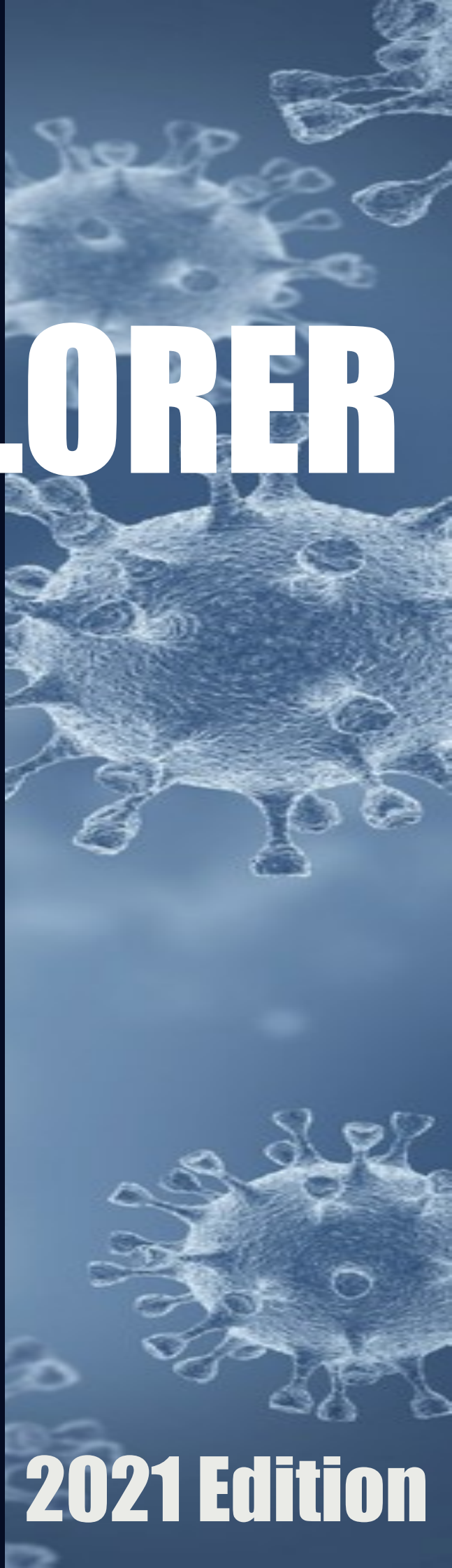
NATO OTAN

Joint Analysis and Lessons Learned Centre

Lisboa - Portugal

THE EXPLORER



COVID-19's Impact on the JALLC's Mission

New Technologies & Lessons Learned

The Latest Joint Analysis Reports

Insights from the NLLP

2021 Edition

Back cover photo credit: © NATO HQ, News: Coronavirus: Alliance scientists respond to the challenge, 10 July 2020

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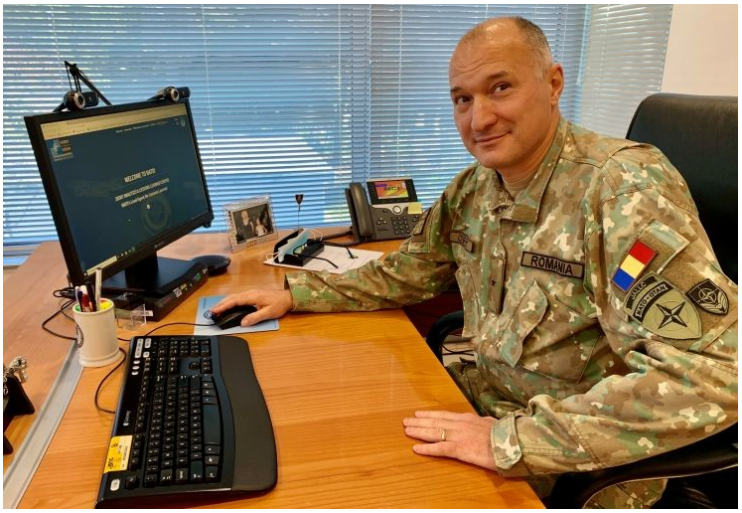
Foreword:
COMMANDER JALLC



It is my honour to present this year's edition of the JALLC Explorer. This edition showcases the JALLC's great achievements in the face of adversity. The general theme of this Explorer investigates the many different ways the JALLC has been essential in NATO's response to the COVID-19 pandemic.

As we learned in responding to this global crisis, the Alliance, national entities, and international organizations have room for improvement in dealing with international crises. This is where Lessons Learned and information sharing prove to be the most critical. As an organization, NATO continues to transform with the help of documenting its observations for improvement and implementing better practices. By managing the NATO Lessons Learned Process, the JALLC ensures that the Alliance has the ability to learn from the past to prepare and respond to the next international crisis.

On that note, I would like to emphasize that the quality of the JALLC's Lessons Learned output depends greatly on the input from everyone in NATO; individuals and entities across the Alliance and Partner Nations must submit their Observations and Lessons and Best Practices based on their respective experiences if the Alliance is to remain a learning organization and ensure that valuable experience and expertise is captured for future use.

In this edition of The Explorer, you will see exactly how the JALLC has played its part over the past year, and continues to do so moving forward. On behalf of the JALLC, we wish everyone a safe end to the pandemic and a welcomed return to normalcy.

Happy reading, and enjoy!

Bogdan CERNAT

Brigadier General, ROU A

Commander JALLC

Visit Highlights

Visit of Naval Striking and Support Forces NATO (STRIKFORNATO) Chief of Staff Brigadier General Marcus Annibale (22 December 2020)

Visit of the NATO Communications and Information Academy Director, Gary Hargreaves (08 October 2020)

Visit of Major General Cavo HQ SACT Deputy Chief of Staff Joint Force Development (12 March 2020)

NATO's Response to COVID-19

The JALLC Perspective

As COVID-19 took the world hostage, NATO immediately implemented measures in HQs all over the Alliance based on guidance from the World Health Organization to reduce the spread of infection. Read about some of the actions that NATO took in response to the pandemic, and what the JALLC's role was.

NATO delivers ventilators to the Czech Republic © NATO HQ

NATO has been incredibly active responding with military and humanitarian measures in response to the pandemic over the past year. Unfortunately, many of NATO's Member Nations and Partners alike were impacted by the COVID-19 pandemic. The Alliance came together, as it always does, and ensured that it did everything possible to support its community.

To purchase medical supplies for impacted nations, NATO established a NATO Pandemic Response Trust Fund. Once the supplies were acquired, NATO's Euro-Atlantic Disaster Response Coordination Centre (EADRCC) coordinated where these supplies would go.

For example, NATO Allies Albania, Czech Republic, Montenegro and North Macedonia received 200 ventilators from NATO's stockpile. Additionally, a portion of the financial contributions from the Trust Fund is funding assistance packages to some of NATO's hardest-hit partners, including Bosnia and Herzegovina, Iraq, the Republic of Moldova, Tunisia and Ukraine.

The national militaries were also critical in responding to the pandemic. As of November 2020, militaries from across the Alliance:

- Flew more than **350 flights** to transport medical personnel
- Transported around **1,500 tonnes** of medical supplies and equipment to Allied countries.
- Helped build almost **100 field hospitals** and over **25 000 treatment beds**.
- Supported civilian efforts with almost **half a million troops**

NATO also took necessary steps to make sure that its personnel would stay safe and limit the spread of the pandemic into the greater community. These measures include the suspension of the majority of staff travel, encouraging staff to work from home, mandatory mask-wearing inside NATO

Poland delivers medical aid to Iraq © NATO HQ

RAF Flights take UK aid-funded supplies to Africa to tackle coronavirus.
©UK MoD Crown Copyright 2020

buildings, and suspending group visits to NATO HQ in Brussels. The JALLC is no exception, and continues to maintain a 50% maximum in-office capacity and encourage its staff to work from home and social distance.

The Alliance has also taken critical steps to innovate in response to COVID-19. The NATO Innovation Hub organized a 2020 Innovation Challenge open to entrepreneurs, designers, inventors, engineers, scientists, coders, and others in order to find innovative solutions to: support the decision-making of military leaders, deliver logistics and supplies to isolated individuals and teams, and identify false information and mitigate its effects on NATO operations.

Additionally, NATO's Chief Scientist started a challenge to identify solutions to some of the most pressing scientific challenges resulting from COVID-19. This challenge was set out to the 6000 scientists within the Alliance's network. For more information on NATO's response, check out the "NATO's Response to the COVID-19 Pandemic Factsheet."

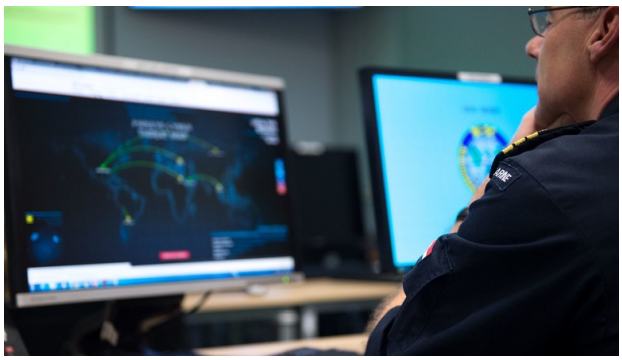
"We do not need to reinvent NATO. But we do need to ask how we can make our Alliance stronger and more effective."

NATO Secretary General Jens Stoltenberg at the German Institute for Global and Area Studies, June 2020

What is the JALLC's role?

SHAPE Vice Chief of Staff Lieutenant General Brice Houdet, right, attends a briefing during Exercise Steadfast Bonus 2020 held at SHAPE Headquarters in Mons, Belgium. (NATO Photo by SSgt Ross Fernie)

Steadfast Jupiter Jackal End of Exercise



NATO's biggest cyber defence exercise, the week-long Cyber Coalition started on Monday (16 November 2020). The exercise aims to train cyber defenders in their ability to defend NATO and national networks and will test decision making processes and procedures. Source: https://www.nato.int/cps/en/natohq/news_179481.htm

The JALLC took an active role in helping the Alliance respond to, document, and learn from the ongoing crisis.

In the first months of the pandemic, HQ Supreme Allied Commander Transformation (SACT) tasked the JALLC with a short-term analysis request to identify lessons to be shared with the NATO Chiefs of Defence. The JALLC conducted research, a survey, and interviewed senior military leaders from Nations, the NATO Command Structure, the NATO Forces Structure, Centres of Excellence, and Agencies. The final report, *Strategic Military Lessons of the COVID-19 Crisis,* presents seven Lessons Learned areas, and addressed two essential questions: "what did we learn?" and "what can we improve."

The JALLC also provided Joint Analysis support to entities across the Alliance, including to the NATO Science and Technology Organization in a report titled *The Military Impacts of COVID-19 on the Alliance: Challenges and Opportunities,* and direct research and analysis support to SHAPE J7 and planners in their COVID-19 response efforts.

In addition to COVID-19 related Joint Analysis support, the JALLC continued to support NATO exercises that were not cancelled or postponed. Specifically, the JALLC provided support to Exercises Steadfast Bonus 2020 and Cyber Coalition 2020. Flip to page 11 to read more about the JALLC's role in both exercises.

Maintaining NATO's Lessons Learned Capability was also a critical JALLC effort. Through close coordination with NATO HQ, the JALLC created a Community of Interest (COI) in both the NATO Secret and NATO Unclassified NATO Lessons Learned Portals (NLLP) to function as an observation collection tool. The COIs were used as a repository for all the observations formulated by the International Staff, the International Military Staff, and the Nations' military and civilian representatives.

