DEFENCE LEADERS | COMBAT ENGINEER | COMBAT LOGISTICS

COMBAT ENGINEER AND LOGISTICS 2024

12 – 14 March | Warsaw, Poland
EXPO XXI Exhibition Centre

CONFERENCE PRODUCER'S INTRODUCTION

Throughout the history of armed conflict, military engineers and logisticians have been intertwined and are increasingly crucial for success in modern warfare. As we witness a resurgence of large-scale combat operations, where mass of forces plays a significant role, the collaborative partnership between our engineers and logisticians is becoming increasingly vital. The tenth edition of the Defence Leaders **Combat Engineer and Logistics** conference is a global platform for the two communities to come together and exchange their knowledge, discuss common problems, examine the potential solutions, and network with military peers, scientists and industry experts.

Russia's illegal invasion of Ukraine has shifted our focus and demonstrated that, in some cases, we are under-prepared to respond to contemporary threats. As plans and priorities shift it is more important than ever to learn from each other, find effective ways of working together, and evolve tactics and equipment to meet future threats.

CEL 2024 will be our biggest iteration of the event yet, with us returning to the vibrant city of Warsaw but relocating our meetings and exhibition to the impressive **EXPO XXI Exhibition Centre**. The Defence Leaders team and our event partners are excited to present you with an enhanced programme of focused briefings and panel sessions from our authoritative speaker faculty addressing the most pressing topics facing the community now including; climate change, advances in technology and the impact of NATO's new force posture on engineers and logisticians. Attendees will include senior military personnel, government representatives, programme managers, capability and requirements teams, front-line commanders, engineers and scientists. The event will be catalyst for stimulating meaningful discussions, forging partnerships, and fostering international cooperation in pursuit of enhanced combat engineering capabilities and logistical excellence.

We are delighted to welcome you to the event and hope you fully achieve your objectives during this year's meeting.

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Conference Producer
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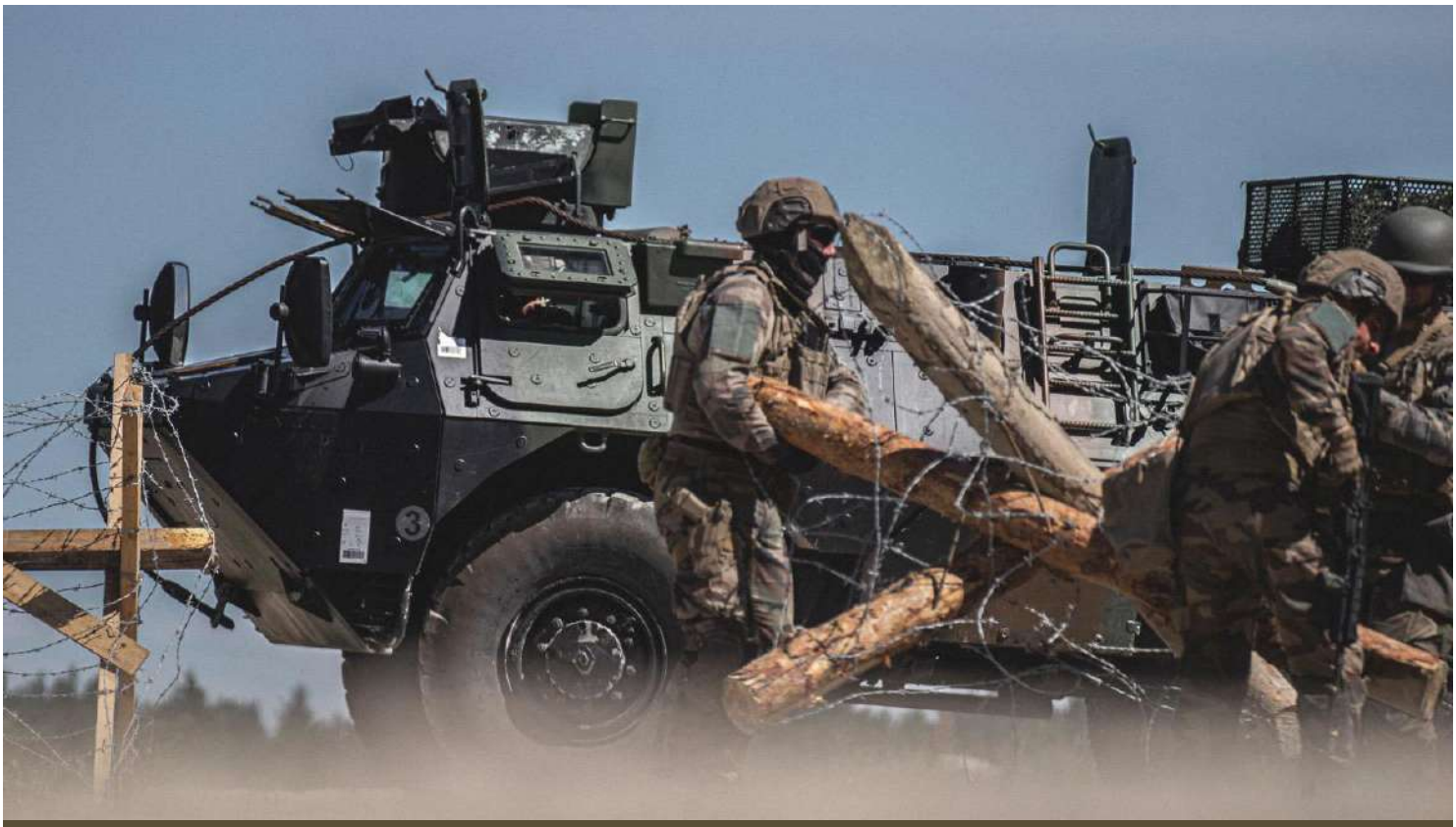
PRE-EVENT RECEPTION
Monday 11 March 2024 | Location to be Confirmed

1800 – 2100 **Networking drinks reception and pass collection**

- Meet other conference delegates and the Defence Leaders team
- Collect your conference guides and any other information required for CEL 2024
- A relaxed and casual evening that will help you skips the queues at registration on Tuesday morning

Sponsorship available



DAY ONE | TUESDAY 12 MARCH | KEYNOTE THEATRE
PLENARY KEYNOTE PRESENTATIONS

0615 – *5km run from the Hilton Warsaw City reception*
Sponsorship available

0800 – *Security scanners open*
Hosted by **CEIA**

0800 – *Registration and welcome coffee in the Exhibition area*
Sponsorship available

THE OPERATIONAL CONTEXT - INFLUENCING ENGINEERING AND LOGISTICS REQUIREMENTS

Our keynote presentations will explore the current threats and challenges that will shape future requirements for both the engineering and logistics branches. Discussions will outline the changes resulting from NATO's new force posture and the impacts of the pivot towards large scale combat operations. We will address the latest developments in capability requirements and spend time exploring potential solutions to the expected problems faced by host nations.

