

Lessons Learned & NATO's evolution

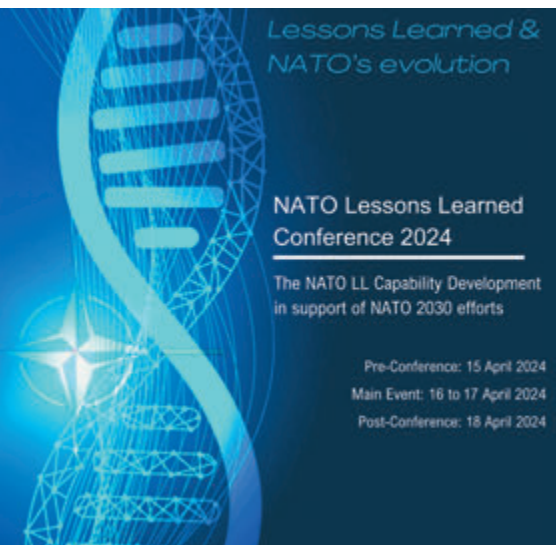
NATO Lessons Learned Conference 2024

The NATO LL Capability Development
in support of NATO 2030 efforts

Pre-Conference: 15 April 2024

Main Event: 16 to 17 April 2024

Post-Conference: 18 April 2024



Editorial

It is with great pleasure that I welcome you to this year's edition of our magazine, a culmination of the NATO Lessons Learned Conference (NLLC) 2024. This year's conference marked a significant milestone as we returned to an in-person format for the first time in five years.

Reflecting on the success of this event, I am reminded of the essence of our work at the JALLC—looking back to face forward. Our commitment to analysis and Lessons Learned is rooted in understanding past events to drive positive change and progress within the Alliance.

This magazine serves not only as a reflection of the conference but also as a reminder of the achievements made, and the invaluable insights shared, during our time together. I hope this publication provides a comprehensive overview of the discussions that took place.

I extend my heartfelt thanks to everyone who contributed to the success of this event, from our dedicated team at the JALLC to the behind-the-scenes crew whose support was instrumental. Your commitment and dedication are truly appreciated.

As we look to the future, I invite you to join us at the next NLLC, where we will continue our journey of learning, collaboration, and progress within the NATO community. Until then, thank you for your continued support, and I look forward to our continued partnership in advancing collective security and resilience.

See you all at the next NLLC,

Jodie Lazell

Contents

01

Welcome to the NLLC24 Magazine

02

NLLC24: Behind the Scenes

03

NLLC's Keynote Speaker Urges Unity, Adaptation, and PL

05

General Chris Badia

07

Partner in the Spotlight: Australia

09

Lessons Learned in Digital Transformation

11

Enhancing Alliance Learning Through Sharing and Interoperability

13

NATO LL Capability Development in support of other NATO Capabilities

15

Lessons from the War Against Ukraine

17

Exploring the Frontiers of Innovation: Industry and Academia at NLLC24

18

NATO 2030: Charting a Path Forward

19

LL from Technological impact in Modern Conflicts

20

The Future Operating Environment

21

Education and Individual Training (E-IT): Learning to Prepare for NATO 2030 and Beyond

22

NLLC24 @ A GLANCE – Statistics

23

NLLC24 Agenda

Hyperlinks to the NATO Lessons Learned Portal in this magazine will take the reader to the unclassified version of the portal. For full access to all NATO Lessons Learned Portal information, readers are encouraged to visit the classified version of the portal, subject to the required security clearances.

Welcome to the NLLC24 Magazine

Colonel Arturo Sabando

Director of the NATO Lessons Learned Conference 2024



This magazine is intended to provide those who attended the NATO Lessons Learned Conference 2024 (NLLC24)—which took place on 16–17 April 2024—with an overview of what they heard and saw, and those who could not attend, with an idea of what they missed.

The NLLC24 theme—NATO Lessons Learned Capability Development in support of NATO 2030 efforts—allowed us to build upon the successes and lessons gleaned from NLLC22, with a noticeable difference: this year’s conference format returned to its pre-COVID state, with the entire audience gathered in person with some high-visibility guest speakers joining us from locations around the world.

For me, one of the most remarkable aspects of this year’s conference was the convergence of diverse perspectives, opinions, and expertise from across the Alliance. It is this spirit of collaboration and open-mindedness that enables us to continually embrace new ideas and explore innovative solutions to complex challenges. Over the course of NLLC24, three panels delved into key topics aligned with the overarching themes of the conference. These panels, along with highlighted topics, are featured in this magazine, providing a comprehensive overview of the discussions and insights shared during the event. I encourage you to explore these pages to gain valuable insights and key takeaways from each panel discussion.

In alignment with the NATO Lessons Learned Roadmap (2021–2025), NLLC24 exemplified our commitment to thinking big while acting swiftly and decisively. By harnessing the collective expertise of the NATO Lessons Learned Community, we continue to drive meaningful progress and enhance our operational effectiveness. The findings derived from NLLC24 have already been captured in a comprehensive JALLC Report that has been sent to Lessons Learned Leadership and is available on the classified version of the NATO Lessons Learned Portal. We trust this report will serve as a valuable resource for further reflection and action within the Alliance.

As you peruse this magazine, you will find a detailed overview of the presentations, discussions, and notable activities that took place during NLLC24. Additionally, insightful statistics provide a glimpse into the significance and impact of this year’s conference. I hope you find this magazine both informative and inspiring, and I eagerly anticipate our continued collaboration and learning at future NATO Lessons Learned Conferences.

Director of the NLLC24
Colonel Arturo Sabando, ESP A
JALLC’s Lessons Learned Management Division Head



NLLC24: Behind the Scenes



You might think that it takes a small army to put on the NLLC24, but the core team is made up of just a few JALLC members who have a LOT of experience in organizing these types of events. We hear from the NLLC24's Officer of Primary Responsibility, Stefan Olaru, about how the team did it again at this year's key Lessons Learned event.

This iteration of the NLLC was marked by a sense of “getting back to normal” as we transitioned to a fully in-person format and returned to a familiar location for the event at the Portuguese Military Academy in Lisbon. This certainly gave the NLLC24 team a sense of continuity as we got the show on the road. The NLLC24 always aims to test—if not push—the boundaries of what can be achieved at NATO events. And this can only be done when you have a team of people that can not only work together but are synchronized and harmonized so that the “teamwork” bit requires zero effort, and all the effort can be put into making the event a success. And I think this is the secret to how the NATO Lessons Learned Conference always manages to be on the cutting edge of NATO events.

But we didn't walk alone: we had some help from a few friends along the way.

We extend our heartfelt thanks to the US Navy Reserve for their assistance in making NLLC24 a success. Their support and collaboration were instrumental in overcoming logistical hurdles and ensuring the seamless execution of the event, and to the staff of the Portuguese Military Academy, whose hospitality and professionalism shone through the whole event.

As we navigated the complexities of running the event, one of the trickiest elements was maintaining timing and coordination between the live and virtual components. Yet, with meticulous planning

and dedication, we successfully delivered a memorable and impactful conference experience.

Looking back on NLLC24, we reflect on the lessons learned and the progress made in advancing collective learning within the Alliance. As we continue to evolve and innovate, we remain committed to driving positive change and fostering collaboration across NATO.