Additionally, the JALLC's Data Analysis Team created useful graphics and COVID-19 storyboards, which help visualize the incoming Lessons and Observations submitted in the NLLP. The team also responded to dozens of requests for analysis of the COVID-19 related information available in the NLLP. For more information on their activities, head to page 26 for our interview with the Data Analysis Team.

The JALLC also continued remote training on the NATO Lessons Learned Capability and Process across the Alliance, to ensure that all the Observations and Lessons Identified during the pandemic would be well documented and eventually, become Lessons Learned.

Participants in one of the JATT's NATO Lessons Learned Capability training sessions get some hands on experience at working with Lessons Learned.

Outreach with the JATT during COVID-19

Lessons Identified

The JALLC Advisory and Training Team activities have been significantly impacted by COVID-19 measures and travel restrictions. This article will take a look at their biggest challenges, and Lessons Identified.

Training is a key pillar of the NATO Lessons Learned (LL) Capability. As such, the JALLC Advisory and Training Team (JATT) has been central to disseminating the critical knowledge that moves the entire NATO LL Process and perpetuates the Alliance's transformation.

In a pre-pandemic world, the JATT used a combination of self-learning online training sessions and on-site training (with an instructor) to ensure an interactive and impactful training experience. Unfortunately, COVID-19 pandemic related travel restrictions limited the JATT to strictly virtual training methods in 2020 and into 2021. As a result, the JATT faced substantial challenges over the past year, made significant adjustments, and identified many Lessons and Best Practices that will be critical to continue LL training for future crises.

Adjustments

Ninety percent of the JATT's 2020 LL training and outreach events were cancelled by host nations because of the pandemic. As a result, the JATT's reliance on technological platforms dramatically increased to ensure that they could continue training throughout the year. This also meant adjusting the normal training methods to fit the available tools. The JATT adapted its training, providing briefings on Microsoft PowerPoint via authorized NATO platforms including Polycom and Skype for Business. Due to the limitations of the platforms, this also meant removing the syndicate work, the work usually done on white boards, and mid-course student polling.

Challenges

Per their experiences over the past year, the JATT has concluded that the available and approved platforms pose some challenges for training. The primary challenges associated with such platforms were that they did not successfully replicate a classroom's interactive setting, and it was difficult to mimic frequently used training techniques including syndicate work, breakout rooms, document exchanges, or mid-training polling. These challenges impact the students ability to interact with each other and with the trainers.

The JATT is not alone in this experience. Across NATO, HQs have had to adjust to the online classroom environment and find solutions tailored to their own challenges. Going forward, NATO as an enterprise will need to explore options to ensure that, no matter what crisis is taking place, the Alliance can continue to train and learn its staff seamlessly.

Recent JATT Trip

In February 2021, the JATT was able to travel to the Joint Force Training Centre (JFTC) in Poland, a trip that was initially planned for 2020 and rescheduled to early 2021 when COVID-19 pandemic restrictions allowed for travel again.

The trip's purpose was to conduct a JFTC NATO LL Capability Training ahead of Exercise Steadfast Leda 2021 and the pre-deployment training for Resolute Support Mission and NATO Mission Iraq. The JATT trained the NATO LL Points of Contact from each of the JFTC's Divisions and Command Group; by doing so, the JATT educates on the NATO LL mind-set so the JFTC can effectively execute their NATO LL Capability. They trained a total of five NATO LL Points of Contact and three NATO LL Staff Officers, and provided Key Leader Training for Commander JFTC, Deputy Commander/Chief of Staff JFTC, and the Division Heads. Throughout their week, the JATT made sure to observe all COVID-19 measures such as social distancing and wearing masks.

Observations and Impact

Despite the COVID-19 pandemic, there has still been a good exchange of NATO LL information through outreach and engagement over the past year. However, there are many lessons to be learned such as the need for an enterprise-wide, effective, virtual collaboration tool to enhance online training.

The impact of decreased on-site training at NATO Training facilities or trainings provided through mobile training teams over the past year will be felt across the Alliance. Until travel is fully restored to pre-pandemic norms, the JATT and the Alliance will continue to rely on the available technology to continue the important work.

JALLC Analyst Training Course

Despite the COVID-19 pandemic, the JALLC, with careful planning and precautions, was able to host its annual JALLC Analyst Training Course from 09 -13 November 2020. Eleven new JALLC employees participated in this week-long course which was split into three syndicates in an effort to limit the number of participants working together in a room and remain safe, while retaining the value of group interaction to replicate the work of an actual JALLC analysis project team.

Each syndicate was digitally connected to the others using video conferencing software to encourage some form of larger group discussion and instruction. Throughout the course, the trainees were taught the JALLC Project Approach, the JALLC's own project management system, while also practicing different research and analysis skills to fully understand how to successfully complete a Joint Analysis project at the JALLC. The next course is already being planned for Fall 2021.

JALLC Training in COVID-19

Also in November, the JALLC held the Local NATO Lessons Learned Portal Management Course at the NATO Communications & Information Academy facilities in Oeiras. Because of COVID-19 restrictions, the course was limited to a total of nine participants. Participants included staff from the JALLC, the Counter Improvised Explosive Devices Centre of Excellence, Allied Land Command, the Deployable Air Command and Control Centre, and the Maritime Geospatial, Meteorological & Oceanographic Centre of Excellence.

The course trained the Local NLLP Managers, who are the individuals responsible for facilitating the NATO Lessons Learned Process in their organization. Instructors provided the knowledge and technical skills necessary for the Local NLLP Managers to most efficiently and effectively fulfil their roles. The course was made as interactive and informative as possible. One of the primary activities was for the instructors and participants to test the new NLLP webpage layout and functionalities. You can read more about the new NLLP on page 31 of this magazine in the JALLC updates.

NATO Lessons Learned Portal Management Course

JALLC Support to NATO EXERCISES

Photo from Exercise Dynamic Mariner
© SHAPE

The Alliance has been conducting exercises since 1951. They are important tools for NATO to test and validate its concepts, procedures, and systems across the entire organization and with Partner Nations. The JALLC plays a key role in making sure important Lessons are extracted from key exercises to benefit the improvement and transformation of the Alliance.

The importance of exercises to NATO's transformation cannot be understated. Exercises enable militaries and civilian organizations deployed in theatres of operation to test capabilities and practice working together efficiently in a crisis. In order to ensure that NATO troops are interoperable and prepared for operations at any time, NATO schedules a comprehensive exercise programme with objectives in line with current operational requirements and priorities. NATO has recently boosted its exercise programme in light of the ever-changing global security threat environment.

Exercises allow forces to build on previous training in a practical way, improving their proficiency in a given area and are designed to practise the efficiency of structures as well as personnel responsiveness. This is necessary, as the NATO Command Structure is periodically reformed, and new headquarters must test their ability to fulfil new responsibilities. That is also why exercises vary in scope, duration and form – ranging from live field exercises to virtual computer-assisted exercises – to ensure all components are ready for anything.

NATO-led forces must be able to work together effectively despite differences in doctrine, language, structures, tactics and training. Interoperability is built, in part, through routine inter-forces training between NATO member states and through practical cooperation between personnel from Allied and partner countries. Ultimately, the central component of exercises is that they enable all involved parties to identify "best practices" (what works well) and "lessons identified" (what needs improving). That is where the JALLC comes in with its support to exercises.

The pandemic caused NATO to cancel or postpone most of its exercises in 2020. However, the JALLC was able to support two of the exercises that were held virtually: Exercises STEADFAST BONUS 2020 (STBO) and Cyber Coalition 2020.

Exercise STBO20 was SHAPE's battle staff training in preparation of Steadfast Jupiter/Jackal 2020, in which relevant parties convened for three days over Video Teleconferencing to rehearse the recently released SHAPE Decision Process. The JALLC had a dedicated team that supported the Senior Mentor (SM) throughout the exercise by extracting essential Lessons, and worked together with the SM to produce a short-term Lessons Learned report following the exercise.

Exercise CYBER COALITION 2020, led by HQ SACT, allowed NATO Nations and Partners to train their cyber defence remotely. The JALLC provided the planning team with key points and organizational advice about efficient Lessons Learned Process organization.

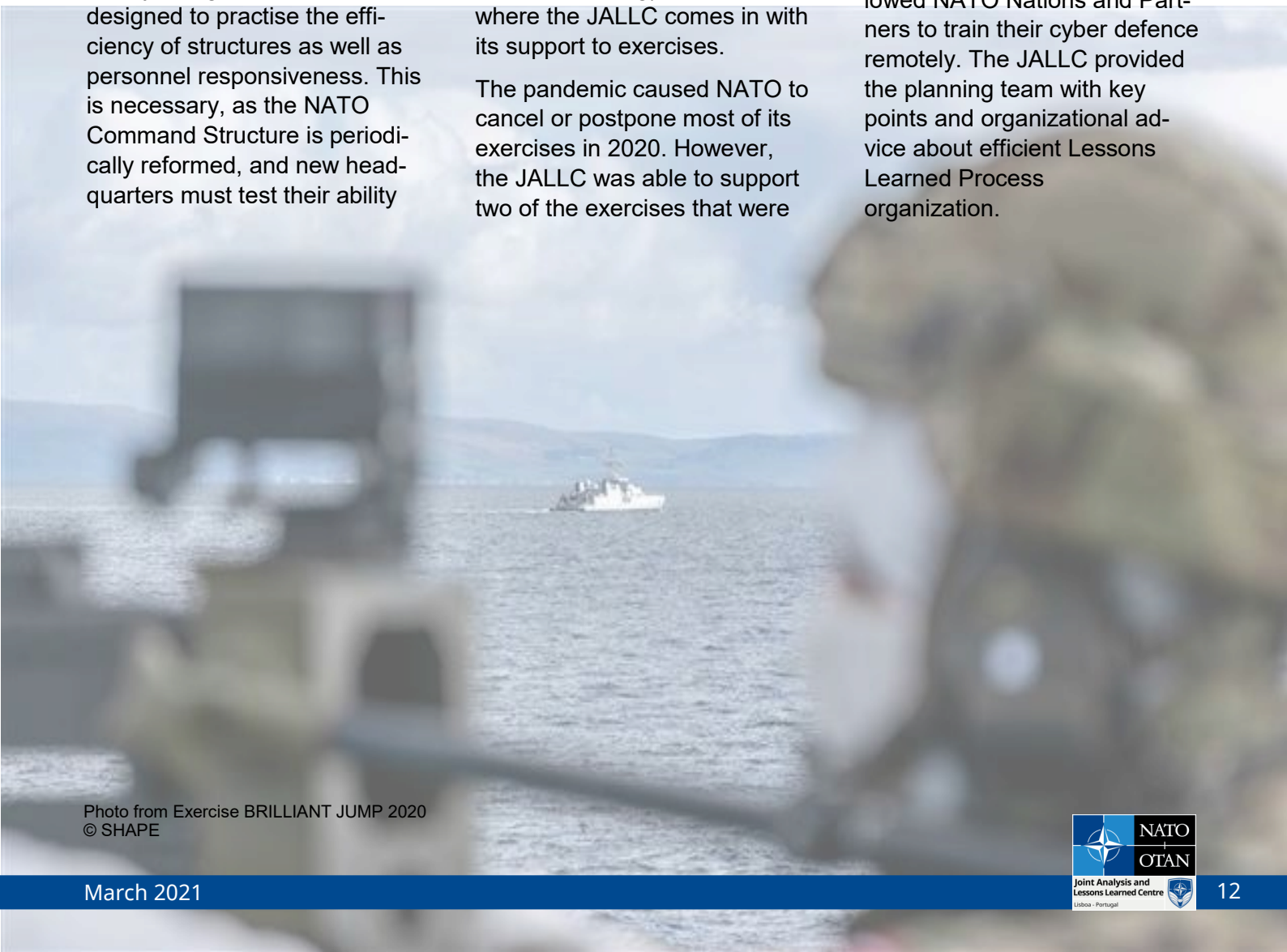


Photo from Exercise BRILLIANT JUMP 2020
© SHAPE

Here are some key facts on the JALLC's support to exercises:

1. The JALLC's exercise support team, as well as military and civilian analysts participate in all stages of the NATO Exercise Process, from Exercise Specification and Development, through Planning and Product Development, Operational Conduct to Analysis and Reporting.

