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NATO-
INDUSTRY
FORUM 2019

I. SOBRE O NATO-INDUSTRY FORUM 2019

O NATO-Industry Forum 2019 (NIF19) decorreu em Washington D.C com o alto patrocínio do Secretário-Geral da NATO e coorganizado pelo Supreme NATO Allied Commander Transformation e o Secretário-Geral Adjunto para o Investimento em Defesa.

O NIF19 teve como pano de fundo um ambiente de segurança desafiante e imprevisível, no qual os rápidos avanços tecnológicos revelam um mundo cada vez mais interconectado, facilitando a evolução incansável e o acesso global a tecnologia e informação.

Marcado pelo 70º aniversário da NATO e apenas um mês antes do *Leader's Summit* em Londres, o NIF19 incidiu sobre o Apoio à Tomada de Decisões através da partilha de conceitos, visões e estratégias no âmbito da Defesa e da NATO.

As sessões contaram com a presença e participação do Secretário-Geral da NATO, Jens Stoltenberg, o Comandante no NATO Allied Command Transformation, General André Lanata, o U.S. Deputy Secretary of Defense, David Norquist e o NATO Secretary General, Jens Stoltenberg, assim como representantes da Indústrias de Defesa dos países membros da Aliança, entre outros.

Este encontro de dois dias, convidou a indústria a reflectir sobre os seus actuais mecanismos de tomada de decisão de forma a alavancar soluções inovadoras; fomentando estratégias que adaptem os mecanismos de tomada de decisão, processos e procedimentos às tecnologias disruptivas. O debate, com foco no envolvimento da NATO com a indústria, interoperabilidade, inovação e tecnologia visa identificar transformações necessárias para adaptar e projectar a Aliança para o futuro.

II. TEMAS DISCUTIDOS NO NIF19

II. a) Tasking, Collecting, Processing, Exploitation, Dissemination

With the planned arrival of the Alliance Ground Surveillance (AGS) capability this year, NATO commanders and staffs have rapidly shifted from a mind-set of taking whatever Intelligence the Nations offer, to ambitions for planning and managing organic, National and commercial Intelligence, Surveillance and Reconnaissance (ISR) collection and exploitation. NATO now has agreed doctrine for Joint ISR and Allied Command Operations (ACO) has established procedures and arrangements for managing Tasking, Collecting, Processing, Exploitation, and Disseminations (TCPED) - the phases of the JISR cycle.

While there are complicating factors associated with collection authority and rules of engagement, the capability requirements most often raised by the staffs are:

1. How to shift from using a trusted spreadsheet to something more automated and integrated for synchronising collection and exploitation management of best available assets;
2. How to more rapidly extract useful information from multiple sources that exceed the exploitation and fusion capacity of the existing organisations; and
3. How to more rapidly turn the information into understanding that directly supports decision-making of all kinds.

Generally, it is accepted that the Alliance must function as a coherent federation of ISR forces and agencies, most belonging to the Nations. The JISR community needs to share and utilise timely data for planning and dynamically re-tasking collection and exploitation. Collection and exploitation management tools will use near real time data about sensors and platforms (type/status/location) to optimise their use in the multidimensional battlespace. Then collected data needs to be processed on board or routed to the appropriate nodes in the network for processing, exploitation, fusion, assessment and decision-support. The fewer steps that require intervention by a human, the faster this can occur. For NATO-led missions, this data must pass without loss or delay between tactical, mission, National, and NATO networks, which is an interoperability challenge. Finally, decision-makers of all kinds, from the tactical to the political levels, must receive information at the earliest stage of processing that will be useful to them. It may be data for a fire control system, an image or symbol on a map, or a written report. Since there cannot be one analyst for every customer of collected data, automation must help make the existing capacity more effective.

II. b) Leveraging Big Data (Strategic)

Data provides the foundation from which we will extract information, intelligence, and ultimately knowledge. Securing access to and being able to successfully analyse data will be fundamental to our future ability to understand the environment we face and take action.

The exponential, and in some fields over-exponential, growth of structured and unstructured data, from human and non-human sources, marks the transition from knowledge creation being an exclusively human endeavour to its future dimension: where artificial intelligence algorithms extract critical insights from vast amounts of data to support the decision-maker, enabling an overall capacity which is more capable than the sum of its parts.

In this era – also known as the ‘Cognitive Age’ – data are the dispersed, ever-present dust which are the invisible gold of today’s markets and will be equally vital to tomorrow’s operational theatres. Data is generated from events happening in either, or both, cyberspace and physical space, and their effects have ripples across all domains of operations.