Thank you to everyone involved for your hard work, dedication, and contributions to the success of NLLC24. We look forward to the continued journey of learning and collaboration at future NATO Lessons Learned Conferences.



NLLC24 Officer of Primary Responsibility **2**

Stefan Olaru

NLLC's Keynote Speaker Urges Unity, Adaptation, and Proactive Learning

Drawing upon the conflict in Ukraine, NATO's Assistant Secretary-General for Operations, Mr Goffus, addressed the NLLC24 audience, stressing the importance of unity and adaptation in the face of evolving threats. He emphasized the need for a robust and diverse approach to Lessons Learned, cautioning against simplistic thinking.



Source: <https://tdhj.org/blog/post/cognitive-warfare-national-will-fight/>

Addressing the NLLC24 audience by video, Mr Tom Goffus, the Assistant Secretary-General for Operations of NATO, emphasized the importance of unity and adaptation in tackling the complexities of modern warfare.

Drawing upon the ongoing conflict in Ukraine as an example, Mr Goffus emphasized the urgent need for NATO to glean lessons from the war and apply them swiftly and effectively. He underscored the critical role of the NATO Lessons Learned Process, highlighting its capacity to accommodate a diversity of thought and perspectives.

Leveraging the diverse experiences and insights of the NLLC participants, Mr Goffus called for a proactive approach to learning while stressing the silver lining of adversity: the invaluable opportunity it presents for learning and growth. Mr Goffus urged stakeholders to embrace a more inclusive approach that provides robust inputs to political decisions, even if they may not be universally agreed upon.

“One of the few silver linings of the war against Ukraine is the ability to learn from what is happening there.”

ASG OPS
Mr Tom Goffus

ASG OPS Mr Tom Goffus

Mr Tom Goffus was appointed Assistant Secretary-General for Operations in January 2022.



He advises the Secretary-General on strengthening the defence capabilities of NATO partners, preparing NATO for the defence of Alliance territory and responding to crises.

Mr Goffus previously served as the Deputy Assistant Secretary of Defence for European and NATO Policy from May 2017 until October 2018. In this role, he was responsible for the U.S. Department of Defence relationship between the USA, NATO, the EU, and the nations of Europe for Secretary Jim Mattis.

Addressing the NLLC24 audience by video, Mr Tom Goffus, ASG OPS, emphasized the importance of unity and adaptation in tackling the complexities of modern warfare.



In outlining his vision for NATO's Lessons Learned framework, Mr Goffus stressed the importance of updating tools, embracing diversity, and ensuring comprehensive coverage across the spectrum from tactical to strategic to operational levels. He highlighted the need for NATO Lessons Learned experts to be present at the right forums, providing their perspectives in real time and actively contributing to the creation of impactful lessons.

Further, Mr Goffus encouraged a forward-thinking mindset, quoting the wisdom of Wayne Gretzky, the legendary ice hockey player: *"Skate to where the puck is going to be, not where it has been."* This philosophy of anticipation served as a powerful reminder of the importance of anticipating future challenges and adapting proactively to meet them head-on.

His address set the tone for the NLLC24, encouraging participants to discuss, share insights, and collaborate to enhance NATO's continued effectiveness and resilience in an ever-evolving security landscape.



As Mr Goffus highlighted, the NATO Lessons Learned Process has a critical role in the war in Ukraine. Source: <https://www.publico.pt/2022/02/25/politica/noticia/seis-partidos-marcam-protesto-unido-invasao-ucrania-1996788>

General Chris Badia

Deputy Supreme Allied Commander Transformation

Addressing the NLLC24 audience via a recorded hologram, Deputy Supreme Allied Commander Transformation (DSACT) General Chris Badia stressed the importance of unity amidst the Ukraine conflict and an “increasingly volatile environment.” Working together is essential to ensure collective defence.

General Chris Badia opened the NLLC24 by extending a warm welcome to the two newest members of the Alliance, Sweden and Finland, stressing that their membership “... is as important today as founding members in 1949.”

In his introductory remarks, the General also highlighted that Russia and other authoritarian regimes “... are threatening our very way of life as well as the peace, prosperity, and stability of the rules-based international order that has enabled peace for over 80 years.” He went on to note that the conflict in Ukraine is “... clear evidence that we cannot rest on our past accomplishments to secure a future peace.”

The invasion of Ukraine by Russia is a violation of the rules-based international order. This picture shows the state of a residential zone in the Ukraine. Source: <https://www.cmjournal.pt/mais-cm/especiais/guerra-na-ucrania/detalhe/guerra-ja-causou-prejuizos-de-110-mil-milhoes-de-euros-a-economia-ucraniana>



DSACT General Chris Badia

General Badia joined the German Air Force as a cadet in 1984 to become a jet pilot and officer. His first assignment after the academy was with NATO as Personal Assistant to COM/DCOM HQ Allied Air Forces Northern Europe in Ramstein. In 2018, Badia assumed responsibility as Director General for Planning in the Ministry of Defence after two commanding assignments.



On 07 July 2022, General Badia was appointed Deputy Supreme Allied Commander Transformation (DSACT).

General Badia then gave the NLLC24 an overview of what was to come during the event, highlighting the importance of this full, live, in-person iteration of the NATO Lessons Learned Conference after the COVID-19 pandemic. He noted, in particular, the importance of the post-conference opportunities, which were designed to allow specific communities to meet and discuss topics relevant to them under the umbrella of Lessons Learned and the framework of the NLLC24.

Regarding the content of the NLLC24, General Badia noted that the intriguing, cross-functional agenda would allow participants a broad sweep through the state of Lessons Learned, particularly in the context of the NLLC24's theme, which focused on how the NATO Lessons Learned Capability can support NATO 2030 efforts.

He highlighted the interventions of Major General James R. Kriesel, Director J7 of the US European Command; Rear Admiral Nick Wheeler, Director of NATO's Digital Staff; and General Norbert Wagner, Commander of the Joint Force Training Centre in the context of the NLLC24 panels, but noted that all the speakers would bring unique and truly relevant perspectives to the NLLC24 table.

Finally, General Badia noted that the global security environment is increasingly volatile, identifying four key challenges. First, Russia's war against Ukraine. Second, Hamas's attack on Israel and the spread of instability in the region. Third, the increasing conflict in Africa. Fourth, the instability in Haiti. He stressed that NATO is prepared to face each one of these challenges and the current and emergent security threats.

In his concluding remarks, General Badia, on behalf of SACT, thanked the JALLC's Commander and highlighted the importance of working together to ensure collective defence. In his words, this is key *"... to Out-Excel our adversaries who are also learning and adapting from the ongoing Russian War against Ukraine."*

"Russia and other authoritarian regimes are threatening our very way of life."

DSACT
General Chris Badia



Top: NATO is committed to Ukraine for as long as it takes. Source: <https://edition.cnn.com/europe/live-news/russia-ukraine-war-news-07-12-23/index.html>

Middle: Working together is essential to ensure collective defence. Source: <https://www.nato.int/docu/review/articles/2005/12/01/a-more-political-nato/index.html>

Bottom: General Chris Badia on stage as a recorded hologram, delivering his address to the NLLC24 audience. The NLLC24 used the latest technology from across the NATO Enterprise to connect key speakers from across the globe to the live event audience.