2. The JALLC focuses on strategic lessons, emphasizing short-term analysis in support to exercises, rather than direct support to exercise Officers of Primary Responsibility.

3. The JALLC aims to support at least five major NATO exercises per year. Given the overall length of the whole process for one exercise (18 to 24 months).

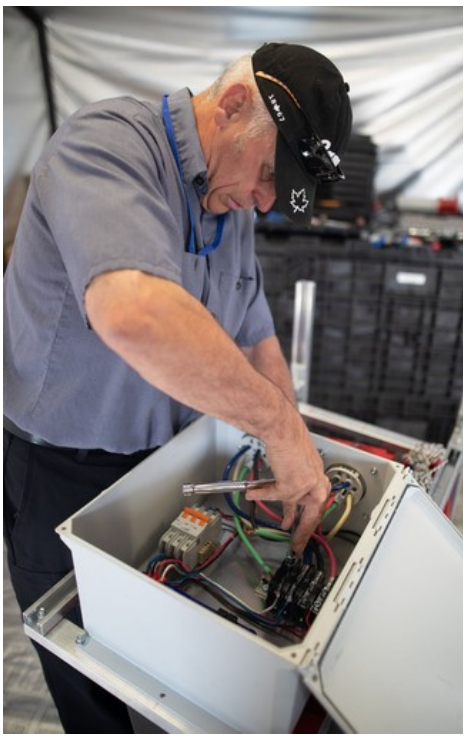
4. The JALLC staff provide mentoring support and advice on the NATO Lessons Learned Process during all stages of the NATO Exercise Process to NATO Lessons Learned staff employed in the exercises, and contribute to the revision of key exercise documentation.

5. JALLC staff deliver training for Primary and Secondary Training Audiences such as Academics, Key Leader Training and Battle Staff Training.

JALLC Exercise Support In Practice:

Capable Logistician

Every two years, logistics units from multiple Nations gather together in order to, "*exercise multinational logistics and to enhance interoperability among nations*" through the multinational exercise series, titled Exercise CAPABLE LOGISTICIAN (CL). CL exercises are organized by the Multinational Logistics Coordination Centre and aim to train NATO and Partner Nations, NATO Command Structure (NCS), and NATO Force Structure (NFS), with participation varying according to nations' willingness and availability. The outcomes of the exercise relies on experts in the realm of NATO standardization to provide an evaluative function.



In 2012, the NATO Military Committee Land Standardization Board (MCLSB), as the lead for evaluation at the exercise, recognized a key opportunity to go beyond traditional evaluation, and enlisted the help of the JALLC to better understand the synergies between exercises, analysis, standards, and lessons learned.

Together, the MCLSB and the JALLC developed the Evaluation Analysis and Reporting Cell (EARC) with the task to, "*evaluate standards and interoperability among Participating*

Nations in order to provide recommendations for improvement." The EARC pulls together functional area experts (areas include water, fuel, smart energy, and ammunition, among others), as national contributions, to be trained in the NATO Lessons Learned (LL) Process and deploy to the exercise to identify lessons. The results of this work are pulled together in a final exercise report, using the NATO Lessons Identified format, to make recommendations directly to the various standardization boards and working groups within the NATO Military Committee.

Support to Standardization

Since deploying with the EARC for the first time in 2013, the JALLC has supported the subsequent CL exercises in 2015 and 2019. The work of the EARC at each of these exercises has resulted in over 50 different observations across logistics functional areas and even more recommendations. In fact, over 90% of the recommendations from the Exercise CL15 report were endorsed by the Nations through the Military

Committee, resulting in direct input and improvements to NATO military doctrine, tactics, and procedures at the heart of NATO standardization and interoperability.

Support to NATO Logistics

For example, one lesson identified during Exercise CL15 related to the lack of an allied publication that described tactical level tasks and responsibilities of the Joint Logistics Support Group HQ. Since then, a new Allied Tactical Publication for the JLSG has been in development and will serve as a key guiding publication for units in both the NCS and NFS.

Leveraging the work over these three exercises, the JALLC, in close coordination with MCLSB and the MLCC, took all the exercise lessons and developed a new Logistics LL Community of Interest (CoI) on the NATO LL Portal (NLLP). The CoI is home to all CL lessons with the long term goal to bring together Logistics stakeholders from NATO and National entities, giving them a space in which to share their knowledge and expertise. The CL lessons are merely the foundation upon which this community can continue to grow.

LL CoIs in the NLLP are established when a real need is identified by one or several organizations, and membership to a particular CoI must be requested.

The JALLC will continue to support Exercise CL as required in the future as part of its long term commitment to supporting NATO exercises and ensuring that the valuable lessons identified during these exercises are learned for the future.

Joint Analysis Projects

Since the previous edition of the JALLC Explorer, the JALLC Lessons Learned Analysis Division has produced several impactful analysis projects for a wide variety of NATO customers. See what the team has been up to.

Joint Analysis Project: NATO's Strategic Adaptation to Hybrid Threats

The JALLC published its report *NATO's Strategic Adaptation to Hybrid Threats and Lessons for the Alliance's Future Resilience* in November 2019. The report was the product of a six-month Joint Analysis Project intended for customers at HQ SACT's Strategic Plans and Policy Division and the Comprehensive Crisis and Operations Management Centre.

This project was timely for NATO as in recent years, complex and adaptive strategies utilizing a combination of conventional and unconventional means in overt and covert activities are challenging the state of transatlantic security. Military, paramilitary, irregular, and civilian actors are increasingly using such activities to achieve their respective (geo) political and strategic objectives.

In 2014, the NATO Heads of State and Government at the Wales Summit categorized these comprehensive strategies as hybrid threats and recognized Russia as one of the main practitioners. Hybrid threats exploit vulnerabilities, create ambiguity, and ultimately undermine the unity, solidarity, and cohesion that form NATO's cornerstone principles. Since then, NATO and the Nations have been working towards adapting their structures and processes and developing the mind-set to prepare against, deter, and respond to hybrid threats.

With the Warsaw Summit Declaration in July 2016 followed by the Brussels Summit Declaration in July 2018, the Alliance made a clear statement on the topic of hybrid threats by highlighting that:

"NATO is ready, upon Council decision, to assist an Ally at any stage of a hybrid campaign. In cases of hybrid warfare, the Council could decide to invoke Article 5 of the Washington Treaty, as in the case of armed attack".

(NAC; Brussels Summit Declaration; 11-12 July 2018)

In order to support Allied Command Operations' and Allied Command Transformation's continuous efforts to enhance the Alliance's strategic adaptation to hybrid threats, the JALLC conducted a study to explore what measures NATO and the Nations have recently taken to counter hybrid threats. Based on the project team's findings and conclusions, the JALLC was able to make recommendations to improve the Alliance's strategic adaptation to hybrid threats and lessons for the Alliance's future resilience. Find out more about NATO's response to hybrid warfare here: https://youtu.be/i9v_bpGTwOM

Picture: NATO Review 2017

JALLC Analysis Project: NATO Exercise Big Data

In February 2020, the JALLC published a report from a year-long project exploring the potential value of Big Data Analytics using NATO exercise data to develop the NATO Lessons Learned Capability.

This project, a follow-on from the JALLC's 2018 New Technology in Support of Lessons Learned report, looked at how Data Science can improve the speed and accuracy of exercise lessons collection, management, and analysis. In an increasingly digital world, NATO's reliance on data, technology, and connectivity is growing and generating a need for innovative data management solutions. However, studies show that, particularly within NATO Exercises, relevant Lessons Learned information is often lost in *Big Data* - large volumes of diverse data generated at a fast pace.

Data Science tools and techniques can help address some of the challenges posed by Big Data. For NATO exercises, these tools can revolutionize the way we identify and extract relevant information, making it more efficient and cost-effective. To test these ideas, the JALLC explored the data collected at Exercise NATO TRIDENT JUNCTURE 2018, the biggest Live Exercise NATO has conducted since the end of the Cold War. In partnership with the NATO Communications and Information Academy Data Science Team, the JALLC investigated how Big Data Analytics could help the NATO Lessons Learned Capability development by: processing available data faster and more effectively, accessing necessary information more efficiently, and sharing relevant information more easily.

The techniques used were helpful in identifying and extracting Lessons-related information from the exercise data by looking for keywords and specific entities. While promising, the results must be refined to improve overall accuracy and relevance.

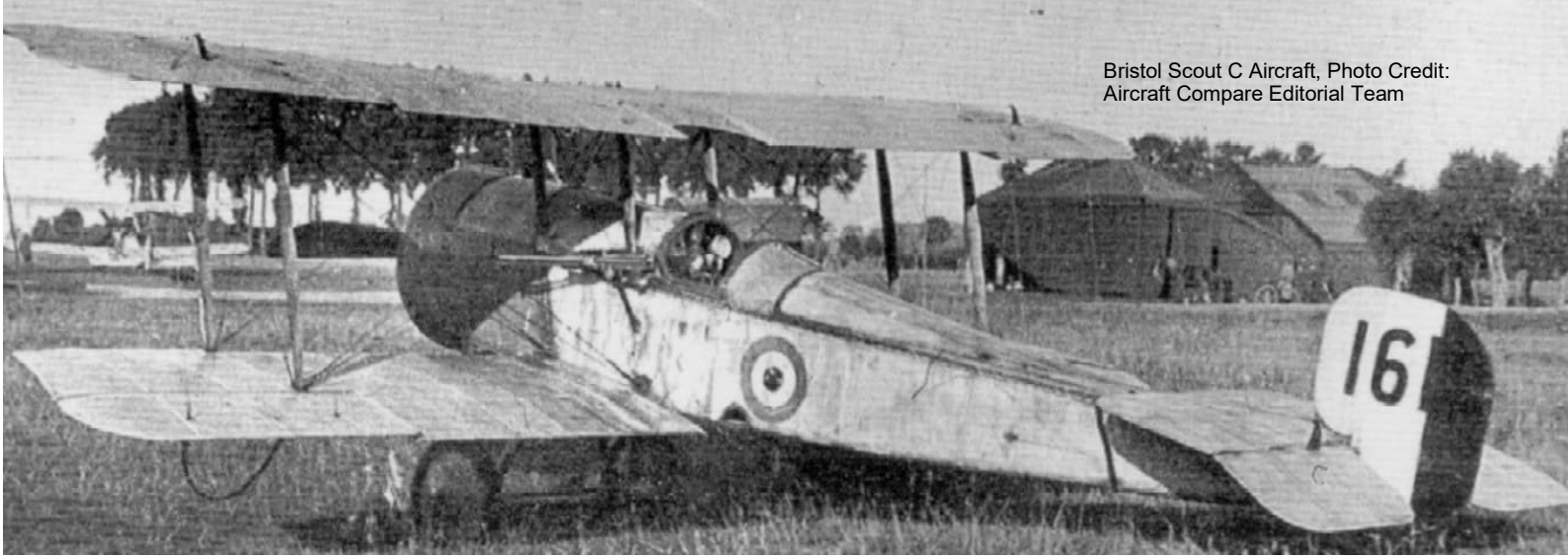
Utilizing these tools could have immediate short term benefits, including faster data processing and improved information visualization via an interactive and customizable dashboard. The dashboards make the data more accessible, while also formatting and standardizing the existing items in the NATO Lessons Learned Portal (NLLP).

