CONFERENCE FOCUS DAY
TUESDAY, 16TH APRIL 2019

ADVANCING C-UAS CAPABILITY AND STRATEGY FOCUS DAY

Technological innovation within the UAS industry is happening at a rapid pace, and we must be prepared to adapt our posture in time with these developments in order to maintain C-UAS effectiveness. Preparing for future developments in tactics and technology is a necessity for C-UAS stakeholders, and this will be the central theme of the conference focus day.

This day will provide the opportunity for military and industry experts to discuss this important and emerging threat. The day will examine the nature of the threat and how we should be preparing for it. In the afternoon, there will be interactive roundtable discussions that use different scenarios to compare approaches and stimulate conversations on how to actually tackle these threats.

ATTEND THIS DAY IN ORDER TO:
► Understand the rate of technological progress in UAS in order to gain strategic awareness of future threats
► Hear how technology that enables autonomous and swarm behaviour is progressing in order to understand how such systems can be countered
► Identify gaps in capability that will arise due to the evolving nature of the future threat

1330 REGISTRATION AND COFFEE
1400 CHAIRMAN’S OPENING REMARKS
Tony Reeves, Director, Level 7 Expertise
1415 TECHNOLOGICAL AND TACTICAL UAS INNOVATIONS THAT WILL SHAPE C-UAS DEVELOPMENT
UAS is an energetic industry in which state militaries are challenged with trying to keep up with the rapid developments in commercial technology. How does this put us at a disadvantage, and what are the innovations that will have the greatest impact on future C-UAS development?
1500 DRONE SWARMS AND POTENTIAL FOR COTS PROLIFERATION OF THIS THREAT
One of the most worrying threats within C-UAS is swarm tactics. If used to full effect, these UAS could be integrated with weapons, sensors and even Artificial Intelligence that could change our approach to warfare in many scenarios. How close is this to becoming a reality? How will COTS UAS shape its development? How can we prepare?

1545 AFTERNOON TEA AND NETWORKING

1615 ROUNDTABLE DISCUSSIONS
Discussion leaders will introduce the subject of their roundtable. Attendees will have an opportunity to take part in these focused discussions. After 30 minutes, attendees will change table and take part in another discussion.

SUBJECT 1: INTEGRATING C-UAS CAPABILITIES INTO WIDER AIR DEFENCE SYSTEMS
Led by: Lieutenant Colonel Jonathan Parrott, GBAD Plans and Transformation, Capability Ground Manoeuvre, British Army HQ

SUBJECT 2: EVOLVING AIR DEFENCE CAPABILITIES TO EFFECTIVELY COUNTER SMALL UAS IN CONTESTED ENVIRONMENTS
Led by: Colonel David Shank, Commander, 10th AAMDC, US Army

SUBJECT 3: IMPROVING IDENTIFICATION AND TRACKING OF NON-FRIENDLY UAS BEYOND THE LINE OF SIGHT
Led by: Dr. Clayton Stewart, Department of Electronic and Electrical Engineering, University College London

SUBJECT 4: TESTING AND EVALUATING NEW TECHNOLOGIES FOR C-UAS
Led by: Tony Reeves, Director, Level 7 Expertise

SUBJECT 5: IMPROVING MOBILE FORCE PROTECTION THROUGH THE INTEGRATION OF C-UAS CAPABILITIES INTO SQUAD LEVEL ACTION

SUBJECT 6: COUNTERING SWARM TACTICS EMPLOYED BY GROUPS OF HOSTILE UAS

1715 ROUNDTABLE LEADERS REPORT BACK FINDINGS
Roundtable leaders will report back key outcomes from their discussions. Leaders will also write-up discussion themes and outcomes which will be made available after the conference.

1725 CHAIRMAN’S CLOSING REMARKS
END OF CONFERENCE FOCUS DAY
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<th>Time</th>
<th>Session Title</th>
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<td>0900</td>
<td>CHAIRMAN’S OPENING REMARKS</td>
<td>Tony Reeves, Director, Level 7 Expertise</td>
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<td>0910</td>
<td>KEYNOTE ADDRESS: THE DEVELOPMENT OF UAS AND THE NEED FOR IMPROVED AIR DEFENCE</td>
<td>Dr. Juanita Christensen, Director, US Army Aviation and Missile Research, Development and Engineering Centre, US Army</td>
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<td>0950</td>
<td>INTERNATIONAL C-UAS COOPERATION THROUGH EXERCISE AND INDUSTRY ENGAGEMENT</td>
<td>Major Alexander Bayliss, Force Design, Directorate of Capability, British Army HQ</td>
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<td>1030</td>
<td>DEVELOPING STRATEGIES TO MAINTAIN READINESS AND MAXIMISE EFFECT</td>
<td>Colonel Cornelius Kiesling, Head of Capability Situation, Analysis and Development Branch, German Army HQ</td>
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<td>1110</td>
<td>MORNING COFFEE AND NETWORKING</td>
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<td>1140</td>
<td>CONSOLIDATING AIR DEFENCE THROUGH THE ESTABLISHMENT OF CLEARER C-UAS TRAINING DOCTRINE</td>
<td>Brigadier General Brian Gibson, Commandant, Air Defence Artillery School, US Army</td>
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<td>1220</td>
<td>C-UAS, NOT ONLY TECHNICALLY, BUT ALSO TACTICALLY SPEAKING</td>
<td>Dr. Clayton Stewart, Department of Electronic and Electrical Engineering, University College London</td>
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<td>1300</td>
<td>NETWORKING LUNCH</td>
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<td>1400</td>
<td>CASE STUDY: UKRAINIAN EXPERIENCE WITH DEFEATING ADVERSARIAL UAS</td>
<td>Confirmed representative from the Ukrainian Armed Forces</td>
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<td>1440</td>
<td>DUTCH APPROACHES TO PREPARING FOR FUTURE UAS THREATS</td>
<td>Lieutenant Colonel Rob Olthoff, Incoming Head of the Ground Based Air and Missile Defence Knowledge Centre, Royal Netherlands Army</td>
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<td>1520</td>
<td>AFTERNOON TEA AND NETWORKING</td>
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<td>1550</td>
<td>AGILITY IN C-UAS APPROACH TO PREPARE FOR UNIQUE THREATS</td>
<td>Lieutenant Commander Tristan Wagner, C-UAS Team Chief, USCENTCOM</td>
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<td>1630</td>
<td>EXPLOITING RADAR MICRO-DOPPLER FOR SMALL UAS CLASSIFICATION</td>
<td>Dr. Clayten Stewart, Department of Electronic and Electrical Engineering, University College London</td>
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<td>1710</td>
<td>CHAIRMAN’S CLOSING REMARKS AND END OF CONFERENCE DAY ONE</td>
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THURSDAY, 18TH APRIL 2019