Partner in the Spotlight: Australia

Source: <https://www.defenceconnect.com.au/geopolitics-and-policy/12365-australiapushes-for-a-seat-at-the-nato-table>

The Australian Defence Force (ADF) plays a pivotal role in managing Lessons Learned within the Indo-Pacific region, offering valuable insights for collective-defence efforts. With extensive experience from operations alongside NATO, the ADF is an example of a structured approach to lessons management, including immediate hot wash-ups and comprehensive After-Action Reviews (AAR) to ensure that observations are effectively captured, reviewed, and applied to enhance operational effectiveness.

It was in this context that Lieutenant Colonel John F. Edwards, CSC of the Royal Australian Infantry Corps, addressed the NLLC24 audience on Australia's current efforts in Lessons Learned.

In the dynamic theatre of the Indo-Pacific, where security challenges abound, Australia stands as a key partner in fostering collective defence and learning from shared experiences. Much can be learned from understanding how our Partners do Lessons Learned. As such, LTC John Edwards CSC took to the floor of the NLLC24 stage to provide some Australian insights that offer invaluable lessons for the broader international community.

The ADF operates within this region at the forefront of security challenges, managing Lessons Learned from a diverse range of operations. The ADF's lessons management framework serves as a cornerstone for enhancing operational effectiveness and promoting interoperability among allied and partner forces.

Drawing from its 15-year involvement in Afghanistan, alongside NATO forces, the ADF is a key partner in collective defence. Operating in support of the international rules-based order, the ADF prioritizes deterrence, recognizing that sustainable security requires collaborative efforts.

Utilizing a structured six-stage approach to lessons management—plan, collect, analyse, decide, implement, and validate—the ADF ensures a thorough process for extracting insights from operations.

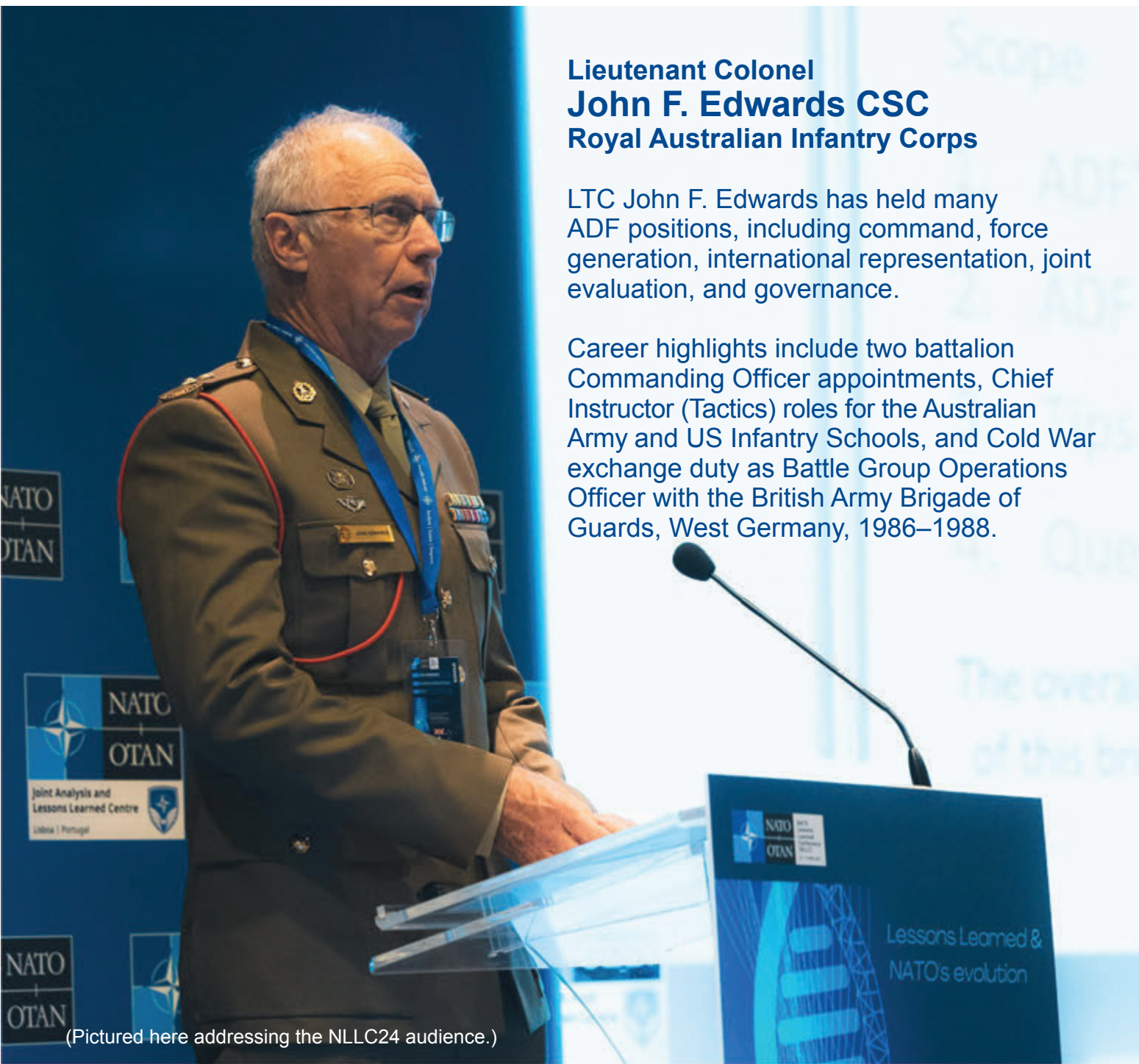


Source: <https://www.nato.int/docu/review/articles/2008/03/27/rethinking-nato-partnerships-for-the-21st-century/index.html>

Lieutenant Colonel
John F. Edwards CSC
Royal Australian Infantry Corps

LTC John F. Edwards has held many ADF positions, including command, force generation, international representation, joint evaluation, and governance.

Career highlights include two battalion Commanding Officer appointments, Chief Instructor (Tactics) roles for the Australian Army and US Infantry Schools, and Cold War exchange duty as Battle Group Operations Officer with the British Army Brigade of Guards, West Germany, 1986–1988.



(Pictured here addressing the NLLC24 audience.)

From immediate post-action hot wash-ups to in-depth AARs and subject matter expert (SME) reviews, the ADF's methodology emphasizes the importance of capturing and disseminating lessons in a timely manner.

Central to the ADF's lessons management ethos is the cultivation of a robust learning culture. By tagging observations with keywords for easy retrieval and sorting, the ADF makes the process of knowledge dissemination and application easier. The ADF also emphasizes the importance of reviewing and prioritizing insights to maximize their impact on operational effectiveness.

In conclusion, Australia's lessons management practices offer a blueprint for the Indo-Pacific region and beyond. Through collaboration, standardization, and a relentless commitment to learning, the ADF demonstrates how partnerships and shared insights can strengthen collective defence efforts. Australia is, therefore, a key partner for NATO.

“The ADF operates within this region at the forefront of security challenges, managing lessons learned from a diverse range of operations.”