In the long term, predictive modeling could unlock more value in the data. The project results showed that machine learning algorithms could predict observation categories based on a content text analysis. This could address the issue of missing or incorrect metadata for lessons already in the NLLP, improving its search functionality, and allowing more user-friendly applications.

Ultimately, the report concluded that NATO can greatly benefit from these Data Science tools. However, to leverage these technologies, a number of challenges must be addressed, ranging from barriers to data acquisition and use, to the absence of specialized tools that are able to transform highly technical NATO data into computer readable formats. The nature of Lessons Learned data also requires human input to maximize the value of data for positive outputs in the field. While machines can help automate key parts of the data collection process, extraction, and analytics, the human aspect remains central to performing the more complex analysis behind the lessons.

To harness the Data Science tools and techniques for Lessons Learned, the project team made a series of recommendations designed to maintain innovation momentum in this context.

You can download a copy of the JALLC's factsheet on this project from the JALLC's website or by clicking here: Big Data Factsheet



Bristol Scout C Aircraft, Photo Credit: Aircraft Compare Editorial Team

JALLC Analysis Project: Air Land Integration

The JALLC released a report in March 2020 titled: *Air-Land Integration: Extending NATO's Tactical Air Command and Control Capability to the Corps Level* for its customer at the Allied Rapid Reaction Corps on behalf of Allied Land Command. The project investigated the current NATO Tactical Air Command and Control (TacAirC2) Model and how it could be improved in a potential Major Joint Operation Plus (MJO+) scenario in order to optimize Air-Land Integration (ALI) in the Alliance.

The origins of ALI trace back to the First World War when aircraft were used to spot targets for artillery forces. Defined by the ALI community as the focused orchestration and application of the full range of Air and Land capabilities within a Joint Force to realize and enhance effects, ALI has always been subject to debate across all NATO Nations and their Air and Land components.

Recently, the ALI community has reflected on lessons from past conflicts with a view to determine how ALI can be optimized. At the heart of the debate is where and at what level in the military structure the function of TacAirC2 should be conducted to best coordinate and direct air support for land forces.

After a comprehensive research and analysis effort, JALLC produced feasible recommendations for the stakeholders across the Alliance Commands. The project team based their analysis on evidence from a variety of data sources, including Final Exercise Reports, simulation studies, statistical models, ALI-related policy documents as well as hosting a topical workshop.

The project team concluded that there is convincing evidence to suggest that NATO's current TacAirC2 capability could be optimized if it were extended down into NATO's highest Land warfighting echelon i.e. the Corps level:

- It would set the conditions for the Corps to be delegated more airspace where decisions can be made closer to the fight, ultimately increasing situational awareness.
- Integrating and deconflicting fires and air assets in delegated airspace would decrease the volume of deconfliction requests, which reduces the processing burden on air control, shortens the fire mission process, and improves tactical execution efficiency.
- Efficiency drives tempo. A TacAirC2 capability at the Corps level would coordinate desired effects in a near real-time, collaborative way.
- Increased resilience by ensuring that air and ground operations could continue within assigned airspace despite potential disruption.

The final report contains recommendations, including the need to create a governing body to oversee the development of an Operational Requirement Statement to define the requirements associated with the implementation of the TacAirC2 capability, and the requirement for a multi-domain.

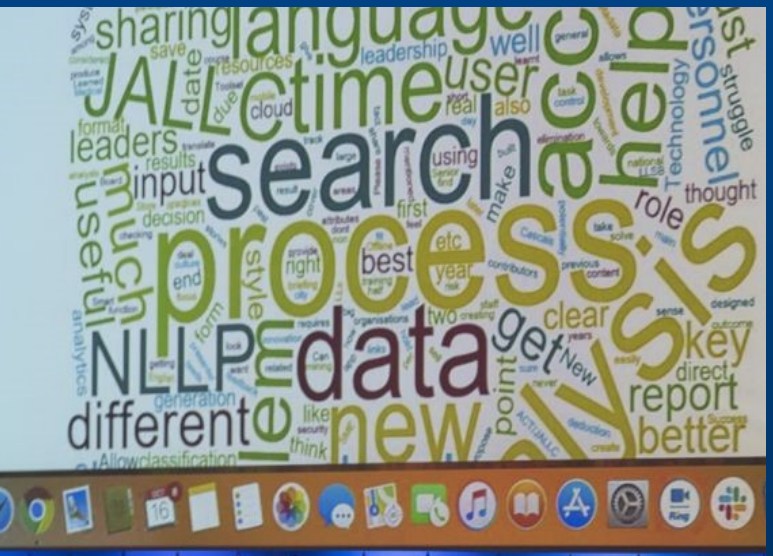
As a direct result of JALLC's independent analysis and recommendations, several Commands within the Alliance began implementing specific measures to improve ALI, ultimately having a positive impact on NATO's future warfighting capabilities.

You can download a copy of the JALLC's factsheet on this project from the JALLC's website or by clicking here: ALI Factsheet

Innovation and New Technologies in Lessons Learned

From Ideas to Actions

By: Stefan Olaru, JALLC Analyst



Stefan Olaru at the NATO Lessons Learned Conference 2019

Since the JALLC held the New Technologies Event in 2018, the JALLC's dedicated New Tech Team continued exploring and investigating how New Technologies can potentially make *doing Lessons Learned* easier more efficient. In this feature article, we hear first-hand from Stefan Olaru, responsible for investigating how New Technologies can be applied to a new NATO Lessons Learned Tool.

Innovation and the application of new technologies in NATO continues to be a hot topic. Buzzwords are flying around NATO faster than you can say: Artificial Intelligence, Machine Learning, Deep Learning, Reinforced Learning, Natural Language Processing, Analytics (descriptive, predictive, prescriptive), Polyglot Tools, Autonomy solutions, and other emerging and disruptive technologies.

Personally, I simply call them: New Technologies. Unsurprisingly to me, a simple Google search gives 1,88 billion results from a search for "*innovation*," compared to 1,22 billion results from a search for, "*peace*."[1]

Notwithstanding the importance of peace (despite the lower search return) to an organization like NATO, innovation and the application of new technologies continue to increase in importance to the future of the Alliance. As such, I found it interesting to share how the JALLC, as a NATO body really just beginning on its journey of understanding the potential value of new technologies to its activities, is managing to find its place in this brave new technological world, especially how it started, what is the approach being taken, what has been done so far, and what is planned for the future.

Any organization begins its innovation and transformation process from within. NATO is no different in this respect. Allied Command Transformation (ACT), as one of the two

AI – artificial Intelligence
QC – quantum computing
ML – machine learning
NLP – natural language processing
EDT – emerging & disruptive technologies

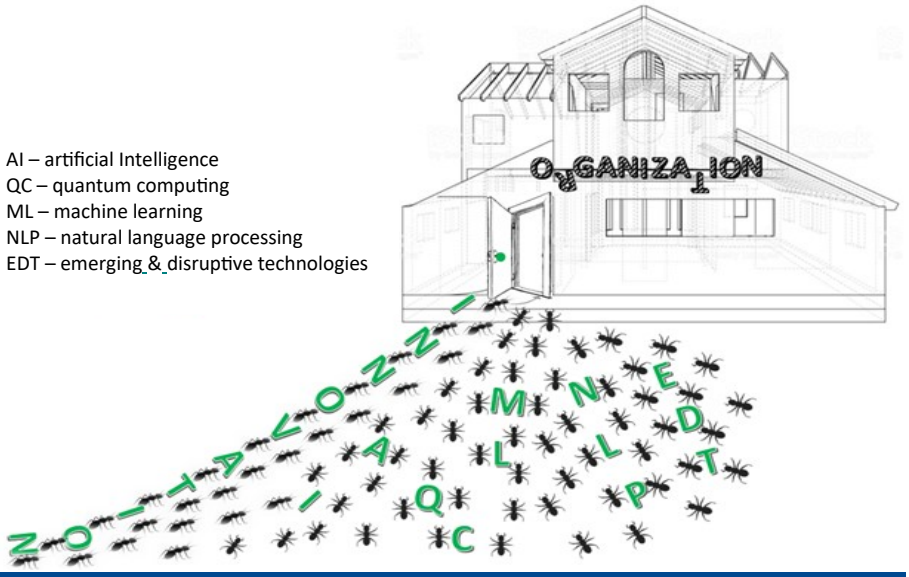


Figure 1: The door to innovation and transformation opens from inside (©Clara)

Strategic Commands of the Alliance and responsible for NATO's transformation and warfare development, created an innovation tool to increase the Alliance's ability to communicate its technological developments and achievements. This tool took the form of the ACT Emerging & Disruptive Technologies (EDT) Roadmap[2] which has encapsulated several projects and experiments involving new and emerging technologies under several lines of effort with the aim of identifying where new technologies can be brought in to bridge any internal organizational needs and shortfalls.

In this light, HQ Supreme Allied Commander Transformation (SACT) has been encouraging its subordinate HQs, including the JALLC, to investigate how new technologies can be applied to improve their activities in the context of the EDT Roadmap. The JALLC, has been conducting extensive research over the past almost three years into understanding how new technologies can support an improved NATO LL Capability and a more effective implementation of the NATO LL Process.

The JALLC began the research in 2017 with a Food for Thought Paper[3] addressed to SACT on the next generation NATO Lessons Learned Portal (NLLP) presenting the potential of new technologies to support the NATO LL community and address the challenges to the NATO LL Capability. As the main author of this Food for Thought Paper, I realized how important it would be to have leadership buy-in, in order for us to move forward from ideas to actions and eventually to change.

SACT's visit to the JALLC in September 2017[4] was a good opportunity to build a common understanding of the relevant key NATO documents, the

1. Search results as of 02 March 2021
2. SECGEN; ACT Roadmap on Emerging and Disruptive Technologies; 26 June 2018; PO(2018)0292; NATO UNCLASSIFIED
3. JALLC; Food for Thought Paper on the Next Generation Lessons Learned Tool; 14 December 2017; JALLC-CG-17-219; NATO UNCLASSIFIED
4. The context of the visit is available at https://youtu.be/cp3m-mSLmok.

JALLC Commander's intent, and the JALLC staff's ability to move toward implementation. This opportunity opened interesting debates on the NATO LL Capability and the need to innovate within this capability, given the momentum that had already been created to improve and innovate LL in NATO more generally and the NCS Adaptation which was ongoing at that time.

I realized only later that those debates were reflecting the innovation within the NATO LL Capability according to the types described by professor Pisano in his innovation landscape:[5]

- *routine* (builds on existing technological competencies),
- *disruptive* (requires a new business model but not necessarily a technological breakthrough),
- *radical* (maintains the current business but heavily improve the technology), and
- *architectural* (combines technological with business model disruption).

Without being very clear in 2017 on what type of innovation we were aiming for in order to address the challenges to the NATO LL Capability, it was unanimously accepted that efforts should be made in order to be able to keep pace with the technological evolutions within NATO, as well as to be able to provide deliverables at the speed of relevance required by the future operating environment for the Alliance, as described in the Strategic Foresight Analysis[6] and the Framework for Future Alliance Operations[7] studies.

On that basis, the JALLC fully committed to identifying some of the key challenges faced by implementing the NATO LL Capability and to investigate how new technologies could possibly support addressing these challenges, with the aim of incorporating relevant new technologies into a new LL Toolset for the Alliance in the future. Taking into account the impact of the new technologies not just on the *Tools* element of the NATO LL Capability, but also some of the other elements (e.g. on the process, training, or information sharing) and other foreseen innovations and adaptations in the area of IT structure, architecture, infrastructure, and the vision for the NATO Communications & Information—a kind of *architectural* innovation, the target date for delivering this new LL Toolset was planned for 2025. However, whenever appropriate, any relevant new technology was to be included in the current NLLP for the benefit of the NATO LL Community—a kind of *routine* innovation.

