

2025

annual  
REPORT



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**Joint Air Power  
Competence Centre**

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# Foreword

As the JAPCC Assistant Director, it is my distinct honour to present the 2025 Annual Report. This year was more than just a reporting cycle; it was a milestone in our history as we celebrated the 20<sup>th</sup> anniversary of the Joint Air Power Competence Centre. Since 2005, this Centre has served as the intellectual engine for NATO's Air and Space Power, and our journey from a nascent idea to the Alliance's most senior accredited CoE has been nothing short of remarkable.

## A Year of Strategic Impact

In 2025, JAPCC delivered across every pillar of CoE work at higher tempo, and against a more demanding set of stakeholder requirements than in any previous year. The Annual Joint Air and Space Power Conference moved to the Grugahalle in Essen, expanding its capacity to reflect the Alliance's growing appetite for independent, expert-driven discourse on air and space power. The conference drew record attendance, bringing together leading minds from across the Alliance and industry to address the complex theme of 'Disrupting Dominance'.

The launch of the NATO C-UAS Fundamentals Course demonstrated JAPCC's ability to identify a critical capability gap and close it at operational speed. From initial concept to first delivery took under twelve months, a timeline that reflects both the urgency of the C-UAS challenge and the analytical agility that distinguishes JAPCC within the CoE enterprise. In 2025 alone, we trained nearly 700 students, providing them with the critical skills needed to navigate the modern drone-saturated battlefield. Looking ahead, our capacity will double to accommodate 1,500 students in 2026.

Our commitment to the Alliance's security was further demonstrated by our direct support to Ukraine. Through our involvement with the NATO Security Assistance and Training for Ukraine (NSATU) and the six-month deployment of one of our own members to

that organisation, the JAPCC provided real-world expertise where it was needed most. This 'boots-on-the-ground' perspective has enriched our analysis and ensures that our work remains grounded in the harsh realities of modern peer conflict.

## Navigating our Human Capital Limitations

To remain a premier organisation, we must be candid about our challenges. The personnel challenge within the CoE community is a critical reality that worsened in 2025. This year, we were required to de-flag seven additional posts, including a vital Branch Head position, several critical Subject Matter Expert posts, and a key administrative post.

The personnel challenge is real, and its consequences for output are documented in this report. JAPCC's response has been to consolidate where consolidation adds value, and to pursue targeted structural adaptation – not as a substitute for adequate personnel, but as a means of protecting analytical output whilst Sponsoring Nations work to address the underlying shortfall. To this end, we are combining the Joint Air and Space Power Network (JASPN) with our Think Tank Forum (TTF) in 2026. Furthermore, the overall trend in the reduction of NATO CoEs, most notably the closure of the Combined Joint Operations from the Sea Centre of Excellence (CJOS CoE), presents a unique strategic opportunity. As these organisations sunset, there is a clear path to consolidate vital personnel and specialised expertise back under the JAPCC umbrella. We feel the best way to ensure that NATO's Joint Air and Space 'collective memory' is not lost is to encourage air domain consolidation.

## Innovation as the Standard

In addition to our core missions, we successfully supported three ACT Innovation Challenges, proving that

the JAPCC is as much a laboratory for the future as it is a guardian of doctrine. Every project we undertook remained rigorously aligned with AIRCOM's five priorities, ensuring our output delivers immediate dividends for the warfighter.

As JAPCC enters its third decade, the strategic rationale for this institution has never been stronger – nor the demands placed upon it more acute. The Alliance requires rigorous, independent, non-industrial air and space power expertise. JAPCC exists to provide it. Whether that task is fulfilled at the level the Alliance requires depends, in no small part, on the decisions Sponsoring Nations take in the coming year. As General Gorenc

famously remarked, 'Airpower is like Oxygen. When you have enough, you don't have to think about it. When you don't have enough, that's all you can think about.' Our task remains clear: to keep the Alliance breathing.

Sincerely,



**Vito Cracas**

Colonel, ITA Air Force  
Assistant Director, JAPCC

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# JAPCC Background

## Vision

To be NATO's catalyst for the improvement and transformation of Joint Air and Space Power, delivering effective solutions through independent thought and analysis.

## Mission

The JAPCC, as a team of multinational experts, is to provide key decision-makers with effective solutions on Air and Space Power challenges in order to safeguard NATO and the Nations' interests. To accomplish our mission, the JAPCC undertakes independent research and advocacy while also addressing the requirements of NATO and its member nations. Our Programme of Work (PoW) consists of a range of dynamic projects, activities, and tasks that are adjusted monthly in response to approved Requests for Support (RfS). If you are interested in submitting a RfS to inquire about the possibility of JAPCC facilitating a study on your chosen topic, please contact us using the form provided on our website, [www.japcc.org](http://www.japcc.org).

In addition to this, the JAPCC independently hosts several significant events throughout the year. These include the annual Joint Air and Space Power Conference, the Joint Air and Space Power Network Meeting (JASPN), the Think Tank Forum (TTF), the Maritime Air Coordination Conference (MACC), as well as the JAPCC Steering Committee (SC) meeting and the Senior Resource Committee (SRC) meetings.

## Leadership and Structure

The JAPCC is headed by the Director, Lieutenant General Jason Hinds (USA AF), who has led the Centre since Autumn 2025. Lieutenant General Hinds also serves as the Commander Allied Air Command (AIRCOM) and the Commander United States Air Forces in Europe

and Air Forces Africa (USAFE-AFAFRICA) at Ramstein Air Base.

The JAPCC's Executive Director, Lieutenant General Thorsten Poschwatta (DEU AF), also commands the German Air Component Command (DEU ACC) and the NATO Combined Air Operations Centre (CAOC) Uedem.

