



**NORTH ATLANTIC TREATY ORGANIZATION  
SUPREME ALLIED COMMANDER TRANSFORMATION**

SACT REMARKS to  
the NATO INDUSTRY FORUM  
PANEL 1

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Supreme Allied Commander Transformation

We had a good start this morning, so let's keep up the momentum and open the floor for a very sound and candid discussion. This is what we are looking, because we need that.

We have many challenges in front of us, we know that, and the only way to go forward is really to be most realistic, innovative, and to do that together. This is exactly the essence of this day.

Deputy Secretary General, Ambassadors, Admirals, Generals, Distinguished guests,

Ladies and gentlemen,

It's a great pleasure for me to contribute to this NATO Industry Forum with such distinguished panellists and we thank really once again all the Croatian authorities and their staff for what they have done so far. This is an amazing collaborative endeavour and this is already a success.

I'm very glad to open this panel, because it is focused on one key essential priority for NATO: Readiness. Let's be clear at once, Readiness cannot be considered alone because I would say it is both an aim by itself and a key component of our military strategy. Therefore, from my perspective, Readiness is the result of a consistent capability development planning process, a high level operational forces' preparation, and last but not least, a permanent effort to maintain our equipments' serviceability in accordance with those levels of ambition. And this is perhaps, this last one, perhaps for me the greatest challenge for many, if not all, NATO countries.

Very much linked to Readiness is the aptitude to innovate and anticipate new framework of operations, new threats and take the best advantage of new technology in developing new concepts and capabilities, as demonstrated earlier by Vago [Muradian].

An illustration being worth than many definitions, let me start with a Croatian example of breakthrough innovation. In 1866, Ivan Vukic also known as Giovanni Lupis, he was a Croatian-Tialian officer, developed a game changer, it was not night-vision, it was the torpedo. As a consequence, it forced all the Navies to understand this new capability, this





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new weapon, develop adequate counter-measures, to train and exercise their crews in accordance. So I think this is a clear and relevant illustration of what I would summarize as keeping the edge through readiness and innovation.

What was true in the 19th century is still relevant in today's operational environment. It was clearly reaffirmed during the NATO Summit in Wales and everybody, the newspapers and media, widely highlighted this apparent NEW requirement for readiness.

More specially, they mainly put the emphasis on NATO's Readiness Action Plan aiming to provide responsive, flexible and robust forces to cope with emerging threats to our Alliance after the Ukrainian crisis but as well to face the many strategic security challenges both in the Middle East and North Africa.

For sure readiness is not a new goal for military forces, it has been well known in my command, Allied Command Transformation, as one of my key priorities since I took this command two years ago. Readiness is all the more important because of the growing demand on our military forces, the variety of their missions, the reduction of notice to effect, the complexity of the threats they had to face. So let's shortly proceed to a simple retrospective during the last two decades:

- It took 6 months between the UN resolution 1203 for Kosovo and the first strike of operation Allied Force in March 1999.
- 6 weeks to start the operation Active Endeavour in Mediterranean Sea after the 9/11 terrorist attacks.
- 6 days between the UN resolution 1973 for Libya and NATO handover of operation Odyssey Dawn (and I remember it took only 36 hours after UNSC resolution for the French Air Force to strike and save Benghazi).
- Approximately took 6 hours again for France to intervene in Mali in January 2013 and avoiding this country fall in the hands of terrorist fundamentalist extremist.
- Looking at the future, what will be next? Will we be ready in 6 minutes to counter a ballistic missile strike our euro-Atlantic territory?
- Will we have more than 6 milli-seconds to stop a cyber-attack?
- How much time will we have to respond to an hybrid threat to a NATO member?

These are indeed real scenarios that tremendously challenge our military forces. Not only to respond in ever shorter delays but at the same time in the most coherent and effective way. To successfully achieve these missions, we need today and even more tomorrow the right capabilities and forces that are trained, interoperable, deployable and maintained in the right operational structures and groupings, what NATO qualifies today with one single word: **READINESS**.