Based on the ideas presented in the Food for Thought Paper and the Lessons Learned Enabling Line of Effort in the ACT EDT Roadmap, and after conducting an in-depth review of roles and responsibilities of JALLC in this area and its in-house expertise, the JALLC initiated several Lessons Learned related activities. These activities were focussed more on discovery and exploration of relevant new technologies and involved engaging external experts to work with the JALLC's in-house team, building on understanding the potential of the different technologies available and how they might work to improve Lessons Learned.

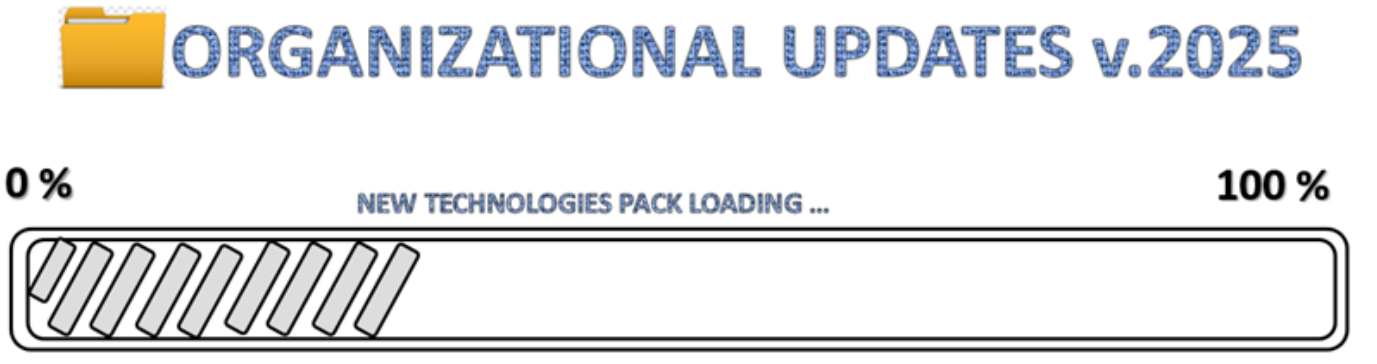


Figure 2: Technology within innovation (© Stefan)

5. The innovation landscape was described in the article "The Big Idea – You need an innovation strategy"; Harvard Business Review; June 2015, page 8-9, available at s3.amazonaws.com.
6. More details are available at https://www.act.nato.int/images/stories/media/doclibrary/171004_sfa_2017_report_hr.pdf
7. The document is available online at https://www.act.nato.int/images/stories/media/doclibrary/180514_ffao18-txt.pdf

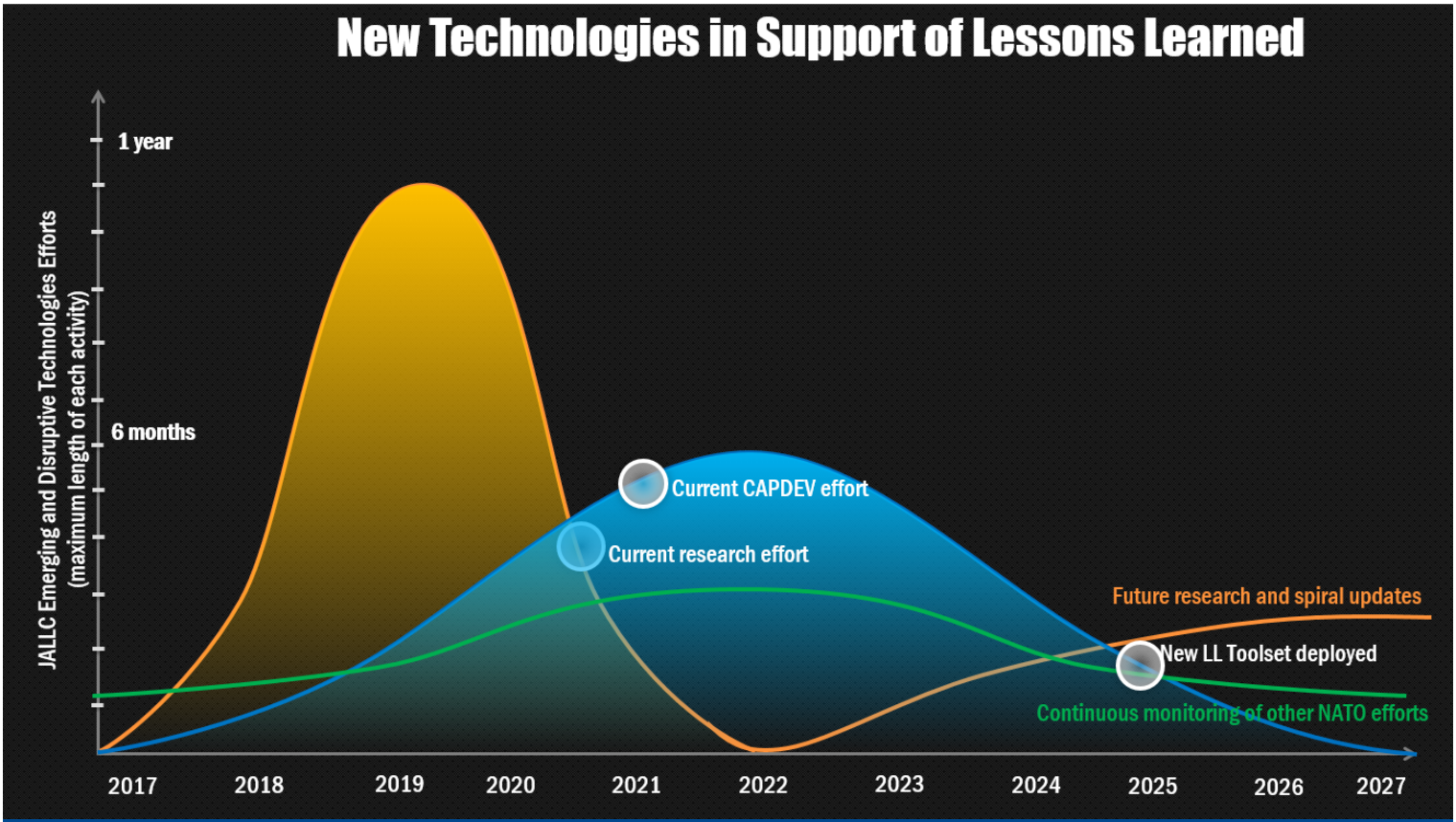


Figure 3: JALLC Effort Planning (© Slidemodel adapted by Stefan)

The next step was to take the outcome of this discovery and exploration stage and move into the Capability Development process, towards the delivery of a new LL Toolset embedding the suitable new technologies.

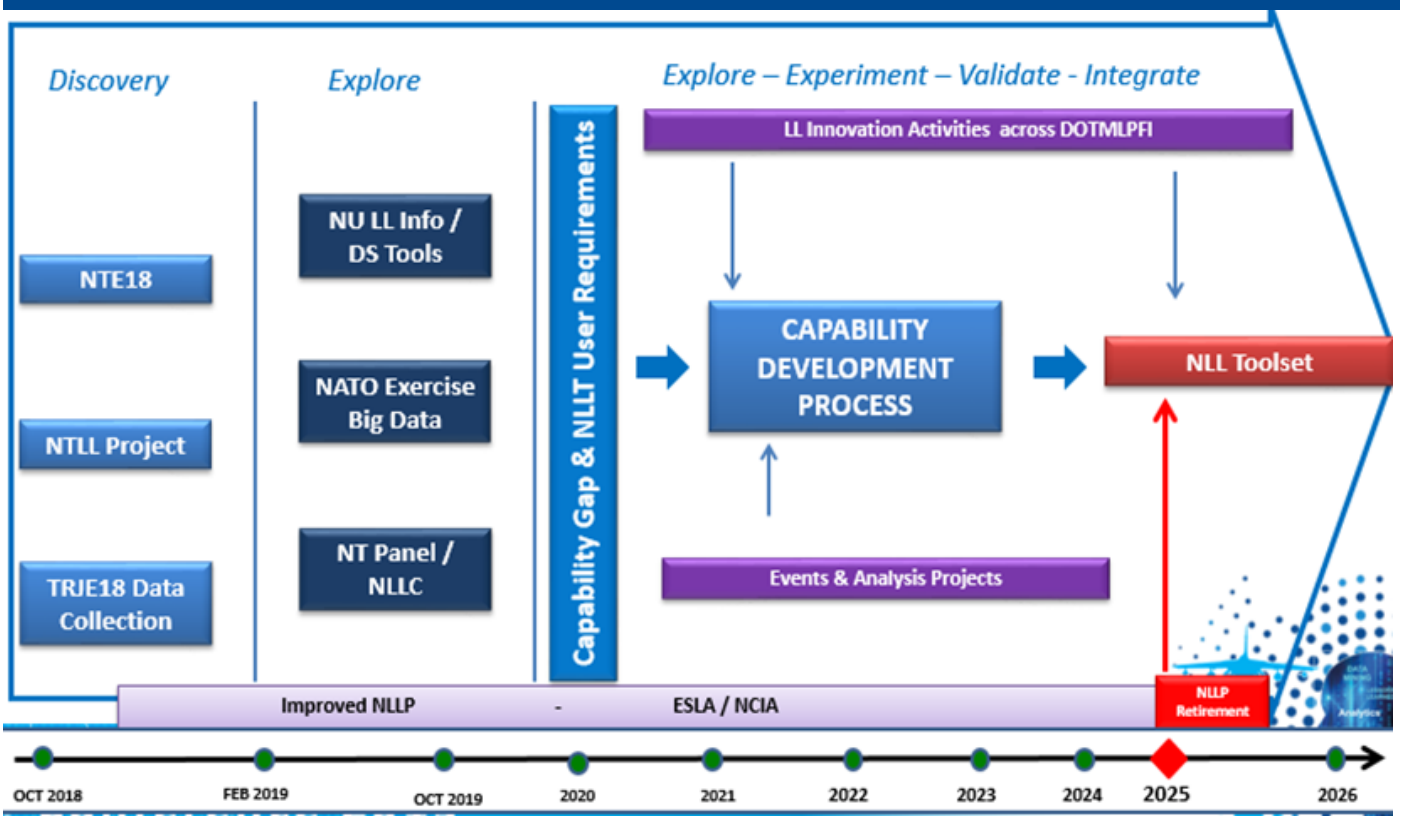
Once the new LL Toolset is delivered, post 2025, the plan is to continue research as a form of *routine* innovation in support of the NATO LL Capability. Such routine innovation may include spiral updates that can be documented and implemented to maintain the LL Toolset to high technological standards. Finally, it will be crucial to remain aligned and synchronized with relevant NATO-wide efforts to implement new technology as it develops to avoid the new LL Toolset being isolated from the NATO Enterprise tools and services.

Therefore, in 2018 JALLC initiated a series of dedicated new technology related activities that would enable the JALLC team to *discover* and assess the functionalities and claimed abilities of new / emerging and disruptive technologies as well as their relevance for LL.

The series of new technology activities kicked off with the ***New Technologies Event 2018 (NTE18),***[8] organized in Lisbon, Portugal as a discovery event, supporting the identification of challenges associated with NATO LL Capability and to understand *the art of possible* in using new technologies to address some of these challenges. I was made responsible for the organization of the NTE18, working together with a very dynamic and ambitious team. The NTE18 was to be the first JALLC event involving industry and academia and I was very impressed by the interest showed by over 140 attendees from all across NATO, Allies, Partners, and their appetite to network and share insights with the representatives from industry and academia. The level of interaction in presenting and discussing the new technologies applicable to Lessons learned reconfirmed, at least to myself, that this was the correct way ahead for the JALLC to begin to research and understand how New Technologies might be able to improve Lessons Learned in NATO for the benefit of the entire Lessons Learned Community.