**“Militaryies that do not adapt
or transform, lose.”**

RADM Wheeler

Lessons Learned in Digital Transformation

The opening panel focused on digital transformation, with experts highlighting the importance of adapting to evolving threats. RADM Nick Wheeler, director of NATO’s Digital Staff, addressed the audience as a key speaker, encouraging participants to think about Digital Transformation as an enhancement of human resources rather than as a replacement for them. In this article, we look at some of the discussions during this panel that covered shared experiences during the COVID-19 pandemic, artificial intelligence (AI) pilot programs, and smart procurement strategies to advance NATO’s technological capabilities in line with collective security goals.

By 2030, NATO’s Digital Transformation (DT) will enable the Alliance to conduct multi-domain operations, ensure interoperability across all domains, enhance situational awareness, and facilitate political consultation and data-driven decision-making. This will be achieved through NATO’s DT Implementation Strategy, which combines modernization, optimization, and transformation efforts across the dimensions of people, processes, and technology. In this context, and given that Lessons Learned will be a critical enabler to achieve these strategic outcomes, the NLLC24 presented a panel discussing the three key aspects of Lessons Learned and NATO’s DT: how LL can inform NATO’s DT; what Lessons need to be Captured, Analysed and Learned from the implementation of NATO’s DT, and how the NATO LL Capability itself can be enhanced by DT.

RADM Nick Wheeler (pictured on stage, bottom of the next page), Director of NATO’s Digital Staff, addressed the audience as the key speaker of the NLLC24’s first panel, emphasizing the urgency of change in the face of evolving threats. “*Militaryies that do not adapt or transform, lose,*” RADM Wheeler noted, highlighting the imperative for embracing digital innovation to maintain relevance. He underscored the pivotal role of data-driven decision-making and the necessity of dismantling barriers between nations for collective progress.

Key Takeaways:

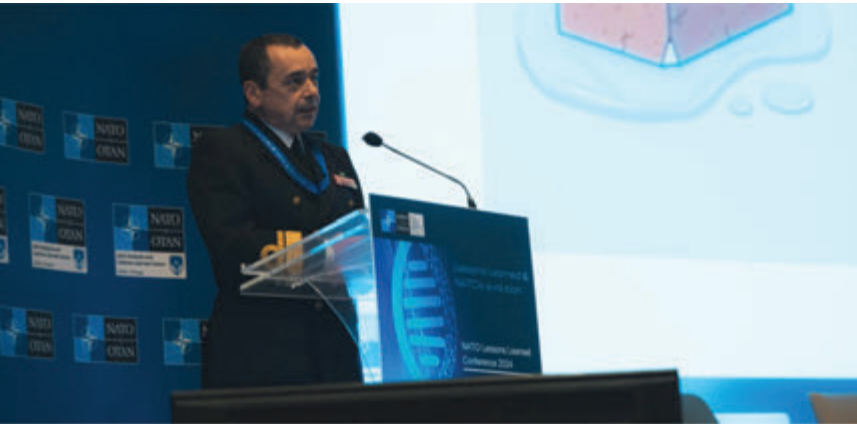
URGENCY: There is an increasing sense of urgency regarding digital transformation. This is imperative to adaptation and maintaining military relevance.

DATA-DRIVEN: NATO OCIO's commitment to data-driven decisions and agile processes, revolutionizing information sharing. Will be key to successful DT in NATO.

LEADERSHIP: The importance of leadership and collaboration in navigating the digital landscape for high-reliability organizations should not be underestimated in the context of successful DT.

INNOVATION: Innovation goes hand in hand with DT and can be used to enhance existing frameworks, focusing on leveraging technology to improve operational effectiveness.

Ms Kamila Lenarczyk (pictured below), from NATO's Office of the Chief Information Officer (OCIO), discussed the path towards a secure and digitally enabled Alliance. Ms Lenarczyk outlined the pivotal role of OCIO in shaping NATO's digital future, highlighting the Office's commitment to pioneering initiatives that enable data-driven decisions and foster agile processes within the Alliance.



RADM António Gameiro Marques (pictured above), Director General of the Portuguese National Security Office, then provided insights into the importance of high-reliability organizations in navigating the digital landscape. Emphasizing simplicity, integrity, and continuous learning, Marques highlighted the critical role of leadership and collaboration in mitigating risks and seizing opportunities in the digital age.

Ms Jackie Eaton, the JALLC's Principal Operational Research Analyst, shed light on how the JALLC's innovation plan is delivering progress in the context of its activities and NATO's Lessons Learned framework. Ms Eaton emphasized the importance of enabling human potential through technology, noting that tech shortfalls in data collection and analysis hinder optimal performance. Through initiatives like intelligent chatbots and big data exploration, JALLC is pioneering new frontiers in leveraging technology to enhance NATO's operational effectiveness.

You can read more about NATO's Digital Transformation and the JALLC's Innovation activities, as well as interesting feature articles about Digital Transformation, in the JALLC's annual publication, [The Explorer](#). [Click here](#) to download a copy, or visit our website at www.jallc.nato.int.





Enhancing Alliance Learning Through Sharing and Interoperability

Source: <https://www.act.nato.int/our-work/nato-warfighting-capstone-concept/>

Lessons Learned (LL) sharing goes hand in hand with Alliance interoperability. As SACT noted: “Interoperability ensures that NATO’s military power is always greater than the sum of Allies’ military capabilities.” This is true for LL as it is for any other NATO capability. LL Interoperability will, therefore, be key to Enhancing Alliance learning in order to ensure that NATO’s 2030 ambition can be achieved.

Key speaker MGEN James Kriesel, Director J7 of United States European Command (USEUCOM) addressed the NLLC24 audience during this panel, which offered insights into the Alliance’s need to enhance learning through sharing and interoperability. Although a seemingly simple topic, NATO is based on an alliance of Sharing and Interoperability, and this panel uncovered some of the real challenges to improving NATO’s and Nations’ ability to share and exploit valuable lessons.

NATO’s 2030 ambition can be achieved by addressing a number of key requirements in areas that will strengthen NATO’s deterrence and defence posture and enhance interoperability, readiness, and responsiveness. In this respect, the importance of LL cannot be underestimated: by not only incorporating past LL into our current and future work strands but also by ensuring that we capture and share future lessons from our endeavours in these areas, the Alliance can validate what it is doing today, from its experience in the past, to ensure it is ready for the future.

As such, this NLLC24 panel discussed the importance of interoperability to LL sharing from the perspective of the NATO LL Capability elements. Another key aspect discussed during this panel was LL standardization as a driving force for enhanced LL sharing and interoperability. However, national challenges to actually being able to share lessons with NATO will need to be identified and addressed if the alliance is to progress in enhancing its capability to learn through national contributions to Lessons Learned.



MGEN James Kriesel, Director J7 of USEUCOM, discussed the importance of vigilance and adaptation in the current geopolitical context. MGEN Kriesel highlighted the imperative for continuous learning in the face of evolving threats. With a focus on the Russia–Ukraine conflict, MGEN Kriesel underlined the need for collective defence in sustaining deterrence and managing escalation. Lessons identified from both successes and challenges are the bedrock of NATO’s ability to refine strategies and confront emerging security paradigms.

Echoing Kriesel’s urgency, BGEN Manu Tuomeinen of the Finnish Defence Forces offered a fresh perspective on Lessons Learned from a new NATO member. Drawing on Finland’s position as a nation bordering Russia, the General emphasized the importance of actively participating in collective defence efforts. Finland’s commitment to adapting swiftly and contributing to NATO’s collective resilience is key to the Alliance.