0850 – *Chair's welcome and opening remarks*
Dr Paulina Zamelek, Professor, **Military University of Technology**

0900 – **How NATO will meet the expected future challenges in Central Eastern Europe**
- NATO's new Force Posture and what this means for the Alliance's engineer and logistics capabilities
- European threat analysis and how NATO will meet the challenges of hybrid warfare
- Future developments that will enhance NATO's military engineering and logistics capabilities

Brigadier General Tomasz Kowalik (POL), Deputy Chief of Staff Support, **Multinational Corps Northeast**

0930 – **Delivering resiliency and autonomous capability for tomorrow's Combat Engineer**
- Solutions for the combat engineer and logisticians with both COTS/military modified products
- Semi-autonomous solutions – what does that mean?
- The semi-autonomous future battlefield

Hosted by **CAT Defense**

1000 – **Shaping Future Fights Through Research and Development**
- How research and development supports warfighters
- Coordinating with operators and planners to look at future threats and needs
- Driving innovation to address specific military engineering and wider support challenges

Pam Kinnebrew, SSTM - Technical Manager for Military Engineering, **US Army Engineer Research and Development Center (ERDC)**

1030 – *Morning coffee and networking, Exhibition area*
Hosted by **CAT Defense**

OBSERVATIONS FROM UKRAINE – SUSTAINING THE NEXT FIGHT

The second plenary session will analyse the logistics lessons from the Russia-Ukraine war to date and how these will shape the future of military logistics and combat engineering. It is clear that sustainment has and continues to play an important role in the conflict and these lessons will have far-reaching implications for nations and alliances to consider when outlining requirements for their own future programmes. to ensure that sustainment is agile, adaptive, and prepared

1115 – **Worldwide mission support at the speed of war – agile, adaptive and prepared**
- Executing support flexible programs in challenging, austere and rugged environments
- Cost efficient and rapid life and mission support using local procurement
- Delivering solutions adapted to customer needs to deliver on projects

Thibault Flament, Managing Director – Europe, **KVG**

1145 – **Panel discussion: Sustainment in Contested Environments – A Ukraine Case Study**
- Addressing equipment support and movement challenges in a crisis
- Multinational approach to logistics coordination
- Preparing for the future, what have we learned?

Led by **Colonel Bud Lacroix,** Support Operations Officer - 21st Theatre Sustainment Command, **US Army**

Brigadier Lisa Keetley, Commander – International Donor Coordination Cell, **British Army**

Colonel Paweł Teodorczyk, Chief Specialist J4 – General Staff, **Polish Armed Forces**

1245 – *Lunch and networking, Exhibition area*
Hosted by **C6I Services**

SUSTAINABLE MISSION SUPPORT

The scale of investment in European defence from NATO partners and the European Union sees continued development of engineering and logistics capabilities with significant areas of investment. This session will explore both warfighting and general priorities to showcase and discuss the latest developments in capability requirements and potential solutions.

1345 – **Multinational logistics solutions in practice**
- Innovative methods for developing multinational logistics capabilities and cooperation
- Preparation of logisticians in an international environment
- Exploring and experimenting with future developments in logistics

Hosted by **ADS**

1415 – **Supporting future forward deployed formations; engineering and logistics requirements**
- The strategic importance to NATO's Eastern Flank of reinforcing the Suwałki corridor
- Essential capabilities for the Enhanced Forward Brigade Lithuania and ensuring maximum cohesion
- The necessary infrastructure, sustainment and general engineering requirements

Colonel Andreas Goldbach, Branch Chief Mission Infrastructure, **German Federal Ministry of Defence**

1445 – **The need for increased readiness force support in a changing European security environment**
- The changing defence landscape and evolution of Ecolog's force support capabilities
- Focussing on resilience, responsiveness and sustainability when supporting operations
- Rapid-deployment turnkey solutions for logistics and camp support services; case study examples

Hosted by **Ecolog**

1515 – *Afternoon coffee and networking*
Sponsorship available

FUTURE SUPPORT FOR FORWARD DEPLOYED AND LARGE-SCALE COMBAT OPERATIONS

The final session of our plenary day moves us to the vanguard of capability development, looking at future logistics and engineering solutions that will deliver crucial combat capabilities to the front line. Leveraging technology though effective research, development, testing and implementation will enable engineers and logisticians to continue solving complex problems and enable combined arms effects on the battlefield.

1630 – **How robotics can augment our forward deployed solutions**
- What are the EOD/CBRN threats that we have are geared to defend against
- Innovative options for route clearance and convoy protection
- Where will robots be replacing troops in our next range of solutions

Hosted by **DOK-ING**

1700 – **Countering future threats with effective combat support**
- Implementing lessons from current real-world operations into future exercises and force structures
- Planning tactics and doctrine for future conflicts and threats
- Future technology trends including reducing demand, C4ISR and advanced manufacturing

Brigadier Irena Dzisiewska, Chief Engineer & CIMIC, **Allied Rapid Reaction Corps**

1730 – **Counter-mobility in the Future**
- What is required for counter-mobility, especially Anti-Tank Mines (ATM) in the future?
- Mines comparison; practical differences between new generation and traditional mines
- Counter-mobility new solutions for going back to the future

Hosted by **Forcit Defence**

1800 – *Chair's summary and close of day one*
Dr Paulina Zamelek, Professor, **Military University of Technology**

1805 – *Networking and drinks reception*
Hosted by **Noble Supply**

DAY TWO | WEDNESDAY 13 MARCH
THEMED CONFERENCE STREAMS

Following on from our opening day, the event will divide into four conference streams with focussed discussions on critical topics of interest for both the military engineering and logistics communities. Operations in Ukraine have highlighted the importance of conducting high-tempo multi-domain operations in support of ground manoeuvre. This however, places significant demands onto engineers and logisticians and nations are looking at how they will conduct these essential tasks in the future.
For logisticians, sustainment remains the foundation of effective warfighting but sustainment operations in contested environments where the threat of missile attack is ever-present will be the norm. Conduct of offensive actions requires large amounts of fuel, forces are considering more efficient and sustainable options which reduce the logistics footprint as well as longer-term options for the future of operational energy. A battlefield lines blur the use and role of contractors is also important for logisticians to consider carefully the contractor mix as well as how to reduce overall risks in the combat supply chain.
For engineers, creating the conditions for complex tactical movements whilst denying or restricting this freedom to the enemy is requisite for success. Grappling with the challenge of rapidly establishing adaptable infrastructure for large scale deployments, ensuring safe routes for troop mobility, and area control or denial is critical, now more than ever. Engineers must balance agility with sustainability when undertaking their role and developing future capabilities.