NATO will only maintain its military superiority if it captures and exploits data faster and more efficiently than potential competitors, starting from today. The Alliance has therefore embarked upon a major new initiative to promote the use of data as a strategic resource. We need to take the right steps now to ensure we can successfully harness the data we have and derive value from it. Looking ahead, we must prepare ourselves for a new era of decision-making driven by insights derived by data.

In the 2035-2040 timeframe, we can anticipate that artificial intelligence enabled by data exploitation will drive new ways of operating – such as human-machine teaming – and lead to an increase in the speed of decision-making. Increases in the availability of data will also lead to greater complexity as we search for the key threads which need to underpin decision-making in a mass of information. Ensuring that we have the right data delivered to the right place at the right time will become a key operational necessity.

There are a number of Data Science-related issues to be tackled which require a mixture of policy and technical work. We have convened you here today to understand what major developments you foresee in this field as well as the challenges that lie ahead. Together, we need to transform the state of the possible into the state of art.

II. c) Operational Awareness and Anticipation

As NATO celebrates 70 years of shared purpose and mission, there is a strong sense among Allies that our security situation has never been more complex and unpredictable. Russia's 2014 seizure of Crimea and interference in Eastern Ukraine, the Arab Spring, missions in Afghanistan and Iraq, the rise of ISIL/DAESH, civil war in Syria, Iranian regional aspirations and nuclear ambitions, as well as migration, cyber and hybrid threats have all underscored the need for operational awareness and anticipation. Furthermore, as the Alliance looks to the future, factors such as the rise of China, threats to critical infrastructure, and advances in emerging and disruptive technology are transforming the way NATO thinks about Allied security.

In this dynamic environment, both national and NATO leaders demand timely information and intelligence that will improve decision space and prevent surprise. NATO's June 2016 Warsaw Summit Declaration emphasized the importance of improved intelligence functions and Joint Intelligence, Surveillance, and Reconnaissance (JISR) capabilities as a means to anticipate the actions of potential adversaries and support "timely and informed" political and military decision making.

Despite improvements, the task of providing leaders with decision space remains immense for several reasons. First, the number of operational areas and trouble spots strains even the most well-resourced organizations. Second, traditional tools for providing indications and warning are often ill-suited for anticipating cyber actions, terrorist threats, and hybrid actions. Third, improvements to intelligence collection outpace the capacity of human analysts to analyse and disseminate information. NGA Director Vice Admiral Robert Sharp highlighted the need to rethink collection and analytic processes as well as IT infrastructure and networks, in order to "keep up with the deluge of data."

In a multilateral environment such as NATO, the challenges are unique. Rather than suffering from a "deluge" of data, NATO organizations charged with awareness and anticipation must ensure they have timely access to relevant Allied information. Classification issues, systems constraints, and habits of information protection can create impediments to situational awareness.

As NATO looks to enhance operational awareness and anticipation, close linkages with Allies and industry partners are necessary. Breakthroughs in artificial intelligence, quantum computing, big data, biotech, and security technologies have the potential to transform how we provide planners and decision makers with awareness and anticipation. However, to be properly implemented, these tools need to be well understood by practitioners and leaders. Too often these technologies become buzz words for well-intended, but poorly informed bureaucrats. It is essential that experts from both industry and government jointly consider the problems we face and the potential solutions, including those that challenge the limits of our imagination.

II. d) Support to Human Decision-Making

As technologies continue to advance at an exponential pace, NATO will be operating in complex multinational operations where timely decision making is paramount to staying ahead of the adversary. Adversaries will strive to match or even out-pace the Alliance, using increasingly sophisticated tools to support and inform their own decision making. Technology can be a force enabler in the decision making process by processing large amounts of data and providing filtered and formatted information to the leaders. It can also serve as a great training aid in improving decision making performance and in evaluating decision making skills.

Technology tools like model and simulation and augmented reality provide key leaders the ability to forecast the outcomes of their decisions. These tools can also be used by operational planners to assist in developing multiple courses of action for the strategic leader to consider. Technology also brings the added benefit of forecasting 2nd and 3rd order effects on decisions like the political implications of a military decision. Implementing new technological process and approach to an organization poses additional challenges such as apprehension and pre-conceived bias by individuals who may not understand the advantages these technological advancements offer.

NATO continuously seeks education and training solutions that will best prepare its leaders to incorporate modern technologies to support the human in the decision making process. Simulation can provide a risk-free environment where decision-makers can develop and improve their skills without regard to real-world consequences. NATO would like to understand how industry is leveraging simulation to improve the skills of decision-makers in their organizations.

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