Russia's exploitation of the electromagnetic spectrum in Eastern Ukraine and its increasing investment into electronic warfare (EW) capability development demonstrates a significant challenge to the execution of NATO's Enhanced Forward Presence initiative. EW capability development reinforces Russia's anti-access/area-denial approach and allows Russian forces to retain tactical advantage. In addition to exploiting jamming techniques, Russian forces have successfully integrated UASs for surveillance and assault. By arming drones with explosive devices, Russian troops have been able to limit manoeuvrability of NATO units.

In response to this threat on NATO's Eastern flank, allied nations are requesting information for advanced EW systems and Short-Range Air Defence (SHORAD) equipment. The conference focus day will support this objective and delve into emerging requirements for EW and SHORAD against Low, Small and Slow (LSS) targets. It will offer a comprehensive overview of procurement priorities for jamming solutions and air defence artillery in Eastern Europe, allowing attendees to learn best practices from thought-leaders including an overview of Spain's recently acquired CUAS system and the US Army's planned activation of Stinger formations and new air-defence short-range artillery systems.

**Perspectives on Electronic Warfare and Short-Range Air Defence**

27th November 2018

**Attend the EW & SHORAD Day To:**

- Advance target engagement and neutralisation of enemy assets by learning about effective jamming and non-kinetic solutions
- Redefine existing air defence artillery technology for applications against a wider array of missile, manned, and unmanned aircraft threats
- Upgrade disruption of enemy assets in congested operating environments by advancing EW capabilities
- Enhance detection of aircraft systems with low kinematic profile by informing your organisation of integrated radar technology, and networked infrared, optical, and acoustic sensors

**12:00 Registration & Coffee**

**12:50 Chairman’s Opening Remarks**

**13:00 Short-Range Air Defence Challenges for the UAS Threat**

- Overview of UAS technologies and roles within the battlefield
- General aspects & operational perspectives on C-UAS
- Tactical & Technical points of view to IPB, detection, elimination
- Optimal C-UAS: lethal or non-lethal?
- Examining experimentation conducted by the University of Defence

Dr. Ing. Miroslav Kratky, Department of Air Defence Systems, University of Defence in Brno

**13:40 Defeating the Threat of UAS in the European Theatre of Operation**

- Assessing methods to close the SHORAD capability gap in Europe
- Integrating CMIC and Stryker vehicles to advance force protection
- Evaluating short-term and long-term requirements to detect and intercept hostile UAS in the European area of responsibility

Colonel David Shank, Commander of 10th AAMDC, US Army Europe (Subject to Final Confirmation)

**14:20 Examining Current and Planned Operational Indirect Fires Capability of the Bulgarian Land Forces**

- Achieving NATO interoperability and understanding the strategic priorities and operational employment of Bulgarian air defence artillery
- Overview of current capability which includes towed 122mm: 100 D–30, MRL 122mm: 24 ARPA–40, MOR 120mm: 100 M–75 and examining future plans for modernisation and investment
- Feedback from Saber Guardian which saw the Air Defence Artillery live fire exercise take place in Shabla, Bulgaria

Confirmed Representative, Bulgarian Ministry of Defence

**15:00 Coffee and Networking**

**15:40 Upgrading EW Operations and Non-Kinetic Target Engagement**

- Assessing capabilities of the mobile electronic warfare (EW) suite
- Advancing signals analysis and classification
- Examining procurement objectives and the second-generation Symon signal analysis system

Confirmed Representative, Reconnaissance & EW Department, Czech Army

**16:20 Advancing Target Acquisition for the Future Force**

- Outlining requirements and objectives for developing indirect fire systems for 2030+
- Automating fire direction systems and digitising the C2 suite
- Examining networked assets and interconnected systems for intelligence gathering for the future force

Dwayne Hynes, Deputy Chief of Staff, G2, US Army

**17:00 Spanish Artillery: Challenges & Realities**

- Air Defence Artillery
- Spanish Air Defence Artillery organization
- Active defence and passive defence for field Artillery Battalion
- Field Artillery Doctrine
- Mixed weapon systems
- Target mensuration
- Precision Guided munition
- Long-range fires

Lieutenant Colonel Luis Algora, Chief of Department of Tactics, Techniques and Gunnery – Artillery School, Spanish Armed Forces

**17:40 Panel Discussion: Defeating the Threat of UAS in the European Theatre of Operation**

- Assessing methods to close the SHORAD capability gap in the Eastern European flanks
- Advancing shoulder-fired man–portable air defence systems to defeat LSS targets on the move
- Evaluating short-term and long-term requirements to detect and intercept hostile UAS