0615 – *5km morning run from the Hilton Warsaw City reception*
Sponsorship available

0800 – *Registration and welcome coffee, Exhibition area*
Sponsorship available

EXCLUSIVE PRIVATE BRIEFINGS

Following the success of a series of private briefings run concurrently with the programme, Defence Leaders is delighted to be able to offer bespoke, confidential meetings to a select group of attendees. Whilst attendance is predominately by invitation only, please contact our team for consideration should you want to attend.

WEDNESDAY 13 MARCH

0730 - 0900		**Darley**
0900 - 1030	*Sponsorship Available*	
1045 - 1215	*Sponsorship Available*	
1230 - 1400	*Sponsorship Available*	
1415 - 1545	*Sponsorship Available*	
1600 - 1730	*Sponsorship Available*	

COMBAT ENGINEER STREAM A

AUTONOMOUS SOLUTIONS FOR COMBAT ENGINEERS

In association with
IAI-ELTA SYSTEMS Ltd.

The rapid adoption of robotics and autonomous systems means there is a pressing need to adapt existing method, incorporating and leveraging novel technologies to increase speed and safety of combat engineers. This session will explore the impact of robotics and autonomous solutions on the role of combat engineers for tasks such as route clearance and engineer reconnaissance as well as how to team autonomous assets with existing C2 and humans.

0855 – *Chair's opening remarks*
Dan Harder, Research Scientist, **US Army Engineer Research and Development Center**

0900 – **Assuring mobility across the spectrum of conflict**

- Training forces for robot systems
- The role of robots and autonomous systems in assuring mobility
- Specialist capabilities for gap-crossing, breaching and mine clearance, counter-IED and EOD

Brigadier General Ferdinand Dimo, Commander Support Command, **Albanian Armed Forces**

COMBAT ENGINEER STREAM B

SUSTAINABLE & SELF-SUSTAINNG INFRASTRUCTURE

In association with
Alaska Defence

Whether for emergency situations or longer-term use, infrastructure needs to be safe. reliable and scalable to support a wide variety of deployment strategies. Increasingly sustainability is a priority for planners when considering the range of shelter options as forces aim to reduce carbon-emissions and lessen the logistics footprint of camps to meet ambitious net-zero emissions targets. This session will explore potential solutions and how sustainability can increase survivability.

0855 – *Chair's opening remarks*
Colonel Adam Foley, AH Military Engineering, **British Army**

0900 – **Vision to reality – enhanced Military Engineering across NATO**

- Developing NATO's recognised MILENG picture
- The deployable infrastructure challenge in NATO
- NATO's Operational Energy Concept – impacts for military engineers

Colonel Bryan Mialkowsky, Chief Engineer, **NATO Land Command**

COMBAT LOGISTICS STREAM C

SUSTAINING READINESS FOR LARGE SCALE COMBAT OPERATIONS

In association with
NCS Fuel

Whether for generators, vehicles, or aircraft, fuel is needed to help accomplish the mission. It directly enables tempo and extends reach but fuel readiness for large scale combat operations is a complex problem for logisticians to solve, requiring careful consideration of the various options. This session will explore how fuels readiness can be ensured for critical phases of operations where it is essential that forces can out-manoeuvre the enemy and occupy advantageous positions.

0855 – *Chair's opening remarks*
Wing Commander Pete Rogers, Chief of Operations**, MCCE**

0900 – **Reducing fuel related mission risk in expeditionary operations**

- Rethinking the tactics of fuel supply
- Enabling force projection and sustainment with growing lines of communication and evolving threats
- Balancing rate of forward movement with availability of fuel and lubricants

Colonel Patrick Feuerherm, Director Logistics Programs – J oint Staff, **Canadian Armed Forces**

COMBAT LOGISTICS STREAM D

CONTRACTING & BASE SUPPORT OPERATIONS

In association with
Rekord Hale Namiotowe

Utilising contractors releases military assets and adds to niche skills to a force composition but using them depends heavily on the permissiveness of the environment in which they will be operating. In an increasingly contested and congested theatre of operations this session will discuss the emerging risks for both military and contractors to best influence their employment for force support and sustainment in the future.

0855 – *Chair's opening remarks*
Dr Paulina Zamelek, Professor, **Military University of Technology**

0900 – **Challenges of the new equipment acquisition**

- Current force laydown
- Recent operations and how these are shaping Polish acquisition
- Future intentions and opportunities for collaboration from partners and industry

Colonel Paweł Teodorczyk, Chief Specialist Logistics Directorate – General Staff, **Polish Armed Forces**

0930 – **Enabling increased manoeuvring tempo in a high IED & Mine warfare arenas**

- Early and high-volume detection of IEDs and mines
- On the move detection; enabling a fast first-pass of terrain to neutralise threats
- Reducing the cognitive load for operators

Hosted by **IAI-ELTA SYSTEMS Ltd.**

1000 – **USACE Priorities in Europe**

- Lessons learnt through cold weather training and exercises
- Energy efficiency in the extreme cold
- Building structures capable of habitation in extreme weather conditions

Major General William (Butch) Graham, Deputy Commanding General, **US Army Corps of Engineers**

0930 – **Sheltering a deployed force sustainably**

- When, where and how we've been deployed – case studies
- From FOBs to hospitals: the range of sustainable solutions being provided
- What are the future structure requirements and how we aim to support deployed forces

Hosted by **Alaska Defence**

1000 – **Addressing infrastructure challenges**

- Evaluating recent collaborative efforts
- Future problems and complexities for logisticians when providing protection on large scale combat operations (LSCO)
- Developing future systems to meet future threats