Mr Robert Trabucchi, Deputy Director of NATO’s Standardization Office, discussed the crucial role of standards in collecting Lessons Learned for broader dissemination and application. Mr Trabucchi emphasized the need to bridge the gap between exercise reports and actionable insights, advocating standardization of processes to enable rapid learning and adaptation. Highlighting initiatives like AI Claire, a search tool developed by ACT Innovation Hub, Mr Trabucchi emphasized the importance of leveraging technology to streamline the lesson-learning process and foster agility within NATO.

The Panel discussions then turned to pressing questions around the nature of contemporary warfare and the Alliance’s readiness to confront emerging challenges. With the ongoing war against Ukraine, the imperative for interoperability and shared learning has never been more urgent.

The discussions in this panel continued to a degree during the post-conference community of interest sessions, one of which was dedicated to the NATO-National LL Community of Interest. The outcome of that session was identifying the need to establish a more permanent working group and NATO Lessons Learned Portal Community of Interest to begin to bolster NATO–National Sharing of Lessons Learned related information.

Key Takeaways:

EMPHASIS ON CONTINUOUS LEARNING: The conference stressed the importance of continuous learning in the face of evolving threats, particularly focusing on lessons from the Russia–Ukraine conflict.

ROLE OF TECHNOLOGY IN LESSON DISSEMINATION: Speakers highlighted the crucial role of technology, such as AI Claire, in streamlining the lesson-learning process and fostering agility within NATO.

COMMITMENT TO ENHANCING ALLIANCE LEARNING: The conference underscored NATO’s dedication to enhancing Alliance learning and ensuring the continued security of its member states, particularly through interoperability and shared learning initiatives.

The Enhancing Alliance Learning through Sharing and Interoperability Panel (pictured below), not only delivered key presentations but also answered NLLC24 audience questions live on stage. Throughout the NLLC24, the audience had the chance to interact with speakers, asking questions and making statements. This interaction added a unique quality to the overall event.





NATO LL Capability Development in support of other NATO Capabilities

Source: https://www.linkedin.com/posts/marshall-of-cambridge-holdings-limited_we-celebrate-an-impressive-milestone-today-activity-7181610601796751361-3mQd

Another key requirement area for NATO's 2030 efforts relates to enhancing and employing capabilities—in particular, multi-domain capabilities that require the full implementation of the NATO Defence Planning Process (NDPP). As such, one-of-the-cross-cutting-efforts-reflected-in-SACT's-priorities-for-2024-relates-to-Enhanced Capability Development (CAPDEV), which challenges the existing processes' and programmes' relevance and priority.

This NLLC24 panel took a deep dive into this topic, with Key Speaker MGEN Norbert Wagner, Commander of the JALLC's sister HQ, the Joint Force Training Centre, addressing the NLLC24 audience on exactly how a holistic assessment of exercises is critical to successful Capability Development.

Taking into consideration that “Lessons Learned” is a mandatory step in both NDPP and CAPDEV cycles, in order to feed these cycles, the NATO LL Capability needs to generate suitable lessons to facilitate the enhanced generation of NATO's capabilities. The need to ensure the NATO LL Capability can contribute to Enhanced CAPDEV is not only true today or in the next five years but has to be true for the longer term to ensure NATO is ready to operate in the (un)foreseen future environment.

Currently, many lessons in NATO are generated in the context of exercises. Indeed, Education, Training, Exercises, and Evaluation (ETEE), as a whole, is a specific sub-area of the NATO 2030 efforts, recognizing the exercises in the Warfare Development Imperatives included by SACT in its priorities for 2024.



This panel discussed the overall CAPDEV framework and how LL can and do contribute thereto. The panel also considered new ways of identifying and collecting lessons from exercises to support their subsequent implementation in the various NATO CAPDEV programmes.

MGEN Norbert Wagner, Commander of the Joint Force Training Centre, stressed the importance of a holistic assessment in extracting insights from exercises. This approach is key to ensuring the extraction of pertinent insights, particularly in the land domain, to refine capabilities and promote interoperability.

Admiral Marc Gander, Deputy Director of Operations and Planning Division at NATO HQ's International Military Staff, discussed the technical and operational frictions within the Alliance with regard to Lessons Learned analysis. Frictions arising from past experiences, notably in Afghanistan, but also from current conflicts in Ukraine, underscored the complexity of sharing insights from diverse operational contexts.

COL Robert Prentice, Future Plans and Requirements Branch Head at SHAPE, stressed the importance of the human factor and time in the current geopolitical arena, marked by a profound transformative change. COL Prentice's reminder of the human factor amidst technological advancements highlights the need for a balanced approach to capability enhancement.

From the tactical extraction of Lessons Learned to the importance of a human-centric approach, the panel showcased NATO's commitment to fostering interoperability and collective resilience.

Key Takeaways:

HOLISTIC ASSESSMENT OF EXERCISES: There is a need to ensure that exercises are holistically assessed in order to extract relevant and useful insights from them, which can feed into capability development in the long run.

BALANCING SENSITIVITY AND NECESSITY: The technical and operational frictions within the Alliance with regard to Lessons Learned analysis are real and should be acknowledged and addressed.

THE HUMAN FACTOR: The human factor in this era of technological advancement will remain key to proper capability development. The Alliance should embrace Digital Transformation and new technologies, but cannot lose sight of the intrinsic value of its human resources in the process.



Lessons from the War Against Ukraine



Live from Ukraine, Deputy Minister of Defence, Mr Stanislav Haider, addressed the NLLC24 audience on Lessons Learned from the battlefield in Ukraine.

The JALLC's activities relating to Russia's war against Ukraine have been as diverse as they have been intense. From various reports analysing the lessons that can be drawn from the war to working with the Ukrainian Boryviter Center of Excellence in a two-way exchange of Lessons Learned experiences, including with regard to Lessons Learned tool development.

There is as much we can learn from Ukraine as it can learn from us when it comes to Lessons Learned, and the NLLC24 offered an opportunity to present some of the work being done in this respect and to hear, first-hand, live from Ukraine with the Deputy Minister of Defence addressing the NLLC24 on how Ukraine is developing its Lessons Learned activities.

Ukraine's security is of great importance to NATO and its member states. The Alliance fully supports Ukraine's inherent right to self-defence and its right to choose its own security arrangements. Ukraine's future is in NATO. Relations between NATO and Ukraine date back to the early 1990s and have since developed into one of the most substantial of NATO's partnerships. Since 2014, in the wake of Russia's illegal annexation of Crimea, cooperation has been intensified in critical areas. Since Russia's full-scale invasion in 2022, NATO and Allies have provided unprecedented levels of support.

In this respect, the collaboration between NATO and Ukraine in the context of Lessons Learned reflects this deepening partnership. As such, the NLLC24 dedicated space in the packed agenda to cover this topic and present the NLLC24 audience with insights live from the battlefield in Ukraine, as well as new initiatives and plans by NATO in this area.

Deputy Minister of Defence, Mr Stanislav Haider, joined the NLLC24, live by video link, to address the NLLC24 audience. In his address, he emphasized the pivotal role of adaptability, especially in times of war, advocating for a shift towards smarter strategies over sheer firepower.