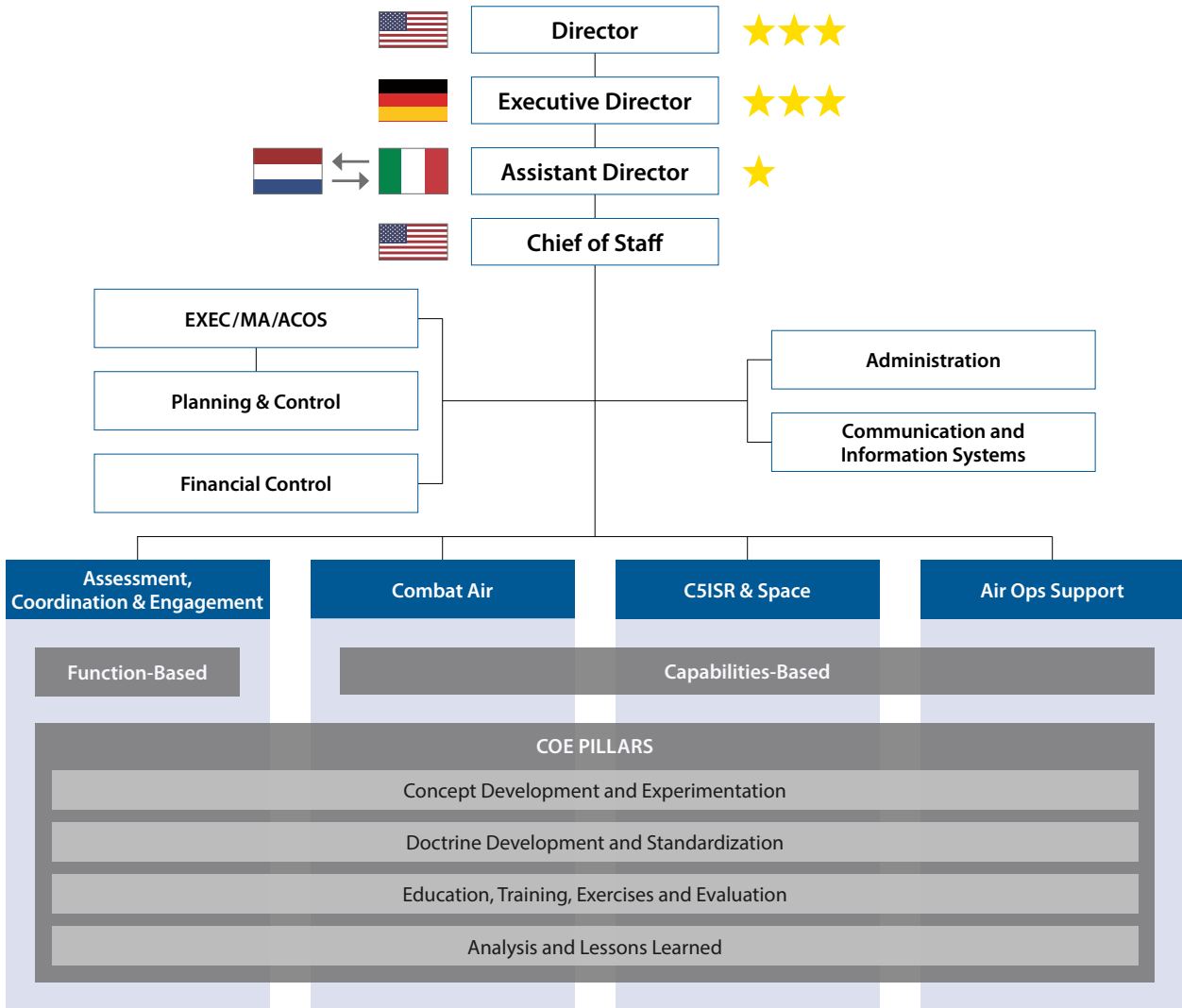
On site, Colonel Vito Cracas (ITA AF) serves as the Assistant Director (AD), and together with the Chief of Staff (COS), Colonel Kevin Anderson (USA AF), provides day-to-day leadership for the JAPCC team.

The JAPCC consists of four branches that form its core. One of these branches is the Assessment, Coordination, and Engagement (ACE), led by Colonel Stefan Matzdorf (DEU AF). The ACE Branch plays a central role in managing engagement planning, media outreach, and publishing. In essence, it acts as the guiding force behind the organisation. The remaining three branches are organised by capability. The Combat Air (CA) Branch, headed by Colonel Patrick Parrish (USA AF), focuses on combat-related operations. Colonel Marco Kathmann (NLD ASF) leads the Air Operations Support (AOS) Branch, which focuses on the provision of combat service support for air operations. Lastly, the Command, Control, Computer, Communication, Cyber, Intelligence, Surveillance and Reconnaissance & Space (C5ISR&S) Branch is led by Colonel Gianluca Chiriatti (ITA AF).

These four branches collectively form the backbone of the JAPCC, each contributing its unique expertise and skills to fulfil our mission.

## Personnel

In 2025, as in previous years, the JAPCC faced the challenge of meeting the demand for support with current resources. We were unable to support all the



*The JAPCC Organisational Structure consists of four core branches that cover a broad spectrum of subject matter areas pertaining to Joint Air and Space Power.*

Requests for Support (RfS) anticipated, as only 45% of Subject Matter Expert (SME) positions were filled in 2025. In 2025, JAPCC declined 17 requests for support, equating to 24% of all requests received. Of those, 12 were declined specifically due to insufficient personnel.

The JAPCC continues mitigating these shortfalls through cross-utilisation, internal education and training, and creative technological solutions. However, to effectively address the wide range of Joint Air and Space Power subject areas relevant to NATO, and to provide enhanced support to the Joint Warfare Centre (JWC) and major NATO exercise programmes, further support is required. It is imperative that sponsoring nations seek to fill their sponsored

billets with appropriately qualified SMEs and assess areas in which representation could be increased. Furthermore, it is crucial to encourage other nations to engage actively with the JAPCC, either as a Sponsoring Nation or a Contributing Nation. Use of the Voluntary National Contribution (VNC) construct allows JAPCC Sponsoring Nations to share their portfolio and focus on fields requiring specific expertise. Any VNC, whether temporary or for a specific project, will greatly enhance and support JAPCC's efforts.

With the help of the Sponsoring Nations, partnerships with universities, knowledge institutes, and Warfare Centres, as well as engagement with industry and academia, can strengthen the JAPCC and significantly advance NATO in the field of Air and Space Power.

This is especially true in the rapidly evolving field of UAS and C-UAS, where JAPCC cannot sufficiently meet the growing demand for subject matter expert support.

## Stakeholders

The JAPCC's primary customers include NATO HQ, Allied Command Operations (ACO), Allied Command Transformation (ACT), NATO Joint Force Commands (JFC), Joint Support and Enabling Command (JSEC), Component Commands (CC), and Sponsoring Nations (SN). However, when possible, and in accordance with the MoU, the JAPCC also accepts support requests from other sources as workload and staff availability permit. With a track record of successful products and ever-increasing connections to industry and academia, the JAPCC continues to build on its reputation as NATO's pre-eminent advocate for the transformation of Joint Air and Space Power.

## Support to the 'Pillars of CoE Work' for NATO

In accordance with the 2005 MoU, JAPCC supports each of the MC0685 CoE pillars.\* As the Air Domain CoE, JAPCC covers an extensive range of air and space expertise. As a result, the four pillars run cross-functionally across three capability-based JAPCC branches. A fourth branch, the Assessment, Coordination and Engagement Branch, assigns a minimum of two positions to support each pillar, ensuring alignment between the JAPCC's PoW and NATO's requirements.

However, due to the low fill-rate, some cross-functional tasks can only be executed at the minimum level.

## JAPCC Area of Interest and Focus Areas

JAPCC regularly reviews and adapts its Focus Areas (FAs), Programme of Work (PoW), and organisational structure to ensure it remains responsive to current and future challenges and continues to provide key decision-makers with effective solutions to Air and Space Power challenges, as illustrated in the figure 'Focus Areas and Programme of Work' on the facing page.

As the FAs have not always reflected JAPCC's true focus and weight of effort, the introduction of JAPCC Areas of Interest (AoI) was approved by Steering Committee. They are intended to capture most of JAPCC's work, provide vision and clarity, and offer a means of articulating our efforts and accomplishments. Whilst the FAs indicate a limited number of priorities, typically aligned with an AoI, for a particular period, activities supporting the FAs may receive prioritisation of time and resources and may apply across multiple AoI or topics.

JAPCC leadership are reviewing FAs and AoIs for 2026, with the expectation to recommend an update at the next Steering Committee meeting in July.

\*Pillars of CoE work for NATO are: 1. Education, Training, Exercise and Evaluation (ETEE), 2. Analysis and Lessons Learned (A&LL), 3. Doctrine Development and Standardization (DD&S) and 4. Concept Development and Experimentation (CD&E).

