

FUTURE ARTILLERY

2025 POST-SHOW REPORT



FOREWORD

The *Future Artillery 2025* conference brought together Chiefs of Artillery, Land Force Commanders, Armaments Directors, Chiefs of Missiles and Fires, Capability Developers, Programme Managers, and Requirements Writers from across NATO, 50+ allied nations, and global partners to examine the progressing role of artillery in modern warfare.

Conflict environments are becoming more technologically advanced, multi-domain and complex. As a result, artillery forces are under growing pressure to adapt through interoperability and innovation. This annual conference provides a vital opportunity to explore the latest developments in long-range precision fires, joint targeting, fire support integration, and next-generation munitions.

Future Artillery enables collaborative dialogue between those shaping doctrine and those delivering capability on the ground.

The 2025 Future Artillery conference attracted an audience of over 600 delegates and 27 sponsors



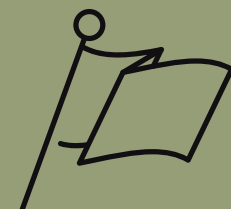
97%

said they were
satisfied with the
event



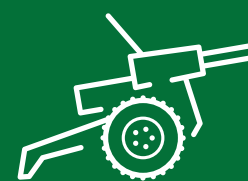
94%

would return to the
event in the future



94%

would recommend
the event to peers
and colleagues



93%

agreed that this
conference is
important in shaping
the future direction
of the topic and
community