Under his leadership, Ukraine's Lessons Learned system has undergone a significant transformation with a focus on digitalization, structured processes, and enhanced training. Ukraine's new Lessons Learned policy seeks to promote knowledge sharing with partner nations while aiming to simplify its processes and outcomes with tools like the Lessons Learned Portal.

“The man who adapts faster, wins this war. In the face of superior forces, we must be smarter.”

Mr Stanislav Haider
Deputy Minister of Defence, Ukraine

In addition to the live link to Ukraine, the NLLC24 audience was also addressed live in person by COL Oleksandr Danyliuk from the Ukrainian Armed Forces J7 General Staff. He emphasized the urgency of quick collection and analysis to implement Lessons Learned. Through various initiatives currently being explored in NATO, including the work with the JALLC, Ukraine has elevated its Lessons Learned capability. NATO is taking advantage of this fast-paced development and rapid adaptation of Lessons Learned processes during wartime which will be key in the face of adversity.

Since Russia’s invasion of Ukraine in 2022, the JALLC, like the rest of NATO, has been keeping a close eye on the development of Russia’s war against Ukraine, particularly from the Lessons Learned perspective.

As NATO’s Assistant Secretary General for Operations, Mr Tom Goffus, explained to the NLLC24 audience during his own address, *“One of the few silver linings of the war against Ukraine is the ability to learn from what is happening there.”*

The JALLC has since worked closely with Lessons Learned representatives from Ukraine, including the Boryviter Center of Excellence, which has emerged as a critical hub for learning and adaptation. Boryviter stepped in to fill the Lessons Learned gap that emerged as the war against Russia evolved, and the need for swift learning emerged and became increasingly important.

Prior Boryviter initiatives have played a key role in Ukraine’s ability to respond effectively to evolving threats. One notable achievement is Ukraine’s advancement in missile defence, made possible through insights gleaned from Lessons Learned. By adapting and refining its defence strategies based on real-time data analysis, Ukraine has been able to better protect its military and civilians.

Boryviter’s collaborative approach extends beyond national borders, establishing partnerships with NATO and other international entities. By sharing knowledge and expertise, Ukraine and its partners are better equipped to address shared challenges and enhance their collective defence capabilities.

In essence, Boryviter serves as a practical example of the importance of continuous learning, lesson sharing and exploitation, and adaptation at the speed of relevance.

As such, the JALLC has been involved in various collaborative Lessons Learned activities with Ukrainian defence representatives and, indeed, with representatives from Boryviter, sharing our expertise in long-term Lessons Learned tool development while gaining the opportunity to discover short-term solutions to real-world Lessons Learned issues.

You can read more about these activities on the [JALLC website here](#) and in our annual magazine, [The Explorer, which you can download here](#).



boryviter



In addition to the collaborative work with Boryviter, the JALLC also launched its JALLC UKR Initiative earlier this year, which was presented at the NLLC24.

The JALLC-UKR Initiative is intended to be the single point of reference for NATO’s Lessons Information relating to Russia’s war of aggression against Ukraine. It is staffed by a dedicated team of JALLC analysts: the JALLC Ukraine–Russia Lessons Analysis Team, or JURLAT for short. The JURLAT will be responsible for populating the JALLC-UKR Information Centre, which is intended to be a comprehensive repository of NATO’s Ukraine–Russia Lessons Information. This Information Centre is hosted as a Community of Interest on the NLLP and contains searchable lessons-related information produced by NATO, Allies, and other organizations, offering a rich source of information for staff and researchers. You can already explore the JALLC-UKR Information Centre by accessing the NLLP on the NATO classified network and applying to become a member of the JALLC-UKR Information Centre. Once a member, you will find, for example, copies of the recent JALLC reports on Russia’s war against Ukraine (as well as some of the initial Lessons Information uploaded into the JALLC-UKR Information Centre. You can engage with the JALLC-UKR Initiative at ukrhub@jallc.nato.int on the NATO unclassified and classified systems or via the JALLC-UKR Information Centre on the classified version of the NLLP.

Watch out for regular editions of the JALLC-UKR Initiative Newsletter, available on the NLLP and the NATO Information Portal.



Exploring the Frontiers of Innovation: Industry and Academia at NLLC24

Over the years, the NLLC and the JALLC's other LL events have always welcomed industry and academia representatives to enrich NATO content with a fresh external point of view. The NLLC24 was no exception, with representatives from four different organisations being given the opportunity to speak on stage at the NLLC24 and present their LL innovations during the networking breaks.

From ground-breaking, augmented-reality technology allowing users to perceive the battle space virtually, to showcasing the latest holographic technology being used throughout Allied Command Transformation, both offering new avenues for communication and collaboration, the NLLC24 participants had ample opportunity to engage with industry and academia representatives and even try the technology on offer for themselves.

With a human interaction robot buzzing around the networking zone showing how lessons could be captured in the future and participants wearing augmented-reality goggles, pointing at things only they could see, the NLLC24 really got a sense of what the future might hold in terms of where technology in LL is heading.

The importance of innovation and digital Transformation was high on the agenda of the NLLC24. These opportunities to engage with innovators and technology brought the NLLC24 audience one step closer to understanding how the technological (r)evolution is set to shape the future of NATO.



NATO 2030: Charting a Path Forward

NATO 2030 - 9 Proposals

1. Deeper Political Consultation and Coordination
 2. Strengthened Deterrence and Defence
 3. Improved Resilience
 4. Preserve Technological Edge
 5. Uphold Rules-Based International Order
 6. Boost Training and Capacity Building
 7. Combat and Adapt to Climate Change
 8. New Strategic Concept
- Investing in NATO



Dr Stella Adorf, Head Situational Awareness, Operations Division, NATO HQ International Staff, provided insights into NATO 2030, a pivotal initiative aimed at navigating the evolving security landscape amidst challenges posed by an assertive Russia and the rise of China.

Originating from the 2019 London Summit, the move towards NATO 2030 marked a strategic shift for the Alliance, emphasizing collective defence and a coherent strategic outlook. Despite the constraints of the COVID-19 pandemic, innovative approaches involving diverse age groups and public engagement were employed to produce key proposals for the concept, which were ratified at the 2021 Brussels Summit and further endorsed at the 2022 Madrid Summit. The NATO 2030 proposals include deeper political coordination, enhanced deterrence and defence, and investment in NATO's future capabilities.

Dr Adorf concluded by noting the importance of NATO 2030 to forward-thinking, comprehensive planning, and positive engagement for success.

Looking Beyond 2030: Strategic Foresight Analysis

Keeping to the theme of the future of NATO but reaching beyond the NATO 2030 horizon, HQ SACT's Dr Gergely Németh, Strategic Foresight

Branch Head; Strategic Plans and Policy, presented the concept of strategic foresight analysis, highlighting future trends and potential scenarios shaping the security landscape beyond 2030. Employing a mixed research methodology, Dr Németh outlined seven drivers and four scenarios to understand the extent and direction of change.

Emphasizing the complexities of the evolving security environment, characterized by the Five Cs: Complex, Congested, Commercialized, Contested, and Confused. He also highlighted emerging challenges such as climate breakdown, technological disruption, and fraying international orders.

Finally, Dr Németh stressed the implications for NATO, including the need for more efficient collaboration in the face of a multidimensional battlefield and the imperative for augmented decision making.