## JAPCC Areas of Interest and Focus Areas

Areas of Interest	Focus Areas
<p>Areas of Interest (Aol) are intended to encompass the majority of all JAPCC work, provide vision and clarity in those efforts, and provide a means to articulate the whole of our efforts and accomplishments across JAPCC Branches and COE Pillars.</p>	<p>Focus Areas (FA) indicate areas of particular interest, typically within an Aol, for a period of time. Activities supporting the FA may receive prioritization of time and resources. FAs may apply across multiple Aols or topics.</p>

**Integration:** Incorporates a broad range of activities with the common theme of integration – be it between nations, joint services/domains, whole-of-government, or industry/academia.

*Examples: MDO including C2, Industry/Academic, Air-Land, CIMIC, etc.*

**Enablers:** Many enablers are necessary to project airpower and accomplish the mission. This includes physical, informational, and electronic activities as well as supporting domains.

*Examples: Resilience & Sustainability, Space/Cyber Support to Air Operations, JISR, EMS, etc.*

**Defensive Air Ops:** The traditional means of planning, C2ing, and conducting the air defence mission to protect civil/military targets and ensure the ability to survive and operate.

*Examples: IAMD, Hypersonic Defence, BMD, etc.*

**Offensive Air Ops:** The traditional means of planning, command & controlling, and projecting airpower to accomplish the joint mission.

*Examples: C-A2/AD Operations, Aircraft/Munitions, UAS, PGM, etc.*

**Support to NATO:** Includes all activities and services that JAPCC delivers to directly support NATO training, planning, or operations.

*Examples: Exercise Support, SME Support, Education & Training, Doctrine Development, Outreach, Publications, Annual Conference, etc.*

*The JAPCC Areas of Interest and Focus Areas approved by the Sending Nations.*

# Key Developments

The JAPCC strives to provide products, research, and analysis aligned with stakeholder demands, time-relevant defence topics, and available SME expertise. This section provides a concise, high-level overview of the organisation's efforts over the past year in support of NATO's Joint Air and Space Power. For more detailed information on any specific area, we encourage you to visit our website or contact us directly.

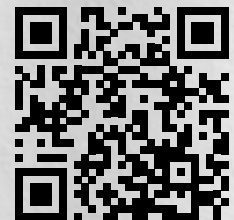
## Publications

**JAPCC Journal.** Through its 2025 journal editions, the JAPCC showcased the value of organisational research and knowledge generation, while reinforcing its role as a platform for thought leadership in NATO air power

topics. Recent issues included innovative insights resulting from collaboration with senior NATO leaders, JAPCC personnel, and external expert contributions. These forward-thinking articles play a vital role in shaping NATO's Joint Air and Space Power, equipping leaders with the necessary knowledge to navigate the complexities of future defence environments.

### **Increase the resilience of a future JFAC HQ or AOC.**

If a JFAC HQ or an AOC are not able to continuously execute their functions, there is a high risk to NATO's capability to deliver decisive cross-domain air power capabilities, which would jeopardise the achievement of campaign objectives. The NR study, delivered in July 2025 and available on JAPCC's NSWAN site, investigates how the resilience of a JFAC HQ or AOC can be improved.

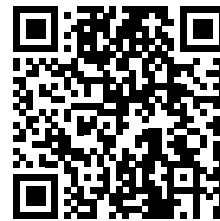


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**AI Handbook** offers a balanced and operationally grounded reference on the prudent integration of Artificial Intelligence into contemporary and multi-domain military operations. It supports senior leaders by clarifying AI's practical utility, limitations, and implications, enabling informed decision-making without requiring technical specialisation. The handbook reinforces the centrality of human judgement, accountability, and legal and ethical compliance in all AI-enabled military activities. While its delivery extended beyond the initially projected timeline, this ensured thorough validation, coherence with evolving technological realities, and alignment with Allied operational needs. This publication reflects JAPCC's established commitment to delivering rigorously assessed, enduring analysis in direct support of the Alliance and its nations.

*Connecting the Alliance at Every Level* is the title of a new JAPCC flyer published in 2026, outlining the ambition to enhance the integration of multi-tactical data links across the NATO operational environment. Effective multi-data link integration is fundamental to NATO's ability to achieve shared situational awareness and coherent decision-making, as forces cannot act effectively without a common operational picture. Interoperability gaps should no longer be regarded solely as technical limitations; without full integration and routine training of tactical data links and federated data networks, they constitute tangible operational risk. The publication underscores that connectivity delivers decisive advantage only when accompanied by aligned governance, robust security, and doctrine that evolves in parallel with technological development.

## Concept Development

The JAPCC's support to Joint A&S Power concept development in 2025 included the following:

- Agile Combat Employment (ACE);
- NATO Multi-Domain Operations (MDO);
- Autonomous Collaborative Platforms (ACPs).

• **Agile Combat Employment (ACE).** ACE is a proactive and reactive operational scheme of manoeuvre executed within threat timelines to increase survivability while generating combat power across the integrated deterrence continuum. ACE must change the *status quo* efficiency paradigm to evolve static and centralised basing constructs into a more agile, resilient, and effective operational model. AIRCOM seeks to develop a flexible NATO ACE concept that encompasses dynamic dispersal, deployment, and basing for tailored implementation across member nations, creating targeting dilemmas for adversaries while enhancing survivability during uninterrupted combat operations.

JAPCC is currently working on several projects that support ACE:

- Contributing to the development of an ACE Doctrine;
- Resilient Basing;
- Aircraft Cross Servicing (ACS);
- Logistics, Definition of nations' roles (framework, HN, SN, transit):
  - Peacetime versus wartime restrictions;
  - Organisational roles (JSEC, JLSG, ALCC);
  - The need for an airfield database;
  - Munitions requirements.
- (Force) Protection (including Decision Support Tool).

**ACE Doctrine Development.** NATO Allied Command Transformation (ACT) is leading the efforts to prioritise interoperability. Joint doctrine is a key element in this endeavour. The JAPCC has proposed a Joint approach to the development of an ACE Doctrine. This ensures alignment with the principles of effective joint and multinational operations. While AIRCOM

first raised the need for an ACE doctrine, it is expected that the proposed Joint approach of the ACE doctrine will benefit from, and involve, a broader range of contributors across NATO.

**Resilient Basing.** The Resilient Basing questionnaire has been completed by JAPCC. Nations are encouraged to utilise it for internal assessments. No further action is planned by JAPCC unless renewed interest is expressed by SNs through submission of completed questionnaires.

**NATO SCI-SET-353 C-UAS Mission-Level Modelling & Simulation.** A JAPCC UAS/C-UAS SME co-chairs the SCI-SET-353 task group. With the ever-increasing capabilities of UAS, their rapid proliferation, and the widespread deployment of UA in recent conflicts, it is evident that C-UAS capabilities are highly relevant to NATO forces. Effective Modelling and Simulation (M&S) can identify shortfalls in existing C-UAS systems in specific scenarios and reveal where improvements are needed to address the threat effectively. The objective of the SCI-SET-353 task group is to develop a common M&S framework capable of evaluating relevant scenarios at the mission level. The framework shall model all relevant characteristics of the UA, the environment, detection methods, C2 systems and effectors. The modelling shall be conducted at an effects-based level sufficient to capture the essential aspects of the C-UAS process. The framework shall subsequently be used to simulate specific scenarios, including vignettes derived in the SCI-301 task group. Ideally, the framework shall be verified by modelling scenarios executed during NATO trials, after which simulation results can be compared with real-world outcomes.