Colonel Thomas Langhammer, Infrastructure Team Leader, **German MoD**

0930 – **Contractor supported fuel operations in the post Afghanistan context**

- Just-in-time fuel logistics and the impact of the Ukraine crisis
- Challenges to freedom of moment in Europe when supporting operations
- Partnering for increased responsibility and ownership

Hosted by **NCS Fuel**

1000 – **The UK's Fuel Transformation Programme (FTP) Update**

- Improving how strategic fuels are managed, stored, distributed and handled
- Increasing and developing sustainability towards NZ50 objectives
- FTP change initiatives, case studies and pilot programme results

Brigadier Mike Caldicott, Head of Logistics Transformation – Defence Support, **UK MOD**

0930 – **Readiness: a contractor's perspective**

- Factors driving readiness and achieving mission success
- Best practices, technologies, and innovation proven in the toughest operating environments
- Real world examples where scale and local expertise combined to help achieve results

Hosted by **Rekord Hale Namiotowe Sp. z o.o**

1000 – **Maximising training opportunities – Joint National/International CoEs**

- The urgent need for a joined up approach in military logistics
- The role of logistics schools
- Developing solutions for interoperability

Colonel Peter Constandt, Land Forces Headquarters G4, **Belgian Armed Forces**

1030 – *Morning coffee and networking*
Hosted by **American Roll-on Roll-off Carrier**

ROUTE CLEARANCE

Clearing roadside bombs and other obstacles is a critically important engineer function, increasingly being carried out using robots and autonomy. As nations expand their use of robots for this task, forces should explore joint procurement of remote-controlled assets for multi-role engineer tasks including route clearance operations ensuring interoperability as well as robust and accurate results.

1115 – **Next Generation Breaching Technology – Explosive Breacher**

- Why modernise? The evolving threats and future requirements driving change
- Reducing risk at the breach
- Updating the Common Operating Picture with explosive hazard geospatial data

Bob Jones, Combat System Chief Assured Mobility Branch – MS CDID, **US Army Futures Command**

1145 –**Protected mobility across the spectrum of conflict**

- Challenges faced preparing forces for asymmetric scenarios
- Equipping a single vehicle platform to perform multiple tasks in support of asymmetric operations
- Mine clearance, counter-ied and EOD remotely operating platforms

Hosted by **Pearson Engineering**

LARGE SCALE SHELTERS

Shelters provide protection from challenging environmental conditions such as cold, rain, snow, humidity and sand; providing commanders with operational flexibility. Enabling deployment at scale creates the conditions for success on the battlefield. Ease of assembly, disassembly and minimising associated logistics are all factors that nations must consider carefully as infrastructure assets are upgraded.

1115 – **Deployability of camp solutions**

- Understanding changes in operating theatres and its effect on potential solutions
- Challenges surrounding using temporary vs permanent installations
- Implementing future projects into current procurement programs

George Buckingham, Chief of Acquisition Planning and Development Office, **NSPA**

1145 – **Mobile infrastructure for maintenance repair and operations**

- The importance of Mobile Infrastructure
- Supporting mobile doctrine
- Creating the “Usual for the Unusual”

Hosted by **KT-Shelter**

OPERATIONAL ENERGY

Power and energy are critical enablers for warfighters, forces are now embarking on the transition towards sustainability whilst increasing future capabilities and reducing the risks associated with dependence on vulnerable supply chains. How can military forces optimise their operational energy generation, storage and supply while embracing renewables and reducing vulnerability and maintaining or increasing interoperability.

1115 – **NATO’s Operational Energy future; a perspective from LANDCOM**

- Maintaining operational capability whilst exploiting emerging energy opportunities
- Enabling operational advantage across the alliance
- Cohering changes across NATO, EU and partners

Major Alexander Landry, Staff Officer – Energy & Infrastructure, **NATO Land Command**

1145 – **Providing proven, robust, ready to mobilize fuel systems designed for austere environments**

- Innovative, compliant, simple and reliable modular fuel systems
- Simplifying rapid mobilisation and demobilisation in austere environments
- Case studies and pas experiences

Sponsorship available

TURNKEY INFRASTRUCTURE

Establishing ready-to-use infrastructure reduces time into theatre and enables faster integration between forces. It results in bases that can adapt quickly to dynamic operating environments and this session will analyse some of the options.

1115 – **Supporting military engineers with adaptive and multinational contracts**

- Interoperability, operational effectiveness and economy through multinational cooperation
- Innovative approaches to delivering engineer capability
- Shaping the modern battlefield

Colonel Marek Swiercz, Deputy Director, **Multinational Logistics Coordination Centre**

1145 – **Novel solutions for forward operating bases**

- Access to supplies in unfamiliar countries
- Practicality of continental supplier partnerships over local produce
- Building stronger military and supplier relationships across Europe

Hosted by **Creative Tent**

1215 – **Advancing NATO's three Military Engineering High Visibility Projects (HVP)**

- Setting the direction of the 'Gap Crossing', 'Counter-mobility' and 'Vehicles/systems' HVPs following LOI
- Future development and procurement
- How the new HVPs will deliver real-world outputs in a timely fashion

Endre Agocs, Multinational Capability Cooperation – Defence Investment**, NATO HQ**

1215 – Structural hardening and survivability against new threats

- Modern methods to harden structures against new threat weapon systems
- Single and multi-layered systems, expeditionary protection, interior protective systems, expedient protection and repair and restoration.
- Technology gaps, extended research and funding

Dr Genevieve Pezzola, Research Civil Engineer, **US Army Engineer Research and Development Center**

1215 – **What is the future of energy in the military? Looking beyond 2040**

- Technological and societal changes impacting military energy uses
- The critical need for standardisation amongst the EU nations, NATO and beyond
- Advances in fuel technology: clean fuels and green energy – ending fossil fuel use

Raphael Danino-Perraud, Researcher – Institute for Strategic Research, **French Ministry of Defence**

1215 – **Multinational support frameworks and tactical logistics support for NATO**

- Norwegian Joint Logistics Support Group supporting tac
- Building support networks and developing theatre level logistics C2
- HNS and support to other operations in Northern Europe and the North Atlantic

Colonel Ståle Rudiløkken, Project Head International Cooperation - Joint Logistics Support Group, **Norwegian Defence Logistics Organisation**

1245 – *Lunch and networking*
Hosted by **Rich Global Solutions**

COUNTERMOBILITY OPERATIONS

Enabling mobility through unpredictable terrain is an essential task. Terrain analysis, route proving and assisting mobility are crucial to mission success. This section explores the evolution of mobility.