600+
Attendees



55+
Nations



75+
Speakers

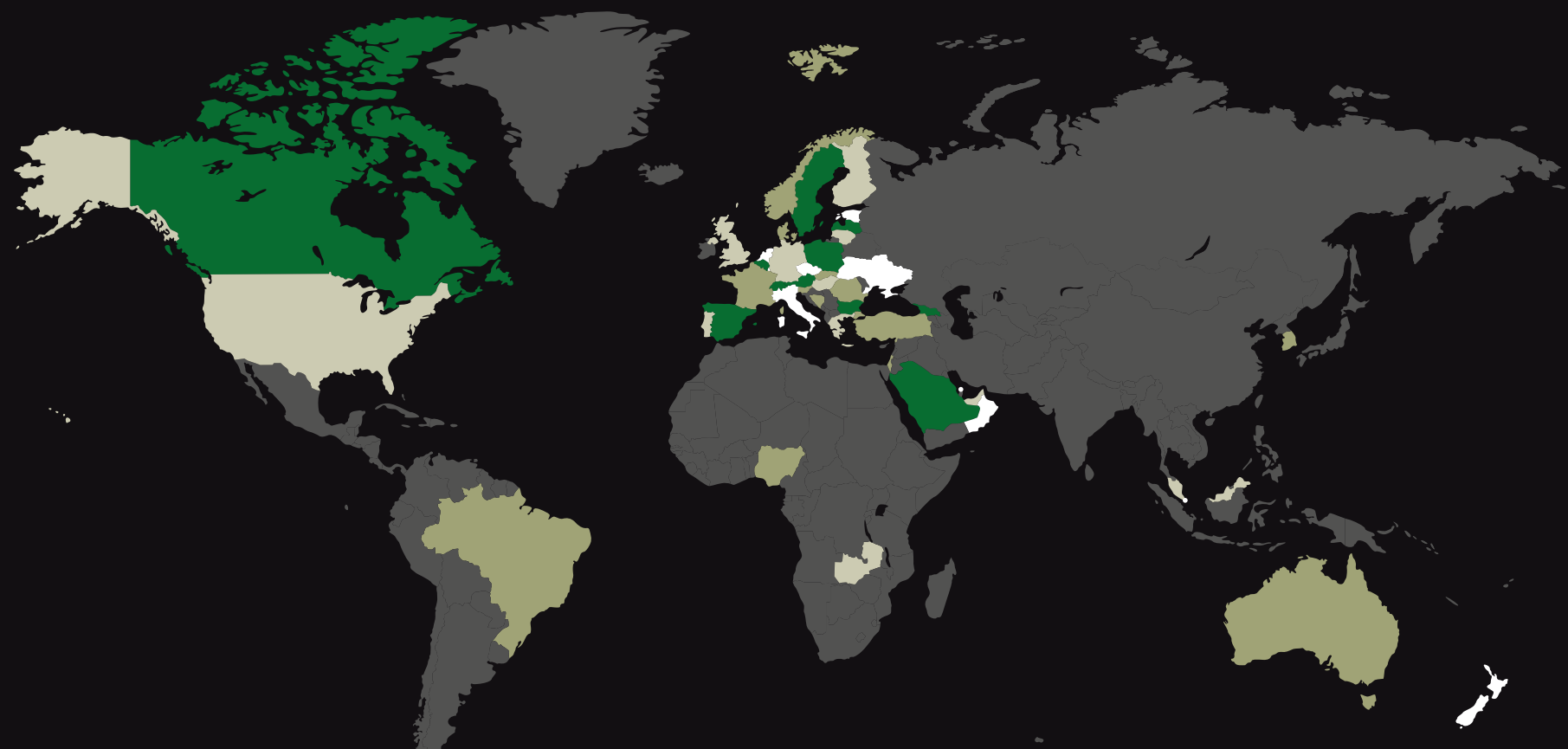


25+
Sponsors

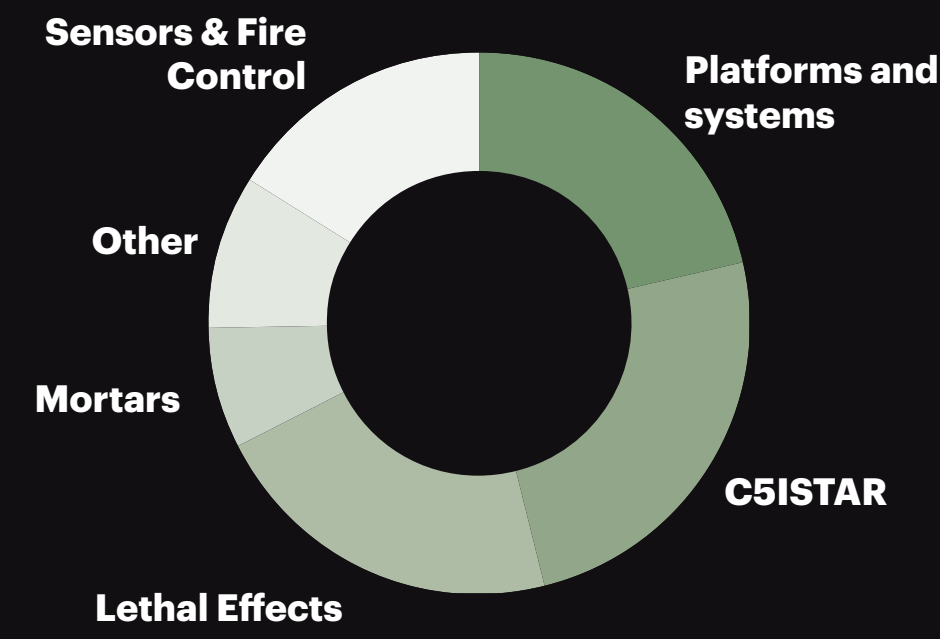
DEMOGRAPHIC BREAKDOWN

GEOGRAPHIC BREAKDOWN

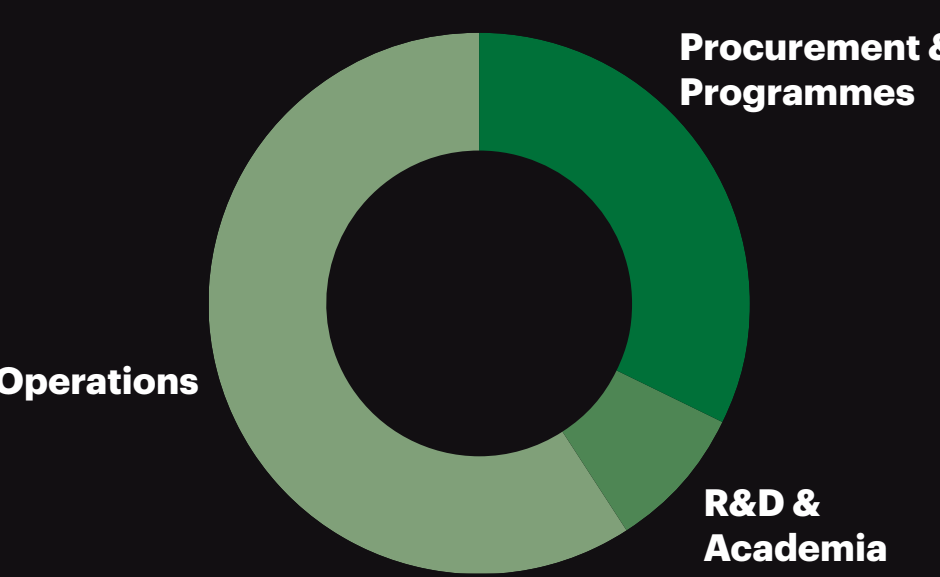
- Australia
- Austria
- Bahrain
- Belgium
- Bosnia & Herzegovina
- Brazil
- Bulgaria
- Canada
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Georgia
- Germany
- Greece
- Hungary
- Israel
- Italy
- Latvia
- Lithuania
- Luxembourg
- Malaysia
- Netherlands
- New Zealand
- Nigeria
- Norway
- Oman
- Poland
- Portugal
- Romania
- Saudi Arabia
- Singapore
- Slovakia
- Slovenia
- South Korea
- Spain
- Sweden
- Switzerland
- Turkey
- Ukraine
- United Arab Emirates
- United Kingdom
- United States
- Zambia



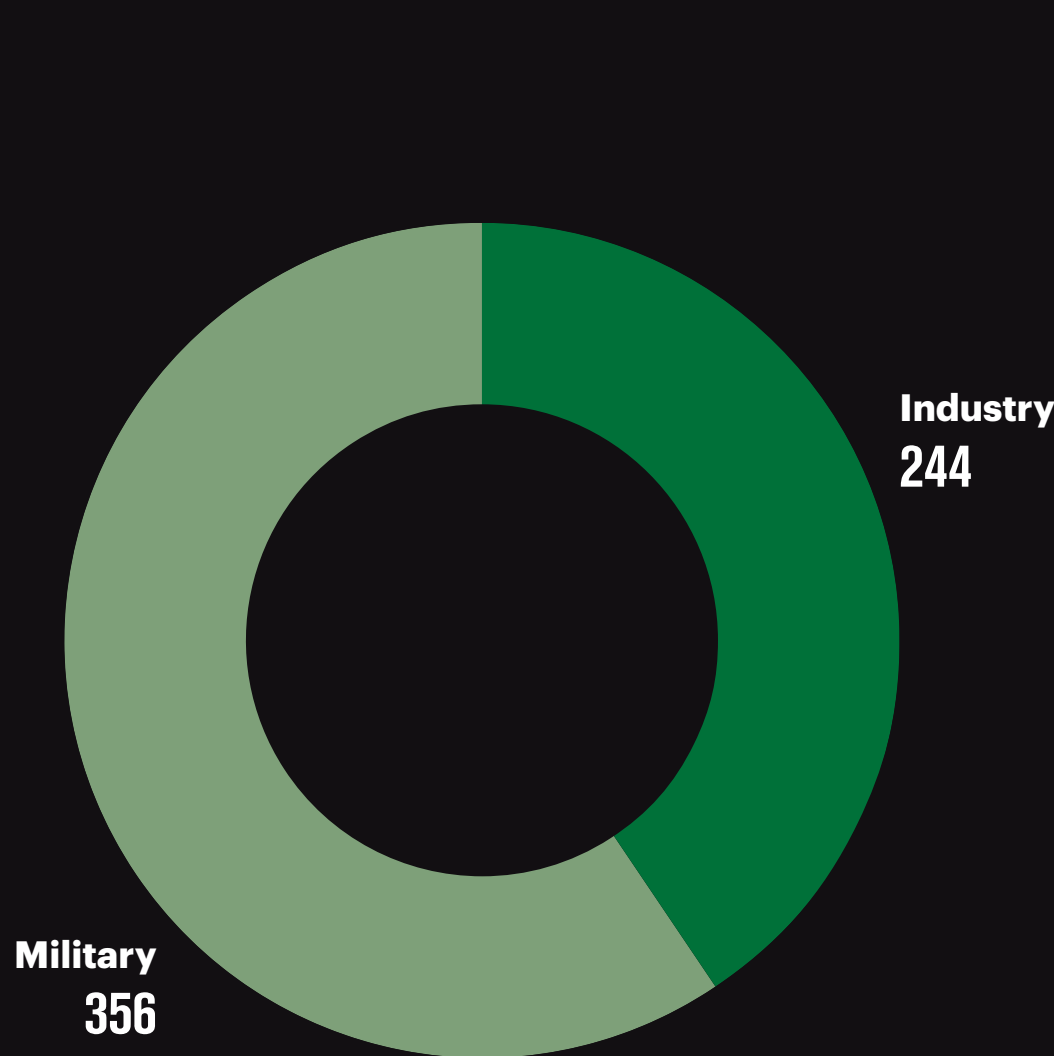
MILITARY BREAKDOWN



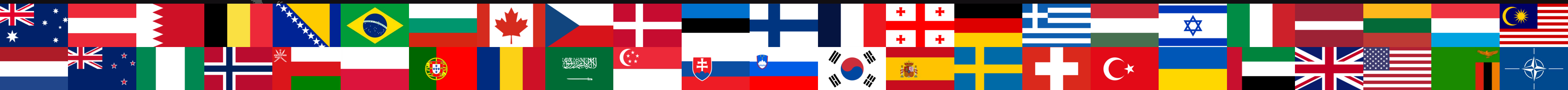
INDUSTRY BREAKDOWN



AUDIENCE BREAKDOWN



VIEW ATTENDEE SNAPSHOT FROM 2025



MEET THE CHAIRS



Lieutenant General Sir Andrew Gregory
KBE CB DL

Master Gunner St James's Park
British Army

Lieutenant General Sir Andrew Gregory joined the Royal Artillery in 1981 after studying engineering at St John's College, Cambridge and a brief period in industry. His military career included deployments to Northern Ireland, the Balkans, and Iraq, where he served as Deputy Commander of 1st (UK) Armoured Division during the 2003 invasion. He later held senior personnel roles, including Director General Personnel, Military Secretary, and Chief of Defence People from 2013 to 2016. Following his retirement from the Army, Sir Andrew became Chief Executive of SSAFA, the Armed Forces charity. Since May 2017, he has served as Master Gunner St James's Park. He is also Vice Lord-Lieutenant of Wiltshire, a Governor of Sedbergh School, Patron of Fighting with Pride, and a trustee of both the Armed Forces Parliamentary Trust and the On-Course Foundation.

"A fantastic conference that covered a vast array of topics from pertinent tactical issues up to strategic problems. All aspects of artillery and fires were covered and the multi-national speakers added that rich vein of thought-provoking topics, resulting in numerous and fascinating discussions. A must for anyone with an interest in either artillery, doctrine, training or future technologies."