**NATO STO-359 Impact of Hypersonic Operational Threats on Military Operations and Technical High-Level Requirements.** With the JAPCC as co-chair, this study focused on military applicability, with the OODA loop (Observe, Orient, Decide, Act) as the baseline reference. Phase 1 was published early in 2022, and Phase 2 was completed in the first half of 2024, after which it was replaced by STO-252 (see next page). Although many facets of hypersonic threats and capabilities have

been analysed over the past four years, some aspects still require further scrutiny. A JAPCC SME, Lieutenant Colonel Andreas Schmidt, published a Journal article titled *'Hypersonic Capabilities, A Journey from Almighty Threat to Intelligible Risk'*, highlighting the work undertaken to understand hypersonic threats and identifying areas requiring further scrutiny.

**NATO STO-252 Effectivity, Feasibility and Affordability Assessment/Trade-Off for High-Speed Strike Vehicles.** This initiative began in 2024. AVT-ET-252 is a NATO exploratory team assessing the potential of hypersonic missiles and glide vehicles. It examines technical challenges like propulsion, materials, and guidance, alongside strategic considerations including deterrence and integration into NATO defence frameworks. The team's findings aim to shape policy and operational strategies for emerging threats. With the support of experts from multiple nations, it will conduct hypersonic research activities, including specialist teams, research workshops, and research task groups to assess the performance, survivability and costs of hypersonic and high-Mach supersonic cruise missiles. A trade-off against other strike weapons will be conducted. Both technological and operational aspects shall be addressed.

**Autonomous Collaborative Platforms.** The JAPCC conducted a concept study on Autonomous Collaborative Platforms (ACP), reflecting their relevance to NATO's evolving approach to Multi-Domain Operations. ACP represent a significant shift in future air power employment, offering the potential to add mass, resilience and adaptability through teaming with crewed platforms and operating with mission level autonomy in contested environments. In line with NATO's strategic direction in the NWCC and DDA, JAPCC's efforts focused on clarifying the operational relevance of ACP, assessing their potential contribution to future air and multi-domain missions, and identifying organisational, doctrinal, and integration considerations associated with their adoption. This work strengthens Alliance understanding of how ACP could enhance mission effectiveness and informs concept development that will shape NATO's future force design.

**Cross Domain Command and Control.** NATO's adoption of Multi-Domain Operations calls for a renewed Cross Domain Command and Control, as indicated in the Alliance Concept for Cross-Domain Command, May 2025 (the JAPCC was involved in the writing team). In support of this effort, in 2025 JAPCC contributed to advancing future C2 thinking through collaborative work with the NATO Command and Control Centre of Excellence, including co-authoring an academic article and co-organising a dedicated workshop on Human-Machine Teaming in Cross Domain Command and Control. This combined effort explored the implications of increasing human-machine interaction within future command arrangements, while identifying organisational, cognitive, and technical considerations necessary to integrate human and machine strengths effectively. The resulting insights inform NATO's ongoing concept development and enhance the Alliance's preparedness for future MDO-driven operating environments.

**NATO STO SAS-203.** The research group's work is fundamentally aimed at strengthening NATO's ability to anticipate disruption, build societal resilience, and make informed strategic choices in science and technology. By examining how public attitudes shape the acceptance and employment of emerging and disruptive technologies, the team generates evidence that helps the Alliance understand where societal friction or support may emerge. Through cross-Alliance collaboration, new research, and foresight analysis, the group identifies societal, perceptual, and ethical challenges that could influence capability development and operational use. This insight directly feeds into future iterations of NATO S&T trends and supports national-level decision-making on the adoption, communication and governance of EDTs.

## Exercise Support

Exercise support is a key mission area for the JAPCC. The JAPCC leads teams drawn from across NATO to provide Red Air, Space, and Cyber (opposing forces, or OPFOR) support to exercises and experiments. This capability is not resident within the Joint Warfare Centre (JWC), Stavanger.

The JAPCC supported the following exercises in 2025:

**Steadfast Deterrence 25.** STEADFAST DETERRENCE 2025 (STDC25) was a JWC-led exercise which evaluated SHAPE and the TCCs/JFCs. STDC25 is part of the new Major Joint Exercise (MJX) series and is aimed at training strategic and operational level HQs through Command Post and Computer Assisted Exercises (CPX/CAX), while conducting peacetime vigilance activities and the Deterrence and Defence of the Euro-Atlantic Area (DDA) Family of Plans (FoP) against a peer adversary. This was the second opportunity to exercise aspects of DDA at the strategic and operational level using the new NATO Force Model (NFM), thereby challenging the Alliance in peace and crisis. The exercise required close adherence to a realistic activation scenario and subsequent deployment. This planning approach was intended to test staff reactions under time constraints. This required strong organisation and coordination, particularly as the personnel came from diverse backgrounds. The JAPCC supported by providing SMEs to fill the OPFOR Air and OPFOR Space positions within the exercise.

**Steadfast Duel 25.** Following the formal agreement with the Joint Warfare Centre (JWC), the JAPCC supported the full cycle of Steadfast Duel 25 at the JWC in Stavanger, Norway. Support was provided during the MEL/MIL scripting workshop and execution. Knowledge of Red Forces and their employment of those forces was provided. A complete RED ATO was developed for three different JOAs to provide the training audience with an air picture. The ATO consisted of over 500 RED missions flown every day of the exercise. In addition to the support in Norway, preparatory work was conducted at the JAPCC. Red Space's involvement in the exercise was ~15%, covering ~400 injects, and addressing 15 (~40%) storylines over all Joint Operational Areas. The JAPCC continues to refine its Hand-Over Take-Over (HOTO) with the newly accredited NATO Space CoE to further assume the OPFOR role for future Steadfast exercises. The JAPCC anticipates the demand for space SMEs to continue exercise support will remain high. The JAPCC also supported the OPFOR Cyber and Cyber Response Cell (CFCyCC) throughout the exercise.

**Ramstein Flag 25.** Ramstein Flag (RAFL) is a new tactical-level, live air exercise (LIVEX). HQ AIRCOM's vision for RAFL25 is to provide participants with high-end training opportunities, including realistic problem sets in a complex operational environment. The second iteration, RAFL25, was conducted in Leeuwarden, the Netherlands in 2025. Several JAPCC SMEs were involved in developing tactics, exercise planning and coordination. They helped shape the exercise objectives and participation, mentored NATO exercise planning teams, and provided an observation team of large force exercise (LFE) experts to help capture lessons identified. The JAPCC will continue to participate in subsequent RAFL events, which AIRCOM plans to conduct every two years from 2025.

**Falcon Strike.** Falcon Strike is Italy's premier fifth generation fighter exercise focused on high-end counter anti-access/area denial (C-A2/AD), integrated air and missile defence (IAMD), and integration with fourth generation fighters. This joint exercise hosted the Royal Navy, Italian Navy, US Air Force, Hellenic Air Force, French Air Force, Italian Army. The exercise took place in October to November 2025, and JAPCC supported the Initial Planning Conference conducted at Poggio Renatico, Italy. JAPCC participated pursuant to a request for support from the Italian Air Force staff.