1400 – **A Bridge to Fall: modernising the Army's bridge demolition capability**

- Tools for an increased understanding of the natural environment
- Autonomous solutions for survey and demolition
- Understanding the impact of rain and weather on mobility options

Robert Shorter, Principal Engineer – Manoeuvre Support, **UK MOD Dstl**

1430 – **UAS autonomy in the forward battlespace**

- Autonomy considerations for the UAS system of systems
- Combat engineer applications for UAS
- Case study: Map the Gap – surveying a wide wet gap crossing

Hosted by **ISS Aerospace**

DEPLOYABLE INFRASTRUCTURE SURVIVABILITY

The opportunities presented by computer-aided design, autonomy and geospatial mapping software could significantly aid camp solutions.

1400 – **Advanced camouflage technologies on the modern battlefield**

- Concealment and camouflage innovative materials
- Integrating green power solutions
- Cutting edge technology trials

Dr Krzysztof Bogdanowicz, Deputy Director, **Military Institute of Engineering Technology**

1430 – **Smart to the future – current containerised solutions and 'Next-Gen' deployable infrastructure**

- Deployable containerised solutions and configurations including mission systems
- Lessons identified and trends, specifications and flexibility
- Key enablers, technology development and integration

Hosted by **Marshall Land Systems Ltd**

MAXIMISING OPERATIONAL READINESS

Keeping fleets operational is a major concern for logisticians – minimising downtime of platforms is a complex task requiring a joint military/industry effort.

1400 – **Situational awareness in logistics- lessons from the Ukraine conflict**

- The conflict in Ukraine – utilising new technologies in military logistics systems
- Polish support to Ukraine – training soldiers to NATO standards
- Implications for military logistics systems following lessons from Ukraine

Brigadier Lisa Keetley, Commander – International Donor Coordination Cell, **British Army**

1430 – **Increasing readiness and vehicle availability**

- Identifying supply chain shortfalls and challenges that diminish readiness
- Alternative solutions for hard-to-find, long lead time, obsolete parts/spares and materials
- Establishing proactive solutions, partnering with OEMs and increased market visibility

Jim Waring, VP Strategic Business Development **Crestwood Technology Group**

FLEXIBLE CONTRACTING

Contracting enables militaries to fill capability gaps and focus on essential tasks. Contracting requirements can range from technical to support services, reducing the burden of sustaining a large standing force.

1400 – **Impact of Geopolitical Changes on the Swiss Armed Forces Logistics**

- Geopolitics: impact on Switzerland
- From peace to war: "the Swiss Armed forces defend"
- The Swiss Armed forces Logistics function: our path to the future

Brigadier General Meinrad Keller, Commander – Logistics Brigade 1, **Swiss Armed Forces**

1430 – **Add green to your programme, tailored facilities management solutions**

- Minimising water, storage and logistics with innovative sanitary solutions
- Solutions for small basecamps to large centres for military/humanitarian support
- Maximise availability with combination purchase or rent "Availability Program"

Hosted by **MSS International B.V.**

1500 – **Comprehensive approach to national defence: framework and enabler for the combat engineer preparations during peacetime**

- Utilising natural and deliberately placed obstacles to isolate enemy weaknesses
- Barrier Planning
- Terrain and route analysis
- Ensuring a coordinated approach when emplacing obstacles
- Counter-mobility with allies – ensuring interoperability

Major Mindaugas Gvildys, MILENG Senior Officer, **Lithuanian Armed Forces**

1500 – **Development of expeditionary basecamps**

- Troop life-support in harsh and remote environments with limited water and electricity access
- Multifunctional elements to flex around operational needs
- Requirements for camps with reduced logistical footprint and increased survivability

Lieutenant Colonel Johan Kranenburg, Head of Engineer Centre of Expertise, **Netherlands Army**

1500 – **Lessons identified from Ex DEFENDER 23**

- Previous problems caused by outdated logistics procedures
- The impact of industry innovations on recent missions
- Future commercial integration into the EX DEFENDER supply chain to enhance efficiency

Colonel Bud Lacroix, Support Operations Officer - 21st Theatre Sustainment Command, **US Army**

1500 – **High quality, flexible solutions for camp services**

- Customisable strategic and tactical camp protection solutions
- Comprehensive support services including long-term storage and ammunition management
- Deployed camp solutions case study: meeting Austria's requirements

Major Heinrich Lindner, S4 Staff Officer**, Austrian Army**

1530 – *Afternoon coffee and networking*
Sponsorship available

NEXT GENERATION C-MOB

Nations are looking to optimise counter mobility via a plethora of options. This section of the agenda sets out to explore new technologies and the affects they may have on future methods for area access control. The term 'smart mines' is being used to label the most sophisticated examples but options for non-lethal counter-mobility are also advancing.

1630 – **Engineer manoeuvring capabilities in Europe**

- Unique terrain shaping challenges in the European theatre
- NATO/EU counter mobility capabilities and opportunities
- Interoperability within the alliance

Lieutenant Colonel Chris Eyre, Deputy Director, **Military Engineering Centre of Excellence**

1700 – **Counter-mobility case study: utilisation of civilian assets**

- The case for changing our approach to counter-mobility
- Getting by – how to work smart not hard
- Developing ways to offset a lack of mass

Hosted by **FMG Defence**

MOBILE INFRASTRUCTURE

Mobile infrastructure facilitates effective support, enabling rapid deployment, movement of troops and equipment and is crucial for maintaining operational flexibility and agility.

1630 – **Building infrastructure to promote Enhanced Forward Presence**

- Addressing the standards of multi-service barracks across Europe
- Challenges with upgrading infrastructure of partner nations
- Working with local suppliers and opportunities for contractors

Major Milen Radanov, Engineer Infrastructure Officer, **NFIU Bulgaria**

1700 – **Deploying infrastructure to maintain deployed forces in austere conditions**

- Containerised solutions, and where they are now deployed
- The range of mission types we are being asked to cover, and how we have supported the requests
- What the future development plans are for the system, and how you can be involved

Hosted by **Continest**

REDUCING LOGISTICS FOOTPRINT

The ability to rapidly re-supply reactive forces is essential during modern operations. Ensuring equipment is well maintained, accurately deployed and received on time is vital to mission success. The following presentations will explore recent logistics operations, methods and challenges.

1630 – **Supporting the British Army to a new way of winning**

- Evolving support in an era of constant competition by harnessing technology
- Developing brigade, battle-group, and sub-echelon capabilities
- Bringing sustainment to the forefront to reduce risk to the force and increase mission success.