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And how does it translate from my perspective, from Allied Command Transformation, from a Transformation perspective? To take a scientific approach, Readiness is solving a very complex equation where the prospective vision and lessons learned refine our capability development and where our Connected Forces and Interoperability endeavor maximize the training and employment of Allies' and Partners' capabilities.

### **[Readiness= (Lessons Learned + Future works) x (CD + CFI)]**

I said complex equation, of course, and I am sure that we are all mindful that this growing demand for readiness may be hampered, is hampered, by the concomitant effects of budget cuts. It was not by chance that Secretary Hagel, last year I think, stated that "The deep, steep, and abrupt cuts of sequestration (sequestration is the word in the US, but you can feel that in any NATO country as well) took a toll on the force by cutting into the readiness of all our troops. But we were also mindful of the harmful impact on American Industry (NATO Industry) and the ripple effects it caused up and down the supply chain".

So in light of what could appear now as an unsolvable equation, the question must be raise is how we can cleverly improve and sustain the readiness of the Alliance in the current environment? And building from that, what both Industry and NATO need to do to achieve this goal together and maintain our leading edge?

### **[Lessons learned and Future works]**

First and foremost, we have to understand what I would call the key features of military leading edge in future warfare. And I still believe historian Geoffrey Parker grasped the necessary conditions for western military forces model to be successful: "use of better technology, innovation, discipline, aggressiveness, and a system to finance war".

Overall, this model has proven to be relevant just after the end of the Cold War as we have benefitted from the offset strategy against the Soviet Union. Then, our modern operations were developed on accurate identification, surgical precision, stand-off capabilities, higher endurance, better protection and a dramatically improved fire power. However, this ability to respond to any kind of crises is being more and more challenged by our adversaries. And we can assume that our military edge will certainly be even more disputed as a result of a number of game changers, just to name a few:

- In all military domains, land, air, maritime, and cyber, technologically empowered adversaries including non-state actors are improving their methods to engage our Alliance, through transnational mobility of fighters, deception, ambiguity which may pose a lot of difficulties for our Nation to tailor their responses and the ability to sustain them as we can see with the Hybrid Warfare Model.

- Thanks to available and affordable technologies, our future adversaries will be able to develop quickly very credible capabilities, in significant numbers. For instance, for the price of one modern fighter, they could buy how many, thousand, off-the-shelf mini-UAVs.





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On the other side, NATO is facing a double challenge:

- The first is to keep long-term investment in Defence capabilities and R&D despite pressures to address immediate needs in the scope of obviously constrained defence budgets. To keep the edge is to keep a vision of the future. Between 2012 and 2014, NATO countries represent 13 out of the top 20 declining defence budgets in the world. As a comparison, between 2008 and 2012, China's defence spending rose by 43.5% (this is the official figure), it could be more, and the Defence budget of China in 2015 could surpass the sum of the French, UK and German ones. As for innovation, the number of patents in China has tripled in the last 6 years and represents currently three times more than the United States' production.

- Second challenge, at the same time, NATO Nations need to maintain access to innovation that is currently and mainly developed outside of the defence sector, it was already referred to this morning. In fact, no defence companies are per se, and I know this could be disputable, but I would say no defence company per se are remaining among the top 20 industrial R&D spenders. The recent acquisition of Boston Dynamics (funded initially by DARPA) by Google illustrates this new paradigm quite well.

As a result of these trends, being ready means therefore for the military to invest smartly in the right capabilities. But, if anything, recent crises in Ukraine, Libya, Iraq, and other places offer lessons, it is in humility. We might face elements of surprise or even "strategic shocks" against which we have to develop not only our readiness but as well our shared resilience by capitalizing on solidarity, complementarity, and interoperability. To better understand and anticipate the future strategic environment we have been developing for 2 years a comprehensive prospective approach, starting with a Strategic Foresight Analysis from which we are currently deriving all the military implications in our Framework for Future Alliance Operations. Looking in the future is crucial to keep the edge.