**POLARIS GUARD Wargame 2025.** Sponsored by DCOS SPP, Headquarters Supreme Allied Command Transformation (HQ SACT), the JAPCC supported a wargame on space deterrence at the POLMIL level at NATO HQ from 10 to 12 December 2025. This wargame, carried out by two syndicates in parallel, brought together the NATO HQ's Operations Policy Committee (OPC) and Defence Policy and Planning Committee (DPPC) to analyse and respond to a space-focused, contested scenario in the High North in the 2030 timeframe. The JAPCC was responsible for leading the cyber white cell, answering RFIs from the training audience, and ensuring realism for both blue and red actors.

**Nimble Titan 26 (NT26).** The JAPCC supported 2025 planning for Nimble Titan as a full member alongside three organisations and 26 Nations. Nimble Titan is a

multinational, strategic-level wargaming exercise focused on integrated missile defence and space operations. Conducted under the leadership of the US Department of Defense, it brings together NATO Allies and partner nations to explore policy, strategy, and operational coordination for countering ballistic missiles, hypersonic threats, and evolving space challenges. The experimental exercise emphasises coalition interoperability, multinational decision-making, and future defence capabilities, helping participants refine concepts for Integrated Air and Missile Defence (IAMMD) in complex geopolitical environments. The JAPCC co-chairs the Wargaming Control Group.

**Cyber and Space Exercise Playbook.** As a JAPCC-promoted output from the 2025 Think Tank Forum, hosted at AIRCOM, the JAPCC is producing a digital playbook. The aim is to augment air exercise planners to help with cyber and space integration. There is a growing demand for cyber and space exercise planners, which the current inventory within the NCS, NFS, CoEs cannot fully meet. This Playbook provides a means to include cyber and space elements without requiring dedicated, multi-week cyber SME support. Version 1 was released in March 2026.

## Education and Training

In 2025, the JAPCC supported NATO education and training in the following areas:

**NATO Countering Unmanned Aircraft Systems (C-UAS) Fundamentals Course.** In support of NATO's ongoing efforts to strengthen C-UAS capabilities, the Joint Air Power Competence Centre developed a C-UAS Fundamentals Training Course tailored for the NATO C-UAS Community of Interest (Col). Starting in August 2025, the C-UAS Fundamentals Training Course has been offered monthly to personnel across all ranks within the NATO C-UAS Col, including relevant law enforcement agencies and critical infrastructure stakeholders.

The course aims to raise drone awareness and provide a foundational understanding of the C-UAS challenge.

The curriculum includes lessons on drone operation tactics, techniques and procedures (TTP), drone threats across the spectrum of terrorism, espionage, sabotage, subversion, and organised crime (TESSOC), detection and relevant sensing methods, passive mitigation in peacetime and operations, active drone mitigation and engagement methods, potential future UAS and C-UAS concepts, and C-UAS planning, including a tabletop planning exercise.

In 2025, the C-UAS Fundamentals Course trained nearly 700 participants across NATO. In 2026, the JAPCC plans to expand its capacity to train up to 1,500 participants, further strengthening NATO's C-UAS education and awareness efforts.

**Air Force Protection (FP) partnership with the European Air Group (EAG).** JAPCC continues to collaborate closely with the European Air Group (EAG) on Air Force Protection (FP) subjects. Areas of mutual interest in 2025 included coordination of efforts concerning the further development of Agile Combat Employment (ACE), continued work to incorporate the EAG's work on Air Mobility Protection Teams (AMPT) into future NATO Air FP Doctrine, and the continued promotion of the Force Protection Decision Support Tool (FPDST), as well as coordination efforts set out in the Memorandum of Agreement (MoA) which captures EAG support in the delivery of FP Courses at NATO School.

**Agile Basing Project (ABP) collaboration with the European Air Group (EAG).** The JAPCC continues its close cooperation with the EAG on the Agile Basing Project (ABP), part of the broader Agile Combat Employment (ACE) effort. The goal of this partnership was to ensure tactical alignment with NATO ACE concepts by supporting the development of the Airfield Decision Process (ADP) framework, the AGE/GSE compatibility matrix, and related lines of development in logistics, maintenance, infrastructure, and force protection. The JAPCC actively participates in EAG Permanent Forum meetings, strengthening the connection between EAG's tactical implementation and NATO's strategic direction through the exchange of updates on interoperability, training, and integration in exercises such as Ex PITCH BLACK and TLP.

### **Tactical Leadership Programme (TLP) Support.**

JAPCC has supported the TLP programme in Albacete, Spain, with cyber and space training. JAPCC SMEs briefed and educated intelligence and COMAO planners about NATO's two newest domains and how they should influence air planning considerations.

**NATO School FP Courses.** In 2025, JAPCC supported the delivery of five iterations of FP courses at the NATO School, including three iterations of the 'Introduction to FP in NATO' course, and two iterations of the 'NATO Advanced FP (Practitioners)' course. Since 2008, JAPCC has acted as the Office with Principal Responsibility (OPR), providing an Action Officer (AO) for these courses on behalf of SHAPE as the Requirements Authority (RA). The 'Introduction to FP in NATO' course continues to be one of the premier courses run by the NATO school in terms of student satisfaction, attendance, and revenue generation.

Upon request of the nations in the forum of the NATO FP Working Group (FPWG), JAPCC was asked in 2012 to develop an advanced FP course, eventually delivering a pilot course in 2019. This course is highly regarded and well attended.

**Air FP Support to the Baltic States.** This activity is an annual follow-on from the highly successful extended regional visits in 2015 and 2016. These initial engagements, which led to structural changes in the region, have now evolved into the delivery of an in-depth and intellectually demanding FP training for the three Baltic Air Forces' officers at the Command and Staff College in Vilnius, Lithuania.

The training was developed based on the JAPCC-authored Advanced FP (Practitioners) Course, tailored to be both Air FP specific and Baltic Region focused. Given events in Ukraine and the renewed attention to reassurance, this training remains exceptionally well received, and this resulted in additional delivery of the training through hybrid means. This enabled resource efficient and cost-effective use of limited SME availability. It is also a practical example of JAPCC's contribution to broader, more operationally focused NATO activity. Finally, the air element of the Military Academy

of Lithuania is seeking closer ties with the JAPCC-facilitated Think Tank Forum. Regretfully, 2025 marked the last delivery of this training due to resource constraints and shift in focus. JAPCC has handed over the training to the Military Academy of Lithuania and will remain available to advise on future iterations.

**NATO CIMIC CoE Course Support.** The JAPCC supported the NATO CIMIC CoE in European Deployment Preparation Course with multiple lectures and instructor support in Kielce, Poland.

**NATO Common Education & Training Programme.** JAPCC supports the IAMD CoE CET-P courses with SME expertise.

**NATO School SBAMD Course.** A JAPCC SBAMD SME supported AIRCOM in executing the 'Introduction to SBAMD' course with SME briefings and leading the course's syndicate work.

**Competence Centre for Surface-Based Air and Missile Defence (CCSBAMD) Support.** JAPCC supports the CCSBAMD comprehensive IAMD course with SME expertise.

**Air and Space Power Course.** JAPCC supports the Netherlands Defence Academy in developing an air and space power course intended as a career-progression requirement accessible to international students, with portions delivered online. This course complements the Academy's broader portfolio of career-progression air and space power education.