Colonel Jon West, AH Sustainment, **British Army**

1700 – **Reducing the logistics burden in hostile environments via 3D printing**

- Managing the energy demands of multi service platforms
- Energising the next conflict based on lessons identified in recent engagements
- Potential solutions to significantly reduce maintenance chains via 3D printing

Hosted by **SPEED3D**

INFRASTRUCTURE CONTRACTING

Having contractors on the battlefield significantly enhances sustainment capabilities, releases military assets and adds niche skills. This session will discuss the risks and benefits of the models employed to inform future decisions by nations on sustainment contracts.

1630 – **Supporting military engineers with adaptive and multinational contracts**

• Interoperability, operational effectiveness and economy through multinational cooperation
• Innovative approaches to delivering engineer capability
• Shaping the modern battlefield

Francesco Romano, Programme Manager Infrastructure and Engineering, **NSPA**

1700 – **Sustaining deployed camp facilities in developing countries**

- Unique environmental challenges that require modular solutions
- Building solutions that can mitigate the drain on military resources
- Cost/benefit analysis of contracting via HNS

Hosted by **Modular Systems**

1730 – **Development of rapidly emplaced Close Terrain Shaping Obstacles (CTSO)**

- Proposed operational concept and timeline for CTSO
- Integrating bottom and top attack with breaching resistant measures
- Networking mission command systems and common operating picture

Lieutenant Colonel Jon Armstrong, Assured Mobility Branch Chief – MS CDID, **US Army Futures Command**

1730 – **NATO Response Force certification; MILENG lessons identified**

- Advantages of international cooperation
- The growing dependence on civilian assets to support land operations
- Further developments in camp infrastructure

Lieutenant Colonel Sarah House (CAN), Staff Officer – Infrastructure, **NATO JFCBS Brunssum**

1730 – **Interoperability mission, role, tasks in Receiving Staging Onward Movement (RSOM) process**

- Specific logistics challenges on the Eastern Flank
- Host Nation Support to NATO exercises and military mobility
- Optimising Host Nation Support to maximise joint operational capacity and effectiveness

Dr Roman Dufek, Deputy Director, **Multinational Logistics Coordination Centre**

1730 – **Exploring the limits of deployability**

- Hastening the erection of multinational camp solutions - catering, ablutions and energy support
- The biggest challenges and how these might be overcome
- Material innovations that are enabling rapid camps

Franck Verdierre, Chief of Warehousing and Transportation, **NSPA**

1800 – *Chair's summary*
Dan Harder, Research Scientist, **US Army Engineer Research and Development Center**

1800 – *Chair's summary*
Colonel Adam Foley, AH Military Engineering, **British Army**

1800 – *Chair's summary*
Wing Commander Pete Rogers, Chief of Operations**, MCCE**

1800 – *Chair's summary*
Dr Paulina Zamelek, Professor, **Military University of Technology**

1805 – *Networking and drinks reception*
Sponsorship available

DAY THREE | THURSDAY 14 MARCH
THEMED CONFERENCE STREAMS

Our final day recognises the important role that engineers, and logisticians play as a force's problem solvers when complex issues arise, at home and abroad, before looking to the future and the role that technology will play for both as it advances at a rapid pace. We will be discussing direct lessons from military support in response to the COVID-19 pandemic and the Poland-Belarus border crisis.
Multi-national multi-modal military logistics is fraught with complexity, and it is difficult to achieve full interoperability. There are an increasing number of technological solutions and programmes that solve issues and help nations maintain a robust supply chain from the industrial base to the last tactical mile.
Ensuring mobility and secure lines of communication to the frontlines is critical for achieving objectives but current doctrine and planning needs to evolve to recognise changes in warfare and leverage new technological solutions for area denial.
Logisticians and engineers must keep pace with the latest innovations in technology but the pace of change is at odds with the way defence has worked in the past. Industry 4.0 technologies offer opportunities to transform digitally and physically but research and development teams need to be empowered and enabled to make the most of these opportunities.

0800 – *Registration and welcome coffee*
Sponsorship available

COMBAT ENGINEER STREAM A

BRIDGE INSTALLATION

In association with

In Quik Bridging Systems

Bridges result in strategic mobility, giving troops the ability to manoeuvre outside of the enemy's decision making loop. This session will explore how best to expand the movement of forces to achieve mission success.

0855 – *Chair's opening remarks*
Lieutenant Colonel Chris Eyre, Deputy Director, **Military Engineering Centre of Excellence**

0900 – **Enabling force projection with effective support equipment and systems**

- Modernising combat support and service support capabilities
- Integrating CS&CSS equipment and systems with the wider force
- Current gaps in capabilities where industry can demonstrate their expertise

Christopher Upton, Product Manager Bridging**, PEO CS & CSS**

COMBAT ENGINEER STREAM B

BATTLEFIELD ELECTRIFICATION

Sponsorship Available

NATO's current operating areas don't have energy supplies to meet the requirements of foreign militaries. The following session will explore the different challenges faced by militaries operating in austere environments.

0855 – *Chair's opening remarks*
Colonel Adam Foley, AH Military Engineering, **British Army**

0900 – **The UK approach to manoeuvre and static power generation – addressing the impending power gap.**

- The immediate battle - Addressing the UK's power generation gap
- The close battle - Sustainability and the 'greening' of power generation
- The deep battle - Horizon scanning, future power generation and the UK's route to net zero

Colonel Adam Foley, AH Military Engineering, **British Army**

COMBAT LOGISTICS STREAM C

EFFICIENT AND EFFECTIVE MOVEMENT FOR COMBAT FRIEGHT

In association with

BR International Consulting Services

The core logistical challenges for military forces are the cost, transport and outsourcing of logistics. It is becoming increasingly vital to deploy rapidly with heavy equipment. This session will explore strategic and operations solutions for capability gaps in strategic and tactical lift.

0855 – *Chair's opening remarks*
Wing Commander Pete Rogers, Chief of Operations**, MCCE**

0900 – **Analysis of airfreight options for heavy equipment transport**

- Potential solutions for satisfying the current airlift capability and capacity gap
- Outlining joint operational concepts for airlift operations
- The next generation of strategic airlift provision

Franck Verdierre, Chief of Transportation and Warehousing, **NSPA**

COMBAT LOGISTICS STREAM D

LOGISTICS OPTIMISATION

In association with

One Network Enterprises

The landscape of warfare has significantly changed over the last two years. Feedback from logistics operations in Africa, Europe and the Middle East have shown a need to develop visibility in storage and in transit. This following session will analyse the options available.