**– CGS's Liaison Officer to Commander Royal Saudi Land Forces,
British Army**

CHAIRMAN'S SUMMARY

LIEUTENANT GENERAL SIR ANDREW GREGORY

Having a backdrop of war raging in both Europe and the Middle East and a Defence Review about to be published, the timing of the Future Artillery Conference 2025 could not have been more appropriate. When the latter was released two weeks after the Conference, its key ambitions were: NATO First; a move to warfighting readiness; an Engine for growth; UK innovation driven by lessons from Ukraine; and a Whole-of-society approach. The first four of those themes were covered in depth as part of the Future Artillery 2025 discussions; the overarching narrative and structure of the event was topical and extremely relevant.

With both Lt Gens Wooddisse and Mead, Commander of the Allied Rapid Reaction Corps and Deputy Commander Allied Joint Force Command Brunssum respectively, speaking early, they gave the NATO perspective and the importance of fires in the high level plans. Key themes that were emerging included: the critical need for interoperability, especially networked command and control systems; for allies to train and work together, including field training and live firing; understanding in detail how we should fight; the requirement for both massed and precision fires - it is not an either/or as well as having cheaper, disposable munitions and sensors; the need for industry to be ever closer to the warfighter, not least if we are to generate the speed, agility and ability to innovate 'in contact'; and the fact that our collective capacity has been degraded for various reasons and must be rebuilt.

Lt Gen (Retd) Ben Hodges gave real insights into the US, European, Russian and Ukrainian perspectives that helped put some excellent industrial presentations into a higher level context. How NATO and other armies use the opportunities being presented by Defence companies will be key to future operational capabilities; whether national procurement processes will manage to be flexible and to change at pace is a key question.

It was also a privilege and critical to hear the perspective from the Ukrainian Armed Forces as they fight to defeat a numerically superior and, in theory, technologically advanced aggressor. What they have achieved in the last three years is, quite apart from the extraordinary and magnificent national and individual courage that has been shown, to operationalise many of themes above; innovation, agility, networked, cheap, disposable munitions and delivery systems alongside expensive missiles and shells and much more. There is so much to learn from how they have survived and adapted since Russia's illegal invasion of more of their country on 23rd February 2022 that followed its earlier invasion of Crimea.

Future Artillery 2025 proved to be a genuine opportunity for formal and informal conversations and exchanges of views, contact details and much more. It was a pleasure to be a part of it.



MEET THE CO-CHAIRS

FIRES ENABLERS

Greg Ivey [CAN]

Head of ISR Air, Land & Maritime, Defence Investment Division

NATO HQ



Greg Ivey is Head of Joint Intelligence Surveillance and Reconnaissance (ISR), Land and Maritime domains in NATO's Defence Investment Division. Based at NATO HQ in Brussels, he leads capability and policy development across multi-domain ISR initiatives, including the Alliance Future Surveillance and Control programme, and contributes to NATO's digital transformation efforts. A former Canadian Army officer, he joined the NATO International Staff in 2021.

PLATFORM TECHNOLOGIES

Osman Tasman [TUR]

Former Land Armaments Coordinator, Defence Investment Division

NATO HQ



Osman Tasman served as NATO's Land Armaments Coordinator, advising on land systems and ammunition safety, and supporting NATO's Army Armaments Group. A specialist in military simulation, he held roles at NATO HQ and the SHAPE Technical Centre, and contributed to security-building efforts in the Balkans. He retired in 2024 after more than two decades of service and was awarded the NATO Peace Medal and the Honourable Order of Santa Barbara.

LETHALITY AND EFFECT

Colonel (Ret'd)

Paul Daniels

Indirect Fires Subject Matter Expert

US Army



Colonel (Ret'd) Paul Daniels is a former U.S. Army artillery officer with 24 years of service, including deployments to the Gulf War, Haiti, and Iraq. He later held senior strategic roles, including at US Africa Command. After retiring in 2012, he spent a decade at Raytheon leading long-range precision fires programs. He now heads P. Daniels Consulting LLC, advising defence companies on growth and market entry.

FUTURE MORTAR SYSTEMS

Christelle Collet [FRA]

Land Munitions Officer, Defence Investment Division,

NATO HQ

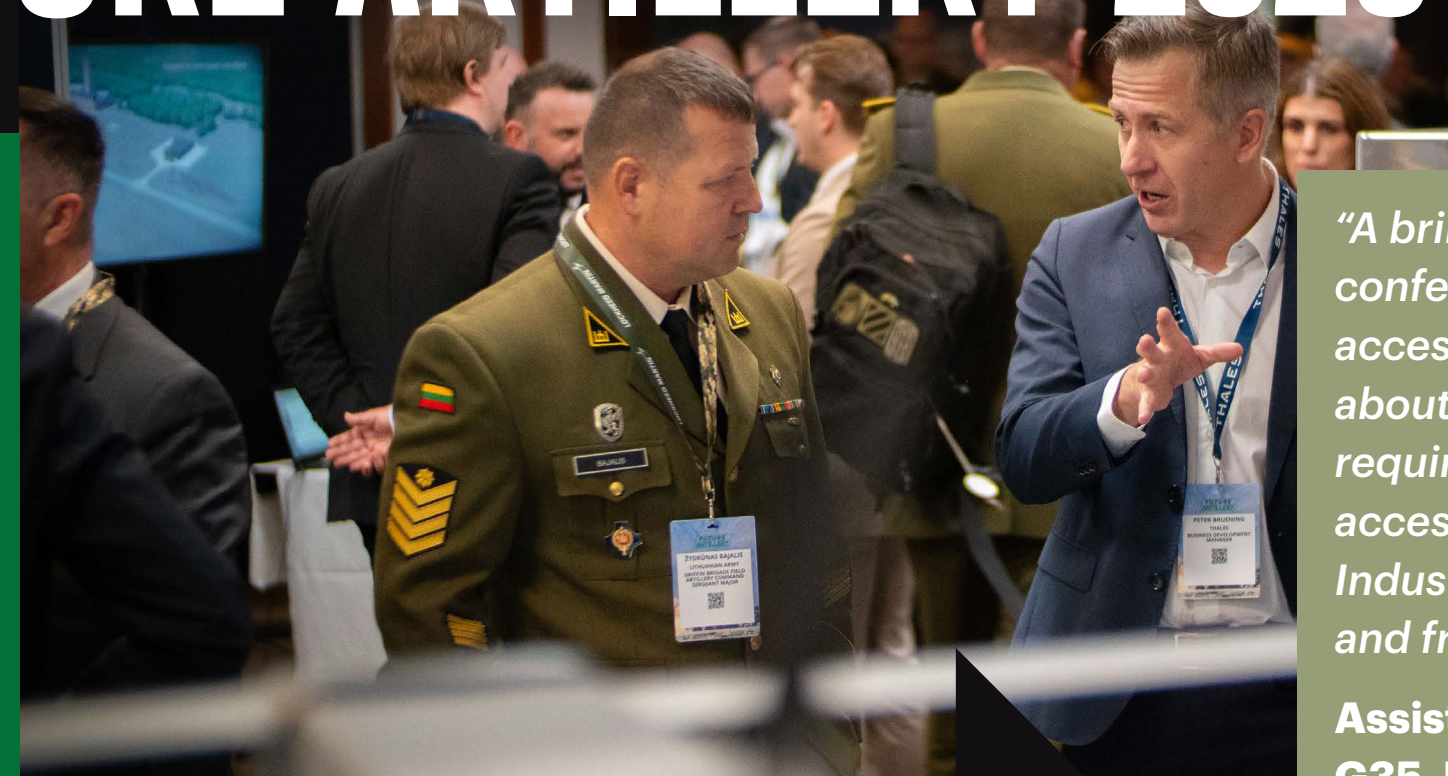


Christelle Collet is the Land Munitions Officer at NATO HQ, advising on indirect fires and dismounted soldier systems. With a background in propulsion and munitions safety, she previously served as a Technical Specialist at MSIAC and spent over a decade as a research scientist at Ariane Group.