REGISTRATION AND COFFEE

0900 CHAIRMAN’S OPENING REMARKS
Tony Reeves, Director, Level 7 Expertise

FUTURE CAPABILITY DEVELOPMENT

0910 KEYNOTE ADDRESS: CREATING THE FRAMEWORK FOR EFFECTIVE C-UAS CAPABILITY DEVELOPMENT
- Establishing C-UAS priorities that can direct a versatile and effective approach to a rapidly changing industry
- Coordinating different approaches to C-UAS for effective multi-layered defence capabilities
- Setting requirements to meet future UAS threats that may exert more influence on operations

Lieutenant General Thomas Sharp, Deputy Chief of Staff Capability Development, Allied Command Transformation, NATO

0950 VALIDATION AND EVALUATION FOR CURRENT AND FUTURE C-UAS SYSTEMS
- Evaluation for hard-kill counter UAS capabilities
- Data analysis to validate effective solutions
- Establishing long-term C-UAS plans that can adapt with technological developments

Commander Ashley Pankop, Operations Chief, Joint Deployable Analysis Team, US Navy

1030 MORNING COFFEE AND NETWORKING

CASE STUDIES OF HOSTILE UAS IN ACTION

1100 CASE STUDY: ADAPTABLE, IMPROVISED AND LETHAL DRONES EMPLOYED BY ISIS
- The ISIS four-page checklist: Mission type (spy, bombing, training). Location. Drone components (motor, bomb, ignition). Operation (success)
- How were drones countered when recovering the city of Mosul?
- Countering the construction of drones by ISIS

General (retired) Mahmoud Al-Bayati, Director General, Counter-Terrorism and National Security Advisor, Iraqi Government

1140 PANEL DISCUSSION: HOW SHOULD WE PREPARE FOR UAS FUTURE THREATS?
The development of UAS capabilities and the growth of its potential in terms of size, utility and ability to be dealt with poses many challenges. It demands an approach that is flexible to the changing nature of UAS, but structured enough for long-term goals to be realised and effective C-UAS to be nurtured.
- What exactly should we be preparing for?
- What is our concept of the future threat and how will it challenge us?
- Up to what level should this be a priority and how will it change the way our forces operate

Moderated by: Tony Reeves, Director, Level 7 Expertise

1240 NETWORKING LUNCH

EVOLVING C-UAS CAPABILITIES

1340 EFFECTIVE C-UAS THROUGH DEFENCE INNOVATION
- Validating the success of C-UAS capabilities for future improvements and adaptations
- Examining trends in UAS development to effectively identify and engage hostile UAS
- Implementing coherent frameworks to set up for long-term C-UAS success

Colonel Claudio Icardi, Chief of Concept Development, Centre for Defence Innovation, Italian Armed Forces

1420 IDENTIFYING TECHNOLOGICAL DEVELOPMENTS IN C-UAS AND COST EFFECTIVE SOLUTIONS
- Procurings weapons systems that can be used in synergy with other units and functions
- Identifying the correct solutions for specific operational requirements and ensuring that equipment exceeds them
- Future development of C-UAS capabilities that can be technologically advanced and robust

Lieutenant Colonel Alfred Warner, Research and Technology Officer, C-UAS Branch, BAAINBw, Bundeswehr

1500 AFTERNOON TEA AND NETWORKING

1530 ESTABLISHING THE STRUCTURE FOR LONG-TERM C-UAS SUCCESS
- Generating C-UAS requirements that can be adapted with advances in UAS capabilities
- Overcoming the challenges of the changing UAS industry by formulating effective doctrine
- Priorities for C-UAS capability development in preparation for future threats

Nico Busschaert, GBAD Expert, Doctrine and Requirements, Belgian Ministry of Defence Chief of Staff

1610 DEVELOPING A LEGALLY SOUND AND OPERATIONALLY EFFECTIVE C-UAS DOCTRINE
- Strategies for the short and long-term to counter the threat of hostile drones
- Risk-based analysis of drones in French airspace
- Balancing regulations with counter-drone capability and establishing a clear C-UAS doctrine

Colonel Christophe Michel, Secretariat-General for National Defence and Security, French Government

1650 CHAIRMAN’S CLOSING REMARKS AND END OF CONFERENCE