8. More details are presented in the NTE18 magazine available online at http://www.jallc.nato.int/activities/docs/20181218_NTE18_Magazine.pdf

Figure 4: Activities within LL ELoE/ACT EDT Roadmap
(© JALLC - New Technologies Panel / NLLC19)



With this positive mindset and with strong leadership support, after the NTE18, the outcomes and insights from that event were taken forward into the next activity in the series: the ***Analysis Project on New Technologies in support of Lessons Learned.***[9] This project results in an extensive report to SACT on the use of New Technologies in support of Lessons Learned and was based on a research and review of over 300 technological features embedded in the software/applications identified as potentially relevant for the NATO Lessons Learned Capability. The project team, taking advantage of the outputs of the NTE18, conducted an in-depth analysis resulting several *current* and *foreseen* challenges for the NATO LL Capability being identified, some of which could potentially be addressed by applying new technologies. However, the project concluded that these *technological features* would require further exploration, review, analysis, and experimentation to be confirmed as potential suitable solutions.

NTE18 was a huge success, in part because it allowed many opportunities for sharing thoughts on the topic of the use of New Technologies, including between leadership, LL analysts, and LL Staff Officers. Based on the ACT leadership support for the JALLC's efforts in this area, resources were committed to the next activity in the series which would be a project on ***Data collection from Exercise TRIDENT JUNCTURE 2018 (TRJE18)***. This data collection project was sponsored by JALLC and executed by NCIA in six Exercise TRJE18 locations resulting in 3.9 TB of data from the Live Exercise (LIVEX) and the Command Post Exercise (CPX), in addition to the TRJE18-relevant items from the NATO LL Portal. The data, would be used by the JALLC, working with NCIA, to further explore how new technologies could be applied to make better use of this data in Lessons Learned (see below), and would also be made available to interested NATO entities for subsequent analysis, experimentation, and testing of new technologies.

During 2019, the exploratory efforts continued, looking in more applied ways to the potential of new technologies relevant for LL as well as their suitability and applicability within the NATO framework. A second team was stood up within the JALLC which, with support from NCIA Data

9. More details are available here: NTLL Factsheet http://www.jallc.nato.int/products/docs/20190403_NU_Factsheet_NTLL.pdf

Science Team, undertook two challenging but interesting analysis projects:

1 The ***Exploration of NATO Unclassified NLLP Data using Data Science Tools***[10] project addressed two challenges typically faced by the JALLC's analysts when conducting Joint Analysis and NLLP Active Content Management: *Identifying Observations Embedded in Documents*; and *Identifying Topics/Trends in NU NLLP Content*.

2 The ***NATO Exercise Big Data Exploration***[11] project aimed at understanding whether it would be feasible to build a model of investigation for extracting LL related value from large / big data sets through enabling staff to process these datasets faster and more effectively, access necessary information more efficiently, and share relevant information more easily.

Both projects used the data collected during the ***Data collection from Exercise TRJE18*** project, which formed a suitable testbed for the JALLC and NCIA to really explore, more than ever before, how this type of data could be made useful for NATO and how best to exploit it. In the meantime, and referring back to *routine* innovation, the JALLC's in-house NLLP team and IT Branch continued their efforts to maintain and update the NLLP's functionalities and to address new identified NLLP user requirements. As such, an audit of the NLLP was conducted identifying shortfalls and a ***NLLP improvement Plan*** was develop and executed in 2020 by the JALLC to address those identified user requirements.

The next activity in the series of New Technology related activities was ***The New Technologies Panel*** [12] which was held during the NATO LL Conference 2019 (October). The panel provided a great opportunity, not only to share details about the work conducted so far in terms of the application of New Technologies to LL in NATO and the findings that are relevant for LL with the NATO LL Community, but also to bring experiences and new perspectives (regional, national, international) on how to employ new technologies. This panel also provided a great opportunity to network and engage with the LL Community and experts in new technologies as well as to capture more user requirements for the new LL Toolset.

However, as the moderator of this panel, I understood two new things. First, working together with the community is essential to ensure all LL user requirements can be captured, not only at the expert level but also at the organizational level. Doing so will provide the NATO LL Community with a stronger/ louder voice within the decision and prioritization processes relating to capability development.

Second, not everybody is able to project what the requirements of the future operating environment may be, taking a proactive approach to developing a new LL Toolset, but instead remain focussed on the immediate problems adopting a reactive approach to existing LL capability challenges. This fact requires us to share ever more actively with the community the details of NATO's efforts in understanding and using new technologies. Therefore – communication is key to the success of this endeavour and to the success of any New NATO Lessons Learned Tool for the future.

Figure 5: Working together with LL Community (© dailymail.co.uk adapted by JALLC for New Technologies Panel / NLLC19)

10. JALLC; Exploration of NATO Unclassified NATO LL Portal Data using Data Science Tools; 13 March 2020; JALLC-CG-20-037; NATO UNCLASSIFIED
11. JALLC; NATO Exercise Big Data Exploration; 13 February 2020; JALLC-CG-20-017; NATO UNCLASSIFIED
12. More details on the panel can be found in the NLLC19 Magazine, available online at http://www.jallc.nato.int/activities/docs/20191220_NLLC19_Magazine.pdf

The Way Ahead

I always believed that as in the past people were able to plan and execute projects extending over 200 years (e.g. cathedrals), nowadays we can and we need to be able, even with significant adjustments, to conclude a plan covering a 5-7 years horizon. Of course, in an organization such as NATO, there are many environmental changes (e.g changes in priorities; resources available, rotation of personnel with negative impact on solid corporate knowledge continuity; many parallel work-strands; threats and opportunities surrounding the organization; and disruptive events such as military/political crisis or outbreaks) that can impact any plan but, as all the efforts towards a new LL Toolset embedding emerging and disruptive technologies are in support of overcoming all these environmental changes, we need to take advantage of them and continue towards the defined end-state.

As such, taken all the relevant factors into consideration, the JALLC intends to carry out the following activities planned in the coming years:

1 Define the User Requirements for the new LL Tool: this is an ongoing activity, with the JALLC leading and including contributions from the entire LL Community to capture requirements from different perspectives—leadership, analysts, staff officers, LL information consumers, etc.—and provide details for the Capability Development process. The LL Working Group and LL Steering Group will play an important role in

2 Keep track of relevant NATO events and initiatives, while investigating and employing new technologies across all available lines of capability development (Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities, Interoperability—DOTMLPF-I).

3 Continue improving the current NLLP, responding as quickly as possible to the short term needs of the LL Community. This investment must be made and will not be lost upon the introduction of any new LL Tool because the Lessons Learned in improving the NLLP can be carried forward into the NLLT regardless of how it will be delivered A(dapt); B(uy); C(onstruct).

4 Continued research into new technologies, either in exploration or experimentation mode, to provide the LL Community with appropriate information enabling them to make informed decisions as to what exactly are their requirements for a new LL tool. For example, the research into the possibility of Multilanguage / Polyglot translation functionalities is highly relevant and expected by the LL Community.

All these activities (conducted, ongoing, and planned), the continuous leadership engagement, availability of expertise (subject matter experts, analysist, data scientists, and programmers), and the strong involvement from all stakeholders are all ingredients for a successful exploitation of relevant technologies in support of LL. This exploitation will subsequently contribute to the improvements of all those areas supported by LL – Decision Making; Operations; Exercises; Capability Development. Therefore, more than ever, the mantra of the moment should be - ***together we are stronger.***

Mr. Stefan Olaru is a Research Analyst at the NATO Joint Analysis and Lessons Learned Centre (JALLC). Before joining the JALLC in 2012, he served for fifteen years as an officer in the Romanian Army, mainly as instructor, researcher and Lessons Learned analyst. His work includes over forty studies, projects, research papers, and publications in the fields of law, capability development and international security. During his career, Mr. Olaru has been involved in several NATO related activities, specifically within standardization and capability development framework. He also had short and long deployments in UN and NATO missions and operations in Kosovo, FYROM, Bosnia-Herzegovina, and Afghanistan. For his service and duties, Mr. Olaru received a variety of Romanian, UN and NATO medals and awards.

As a JALLC analyst, he has contributed to several analysis projects, Lessons Learned training activities and, more recently, to the efforts in identifying the way ahead for the implementation of the new technologies in support of Lessons Learned. Mr. Olaru has a Master's Degree in Private Law and a post-graduated diploma in management.


DATA
MINING
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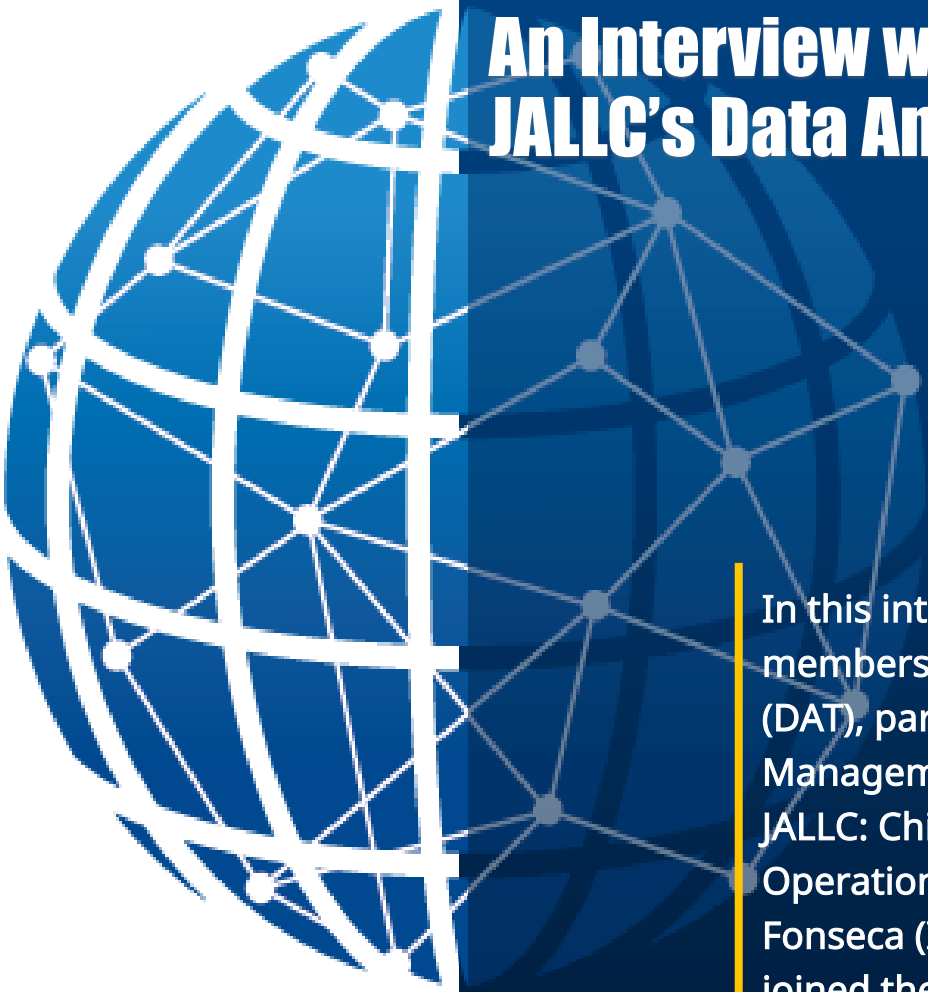
NLLP Insights