## **Active Engagements**

The JAPCC continues actively engaging with various air power stakeholders through working groups and other face-to-face meetings. These engagements included, but were not limited to:

- ACT Defence Planning Practitioners Forum;
- ACS Conference;
- Aerospace Capability Group 2;
- AIRCOM ACE Conference and Symposium 2025;



*NATO Secretary General Mark Rutte delivers his video welcome address to the 2025 JAPCC Joint Air and Space Power Conference in Essen, Germany.*

- Air Operations Working Group (AOWG);
- Air Warfare Development Team (AWDT);
- Cross Domain Command Concept Development;
- European F-35 Users Group Working Group (UGWG);
- NATO Allied Joint Force Protection Working Group (FPWG);
- NATO Countering Class I Unmanned Aircraft Systems Working Group (C-UAS WG);
- NATO Helicopter Interservice Working Group (HISWG);
- NATO Joint Capability Group Unmanned Aircraft Systems (JCGUAS);
- NATO Joint Capability Group Surface-Based Air and Missile Defence (SBAMD);
- International Concept Development & Experimentation Conference;
- Integration of Cyberspace into Joint Air and Space Power;
- Global AAR Strategy Team Collaboration;
- NATO AAR Working Group Chairmanship;
- Maritime Unmanned System Working Group (MUS WG);
- Multinational Capability Development Campaign/Multinational Multi-Domain Command and Control Working Group;
- Multi-National Helicopter Training Centre (MHTC) Helicopter Collaboration and Coordination;
- NATO BiSCSWG (Space) is a biannual meeting of space SMEs to discuss and decide the progress of implementation of space as a domain;
- Interim AAR Matrix: built and used for AAR Planners and Decision-Makers alike. In accordance with STANAG 3971 & ATP-3.3.4.2.4, JAPCC will continue to update and maintain the AAR matrix. The current interim solution contains all NATO nations' SRD data, as well as nations from Indopacific region and industry partners; a permanent commercial solution in development via NATO AIS funding;
- Personnel Recovery/Search and Rescue Working Group;
- Multinational Capability Development Campaign/ Joint Personnel Recovery Working Group;
- European Air Group (EAG) Cyber Forum;
- NATO Science and Technology Organization (STO) SAS-200.

**Annual Joint Air and Space Power Conference.**

Last year's Joint Air and Space Power Conference marked an important milestone, as it was held for the first time in the modernised Grugahalle in Essen, offering a larger and more flexible space for delegates and exhibitors alike. Under the theme 'Disrupting Dominance – The Future of Air Superiority?', the conference

brought together senior leaders, specialists, and industry representatives to reflect on emerging challenges to air superiority and the rapidly shifting operational environment. Discussions highlighted the need to adapt established doctrine, accelerate innovation cycles, and strengthen collaboration across the air and space community. The constructive exchanges shared throughout the event contributed meaningfully to the wider professional discourse. With this positive experience in mind, JAPCC looks forward to welcoming participants back to an expanded and enhanced conference in 2026, which will be co-located for the first time with the inaugural Euro Defence Expo (EUDEX). This expanded setting brings together JAPCC's established strategic forum with a new, large-scale defence trade fair, offering participants an enriched environment to engage with both high level discussions and the broader European defence community.

**Think Tank Forum.** From 15 to 16 April at Ramstein Air Base, the JAPCC and Headquarters Allied Air Command (HQ AIRCOM) co-hosted the 12<sup>th</sup> Think Tank Forum in combination with the AIRCOM Air Warfare Development Team (AWDT). The TTF, led by Deputy Commander AIRCOM, Air Marshal Johnny Stringer and JAPCC Assistant Director, Colonel Vito Cracas, marked a significant milestone as the largest event to date, bringing together 31 diverse stakeholder entities. These entities included the BEL Air Force, CAOC Torrejón, Competence Centre SBAMD, CZE University of Defence, Deployable Air Command and Control Centre, DEU Air Force Command, DEU AWC Luftwaffe, DEU Air Component Command, GRC Air Force, HRV Air Force, ESP Air Force, ESP Air and Space Force, FIN Air Force, FRA Air Force, FRA Air Warfare Centre, Italian Air Force, Italian Air Force Air Warfare Centre, Joint Analysis Training And Education Centre, MIT Lincoln Laboratory, United States Air Force, NATO Air Operations CoE, NATO Cooperative Cyber Defense CoE, NATO Communications and Information Agency, ROU Air Component Command, RAF Air & Space Warfare Centre, RNLASF Warfare Centre, SACT SEE, Tactical Leadership Programme, University of the Bundeswehr Munich, United States Air Force in Europe, and the 10<sup>th</sup> Army Air and Missile Defense Command.



The forum's programme was structured into two key components: plenary sessions that addressed the evolving dynamics of conflicts and lively syndicate discussions. This robust format fostered knowledge sharing and enabled participants to effectively engage in discussions and exchange insights on the complexities of modern warfare in areas such as challenging AirC2, ATO cycle and current C2, end-to-end testing, executability of ATO plans and mission planning revision, synthetic training, enhancing cyber and space integration into air exercises, and providing a concept of employment for autonomous collaborative platforms.

The outcomes of the TTF and AWDT syndicates will serve as a basis for developing and proposing a new approach across the Alliance Air and Space Forces and will be effectively integrated into current and future projects and activities.

To strengthen the relationship between members of the Alliance Air and Space Forces and to create a better foundation for future projects and activities, a decision was made at the beginning of 2026 to merge TTF and JASPN into one comprehensive event.

### **Joint Air and Space Power Network Meeting 2025.**

The 12<sup>th</sup> JASPN meeting took place from 12 to 13 November 2025 at JAPCC's home base in Kalkar. This unique platform brought together representatives from twelve distinguished NATO, European Union and international organisations. Over two days, participants discussed their Programmes of Work (PoWs), shared experiences, and engaged in productive discussions to address current challenges in advancing air and space power capabilities. The JASPN was enhanced by the diverse perspectives of representatives from distinguished entities. NATO Headquarters and C2CoE provided updates on AirC2 modernisation. EUROCONTROL highlighted the growing impact of GNSS interference on European airspace. NATO SACT SEE underscored the importance of long-term capability planning and provided an update on the current NDPP cycle. EAG introduced steps to increase capability through interoperability, and the NATO Space CoE reported progress in doctrine and education. EATC guided participants through the fundamentals of the Air Transport Command's mission and outlined measures to improve efficiency in international cooperation within the TPT field.

### **European Safety and Security Professionals Network.**

The European Safety and Security Professionals Network (SSPN) organisation brings together specialists from industry, academia, civilian law enforcement, and the military. Its aim is to share ideas, discuss challenges, and ultimately create or update best practices. JAPCC participated in the SSPN Seminar in 2025 and delivered a JAPCC Mission Brief. Participation in the SSPN allows JAPCC to maintain its understanding of developments in the civilian environment, including industry and academia, and to compare these with those in the military. This, in turn, enables JAPCC FP SMEs to capture best practices and input this into the entire spectrum of JAPCC FP work. The network benefits from JAPCC input into several academic activities within The Hague University of Applied Sciences (THUAS) curriculum and provides opportunities for THUAS Safety and Security Management Studies (SSMS) students to apply for Internships at JAPCC. The JAPCC hosted three THUAS SSMS interns, from September 2025 to March 2026, and has already received

strong interest from at least three potential Internship candidates for 2026 to 2027. Furthermore, THUAS facilitation of the SSPN also provides a mechanism for the JAPCC to develop both the Asset Protection Handbook and, eventually, an International Standard for Asset Protection.