Aside from what NATO has to achieve by itself in this area, I am a strong believer that industry can also contribute for a great part to the answer. Indeed, you are the experts in achieving readiness as it is your daily business. For Industry, this is your DNA, if I may use this expression, it compels you to constantly adapt, prepare, posture for emerging or changing markets and to keep a sufficient leading edge against competitors. The methods you develop, implement and apply are of great interest for us. This is a key factor for this cooperation between industry and NATO to be able to take the most out of your experience and our experience together. They should inform us, this new method, this vision that you have, and help us comprehend our future operational environment, smartly develop affordable, sustainable capabilities and maximize their use through education and training.

We are eager to listen to the Industry's point of view on which new technological trends may change or alter our art of war that may inform our decisions.

With your help, we need to get the best possible grip on the future threats, on the emerging opportunities, on the art-of-the-possible, to best inform our military requirements. Thus, there is therefore a compelling need and clear need to foster the Dialogue with Industry, so both of





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us can be best apprised on the future and make the right decisions. The recently approved NATO Cyber Partnership with Industry should be a perfect illustration of this new relationship.

### **[Capability development]**

This enhanced Dialogue supports the second part of our readiness equation lying in the development, acquisition and availability of right capabilities “on time AND on target”.

To use former Secretary of Defence Robert Gates, we have to find the solution that can “be produced on time, on budget and in significant numbers”. We always start with good intentions, but most of defence program have a tendency to slip in time and cost. But what are the alternative to this model inherited more or less from the Cold War and the good old time of financial opulence.

First, we must find innovative ways to adapt and reuse, in a certain way, equipment, our systems and equipment. Those we paid for that we have to use now on a day-to-day basis that our men and women on the ground, in the air, at sea, have to use to safe, to protect their life but as well to achieve their mission. So, specifically in the past we had a model which was focused more or less on dedicated specific means, ways and equipment for a single purpose. Now we have to capitalise on the ability to build on a more modular, more system of system approach, as we did in Afghanistan for instance where we developed the Afghanistan Mission Network. And so, we must capitalize on that, on the lessons that we have learned as we are shaping the future Federated Mission Networking for NATO Forces 2020. This is a good example no how we can capitalize, how we can learn, and how we can develop future system. And we are doing that in a very open way. We are capitalizing on a lot of very constructive inputs from industry and from many other stakeholders. This is how we will win and how we will keep the leading edge.

In addition, we must deny our enemies the feeling they can bring us to the brink of bankruptcy. For that purpose, we must discipline ourselves to not look for a “silver bullet” against each military challenge. In Afghanistan, the necessity to maintain a sustainable 24/7 ISR coverage over Kabul brought our Coalition to invest in a very cost-effective lighter-than-air capabilities, an adaption of Zagreb inventor David Schwartz, who built the first balloon with a metal structure during the 19th century. And it works.

As a consequence, I firmly believe that we must adopt a pragmatic approach in our equipment design and acquisition which can be simplified this way: “a sufficient number of platforms” on one hand fitted with “the right payload” on the other. A very simple as a principle. Whatever the asset, aircraft, ground vehicle, or ship, previously developed over long periods of time there is a clear advantage in building common, MODULAR, multi-role platform on which you can plug military equipment best suited to the mission and making use of the latest and affordable technology. It is well known for major maritime and air platforms but, as far as the land component is concerned I see also clear operational and cost advantages in pushing modularity below the brigade level to facilitate battalion and company-sized combined arms deployments.





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Being ready means also taking care of the serviceability of the equipment we field. This is all the more important that many Nations, almost all the Nations, have dramatically reduced their spending in logistics and maintenance. But let's not forget that serviceability of many fielded equipment has become the main part of the life-through-cost. Thus, we will be condemned to develop new ways to provide maintenance and logistic, and to embed that in our initial requirement, in our initial investment. And to do that together. We have to be able to provide a coherent, continuous, robust supply chain to our theatre of operations. So we are already eager to learn on how Industry efficiently manages its supply chains, how it deals with complex logistical issues. How new technology can serve better serviceability.