**18:20 Chairman’s Closing Remarks and End of Conference Focus Day**
CONFERENCE DAY ONE
28TH NOVEMBER 2018

0800 REGISTRATION & COFFEE

0850 CHAIRMAN’S OPENING REMARKS

0900 CONSIDERATIONS FOR CZECH ARTILLERY DEVELOPMENT
- Current requirements and plans
- Artillery development strategic project
- Artillery Reconnaissance
- Training and capability building
- Future plans for 2026+

Colonel Milan Kalina, Chief of Artillery, Czech Republic Army

0940 UPDATE ON THE THEATRE SURFACE FIRES COMMAND
- Providing cross-boundary, theatre-wide fires for a Land Component HQ
- Utilising US and Alliance Field Artillery long-range fires
- Reflecting on experimentation during Dynamic Front 18 and furthering the Theatre Surface Fires Command concept during future exercises

Colonel William Kirby, Commander, 19th Battlefield Coordination Detachment (BCD), US Army Europe

1020 PECULIARITIES OF ARTILLERY CONFRONTATION IN THE DONBASS CONFLICT
- Overview of current Ukrainian indirect fire capability and an update into the current conflict in the Donbass
- Operational feedback of recent reconnaissance, surveillance and fire control activities
- The direction for the development of combat efficiency to increase damage and reconnaissance capability

Major General Andrii Koliennikov, Deputy Director, Central Scientific Research Institute of the Armament Coordination Detachment (BCD), US Army Europe

1100 MORNING COFFEE AND NETWORKING

1140 CZECH MODERNISATION PRIORITIES AND THE NEW 120MM MORTAR SYSTEM
- Preparing for tender in 2021
- Contenders and capability needs
- Cost versus effectiveness
- Related artillery projects

Martin Šufajzl, Project Manager – Artillery & Mortars, Armaments & Acquisition Division, Czech Ministry of Defence

1220 MOBILE SOUND RANGING ARRAY, THE LATEST INSIGHTS
- Acoustic monitoring of impact zones during NATO exercises
- Capturing 3D shockwaves of artillery and rocket shells
- Sound ranging during intense firing

Alex Koers, Cofounder/Director, Microflown AVISA

1250 EVOLVING ARTILLERY TO MEET THE CHALLENGE OF CONVENTIONAL WARFIGHTING AGAINST A PEER OPPONENT
- Analyse the challenge to indirect fire presented by the modern battlefield
- Outline the British Army’s reorientation of its fires
- Overview of the ongoing changes at the Royal School of Artillery to ensure that forces are correctly prepared for the likely character of conflict
- Identify the approach being taken to improve NATO fires interoperability

Colonel John Musgrave, Commandant, Royal School of Artillery, British Army

1330 NETWORKING LUNCH

1440 ENSURING FULL OPERATIONAL CAPABILITY OF ARTILLERY ASSETS
- Evaluating the integration of recently acquired PZH 2000 Howitzers to ensure their full operational capability
- Assessing methods to upgrade situational awareness and target acquisition
- Addressing counter fire and counterbattery radar capability
- Engaging in multinational training exercises to enhance interoperability of the Croatian Army

Lieutenant Colonel Drazen Music, Howitzer PzH2000 Battalion Commander, Artillery and Missile Regiment, Croatian Army

1520 MODERNISATION OF ARTILLERY ASSETS TO RETAIN HIGH READINESS AGAINST PEER ADVERSARY
- Outlining the acquisition of German PzH 2000 howitzers which will extend the Battalion’s range of fire from 11km to NATO standard 40km
- Assessing modernisation priorities to tailor Krauss-Maffei Wegmann PzH howitzers to Lithuanian operational requirements
- Evaluating Dynamic Front 2018: focusing on standardisation of indirect fire deployment and identification of targets from operational to tactical levels

Major Marijus Jonelis, Commander General Romualdas Gedraitis Artillery Battalion, Lithuanian Land Forces

1600 AFTERNOON TEA AND NETWORKING

1640 UPGRAADING ARTILLERY RECONNAISSANCE AND TARGET ACQUISITION
- Examining the performance parameters of the Panzerhaubitze 2000 (PzH 2000) self-propelled howitzer
- Evaluating the reconnaissance potential of German artillery and target acquisition using UASs
- Enhancing reliability of data to accelerate rapidity of response on the battlefield
- Addressing short-range fires and Air Defence artillery

Lieutenant Colonel Uwe Kraft, Head of Artillery and Joint Fires Branch, German Army

1720 PANEL DISCUSSION: ENHANCING FIRES C2 AND TARGETING IN DEGRADED ENVIRONMENTS
- Evaluating ways to improve precision and capability of fire support at 40km range
- Incorporating soft-ware to communicate in real time and link field artillery and C2 systems
- Digitising the fires C2 suite. Assessing challenges and potential vulnerabilities of digital systems
- Addressing operations in degraded and GPS-denied environments without radar capability

1800 CHAIRMAN’S CLOSING REMARKS AND END OF MAIN CONFERENCE DAY ONE
29TH NOVEMBER 2018

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