PRAISE FOR FUTURE ARTILLERY 2025

"The event was exceptionally well-organised and provided valuable insights into the latest developments in the field. The speakers were knowledgeable, and the sessions were engaging and relevant. Overall, it was a highly productive experience that offered excellent networking opportunities and practical information. I would definitely recommend it to anyone interested in this industry."

**Head of Missile and Artillery,
Military University of Land Forces**



"A brilliantly organised conference with great access to latest information about the Future Artillery requirement with excellent access to the leaders in Industry. A really enjoyable and fruitful few days."

**Assistant Chief of Staff
G35, NRDC-Türkiye**

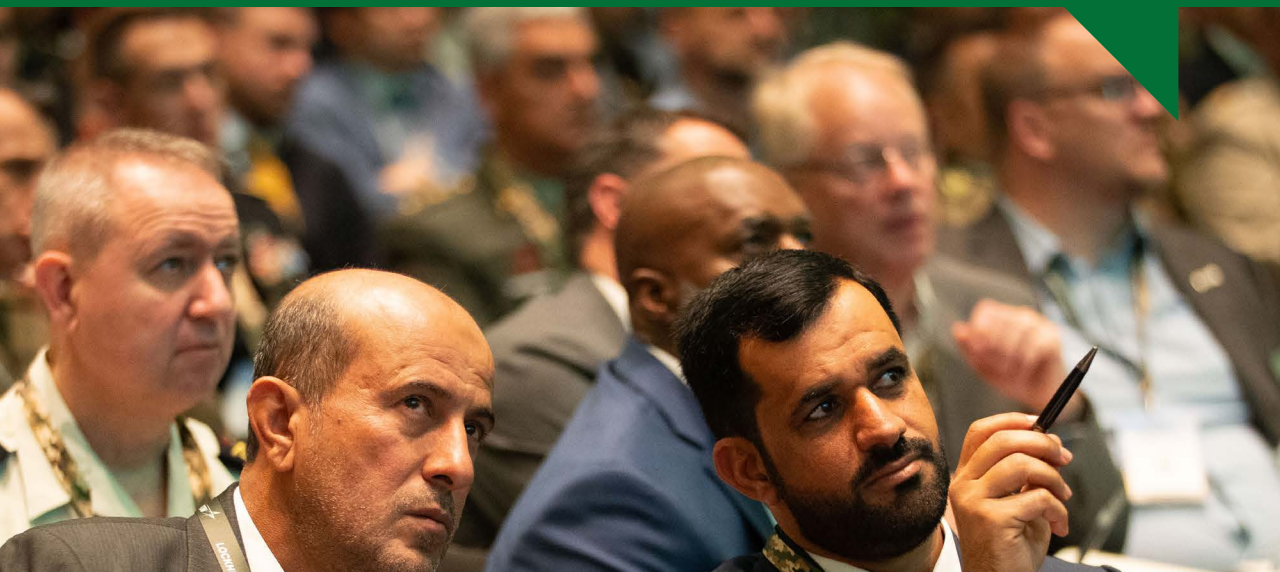
"Future Artillery was a great opportunity for networking and gathering an overall context of current challenges in the defence industry."

Head of R&D, Alzchem Trostberg GmbH



"A conference that tries to satisfy the current and near future needs for fires personnel and does so successfully. Has a good combination and mix of presentations from former - and active-duty military personnel in relevant functions and relevant industry partners. The conference has a combination of plenary sessions and parallel streams with different topics to satisfy multiple needs."

Fires Development Manager, Norwegian Army



"This conference was a great event put on with some fantastic companies that brought their kit along to show military customers from around the world. The briefings gave a great insight into the current and future plans of countries around the world."

Senior Engineer, Dstl



"The Future Artillery conference 2025 was well worth the visit bringing together top military experts, industry leaders, and innovators to discuss the latest advancements in Artillery technology. The conference provided a platform for knowledge sharing, networking, and collaboration, paving the way for future developments in the field of artillery. I'm sure everyone left inspired and equipped with new ideas to help make progress in modern warfare."

Programme manager, Royal Air force



DAY ONE SUMMARY

Day One began with a morning of informal networking over refreshments, offering delegates the opportunity to connect and prepare for a packed agenda of high-level presentations and panel discussions. In the conference hall, lead chairman Lieutenant General Sir Andrew Gregory set the tone for the day with his opening remarks. His address underlined the urgency of modernising artillery capabilities to meet the demands of multi-domain operations and future conflict environments.

The morning then continued with a video address by Maria Eagle, the Minister for Defence Procurement and Industry for the UK. Eagle highlighted the UK's commitment to strengthening its national defences in the face of evolving global threats. She emphasised the importance of strategic partnerships with industry, the need for a refreshed Defence Industrial Strategy, and outlined key programmes such as Project CORUS and the ongoing investment in long-range fires. Her message reinforced the UK government's ambition to deliver cutting-edge capability for the British Army while supporting NATO-aligned procurement efforts.

Next, we heard from Lieutenant General Sir Ralph Wooddisse, Commander of NATO's Allied Rapid

Reaction Corps (ARRC), who provided an operational-level perspective on multinational coordination and the developing role of corps-level formations. He discussed the ARRC's expanding capabilities, its multinational composition, and the importance of long-range precision fires in shaping the deep battlespace. Drawing lessons from current conflicts, particularly Ukraine, Sir Ralph addressed how digital transformation, counter-drone efforts, and multinational logistics integration are vital to maintaining combat readiness in large-scale operations. He highlighted the urgency of modernising command structures, integrating multidomain effects, and embracing expendable technologies to outpace evolving threats.

Providing a broader strategic lens, James Black, Deputy Director at RAND Europe, offered a geopolitical analysis of artillery trends worldwide. His presentation explored the implications of great power competition, evolving regional threats, and industrial capacity shortfalls. He argued that long-range fires are now central to deterrence and escalation management, with the war in Ukraine serving as a case study in industrial warfare. Black also examined the operational demands of multi-domain integration, the risks of cyber and electronic warfare, and the pressing need for resilient, adaptable logistics and supply chains. ►



Later on in the day, we heard from Greg Ivey, Head of ISR Air, Land & Maritime at NATO HQ, who addressed the importance of artillery standardisation and industrial cooperation across NATO member states. He discussed NATO's Defence Production Action Plan and efforts to align national and collective capability requirements. Ivey stressed the urgent need to define what true interoperability means - whether through compatibility, interchangeability, or full integration. He went on to highlight initiatives such as the new Indirect Fire Centre of Excellence in Slovakia, which has been designed to enhance doctrine, training, and equipment standards across NATO forces.

Bringing the day to a forward-looking close, Major General John Rafferty, Commander of the US Army's 56th Artillery Command, shared insights into the transformation of long-range precision fires under Army 2030. Rafferty described the shift from

modernisation to full organisational transformation, noting the integration of multi-domain effects and the importance of command and control (C2) in contested environments. He detailed ongoing training initiatives, such as Dynamic Quest, and stressed the need for saturation tactics, drone integration, and alliance-wide fire coordination to overcome adversary air defence systems. He emphasised that success will depend on persistent joint rehearsals, software-defined C2 systems, and the ability to synchronise kinetic and non-kinetic effects across domains at scale.