For instance, we have to assess the potential of 3D printing or similar advanced and reactive manufacturing technique. Being able to create in a certain way spare parts on a theatre of operation would revolutionize the way we currently approach sustainment, reducing critical vulnerabilities in logistic movements and warehouses. Going further in that thought, we can even imagine futuristic battlefields where some of the needed equipment/capability or systems would be adapted on the spot, on demand, a kind of third Operations oriented industrial revolution...

### [Education, Training, Exercises]

The last but the most obvious part of the readiness equation relies upon the men and women. We have to make sure to ensure their skills through education, training and exercises.

NATO is putting a tremendous effort in this priority area implementing the Connected Forces Initiative. It is a comprehensive set of actions aiming at maintaining and building on the interoperability and lessons identified between Allies and Partners during the last decade of crisis management.

NATO is on the path to make the best use of limited human resources. In this manner, ACT is building an education programme, which will close gaps between Nations' requirements and existing education opportunities within the Alliance. And Industry could really help the process of more distributed training, virtual world, integrating those different aspects of simulations. For instance, during major high visibility exercises, as we will have next year 2015, a larger number of troops could fully participate in the activities through the magic of distributed simulation.

The flexibility that we require from our forces to cope with various environment and threats needs to be reflected in our education program. We must provide solutions to educate and train our forces to cope with the uncertainties and complexity of modern operations. As a result of close exchanges with industry, ACT is developing and promoting new ways to deliver education and training such as serious gaming, the use of immersive environments, e-learning, or the recent demonstration of the first military Massive Open Online Course (MOOC).

Most of all, exercising will always be the capstone for ensuring the desired level of preparedness. Exercising helps to bring together Nations to test their interoperability from





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doctrine to equipment, find solutions to problems identified in operations, define how to react and continue the mission with degraded capabilities. We must be very ambitious and very demanding in building our exercises with complex realistic scenarios. This is a crucial investment because, first and foremost, it is very tangible. It is tangible not only from the outside, but from inside. It's tangible for our people. This is the best way we have to demonstrate that we are really investing in them, for them, for the better readiness and to make readiness concrete and measurable. This is a way as well to build trust and confidence between the many nations, between the troops, between the men and women working and fighting together. And it is a way to better understand the gaps, the reality of the capability, the gaps and constantly validate our response to the military requirement. To share the benefit of these valuable activities and exercise we are ready to investigate the industry involvement. And first and foremost in 2015 through the major TRJE 15 exercise which will gather more than 25,000 military personnel in Spain, Italy and Portugal, and many other places. We are already planning to connect more than 14 national activities, exercises together. This is a great breakthrough in our ability to commit together and improve and optimize our exercises, our training and capabilities, our training investment. For instance the major Canadian exercise 2015 will be fully connected, real-time connected to TRJE 15 and in addition Canada will take part as well in the live exercise in Portugal, Spain, and Italy. So this is the best demonstration how we can invest together.

This initiative we call it **Industry Involvement Initiative in NATO Exercises**. Our guests should be able to closely observe parts of the exercise and have a direct interaction with our operators. They would be confronted to our basic and more complex interoperability issues and by understanding the operator needs, we hope to foster together innovative solutions. My staff stands ready to provide you with all the details on this initiative.

To conclude in a few words before opening the panel, I am sure that you share my conviction that the Alliance is on the brink of a new era that will challenge our collective ability to stand ready, that makes this panel very attractive for we have with us operational commanders, operational practitioners.

So let's take the most benefit of this meeting and without delay, I leave the floor to Vago [Muradian] and I am expecting a lot of interaction, a lot of challenging questions, and hopefully a lot of good answers.

Thank you.