An Interview with the JALLC's Data Analysis Team

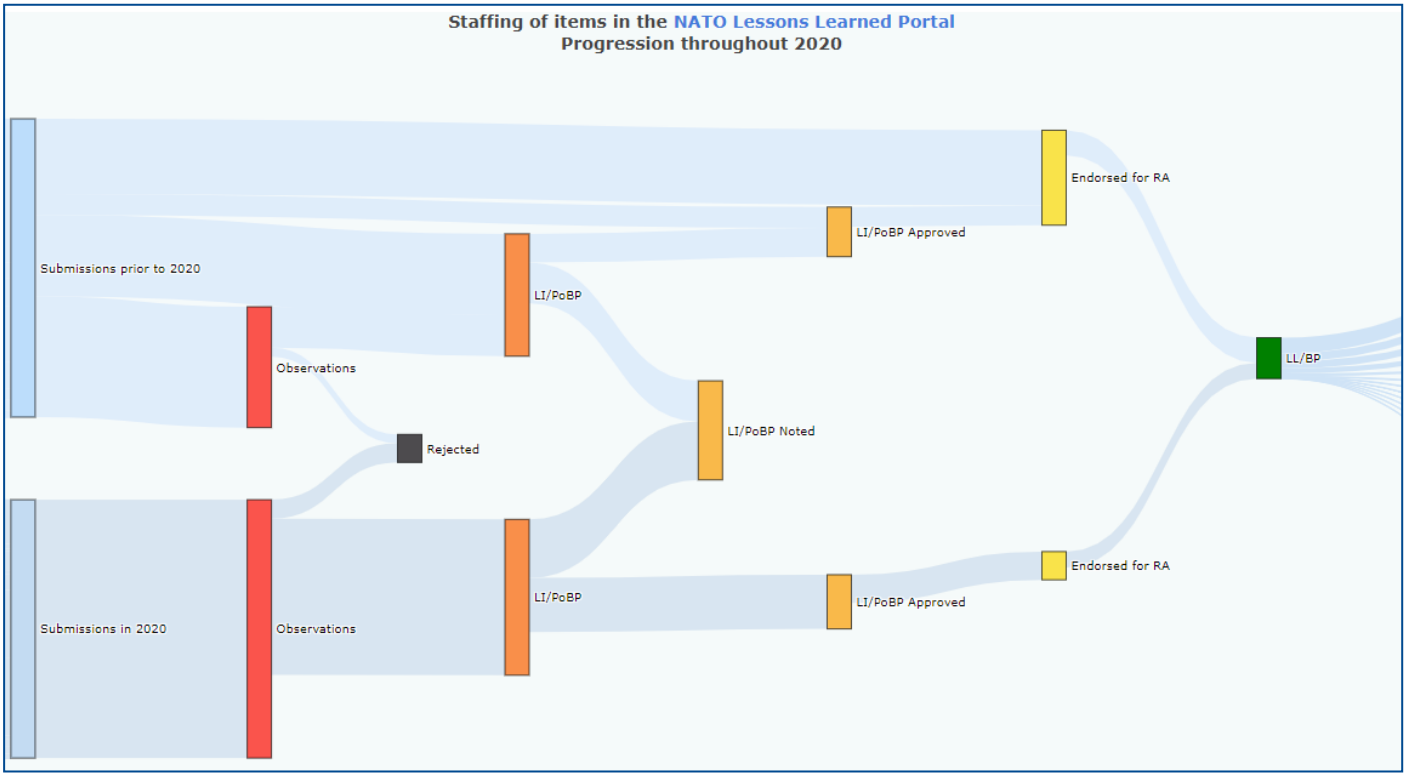


In this interview, we sit down with two members of the Data Analysis Team (DAT), part of the Lessons Learned Management Division (LLMD) at the JALLC: Chiara Rylander (CR), a Senior Operational Research Analyst, and Ines Fonseca (IF), a Research Analyst. Both joined the JALLC in early 2020, filling the remaining posts of the DAT, a team consisting of four civilian analysts responsible for JALLC's conduct of Active Content Management (ACM) of the NATO Lessons Learned Portal (NLLP) content.

To start off, can you tell me about your roles on the Data Analysis Team?

CR As OPR (Officer of Primary Responsibility) of the team, I am responsible for team coordination, reporting on our activities, and assuring the quality of our ACM products. Amongst other duties, I also provide quality assurance to other teams within the LLMD as required, and coordinate with analysts outside of the team to support other JALLC activities.

IF In addition to research work that is also carried out by all analysts, my role is focused on automating parts of the analytical process, mainly through the development of reproducible code for quantitative and graphic outputs. So this includes, animations, interactive charts, and dashboards. This work, in turn, helps me identify features to improve the extraction of information from the portal, and correct metadata inconsistencies, which consequently improves our ability to search in the NLLP – not just me, not just the team, but all the researchers in and outside of the JALLC.



We know that ACM stands for Active Content Management, but can you explain for the readers what it is in practice?

CR Yeah, so I can start with the current official definition: NLLP ACM is a continuous activity that includes analysis and assessment of NLLP data and information, to monitor and assess the conduct of the NATO Lessons Learned (LL) Process, to reach out to Originating Authorities, Tasking Authorities and Action Bodies for coordination and advice as required, to identify trends and strategic lessons, to monitor lessons from major NATO events (exercises and operations) and to push information to relevant authorities. NLLP ACM is a key activity that directly supports the JALLC's Mission, to support Alliance-wide implementation and sustainment of NATO's LL policy through monitoring and supervising the NATO LL Process. In practice, our main activities involve the delivery of routine and ad-hoc products, and visualizations of the NLLP data. The routine reports include a monthly ACM summary, which summarises the NLLP activity over the last month, and periodic reports on the COVID-19-related items within the NLLP. Additionally, we produce ACM reports for the Lessons Learned Steering Group, delivered around the Fall and Spring Lessons Learned Weeks. So, those are our routine products. Then we also do ad-hoc reports for stakeholders/customers who submit a Request for Information on a specific topic they're interested in, along with search criteria. We will then conduct a search of the NLLP and summarize the content related to that subject.

IF For example, we've just done one on COVID-19 focussing on a specific period of time and certain topics. The ad-hoc reports usually take between 2 and 6 weeks, depending on the topic and time constraints.

> **We'll continue to develop new visualizations, utilizing new technologies, analysis methods, and data visualization techniques to offer insights and enable NLLP users to better interact with, explore and understand the NLLP data.**

CR Last year, some of our ad-hoc reports were used by customers to inform discussions at national or NATO committees and working groups, as well as capability development and potential doctrinal changes. With all our products, we aim to highlight the NLLP content that is most relevant and interesting to the audience, and identify any trends that would otherwise go unnoticed. Over the past year, we have developed interactive dashboards and graphics visualising NLLP data to support our reporting. We also use specialist software, such as MaxQDA, a text analytics software that enables us to conduct a more efficient and effective search of the NLLP content. The NLLP data visualization products we produce (dashboards, storyboards and other interactive graphics) are made available to NLLP users to support their own LL reporting and monitoring activities. Ines continues to develop new and innovative ways to present NLLP data using the latest data visualisation techniques to help the LL community to better understand and interact with NLLP data.

IF Yes, so I've been working on some animations and standalone products. The dashboards include all NLLP data and a wide range of graphics, whereas the storyboards contain a series of interactive graphics that tell a story on a specific NLLP topic, such as COVID-19. The animations and other standalone graphics usually focus on something very specific.

On that note, what do you think is the future for the JALLC's role in improving data visualization and how do you think it will impact the LL process?

CR I think we'll continue to develop new visualizations, utilizing new technologies, analysis methods, and data visualization techniques to offer insights into the NLLP data and enable the NATO LL community to better explore and understand the NLLP data. We hope that this will support the community in monitoring and reporting on their LL activity, as part of the NATO LL process.

IF We (the JALLC) are NLLP users too and it is very important for the analysts here at the JALLC to be able to easily interrogate and transform NLLP data for our analysis, so we are the target audience for some of these data visualisation products.

CR We're in the process of deploying three new dashboards for three broad NLLP user groups. The general/leadership dashboards provide a high-level view of the NLLP content and are suitable for all NLLP users. Then, there's the dashboards for JALLC analysts, which contain the most filters to enable us to fully explore the NLLP data for our analysis. And then we have the local manger dashboards, which are tailored to specific HQs, and focus more on the LL staffing process.

Do you think that you will make storyboards, such as the COVID-19 storyboards, for other major world events and activities?

IF I think the concept could be used for other key NATO events and activities represented in the NLLP, such as exercises, because they can help the LL community to understand how things are progressing. COVID-19 is still going on, so we update the storyboard regularly.

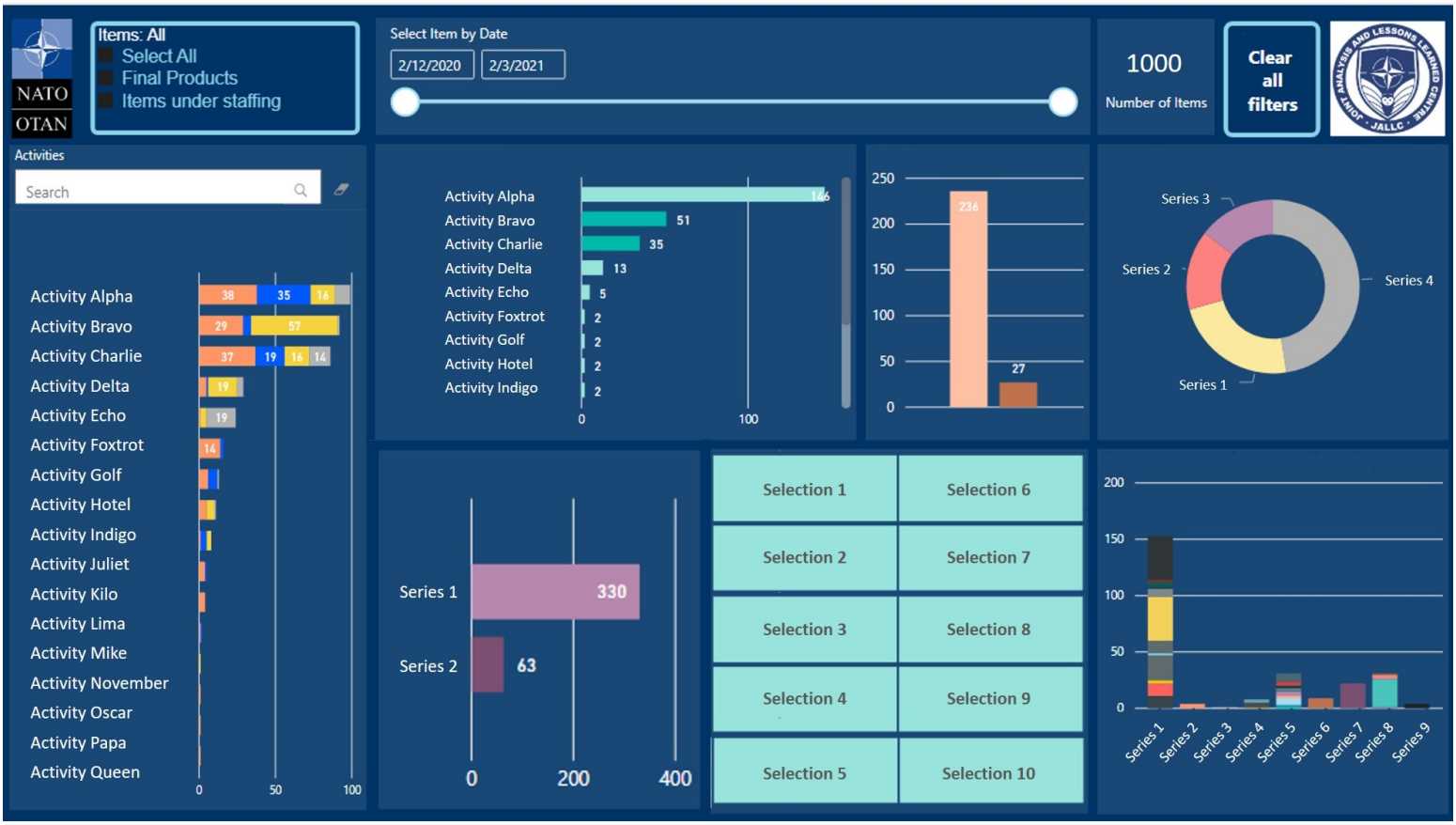
Can you talk a bit about ACM's contribution to NATO's transformation, and offer some insight on its importance to the greater impact outside of the JALLC?