0855 – *Chair's opening remarks*
Colonel Jacub Hrdina, Director, **Multinational Logistics Coordination Centre**

0900 – **UK Logistics Transformation**

- Developing the concept and programme for Future Defence Support Services (FDSS)
- Next steps for the Fuels Transformation Programme (FTP)
- Allied by design

Brigadier Mike Caldicott, Head of Logistics Transformation – Defence Support, **UK MOD**

0930 – **Unique and versatile bridging system advancements**
- Modern crossing abilities used throughout NATO
- Unit protection integrated into bridging systems
- Future permanent bridging methods

Logan Mullaney, President, **Inquik**

0930 – **Resilient and sustainable operational energy**
- Using research & technology to feed hybrid capability development
- Smart Camps Technology Demonstrator project update
- EDA and European Commission collaboration on energy security

Sponsorship available

0930 – **Turnkey specialist solutions for rail freight logistics requirements**
- Planning for the rapid railway movement execution
- Full service loading and securing military equipment on railway wagons
- Emergency services for military rail transport all over Europe

Hosted by **BR International BR International Consulting Services**

0930 – **Creating digital supply chain networks for global defence**
- Intelligent C2 with federated data management
- Real-time collaboration across all mission partners supporting multiple languages
- Full disconnected edge capabilities that support operations in austere environments

Hosted by **One Network Enterprises**

1000 – **Advanced bridge materials - longer and stronger crossings**
- Rethinking what is possible and reinventing the bridge
- Bridge materials experimentation and trials
- DSTL support to industry

Robert Shorter, Principal Engineer – Manoeuvre Support, **UK MOD Dstl**

1000 – **Utilising deployable power systems**
- Understanding the challenges in operating theatres and its effect on energy requirements
- Challenges faced using green energy in deployed installations
- Implementing future renewable energy projects into current installations

Lieutenant Colonel Thomas Beyerl, Product Manager Mobile Electric Power Systems – PEO CS&CSS, **US Army**

1000 – **Delivering at the speed of war**
- Executing creative, innovative and cost-efficient infrastructure solutions
- Dynamic project execution support in rugged, austere, and challenging locations
- Responsive and complete solutions for mission support on the edge

Lieutenant Colonel Scott Gum, Chief Theatre Movements Coordination Centre – 21TSC, **US Army**

1000 – **NATO ACT capability development: Focusing on logistics and sustainment**
- Developing capabilities and enablers for effective, efficient, and flexible logistics support
- Enablement Support Services programme activities
- Understanding the vision for the future of NATO Logistics vision

Captain (N) Allen Rivera, Branch Head Logistics and Sustainment, **NATO ACT**

1030 – *Morning coffee and networking*
Sponsorship available

GAP CROSSING SUPPORT

First line fighting echelons need to ensure their ability to establish wide wet gaps crossings rapidly. This session will explore why this is essential and how this could be made possible.

1115 – **Bridging the gap**

- Armoured Vehicle Launched Bridge (AVLB) Version 2.0
- A new approach to mobility
- Improved Ribbon Bridge tests with MLC classification > 100

Hosted by **General Dynamics Land Systems – Bridge Systems**

GENERAL DYNAMICS
European Land Systems–Bridge Systems

1145 – **Leveraging innovations for Combat Engineering**

- Improving engineer capabilities and reducing risks with robots
- Scorpion programme: EGS and wet-gap crossing assets
- River combat requirements and new assets for French engineers

Lieutenant Colonel Arnaud Dujany & Major Jean-Francois Larher, Department of Studies and Foresight – Engineer Command**, French Army**

POWER GENERATION

Power and the associated logistics burden are on the increase. This session will explore options for generating power supply whilst meeting demanding performance requirements.

1115 – **Power operations and microgrids in austere environments**

- Hybrid power plants; efficient and reliable solutions for isolated load at microgrids
- Turnkey power projects, infrastructure operations, maintenance, logistics and ground support operations
- Case studies and project highlights

Tom Decker, Operational Energy Program Manager, **US Army Engineer Research and Development Center**

ERDC

1145 – **Industry Perspective on Success for Power Generation System Acquisition**

- Overview of common issues that occur during the acquisition process
- Recommendations that can help improved solicitation response from industry
- Cummins ongoing development for Tactical Power Generation equipment/technology

Noah Cotton, Military Programs Leader **Cummins Power Generation**

Power Generation

MULTIMODAL TRANSPORTATION

Establishing transport links for foreign deployments, both at the home and far bank is key to success. By integrating logistics from the beginning of the plan forwards, Combat Logistics can significantly tip the balance in favour of friendly forces by ensuring host nation integration.

1115 – **The role of sea lift innovations in enabling the 'big move'**

- Market update on challenges in scarce capacity of suitable vessels
- The "Lead Nation Concept" on strategic Sealift and overview of our Mali mission
- Our participation in the "Very High Readiness Joint Task Force" (VJTF) related to strategic Sealift

Air Commodore Elizabeth Purcell, Head of Development**, NATO Joint Support and Enabling Command**

1145 – **Multimodal transport options for overcoming logistical challenges**

- Using multimodal transport for increased efficiency
- Comparing airlift to other modes of transport, a contractor's perspective
- Case study: Overcoming new challenges for transport within Europe today

Hosted by **Wuhari Aviation (Deflog)**

DEFLOG

END-TO-END SOLUTIONS

Commercial enterprise has vastly superior IT to support end-to-end solutions. Military logisticians can and should benefit from their civilian counterparts expertise especially when it comes to tracking, identification and management systems. This session will explore potential improvements and solutions.