### **Engagements at NATO Steering Bodies**

JAPCC personnel fill chairmen, co-chairman, and panel positions on numerous NATO steering bodies and provide custodianship of several NATO doctrine documents, as highlighted below.

#### ***Chairmanships***

- Air Operation Working Group: this group has recently absorbed the functions of the disbanded Air Transport Working Group (ATWG);
- Co-chair the Maritime Air Coordination Conference;
- NATO Air-to-Air Refuelling Working Group (AARWG) and NATO AAR Workshop (NAFAG endorsement);
- Doctrine, Organization, and Interoperability (DOI) Panel, subordinate to the NATO Allied Joint Force Protection Working Group (FPWG);
- Nimble Titan Wargame Control Group and Analysis Team;
- DEU Hypersonic Workshop with Fraunhofer;
- Joint Capability Group Unmanned Aircraft Systems Terminology Working Group (JCGUAS TWG);
- Co-chair the NATO STO SCI-SET-353 task group on C-UAS Mission-Level Modelling & Simulation;
- Co-chair the NATO STO AVT-359 Study about Hypersonic capabilities.

#### ***Panel Member/Working Group***

- Allied Joint Operations Doctrine Development Working Group (AJOD WG);
- BMD Operational User Group;
- Counter-UAS Working Group;
- NATO Allied Joint Force Protection Working Group (FPWG) and ACO Force Protection Advisory Group (FPAG);
- NATO Helicopter Interservice Working Group (HISWG);

- Helicopter Operations from Ships other Than Aircraft Carriers Working Group;
- Integrated Air and Missile Defence Policy Committee;
- Maritime Operations Working Group;
- Maritime Tactical Operation (Fixed-Wing) Working Group;
- Maritime Unmanned Systems Steering Board;
- Personnel Recovery/Search and Rescue Working Group;
- Cross Domain Command Concept (CDCC) Working Group.

## Doctrine Development and Standardisation (Custodianship & Contribution)

Over the last year, the JAPCC has held the following custodianships, and led or participated in the following doctrine development and standardisation efforts:

### Strategic Policy and Joint Doctrine (Level 1 & 2)

- MC 485/2: NATO Suppression of Enemy Air Defences Policy (Custodian);
- MC 0656: Policy for Force Protection of Alliance Forces (Custodian);
- AJP-3.3: Allied Joint Doctrine for Air and Space Operations (Custodian);
- AJP-3.14: Allied Joint Doctrine for Force Protection (Custodian);
- AD 80-25: ACO Force Protection Directive (Co-Custodian);
- Key Contributions: MC 064/12 (EW Policy), AJP-3.6 (Joint EW), AJP-3.20 (Cyber), AJP-3.29 (Space), and NATO IAMD Policy.

### Air Transport and Air-to-Air Refuelling (AAR). JAPCC maintains the core standards for AAR interoperability:

- ATP-3.3.4 Vol I & II: Air Transport and AAR Doctrine (Custodian);
- ATP-3.3.4.2 Series: The primary AAR technical suite, including Clearances, Aircrew Certification, Tanker Capabilities, and the Technical Compatibility Matrix (Custodian);
- Technical Standards: ATP-3.3.4.5 (Boom-receptacle), ATP-3.3.4.6 (Probe-Drogue), and ATP-3.3.4.7 (Signal Lights).

### Tactical Air & Helicopter Operations

- Custodian for the ATP-3.2.49.3.2 (Helicopter Air Movement TTPs);
- Custodian for the ATP-3.2.49.3.5 (Helicopter Support to C3 TTPs);
- Custodian for the ATP-3.2.49.3.6 (Helicopter Direction and Control of Fire TTPs);
- Maritime-Air: Custodian/Contributor for MPP 02 Vol I (HOSTAC), Vol II (MTACCOPS), and AJP-3.3.3 (Air-Maritime Coordination);
- CAS & Interdiction: AJP-3.3.2 and ATP-3.3.2.1;
- Airborne Ops: ATP-3.3.4.4 TTPs for NATO Airborne Operations (Custodian).

### Emerging Domains & Specialised Support

- Unmanned Systems (UAS): ATP-3.3.8.1 (Training Requirements) and ATP-3.3.8.2 (TTPs), plus ATP-117 (Countering Class I UAS);
- Force Protection: ATP-3.3.6 (Force Protection Doctrine for Air and Ground-Based Space Activity);
- Logistics & Maintenance: ALP-4.3 (Air Forces Logistics), ALP-4.3.1 (Site Survey), STANAG 3430 and AASSEP-13 (Allied Aircraft Cross-Servicing) (Custodian);
- Future Doctrine: Drafting the proposal for NATO Agile Combat Employment (ACE) Doctrine.

# 2026 Outlook

## Future Projects

**Integrating UAS in the ISTAR Cycle.** Capitalising on LI/LL emerging from recent operations and employments, this new project focuses on Class I drones, as they represent a key area of interest in the near future due to the exponential growth of their technical capabilities. Specifically, the project will explore how Class I UAS affect ISR processes and targeting in current and future warfare, while maintaining strong consideration of relevant information on Counter-UAS operations and ongoing studies on the topic. Release in 2026.

**White Paper: Operational Planning for Multi-Domain Operations.** The Alliance's Warfighting Capstone Concept and the 2022 Strategic Concept established Multi-Domain Operations as a core warfighting imperative, with ACT's transformation agenda targeting MDO-enabled Alliance capability by 2030. The term and associated concept is gradually flowing into all aspects of NATO activities, with cascading effects on relevant and associated publications, for example the Cross-Domain Command Concept, which affects AJP-5 and related publications.

While attending various pertinent working groups, JAPCC AirC2 SMEs have collected and processed their contributions into the subject white paper or study, in a continuous attempt to synthesise recommendations on how the Air Component's planning and execution could evolve into an MDO posture.

The paper aims to propose how, keeping in mind the unique capabilities and attributes of air power and air assets, the existing planning process could be adapted to fully leverage all capabilities across domains within the context of MDO.

Most initiatives on MDO focus on technical aspects, as MDO relies on establishing shared situational awareness and understanding, which necessitates the use

of technology. However, MDO is not solely reliant on technology; it primarily represents a shift in mindset from focusing on service capabilities to domain capabilities. This shift requires a new approach to C2 and to the planning of the utilisation of capabilities of all components across domains. The current planning process is service-centric rather than domain-centric.

A contribution on mission command, currently being pursued via several ACT/ACO initiatives, is under consideration for potential treatment in a follow-on document.

**Asset Protection Handbook (FP).** The JAPCC has always considered this project to be a long-term initiative. It is the forerunner to developing an International Organisation for Standards (ISO) standard for asset protection. The concept captures best practices from industry, academia, civilian law enforcement, and the military and sets it down using common terminology that each cohort can recognise.

Within the military across NATO, one of the biggest single challenges, as discussed in the 2021 JAPCC white paper 'NATO Force Protection on a Knife-Edge', is the current lack of expertise and experience in the field of FP. Within air forces, this is coupled with an over-focus on advanced air platforms, without the commensurate investment in war-fighting enablers, such as FP.