The day concluded with a networking drinks reception hosted by Defence iQ, allowing delegates to continue discussions and build strong bi-lateral connections following a thought-provoking start to the conference.



"The premier international gathering of government and industry to discuss the profession of all things Artillery."

**– Dir, BD - Weapons and Ammunition,
American Rheinmetall**

DAY TWO SUMMARY

Following a dynamic morning plenary session, day two of Future Artillery 2025 was split into four focused breakout streams: Fire Enablers, Platform Technologies, Lethality Effect, and Future Mortar Systems. These tracks allowed delegates to prioritise topics and engage more deeply with the technical, tactical, and conceptual challenges shaping the future of artillery.

We heard from Lieutenant General John Mead OBE, Deputy Commander of NATO Allied Joint Force Command Brunssum. A career artillery officer, he previously commanded the UK's 1st Artillery Brigade. His brief highlighted the urgent need for fires to be embedded within NATO's broader deterrence posture. Mead outlined NATO's evolving joint fires roadmap, which aims to integrate effects across domains and enhance responsiveness through modernised command and control systems. He emphasised that artillery is no longer a standalone function but a central pillar of alliance-wide operational design, requiring real-time integration of ISR, cyber, and electronic warfare assets.

Later on in the day, Lieutenant Colonel Kenneth Nygren, Artillery School Commander of the Swedish Army, delivered an interesting brief on the challenges of training in Arctic environments. As the High North is becoming increasingly significant from both geopolitical and security standpoints, Nygren argued that effective training in such conditions is essential, not optional. He drew upon decades of Swedish experience, going on to detail the logistical and tactical complexities of cold-weather operations and stressed the value of regular, cross-national exercises to deepen interoperability and resilience in harsh conditions.

Lieutenant Colonel (Ret'd) Simon Briggs, Head of Defence Capability at Tekever, addressed the evolution of ISR in contested environments. With

a focus on the challenges of navigating integrated air defence systems and electronic warfare, Briggs highlighted the role of autonomy and AI in shaping future surveillance platforms. Using the war in Ukraine as an example, he outlined the importance of resilient systems, operator training, and tight collaboration between engineers and end-users. Ultimately, Briggs reinforced that innovation must be agile, iterative, and grounded in real-world operational feedback.

Chad Steelberg and Andy Baynes of Tiberius Aerospace provided an industry disruptors perspective, presenting on their "Silicon Valley approach" to artillery innovation. Their presentation focused on how fast-paced continuous integration and delivery (CI/CD) models (typically associated with tech startups) can be applied to rapidly upgrade conventional systems such as the 155mm howitzer. Their modular, sustainment-conscious designs aim to reduce wear, accelerate iteration cycles, and reinforce the domestic defence industrial base. Their talk showcased the potential of private-sector agility in meeting urgent capability gaps.

Closing out the day's speaker highlights, Colonel Andranyk Hasparian of the Armed Forces of Ukraine delivered one of the most impactful sessions of the conference. Speaking from the perspective of a nation currently at war, Hasparian offered a raw and informed account of battlefield adaptation. He discussed the shifting balance between traditional artillery and loitering munitions, the pressing need for resilient GPS-independent systems, and the importance of rapid innovation in the face of an adaptive adversary. His presentation was a powerful reminder that for some, these challenges are not theoretical - they are a daily reality.



DAY THREE SUMMARY

Following morning refreshments, the final day of Future Artillery 2025 was split into three streams Fire Enablers, Platform Technologies and Lethality Effect. Colonel Alicia Johnson, Project Manager for Combat Ammunition Systems (PM CAS), US Army, opened with a detailed look into the Army's indirect fire modernisation programme. Her presentation covered advances in munition lethality at the round level - such as extended range, advanced fusing, and sensor-to-shooter integration - as well as the largest artillery production expansion in decades. Johnson emphasised the importance of supply chain resilience and interoperability with NATO partners, highlighting that scale, speed, and smart design are now central to sustaining credible deterrence.

Lieutenant Colonel Nick Andrew of NRDC-Türkiye delivered a thought-provoking session on the role of non-lethal effects (NLEs) in modern fires strategies. He explored NATO's transition toward a behaviour-centred operational model, where perception, influence, and the information environment play an increasingly prominent role. Andrew discussed the alliance's investment in new assessment tools and strategic communications frameworks, calling for better integration of NLEs into targeting cycles and campaign planning.

Just before lunch, we heard from Lieutenant Colonel Lorenzo Di Giovanni from NRDC-Italy, who shared insights into the Allied Reaction Force (ARF) and its evolving joint targeting capabilities. Designed for rapid deployment and flexible composition, the ARF operates across domains to deliver scalable fires in high-

readiness scenarios. Di Giovanni described how the force embraces innovation, integrates partner nation systems, and ensures NATO retains operational agility in the face of unpredictable global crises.

In the afternoon, the individual streams concluded, and the conference reconvened in a single plenary session. This is when Brigadier General Simon Doran, Commanding General of the Marine Corps Warfighting Laboratory, outlined the US Marine Corps' approach to innovation in tomorrow's battlespace. He discussed the shift toward lighter, more mobile assets and outlined key priorities such as long-range precision fires, contested logistics, and littoral manoeuvre. Doran reinforced the Marine Corps' reliance on industry and allied collaboration to maintain agility and interoperability, with an emphasis on experimentation, autonomy, and machine-to-machine integration.

Concluding the day's agenda, Major General Erb Lyra Leal, Commander of the Brazilian Army's Artillery Branch, provided a glimpse into the strategic posture and modernisation needs of a key South American military power. Leal explained Brazil's efforts to relocate forces toward the Amazon, the urgent need to replace outdated howitzers and MLRS, and the challenges posed by domestic industrial decline. He called for greater international cooperation in procurement, training, and technological exchange as Brazil seeks to build a more capable and adaptive artillery force.



OTHER EVENT ACTIVITIES

Beyond the core conference sessions, Future Artillery 2025 featured a number of supplementary activities that enhanced the overall event experience. HQ ARRC hosted three dedicated sessions during the conference, bringing together Joint Fires representatives from more than ten NATO organisations. These meetings served as a fantastic opportunity for networking, sharing operational challenges and training insights, and reinforcing the themes of interoperability and multinational collaboration. The opening session, led by Lieutenant General John Mead, set the tone for open dialogue and ongoing cooperation.



NATO ARRC SESSIONS

Beyond the core conference sessions, Future Artillery 2025 featured a number of supplementary activities that enhanced the overall event experience. HQ ARRC hosted dedicated sessions during the conference, bringing together Joint Fires representatives from more than ten NATO organisations. These meetings served as a fantastic opportunity for networking, sharing operational challenges and training insights, and reinforcing the themes of interoperability and multinational collaboration. The opening session, led by Lieutenant General John Mead, set the tone for open dialogue and ongoing cooperation.



SITE VISIT

At the end of Day 1, attendees were invited to a site visit at the King's Troop Royal Horse Artillery, currently based at Regent's Park Barracks for the summer.

As His Majesty's Mounted Ceremonial Battery, the Troop is responsible for firing Royal Salutes on major state occasions, including The King's Birthday Parade. Established by Royal Decree in 1946, the unit was renamed by King George VI during his first inspection, marking its ceremonial significance.

The Troop specialises in mounted ceremonial duties, with unique trades such as Mounted Gunners, Gun Team Drivers, Farriers, and Saddlers. Based at the Royal Artillery Barracks in Woolwich, they also perform at prestigious events across the UK and abroad.



