 – Citizens in an Interconnected and Polycentric world</td>
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<td>29 The 2050 Roadmap for Nuclear: Making a Global Difference</td>
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<td>30 Ecological and Environmental Science &amp; Technology in China: A Roadmap to 2050</td>
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<td>31 The World Order in 2050</td>
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<td>32 Multiple Futures Project, Navigating Towards 2030</td>
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<td>33 NATO 2020: Assured Security; Dynamic Engagement</td>
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<td>34 Implications of a Changing NATO</td>
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<td>35 NATO Command Structure, Considerations for the Future</td>
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<td>36 Affordable Defense Capabilities for Future NATO Missions</td>
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<td>37 Alliance Reborn: An Atlantic Compact for the 21st Century</td>
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Conclusion

ACT has experienced past success with studies of trends that supported Allies in mapping out the future security environment and its challenges. Two concrete examples from the recent past are The Multiple Futures Project, that supported the nations’ deliberations on the Strategic Concept, and the Global Commons Study that looked at the implications of NATO’s requirement to have assured access to the maritime, air, space and cyber domains.

While these were successful, they could also be considered ‘stand-alone’ projects. The Strategic Foresight Analysis aims simply at gaining and maintaining that shared perspective of the future for NATO through continuous examination. Ultimately, having a shared perspective ensures Alliance consensus when forging recommendations for future requirements absolutely necessary to continued peace and security in at 2030 and beyond.