1115 – **The Netherlands Armed Forces logistics modernisation program**

- Influencing factors that are prompting the need for change
- Financial and operational advantages to the new system
- How industry providers can help meet future requirements

Brigadier General Nicole de Wolf Frabricius, Land Support, **Netherlands Armed Forces**

1145 – **How Nordic nations are ensuring enhanced security of supply**

- Options for security of supply (SoS) in scenarios of peacetime, raised alert and war
- How SoS affects current and future strategic partnerships, bilateral and multilateral cooperation
- How SoS issues affect legislation, who owns your industry, risks vs costs of sub-suppliers

Sponsorship available

1215 – **Bridging interoperability without compromise – partnering with industry**

- Accommodating interoperability and varying requirements in WWGC solutions
- 'Future proofing' bridging products
- Supporting lifetime operations and easing the burden for engineers

Hosted by **Birdon**

1215 – **Smart management systems in military camps – CAMP SUSTAIN**

- Implementation of NATO Environmental Policies and national level implications
- Initiatives to provide sustainable use of energy management
- Seeking synergies at EU and NATO level to tackle problems which set drawbacks to new initiatives

Colonel Martin Dufour, Liaison Officer to USEUCOM, **Canadian Armed Forces**

1215 – **Logistical challenges in light of the NATO Force Model – German perspective**

- Outline of the NLD/DEU Military Mobility project.
- Integrating services into military specialist transport solutions
- Improvements to resupply during EU/NATO missions

Colonel Dirk Jordan, Deputy Branch Head - DEU Logistical System, **German MOD**

1215 – **Modernising national logistics through joint ventures with industry**

- Previous problems caused by outdated procedures
- The impact industry innovation has had on recent missions
- Future commercial integration into the supply chain that will promote greater cost efficiency

Dan Harder, Research Scientist, **US Army Engineer Research and Development Center**

1245 – *Lunch and networking*
Sponsorship available

GAP CROSSING INNOVATIONS

Combat engineers ensure a force's mobility by providing a range of rapidly deployable options for crossing gaps. Future mission success will depend on the use of innovative bridging and gap crossing solutions and systems to meet NATO's rapid response priorities.

1345 – **Priorities for Joint Force Engineering in the Northern region of Europe**

- The evolving priorities for engineers in Europe and their developing role
- Tools for improving engineer's understanding and situational awareness
- Coordinating the changing landscape of engineer capability requirements

Colonel Phil Borders, Engineer Division Chief**, NATO Joint Support and Enabling Command**

1415 – **Modular bridging and counter mobility support**

- Assuring capabilities when required
- Possible future realistic development challenges
- Contract support on NATO deployments

Hosted by **Janson Bridging International**

EFFICIENT INFRASTRUCTURE

The efficiency of military infrastructure has come under close scrutiny, particularly water and power efficiency. Regulations and user demands mean embedding management systems and smart technology are now an operational and local priority. The final session will explore how militaries have used available technology to maximise efficiency.

1345 – **Smart management systems in military camps**

- Implementation of the Environmental Policy with NLD future infrastructure
- Initiatives to provide sustainable use of energy management and safe use of aquatic resources and relevant waste
- Seeking synergies at EU and NATO level to tackle problems which set drawbacks to new initiatives

Jan Willem Petersen, Architect, **Netherlands MOD**

1415 – **Deployable camp solutions to maximise troop deployment efficiency**

- Revolution in deployable structures
- Innovation in tents and hangars
- Energy saving approaches

Hosted by **G&G**

SUSTAINING EXPEDITIONARY OPERATIONS

Large scale combat operations generate significant logistical challenges as they require people and materiel to be transported strategic distances, to destinations where there may be little in the way of infrastructure. Contractors are vital in order to achieve the necessary mass.

1345 – **Logistics challenges with NATO's Agile Combat Employment (ACE)**

- Developing capabilities and enablers for effective, efficient, and flexible logistics support for Air Command
- Enablement support for high-tempo air operations
- Supporting the vision for the future of NATO's Air Logistics vision

Squadron Leader Michael Neaves, Staff Officer Logistics, **NATO ACT**

1415 – **Looking at the complete portfolio of military airlift solutions**

- Issues regarding Combat Logistics and solutions we analysed
- What options were selected and the impact on operational air lift
- Commercial applications and how we are adapting for the future

Sponsorship available

PREDICTIVE SUSTAINMENT

Optimising logistics and maintenance operations ensures the availability of critical resources when required. To do so requires leveraging data and predictive analytics which enables proactive decision making and efficient use of resources. This session will assess how best to improve success in this area.

1345 – **The role of Ex TRIDENT JUNCTURE in checking and improving NATO capabilities**

- The role of technology in ensuring decision makers have the required information
- Simplifying complex processes and ensuring full visibility of inventories
- Roles of participating nations and opportunities for collaborations

Colonel (Ret'd) Željko Idek, Lecturer in Joint Sustainment**, Baltic Defence College**

1415 – **Integrating civilian expertise into the logistics command chain**

- Matching budget allocations with cost saving solutions
- Applying modern logistics business practice in an operational scenario
- Commercially available software that can promote better management of military inventories

Sponsorship available

1445 – **Military hydrology – total hydrologic awareness for advanced decision making**

- Risk mitigation and logistics support, including flood hazard mapping, infrastructure vulnerabilities and contaminates
- WWGC support
- Building battlespace awareness, terrain limited mobility and threat detection

Emily Stickney, Research Civil Engineer, and **Kate Staebell**, Research Physical Scientist, **US Army Engineer Research and Development Center**

1445 – **Increasing the security of supply by optimising the energy and utility supply in static field accommodation**

- Optimising energy and utility supply for static field accommodation
- Meeting supply demands through joint means
- Looking ahead – improving the safety and security of utility and energy supply

Lieutenant Colonel Tomasz Czekirda, Senior Military Engineering Specialist, **Polish General Command**

1445 – **Transportation during conflicts, crisis and in difficult-to-reach environments**

- Austere airfield development – Lessons from history "Normandy to the Falklands"
- Developing fuel, power, FPE, tech, air operating surfaces and infrastructure – "The Big 6"
- Expedient surface materials in support of deployable airfields – international research

Wing Commander Pete Rogers, Chief of Operations**, MCCE**

1445 – **New commercial approach towards the supply chains of Finnish Armed Forces**

- The need for better commercial and logistical performance
- Implementing a strategic procurement function
- Commercial supply change management expertise within the organisation

Major Jukka Paaso, Chief of Development – Logistics Command, **Finnish Defence Forces**

1515 – *Chair's closing remarks*
Lieutenant Colonel Chris Eyre, Deputy Director, **Military Engineering Centre of Excellence**

1515 – *Chair's closing remarks*
Colonel Adam Foley, AH Military Engineering, **British Army**

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Wing Commander Pete Rogers, Chief of Operations**, MCCE**

1515 – *Chair's closing remarks*
Colonel Jacub Hrdina, Director, **Multinational Logistics Coordination Centre**

1530 – *Close of conference*

Save the Date – Combat Engineer and Logistics 2025 will be taking place in Warsaw over