CHARITY PARTNER

This year's event proudly partnered with the Royal Artillery Charitable Fund (RACF), which provides vital welfare support to serving and former Gunners and their families. Thanks to the generosity of our delegates and sponsors, we raised over £2,000 in support of the RACF's ongoing work, reinforcing the artillery community's commitment to supporting its own: "Once a Gunner, always a Gunner."



2025 SPEAKERS



**Lieutenant General
John Mead OBE [GBR]**
Deputy Commander,
**NATO Allied Joint Forces Command
(JFC) Brunssum**



**Major General
John Rafferty**
Commander
56th Artillery Command,
US Army



**Major General
Erb Lyra Leal**
Artillery Command
Brazilian Army



**Brigadier General
Antonio Mongio Bergua,**
Chief of Field Artillery Command,
Spanish Army



Brigadier General Gianluca Figus
Artillery Commander,
Italian Army



**Brigadier General
Janos Jozsef Somogyi**
Deputy Chief of Staff, **Hungarian
Defence Forces**



Brigadier Rob Alston [GBR]
Chief of Joint Fires and Influence,
**NATO Allied Rapid Reaction Corps
(ARRC)**



Brigadier Paul Hughes
Head of Engineering Assurance and
Certification – Land Domain,
UK Ministry of Defence, DE&S



**Air Commodore
Jamie Thompson CBE MDS RAF**
Deputy Commander and Head of
Operations,
UK Space Command



**Dr, Colonel (Ret'd)
Frederic Peugeot**
Branch Chief Ammunition Support
Partnership,
**NATO Support and Procurement
Agency (NSPA)**



Colonel Gregory Tomlin
Director, Army Capability Manager for
Division Artillery Formations,
Fort Sill,
US Army



Dr Illimar Ploom
Lecturer in Emerging Technologies
and Innovation,
Baltic Defence College

2025 SPEAKERS



James Black
Deputy Director, Defence and Security,
RAND Europe



Colonel Jost Hugel
Chief of Artillery and Commander of
the German Artillery School,
German Armed Forces (Reserves)



Michał Kuc
Section Head of Unmanned Systems
Section, Unmanned Systems and
Ballistics Centre,
**Polish Military Institute of Armament
Technology**



Colonel Christopher Sines
Director Land Requirements and
Director Royal Canadian Artillery,
Canadian Army



Colonel Roman Bobal
Chief of Artillery,
Slovak Armed Forces



Colonel Stephan Sjöberg
Chief of Artillery,
Swedish Army



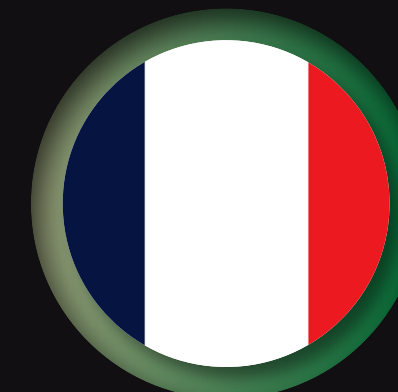
**Lieutenant Colonel
Adrian Golonka PhD**
Head of the Department of Missile and
Artillery Forces, Assistant Professor,
**Polish Military University of Land
Forces**



**Lieutenant Colonel Erik
Verstraelen [BEL]**
Programme Officer of Motorised
Capability,
French Army



**Lieutenant Colonel
Ian Welch**
Project Manager, Precision Fires and
Mortars,
US Army



**Lieutenant Colonel
Jeremy Le Corre [FRA]**
Programme Officer of Motorized
Capability, Plans **and Programmes**
Section, Multinational Capability
Development,
French Army



**Lieutenant Colonel
John Poore [USA]**
SO1 Joint Targeting Coordinator, Allied
Reaction Force
NRDC - Italy



**Lieutenant Colonel
John Zwicewicz**
Director Land Requirements – Artillery
Systems, **Canadian Armed Forces**

2025 SPEAKERS



Jonas Granberg
Project Officer Ammunition,
Moderator CapTech Missiles &
Munitions
EDA



**Lieutenant Colonel
Kenneth Nygren**
Artillery School Commander,
Swedish Army



Lieutenant Colonel Marco Tiberti
C2 and Interoperability Branch Chief,
Italian Armed Forces



**Lieutenant Colonel
Nick Andrew [GBR]**
Assistant Chief of Staff G35, **NRDC-
Turkiye**



**Lieutenant Colonel
Rauno Viitmann**
Fires Lecturer,
Estonian Military Academy



Major Aires Carqueijo
Capabilities Area Coordinator,
Portuguese Army



Major Andrzej Niedźwiecki
Leader of the Artillery Fire Team,
**Polish Military University of Land
Forces**



Major Yoann Poffat
Deputy Commander Trials and
Training Support Command,
Swiss Armed Forces



Captain Janusz Materac
Lecturer,
**Polish Military University of Land
Forces**



Howard Cavel
Senior Field Artillery Specialist,
Fires-Capabilities Development and
Integration Directorate,
Fort Sill,
US Army



Ricky Hart
Principal Adviser Weapons and Fires,
Land Guided Weapons Team
UK Ministry of Defence,
Dstl



Tim De Zitter
Ammunition and Munitions Lifecycle
Manager,
Belgian Defence Forces

2025 SPEAKERS

NATO CORPS MEETING PARTICIPANTS



Major General John Rafferty
Commander, 56th Artillery Command,
US Army



Brigadier Rob Alston [GBR]
Chief of Joint Fires and Influence,
NATO Allied Rapid Reaction Corps (ARRC)



Colonel Charalampos Lolos [GRC]
Assistant Chief of
Staff – Fires and Targeting,
NRDC-Spain



Colonel Frank Maxwell
Commander, 41st Field Artillery
Brigade, V Corps,
US Army



Lieutenant Colonel John Poore [USA]
SO1 Joint Targeting Coordinator, Allied
Reaction Force,
NRDC-Italy

2025 CHAIRMEN



Lieutenant General Sir Andrew Gregory KBE CB DL
Master Gunner St. James's Park,
British Army



Greg Ivey [CAN],
Head of ISR Air, Land and Maritime,
NATO HQ



Osman Tasman [TUR]
Former Land Armaments Coordinator
Defence Investment Division,
NATO HQ



Colonel (Ret'd) Paul Daniels
Indirect Fires Subject Matter Expert,
US Army



Christelle Collet [FRA]
Land Munitions Officer, Defence
Investment Division,
NATO HQ

KEY TAKEAWAYS

Across three days of in-depth discussion, cross-sector collaboration, and global insight, Future Artillery 2025 reaffirmed its place as a vital forum for shaping the future of fires. Many key themes emerged, such as:

- ▶ The accelerating pace of artillery modernisation
- ▶ The integration of non-lethal and multi-domain effects
- ▶ The push for interoperability across alliances
- ▶ and the critical role of industrial innovation and supply chain resilience

Speakers used operational lessons from Ukraine to inform strategic thinking and discuss emerging technologies rapidly reshaping the battlespace. Moreover, beyond the presentations, Future Artillery 2025 succeeded in forging new connections between allied militaries, defence industry leaders, and technology innovators. Delegates left with fresh perspective and a shared commitment to advancing capabilities in a volatile world.

Anticipation is already building for Future Artillery 2026 - where this year's conversations will undoubtedly drive the next wave of strategic innovation and partnership.