Source: <https://aba-vba.org/dici-et-de-la-bas/%F0%9F%87%A7%F0%9F%87%AA-reportage-au-coeur-du-centre-de-cyberdefense-de-lotan-a-mons/>





Lessons Learned from Technological impact in Modern-Conflicts

Major-General Adrian Ciolponea, SACT's European Representative, addressed the NLLC24 audience, focusing his talk on Lessons Learned from the Potential Technological Impact in the Operational Environment, with a particular examination of Ukraine's operational and tactical environment.

MGEN Ciolponea highlighted NATO's Warfighting Capstone Concept's (NWCC) Warfare Development Imperatives, which include cognitive superiority, layered resilience, influence and power, cross-domain command, and integrated multi-domain defence.

Amidst discussions on the evolving nature of warfare, the session probed the changes in waging conventional warfare and the implications of technological advancements on strategic and operational dynamics.



The Future Operating Environment



LTC-Liz-Anne-Strik, Staff-Officer/Analyst; Strategic-Foresight-Branch; Strategic-Plans and Policy, wowed the NLLC24 audience by, perhaps appropriately given the topic, walking live on stage as a hologram.

Connecting back to the topic of Strategic Foresight Analysis, LTC Strik emphasized its importance in leveraging emerging technologies and navigating the digital landscape.

LTC Strik delved into the topic of the Future Operating Environment with NLLC24 participants, taking them through what the evolving future operating environment will look like: a fast-paced environment where commercial data sources play an increasingly prominent role. She emphasized the importance of strategic foresight in leveraging emerging technologies and navigating the digital landscape and highlighted the need to consider carefully a NATO response where commercial data sources diverge from the Alliance's mission objectives. As technology continues to evolve and commercial entities play a larger role in data provision, LTC Strik's remarks underscored the importance of strategic foresight and adaptability in navigating the complexities of future operating environments.

The JALLC recently published an analysis report presenting the results of the NATO Lessons Learned Portal content analysis regarding the Future Operating Environment.

The study was aimed at supporting warfighting development and anticipated the challenges that may affect the employment of capabilities.

Taking into account former Strategic Foresight Analyses (SFA) and other strategic documents such as the NATO Warfighting Capstone Concept (NWCC), the study of the Future Operating Environment will be key to ensuring that Allies and Partners remain adaptable, resilient, and effective in dealing with current and future conflicts while fostering a 360-degree comprehensive approach.

At a time when the current geopolitical arena is confronted with multiple security challenges coming from state and non-state actors, this opportunity to gain more detailed insights into the Future Operating Environment was well received by the NLLC24 participants, who noted that the presentation was timely and contributed to a better understanding of the topic.



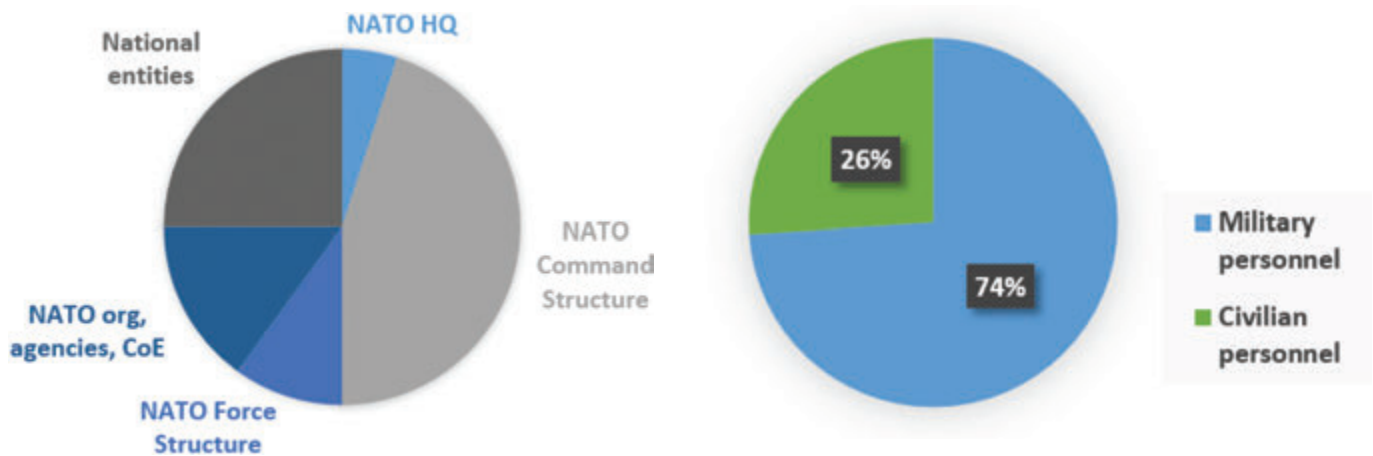
Education and Individual Training (E-IT): Learning to prepare for NATO 2030 and beyond

CDR Robert Driscoll of the British Royal Navy discussed the pivotal role of Education and Individual Training (E-IT) in shaping NATO's trajectory towards 2030. Against the backdrop of **rapid technological advancements**, Driscoll highlighted the imperative of equipping personnel with the skills and knowledge necessary to navigate the challenges. Taking his lead from the NATO 2030 Agenda, CDR Driscoll took the audience through the nine proposals in the agenda, asking the poignant question: "What does it say?" and highlighting the key areas where E-IT can contribute to achieving NATO 2030.

In particular, the multi-domain nature of future operations is an area where NATO needs to focus E-IT efforts. NATO has already incorporated the Cyber and Space domains into its concept of operations as a Multi-Domain-enabled Alliance needs to be orchestrating and synchronizing non-military activities in a persistent, simultaneous, and boundless operating environment of the future, across all phases of competition. This will require a Data-centric approach, facilitated by NATO's Digital Transformation and a change in mindset from "just Joint" to Multi-Domain Operations. This will likely pose organizational challenges in terms of Command and Control, Information sharing requirements, and the use of external networks. In terms of E-IT, this means that NATO will need to adapt its education and training to help meet these needs and drive the required change in mindset. These changes will be small but incremental and will require a whole lot of organization effort.

HQ SACT has already prepared proposed Education and Training adjustments for 2030 that are mapped by measure of effect and prioritized against requirement and discipline. This will help to ensure that NATO has the right people, with the right skills, at the right time.

NLLC24 @ A GLANCE – Statistics



282 registered participants, 32 nations

Albania	2	
Australia	2	
Belgium	6	
Bulgaria	6	
Canada	2	
Croatia	4	
Czechia	5	
Denmark	4	
Estonia	2	
Finland	2	
France	11	
Germany	23	
Greece	5	
Hungary	3	
Italy	22	
Latvia	1	

Lithuania	8	
Netherlands	14	
New Zealand	2	
Norway	3	
Poland	9	
Portugal	19	
Republic of Korea	6	
Romania	20	
Slovakia	3	
Slovenia	1	
Spain	15	
Sweden	4	
Türkiye	2	
United Kingdom	29	
Ukraine	8	
USA	39	

“An opportunity to better understand how NATO works and its Lessons Learned Process.”