CR HQ SACT and SHAPE have a continuous requirement for ACM to support their monitoring and management of the NATO Lessons Learned Process. Therefore, through supporting the LL process, ACM contributes to NATO's transformation. We may also do ACM in support of exercises and operations. So, prior to a NATO exercise or operation, JALLC analysts may provide a summary of LL information contained within the NLLP on the topics of interest, which could be used to support planning. In addition to being a standalone task, ACM also supports other types of analysis that the JALLC does, such as Joint Analysis - a core element of JALLC's mission that also contributes to NATO's transformation.

Finally, are there insights that you'd like to highlight from your work on the DAT?

IF Our main suggestion to the Lessons Learned Community is to enter their Observations and Lessons Identified into the NLLP as often and as accurately as possible, including the relevant metadata – the more information we have, the better we can analyse it and present useful insights to the NATO LL community.

CR Absolutely, we don't generate the data – that comes entirely from the NLLP users. Feel free to explore some of our ACM products on the ACM page in the NLLP.



A sample NLLP Dashboard. Data displayed here is not based on real NLLP data.

Learning from COVID-19

How to Contribute YOUR COVID-19 Observations

Why do we need to learn these lessons?

Learning the lessons now is critical for improving NATO's resilience in the next crisis. Every experience and Lesson Identified is an opportunity to improve the next time around, to not repeat failures, and to record successes.

Where can I find COVID-19 Lessons?

The NLLP has a dedicated COVID-19 area. This is where all the submitted COVID-19 Lessons Information ends up for everyone to use. This area is in both the NATO Unclassified and NATO Secret NLLPs. If you can't find what you're looking for or need help, contact: nllp@jallc.nato.int

How do I Submit Observations?

Teleworking?

- Go to the NLLP through your internet browser (www.nllp.jallc.nato.int)
- Log in or register
- Check the COVID-19 Area to see if your observation has already been submitted
- If not, submit a new one!
- Inform your local Lessons Learned officer about your submission.

In the Office?

- Log in to the NATO Secret NLLP
- Check the COVID-19 area first to see if your observation has already been submitted
- If not, submit a new one!
- Inform your local Lessons Learned officer about your submission.

JALLC UPDATES

In this section:

Despite the pandemic, the JALLC has been busy renewing and upgrading. Read on to see what's new from the JALLC.

The new NLLP

JALLC Website Update

New NLLP

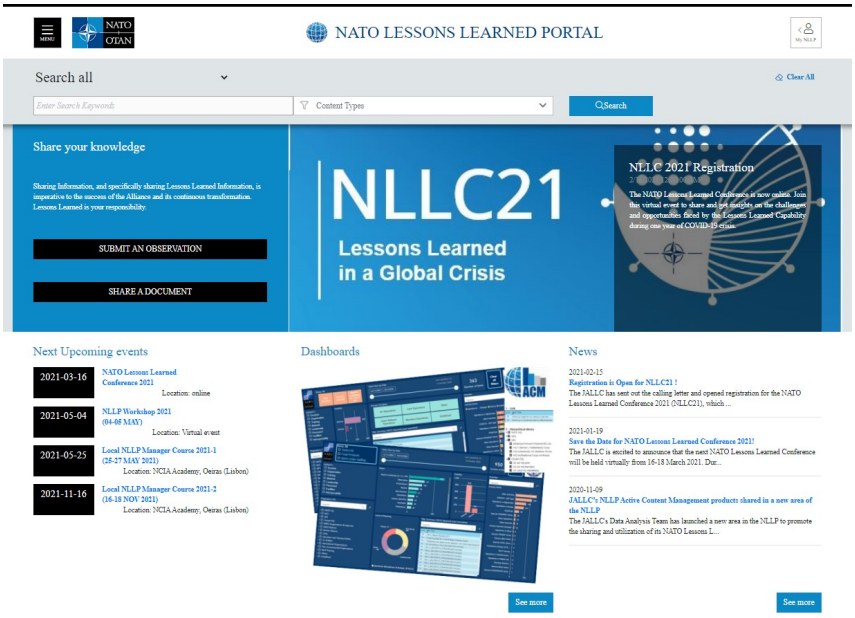
After collecting user feedback on ways to improve the NATO Lessons Learned Portal (NLLP) and months of hard work, the JALLC launched a brand new version of the NLLP.

The main priority was to improve user friendliness in using the website and submitting Observations and Lessons Identified. Some of the new features that you will see in the NLLP include an improved search tool that pulls search results from a wider variety of categories, as well as a more visually appealing and intuitive layout for easier navigation around the site.

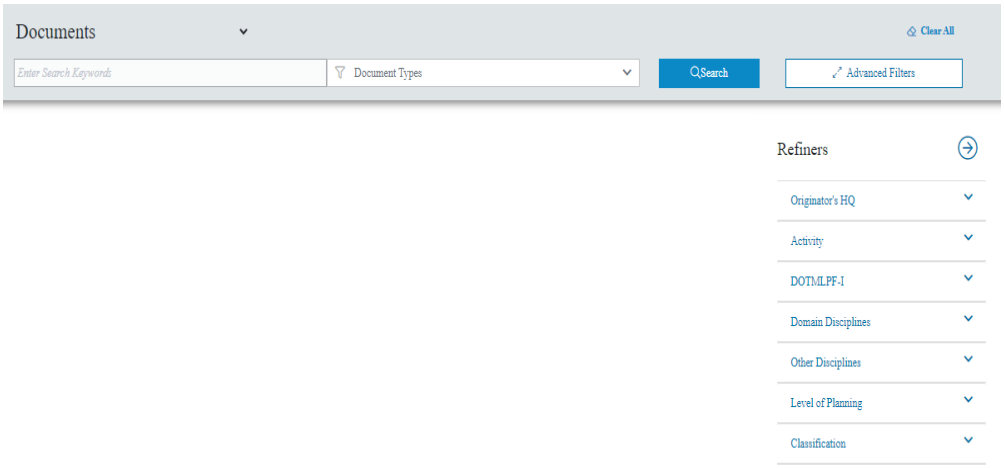
In revitalizing the NLLP, we hope it will encourage increased Observations and Lessons Identified submissions across NATO, which will ultimately lead to many more Lessons Learned contributing to the transformation of the Alliance. As the central location of all NATO Lessons Learned information, improving the NLLP is just one step in the long term advancement NATO's Lessons Learned Capability. If you haven't yet, check out the new NLLP. Please let us know if you have any questions, comments or suggestions on ways we can continue improving by contacting the NLLP team via the NLLP.

https://nllp.jallc.nato.int

1: New "Look & Feel"



2: Improved Search Function



3: More User-Friendly

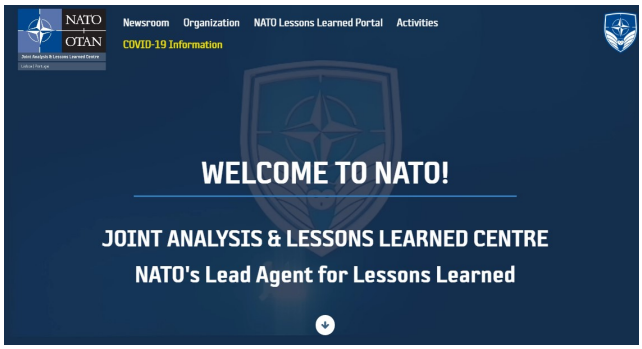
NEW JALLC WEBSITE

https://jallc.nato.int

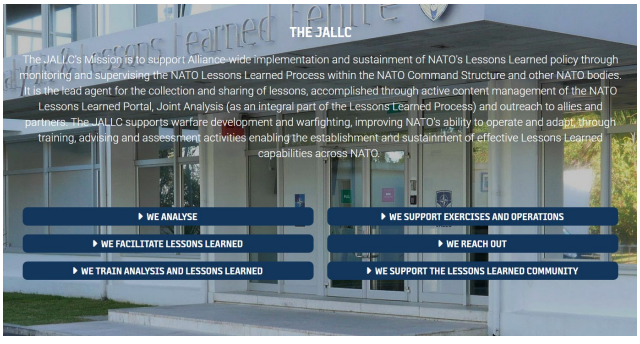
If you have recently visited the JALLC website, then you may have spotted a few changes. On 15 December 2020 the JALLC relaunched its website www.jallc.nato.int.

The website features a new layout, bringing it in line with the rest of ACT and NATO with a modern look and feel structure and experience. The design of the new website is intended to be more user friendly. The website was developed during the COVID-19 pandemic, which presented its own set of challenges. However, through coordination between teams from the JALLC, HQ SACT, and the web developers contracted to help us in the process, the website was successfully updated, upgraded, and launched. Using web-based project management applications and all other virtual means available, the JALLC coordinated across the Atlantic Ocean and across time zones, demonstrating that the JALLC really can deliver the high-quality products the world expects from us under even the most challenging conditions. The new website forms part of a wider communications update at the JALLC planned for 2021 that ties into the new One NATO branding strategy.

1: New Website Design



2: Updated Content



3: Easier Navigation

NLLC21
Lessons Learned in a Global Crisis

NATO Lessons Learned Conference
First online edition

The JALLC will hold the next NATO Lessons Learned Conference (NLLC21) virtually from 16-18 March 2021. During the online event, representatives from NATO Allies, Partners, academia, and industry will present and discuss their experiences with the NATO Lessons Learned (LL) Capability in the past year of the COVID-19 crisis with the theme, *"NATO LL in a global crisis: what did we learn and how can we do better?"*

Hosting the NLLC21 demonstrates that despite the challenges, we have been able to adapt and to learn. The event will be broadcast via the online platform hosted on Attendify. The platform has a variety of features including: the event agenda, read ahead materials, speaker bios, news updates, and a place to network and interact with fellow NLLC21 attendees.

We will start the first day with opening remarks from Supreme Allied Commander Transformation General André Lanata, and a key note address by the NATO Deputy Secretary General, HE Mircea GEOANA. His remarks will be followed by a panel with several LL leaders and experts on "National Perspectives on LL Capability adaptation during the COVID-19 crisis."

The next day will bring speakers from Partner Nations, the European Union Military Staff, NATO Command Structure, and NATO Force Structure. Their presentations and discussions will provide insights on three important topics: *Partner Perspectives on LL Capability adaptation during the COVID-19 crisis*, *NATO LL Deliverables during the COVID-19 crisis*, and *Innovating in the NATO LL Capability to face future similar crisis*.

The last day will have four simultaneous sessions involving exciting discussions on *Standardization in LL Improvement and Innovation in LL*, *Collection and Exploitation of LL in Exercises*, and *Future Leaders' Perspectives on the NATO LL Capability*. Participants will have the opportunity to select the session they would like to join.

We're looking forward to sharing all the valuable COVID-19 related LL information acquired over the past year from across NATO and the LL Community.

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