WATCH THE FUTURE ARTILLERY 2025 HIGHLIGHTS VIDEO



2025 SPONSORS

FOUR STAR LEAD PARTNER ★★★★★



THREE STAR PARTNER ★★★



TWO STAR PARTNERS ★★



KONGSBERG



ONE STAR PARTNERS ★



PROCUREMENT COUNTRY BREAKDOWN

INTRODUCTION

The 2025 Future Artillery conference attracted an audience of over 600 delegates and 27 sponsors.

Key issues included;

- The urgency to ramp-up ammunition production.
- The requirement for more efficient training.
- Speeding up the OODA loop.
- The need to increase capabilities for long-range precision fires.
- The growing importance of loitering munitions.

UKRAINE



75% of Russian casualties have been attributable to drones; 20% to Artillery and 4% to Small Arms.

High priority targets are EW, Counter-battery radar stations and Anti-aircraft radar stations. The aim is to blind Russian artillery.

Over 10,000 drones operate over Ukraine every day.

Much North Korean tube artillery is being used against Ukraine.

Ammunition production in the Czech Republic is very important for Ukraine.

NATO FIRES AND ARTILLERY DEVELOPMENTS



New capability targets are being formulated and there is a Defence Production Action Plan to increase production. Economies of scale are to be generated and standardisation of artillery and munitions are multi-national projects.

More interchangeability and commonality are required, for example with 155mm ammunition.

A new indirect fire centre of excellence is being established in Slovakia, with an IOC of 2027.

NATO/EU co-operation is a top priority and more critical than ever.

It was asked if new technologies are being embraced correctly. Also, was production being ramped-up fast enough? The answer was that this must be done in order to win a future conflict.

The NATO Joint Fires Roadmap has just been issued. A joint fires training course starts in August.

The DIANA innovation hub will exploit technology such as A.I.

ASGARD will double lethality.

Logistics is now the first item in planning.

NATO ammunition production is scaling up to 2 million 155mm rounds in 2026.



COUNTRY-BY COUNTRY PLANS AND PROGRAMMES

U.K.



Archer IOC was in 2024 and FOC is 2025. 62 MLRS are on order. Project Corbus is the replacement of the Watchkeeper UAV.

Multi-Domain Targeting requires;

- A more effective kill-chain than the enemy.
- Realistic training.
- The importance of industry support.
- The quality of the personnel in the process.
- The governance of information needs to be co-ordinated for seamless integration.

There are currently 21 Royal Artillery regiments.

U.S.A.



The U.S. Marine Corps Warfighting Laboratory has an annual budget of just over \$0.5 Billion.

The U.S.M.C. collaborates with the U.S. Army on joint fires and the M777 is the primary 155mm artillery weapon.

It was asked how contested logistics should evolve and it was stated that autonomous vehicles are being experimented with. Also, is the cognitive burden being addressed? Yes, A.I. tools are being used here.

Ammunition stocks in the Asia-Pacific region are to be expanded and there will be new force structures in place here too.

Less sophisticated munitions are required to counter current threats.

Ammunition production must be ramped up further and drones should be synchronised with fires.

The 39mm v 52mm calibre discussion continues and under the Army Transformation Initiative, long-range precision fires capability must increase. Legacy investment must decrease.

HIMARS is expensive and re-load times are too long.

For training, exercise Dynamic Front has run its course. It is being modified and re-named Dynamic Quest.



GERMANY



The German Army currently has 96 tube artillery systems and 36 rocket artillery systems. This is planned to increase to 285 tube artillery systems and 84 rocket artillery systems by 2032. Personnel numbers are also planned to increase to 6,000 by 2032.

The PzH2000 howitzer is planned to remain in service until 2040, but a new wheeled howitzer is planned to enter service in 2029-2030. RCH 155 is being introduced to service.

In terms of artillery units, the current 4 Battalions (2 tube, 1 rocket and 1 recce.) will increase to 10.

A complex sensors to effectors network is planned.

CZECH REPUBLIC



The 8x8 Caesar howitzer is not going well.

It was asked if automation or manual operations were preferable and it was answered that automation was better for professionals and manual for reservists.

Also, as Mortar ranges increase, the 105mm gun becomes less valuable.

SPAIN



The Army 2035 plan includes 9 brigades, each with 1 artillery unit, plus 1 Special Forces brigade, with light guns. The M109 light gun and 155mm howitzers are to be replaced. Future plans include procurement of SP howitzers and loitering munitions.

SWITZERLAND



30.5 billion Swiss francs is to be invested in future equipment, including the ground force. Future Artillery Systems 2030+ will enable part of this.

There are currently 64 forward observers, but more are needed. For every forward observer, mini UAVs will be provided, starting in 2025, with delivery over a 3 year timescale.

The TASYs project is for the Eagle V reconnaissance system. 5 Eagle Vs will be in each Battalion in future.

The Piranha IV will incorporate the 120mm Cobra from 2028.

To replace the M109 155mm, a November 2024 order was placed for the RTH155 on Piranha, for 2031-2032 delivery, plus a fire support system.

48 Mortar systems are also to be procured.

A new sensor network will be acquired for battle management, using a Sitaware Suite.

One lesson from Ukraine is that training needs to be done in a shorter timescale. Conscripts start with an 18 week school and are then selected for other training. There is a 4-6 week NCO school and a 15 week officer school.

Garrison Bire is the Artillery training centre; Garrison Thun is the Mechanised training centre and Garrison Bure is the combat training centre. There are also mountain shooting ranges.

There are increasing combined joint exercises being undertaken and also participation in NATO exercises.



"The event was very well arranged and hosted, with the content extremely informative and valuable, in order to understand the current challenges within the artillery world as a time where artillery is at the forefront of a conflict in Europe."

**– Artillery Analyst,
Australian Defence Force**

POLAND



Key new systems include;

- MLRS
- Krab howitzer
- K9 Thunder howitzer
- 120mm SP Mortar
- HIMARS - A
- Gladius UAV

The current inventory includes the 122mm 2S1 and 152mm DANA, 155mm Krab and 120mm RAK mortar, Langusta and Honar-A/K MLRS.

The TOPAZ fire control system will be upgraded to TOPAZ +.

New training programmes are to be introduced and ammunition stock-piles are to be increased. Domestic ammunition production is very important.

HUNGARY



Hungary is re-establishing its joint fires capability. Challenges include HDF capability building, recruitment and re-armament. Cyber defence is considered crucial.

From 2017-2025, the PzH2000, M12 120mm Mortar, HNT 81mm Mortar and HERO 30/120/400 loitering munitions were introduced to service.

From 2026+, an MLRS (2 battalions), 120mm SP Mortar and further loitering munitions are planned, plus a MALE UAV from 2028 and an SP howitzer (1 battalion) from 2030+.

Training is key, with 45-85% planned to be undertaken in simulators. However, new TTPs are required.

ESTONIA



The Estonian Army has 1 division and operates 36 K9 and 12 Caesar howitzers, 6 HIMARS (with ATACMS), 12 Miny Harpy's and 4 M270 MLRS.

The definition of loitering ammunition as a one-way effector was considered important. It was believed that it would replace attack helicopters for deep attack missions.

CANADA



The new Canadian government has stated that it plans to spend 2% of GDP on Defence by 2027, but this may increase further. It is also exploring the speed and agility of the procurement process.

A new Army commander was appointed in 2024.

The 2030 vision includes long-range precision fires, indirect fires augmentation and a C4ISR backbone.

For the Long-Range Precision Strike (Land) requirement, a loitering munition UOR was developed over the last year. The Switchblade 300 and 600 systems are to be procured.

Project Fires C2 is also a joint fires modernisation project. A draft RFP is due this year.