NLLC24 Agenda

Monday 15 April

14:00 | Admin Remarks and Introduction

Mr Stefan OLARU (ROU NIC) - Research Analyst; LL Management Division (LLMD); JALLC

14:10 | Welcome Message

OF-5 Arturo SABANDO (ESP A) - LLMD; JALLC

14:15 | NATO LL Portal: current use and improvements

OF-4 Marin TUDOR (HRV A) - Staff Officer (NATO LL Portal Administrator); LLMD; JALLC

Future NATO LL Toolset

Mr Stefan OLARU (ROU NIC) - Research Analyst; LLMD; JALLC

14:45 | Updates

OF-4 Marin TUDOR (HRV A) - Staff Officer (NATO LL Portal Administrator); LLMD; JALLC

Access to Industry and Academia Stands

Mr Stefan OLARU (ROU NIC) - Research Analyst; LLMD; JALLC

15:30 | National Experience with Transitioning to New Tools

Mr Albert MUSGROVE (USA CIV) - LL Analyst; US Joint Staff J7

Partner Experience with Developing Tools in a Dynamic Operational Environment:

Mr Pavlo MUSIIENKO (UKR CIV) - Head of Analytical Centre; UKR Boryviter Center of Excellence

19:00 | Icebreaker for registered participants



Tuesday 16 April

09:00 | Administrative Remarks

Mr Stefan OLARU (ROU NIC) - Research Analyst; LLMD; JALLC

09:10 | NLLC24 Introduction

OF-5 Arturo SABANDO (ESP A) - LLMD Head; JALLC

09:20 | Welcome to NLLC 24

OF-6 Fernando ARTILHEIRO (PRT N) - Commander; JALLC

09:30 | Opening Remarks (*recorded hologram)

OF-9 Chris BADIA (DEU F) - Deputy Supreme Allied Commander Transformation (SACT); HQ SACT

09:40 | NATO Updates on LL: NATO LL Capability Improvement Roadmap (2021–2025)

Mr Stefan OLARU (ROU NIC) - Research Analyst; LLMD; JALLC

OF-5 Pierre-Alain ORDAS (FRA A) - Branch Head; NATO HQ/International Military Staff

10:00 | Industry and Academia Interaction

Mr Dano DEBROUX (USA CIV) - Senior Director Public Sector; Magicleap

Mr Terry DAVIS (CAN CIV) - Senior Vice President; Arht Media Holographic

Ms Bárbara TEIXEIRA (PRT CIV) - Communication Manager; Science Communication and Outreach/
Institute for Systems and Robotics

10:45 | Topic Updates: NATO 2030

NATO 2030 Overview

Dr Stella ADORF (DEU NIC) - Head of Situational Awareness, Operations Division; NATO HQ/Military Staff

Looking Beyond NATO 2030 - Strategic Foresight Analysis

Dr Gergely NÉMETH (HUN NIC) - Strategic Foresight Branch Head; Strategic Plans & Policy; HQ SACT

11:30 | Partner Nation in Spotlight: Australia

OF-4 John F EDWARDS (AUS A) - Joint Lessons Assessment Directorate; HQ Joint Operational Command/Australian Defence Force

13:45 | Panel 1 - LL in the Digital Transformation Age

Moderator: OF-5 Richard PAINE (GBR F) - LL Analysis Division Head; JALLC

Presentations:

Key Speaker: OF-7 Nick WHEELER (GBR N) - Director of NATO Digital Staff; NATO HQ/IMS

Speaker: Ms Kamila LENARCZYK (POL NIC) - Project Portfolio Officer/Enterprise Portfolio Section;
NATO Office of Chief Information Officer

Speaker: OF-7 Antonio Gameiro MARQUES (PRT N) - Director General; PRT National Security Office

Speaker: Ms Jackie EATON (GBR NIC) - Principal Operational Research Analyst; JALLC

15:30 | Panel 1 - Discussions

16:00 | Topic in Spotlight: Education and Individual Training (E-IT): Learning to Prepare for NATO 2030 and Beyond

OF-4 Robert DRISCOLL (GBR N) - Section Head (E-IT Analysis and Development); Joint Force Development; HQ SACT (*live hologram)

16:10 | Daily wrap-up and preparation for Day 2

Mr Stefan OLARU (ROU NIC) - Research Analyst; LLMD; JALLC



Wednesday 17 April

08:55 | Administrative Remarks

Mr Stefan OLARU (ROU NIC) - Research Analyst; LLMD; JALLC

09:00 | Industry & Academia interaction

Prof. Tom DYSON (GBR CIV) - Professor of International Relations; Royal Holloway, University of London

09:05 | Panel 2 - Enhancing Alliance Learning through LL Sharing and Interoperability

Moderator: OF-5 Arturo SABANDO (ESP A) - LLMD Head; JALLC

Presentations:

Key Speaker: OF-7 James R KRIESEL (USA F) - Director J7; United States European Command (USEUCOM)

Speaker: OF-6 Manu TUOMINEN (FIN A) - Assistant Chief of Staff (ACOS) J7, Defence Command; Finnish Defence Forces

Speaker: Mr Robert TRABUCCHI (USA NIC) - Deputy Director; NATO Standardization Office

10:35 | Panel 2 - Discussions

11:05 | Topic in Spotlight: Lesson Learned from Technological Impact in Modern Conflicts

OF-7 Adrian CIOLPONEA (ROU A) - SACT Representative Europe; HQ SACT

11:30 | Topic Updates - LL from war in UKR

UKR LL experience

Mr Stanislav HAIDER - Deputy Minister of Defence of Ukraine (*live online)

OF-5 Oleksandr DANYLIUK - Chief, Analysis and Lessons Implementation Section; Main Directorate and Training Directorate (J7)/General Staff of the Armed Forces of UKR

European Union Military Staff (EUMS) LL on UKR

OF-5 Carlos Sanchez LEDESMA (ESP A) - Head of Division Force Capability/Concepts & Capability Directorate; EUMS

JALLC efforts relating to LL from war in UKR

Mr Filipe VIEIRA (PRT NIC) - Analyst Research; LL Analysis Division; JALLC

12:30 | Keynote Address (* recorded online)

Mr Tom GOFFUS (USA NIC) - Assistant Secretary-General for Operations; NATO HQ/IS

14:00 | Topic in Spotlight: Future Operating Environment (FOE24)

OF-4 Liz-Anne STRIK (NLD A) - Staff Officer/Analyst; Strategic Foresight Branch; Strategic Plans & Policy; HQ SACT (*live hologram)

14:10 | Panel 3 - NATO LL Capability Development in Support of Other NATO Capabilities

Moderator: Mr Alan HOFF (GBR NIC) - Capability Monitor; CAPDEV/HQ SACT

Presentations:

Key Speaker: OF-7 Norbert WAGNER (DEU A) - Commander; NATO Joint Force Training Centre

Speaker: OF-6 Marc GANDER (FRA N) - Deputy Director; Operations & Planning Division; NATO HQ/IMS

Speaker: OF-5 Robert PRENTICE (GBR A) - Future Plans and Requirements Branch Head; SHAPE

15:45 | Panel 3 - Discussions

16:15 | Closing Remarks

OF-6 Fernando ARTILHEIRO (PRT N) - Commander; JALLC

16:25 | Way Ahead and Preparation for Post-conference Day

Mr Stefan OLARU (ROU NIC) - Research Analyst; LLMD; JALLC



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Visit the NATO LL Portal:
<https://nllp.jallc.nato.int>