Indirect fires modernisation will include 80-102 155mm systems, up to 85 81mm mortars and up to 90 120mm ACSVs, plus support equipment. An industry day is planned, but no date has been announced yet.

The current 8 M777s per artillery regiment are planned to increase to 18 per regiment, which will reduce the number of personnel required per gun.

BRAZIL

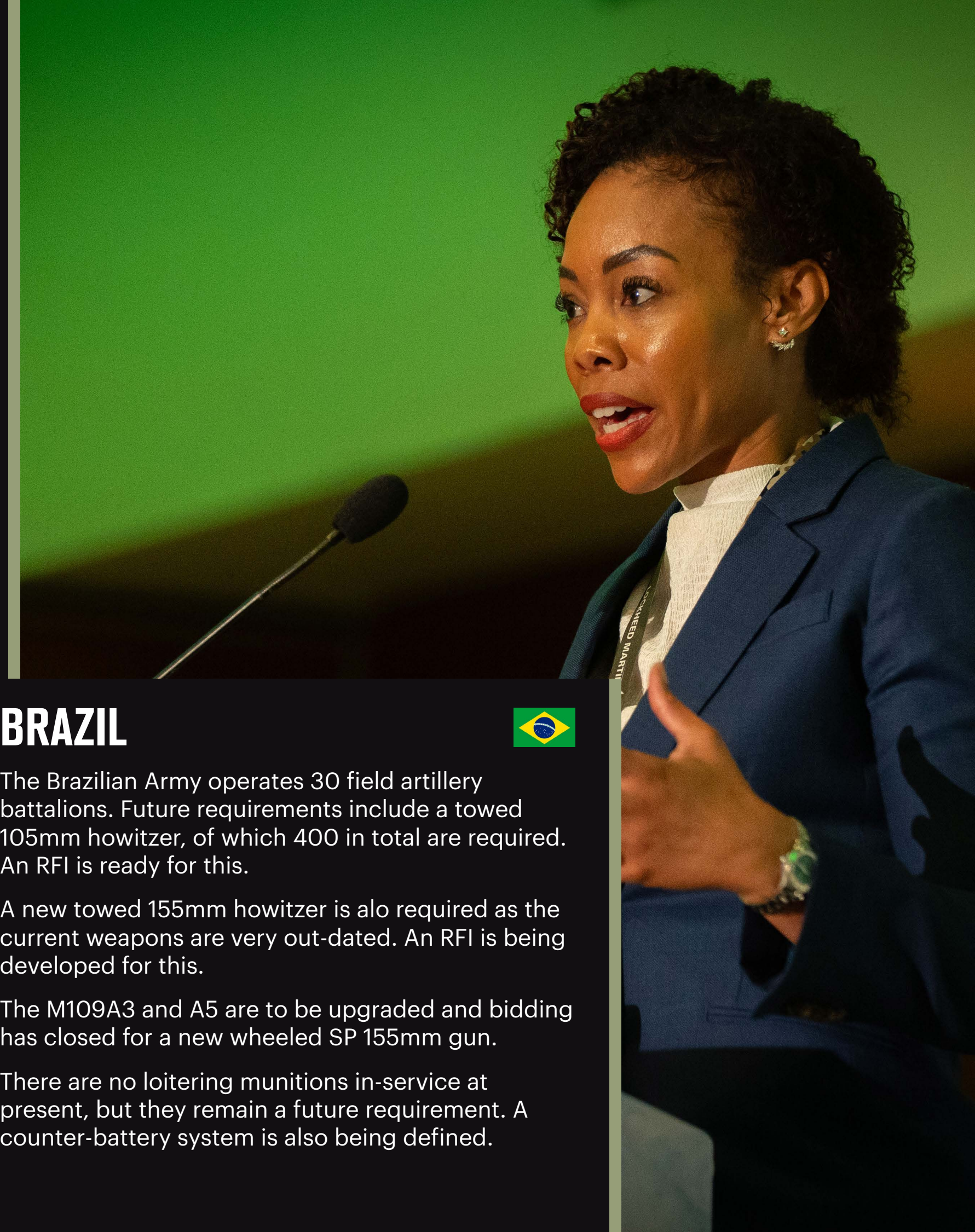


The Brazilian Army operates 30 field artillery battalions. Future requirements include a towed 105mm howitzer, of which 400 in total are required. An RFI is ready for this.

A new towed 155mm howitzer is also required as the current weapons are very out-dated. An RFI is being developed for this.

The M109A3 and A5 are to be upgraded and bidding has closed for a new wheeled SP 155mm gun.

There are no loitering munitions in-service at present, but they remain a future requirement. A counter-battery system is also being defined.



TRAINING

U.K.



New training capabilities are to be delivered by 2027. There is both the political will and investment allocated for this.

The U.K. Land Training System will train soldiers to a higher level of capability. Cyclone will provide 10 weeks training for every unit to achieve this.

It was asked if the speed of change is fast enough and the answer was yes, hopefully.

SWEDEN



The Swedish Army trains in arctic environments and climatic resilience of equipment is required. Specialised logistics training is also needed.

In summer, additional problems are caused by a lack of road availability, caused by melted marshes.

A brigade-level live firing exercise is planned this year, but it won't be multi-domain. Also the Arctic Strike exercise tests new capabilities and is next planned in Finland in 2026.

Tactics and communications are challenges.



TECHNOLOGY ADVANCEMENTS

THE EUROPEAN DEFENCE AGENCY (EDA)



The EDA is advancing ammunition technology.

Current programmes include;

- Premium
- STYX
- FU DET. CODE
- EMPOF
- RECBALL
- SAAT (Small Arms Ammunition Technology)
- ETPEM
- ERICA

In preparation are;

- AMTEM II
- SCORPIO

- Premium II
- HOTSPOT
- CONAN

The CapTech technology group has 21 member states and E70 million in investments. There are currently 15 technology domains (CapTechs), each with a strategic research agenda. There are 120 suggestions for co-operation initiatives at present and this number is growing.

A new 155mm artillery white paper is being developed – a workshop in 2024 had 50 participants.

The plan is a 4-5 year timescale for the 1st generation shell and a 10-15 year timescale for the 2nd generation shell. New production methods are also being studied and will be presented to the EDA management at the end of 2025.

FUTURE ARTILLERY

JOIN US IN LONDON AT FUTURE ARTILLERY 2026

Be part of the next chapter in artillery innovation. Building on the momentum of our successful 2025 event, Future Artillery 2026 will once again bring together global military leaders, defence industry pioneers, and strategic policymakers to tackle the evolving challenges of modern warfare. Don't miss this opportunity to shape doctrine, drive capability development, and forge lasting partnerships at the world's premier artillery conference.

**SECURE YOUR PLACE NOW AND HELP
DEFINE THE FUTURE OF FIRES**

BENEFITS OF ATTENDING:



Gain understanding around the strategy into some of Europe's biggest artillery programmes



Hear an in-conflict nation discuss their challenges and how they would like to develop their lethality on the battlefield



Listen to experts speak about preparation to improve supply and stockpiles, encourage realistic training and learn about the misconceptions and concerns with doctrine and legislation



Develop your artillery platforms by getting updated on key NATO member programmes and learning about their modernisation efforts



Discuss the opportunities in munitions and how we can advance our ammunition capabilities and production



Build effective strategy and plans with fellow military and industry to provide a cohesive, interoperable environment

CONTACT THE TEAM



ENQUIRE AS A SPEAKER:

Abbie Butler
Senior Conference Producer
enquire@defenceiq.com



ENQUIRE AS A SPONSOR:

Richard Brookes
Partnership Director
partner@defenceiq.com