The Asset Protection Handbook Project is designed to capture the core of FP knowledge developed within NATO since the Cold War and to meld it with knowledge and best practices from academia and industry in the field of what is referred to as safety and security management and industrial security, the civilian equivalents of FP. The purpose of setting down this information in a single publication is to create a foundation for the consideration of the issue of Asset Protection. This, in turn, will create a set of robust underpinning principles and supporting practices for FP.

The outcome should be to remove the need to regularly revisit and reword FP publications, which is currently the case and delivers little, if any, advancement in considering or understanding the subject. Progress with this project has continued throughout 2025. It is intended to deliver a first complete draft by mid-2026.

**White Paper on Future Carrier Strike Groups.** This paper examines the current and future requirements of carrier strike groups (CSG) with a focus on European nations' carrier requirements. This paper will discuss not just the capital ships, but all the elements of an effective CSG. The white paper began in late 2024 and will be completed in 2026.

**Autonomous Collaborative Platforms (ACP), Concept Study.** Having followed closely the sixth-generation aircraft and weapon system development, such as the USAF F-47, USN FA-XX, GCAP and FCAS, JAPCC is developing a concept of employment and a wargame in support of ACP concept development within NATO. These emerging unmanned platforms can perform missions autonomously while accepting commands from human operators. ACPs can conduct diverse missions, including 'loyal wingmen', also known as Collaborative Combat Aircraft (CCA), transport, air refuelling, and can potentially serve as live training aids. The CONEMP and wargame development began early 2025 and will conclude in 2026.

**Artificial Intelligence Handbook.** The advent of large language models (LLMs), a new form of artificial intelligence (AI), introduced new powerful capabilities and attracted growing attention to this field. These developments have prompted new research in NATO and across nations to investigate the applicability of these emerging AI capabilities, supported by established AI methods such as deep learning, in the military domain to enhance military processes and enable autonomous or semi-autonomous systems. Soon, new AI-empowered tools will support human operators in most critical military processes, and even AI agents will be employed to fulfil time-consuming structured tasks.

In this new emerging AI landscape, military personnel, especially the decision-makers, should not only under-

stand the basic principles of AI but also the challenges and risks it presents. This handbook, set to be published in early 2026, aims to introduce AI to the general audience, provide use cases and potential future scenarios, and discuss the legal and ethical challenges this technology presents.

**White Paper on Multi-Tactical Data Links in MDO; A Formula for Success Through Benchmarking.** NATO's Digital Transformation Strategy includes cloud computing, artificial intelligence and machine learning, next-generation networks, cybersecurity architectures with zero-trust principles, quantum technologies, space-based capabilities, Federated Mission Networking and data-centric governance. Consequently, Tactical Data Link Management (TDLM), its education and training approaches within the Alliance, and the command structure linked to NATO and national TDLM may require re-evaluation to enhance NATO and European preparedness. We can no longer afford a fragmented approach to sharing tactical data. Instead, modern TDL standards must be complemented with contemporary communication methods. Adapting to the increased complexity associated with emerging technology, together with the growing demand for interoperability, requires a new vision affecting the NATO command structure and the national TDL workforce. Based on best practices, and by analogy with the US Joint Interoperability Division Training Cell, the paper proposes for a NATO JID-TC as the primary training institute for transferring E&T in building the necessary Multi-Tactical Data Networks (MTN) and Joint Data Networks (JDN) architecture in an MDO setting. This research paper is expected in spring 2026.

## 2026 Events

**19–20 May 2026 Periodic ACT CoE Accreditation Visit:** As the first accredited and largest NATO CoE, the JAPCC continues to set the standard for support to Sponsoring Nations and NATO in Joint Air and Space Power thought and analysis. However, as the Centre prepares its Annual Report and completes the Periodic Accreditation Questionnaire, one trend emerges across the last several years of reporting: the JAPCC is

continually challenged by personnel shortfalls, and the personnel fill rate has steadily decreased over time. One factor impacting the JAPCC and other domain-focused CoEs is the growing number of niche CoEs being proposed and approved by ACT.

The proliferation of increasingly specialised Centres of Excellence across the NATO enterprise, now numbering in excess of 30 accredited institutions, has introduced a structural tension that domain-focused CoEs like JAPCC absorb disproportionately. Each newly accredited CoE draws from the same finite pool of national personnel, expertise, and sponsorship commitment. Nations operating within constrained defence budgets and personnel ceilings cannot indefinitely expand their CoE contributions without reducing their depth elsewhere. The cumulative effect is a fragmentation of subject matter expertise across institutions with overlapping remits, whilst the foundational CoEs tasked with the broadest analytical mandate – and therefore the highest SME requirements – find themselves competing for the same national billets as organisations with narrower and more recently defined scope. A further structural disincentive is the fact that CoE billets do not count towards national NATO capability targets. This continues to suppress contributions to existing centres while the number of accredited institutions grows.

This dynamic is not a criticism of the CoE model. It is a consequence of its success, and a sign that governance has not kept pace with growth. The original CoE framework was designed to concentrate recognised expertise in a specific area of military activity. That logic is sound. What it was not designed to accommodate is an environment in which accreditation becomes a routine mechanism for institutionalising niche capabilities that might more efficiently sit within an existing CoE's programme of work. Where a proposed CoE's remit falls within the analytical scope of an established institution, the default position should be consolidation, not accreditation. JAPCC's assessment is that the Alliance would be better served by consolidating subject matter expertise around the five primary warfighting domains than by continuing to expand the number of accredited institutions.

### **1–2 July 2026: Steering Committee (SC) and Senior Resource Committee (SRC) Meetings.**

The annual SC meeting serves as a platform to update the Sponsoring Nation Air Chiefs or their designated Flag or General Officer representatives, on the JAPCC PoW, the Director's priorities, and the current state of the Centre. This meeting also allows the Committee to offer strategic guidance for the future PoW.

The SRC, which oversees legal, financial, personnel, infrastructure, and other administrative matters on behalf of the Sponsoring Nations, follows immediately after the SC meeting. It reviews the decisions made during the previous day's meeting and conducts the normal budget review, including a summary of the past year and the current year's execution.

### **22–24 September 2026: The Joint Air and Space Power Conference, Grugahalle, Essen, Germany.**

2026 will mark the first-ever co-location with the newly established Euro Defence Expo (EUDEX), <https://www.eurodefenceexpo.de/defence-industry/>, a major new defence trade fair launching in 2026. Although successfully hosted in the modernised Grugahalle for the first time in 2025, this year's conference represents an important next step, bringing together JAPCC's high-level strategic forum with a large-scale European defence trade fair in one coordinated setting.

While the Joint Air Space Power Conference and EUDEX remain distinct events with separate programmes and audiences, their co-location creates several advantages. JAPCC conference participants have full access to the EUDEX, from 22 to 25 September 2026, allowing them to visit the trade fair at their convenience. A jointly hosted networking event further enhances opportunities for informal engagement across both communities.

By pairing JAPCC's established conference with the inaugural EUDEX, the 2026 edition creates a unique opportunity for thought leadership, capability development, and defence innovation to come together in one location for the first time.

**November 2026: Think Tank Forum (TTF).** Following the success of previous events, the 13<sup>th</sup> TTF will maintain and enhance the high level of collaboration and information sharing among participating nations. This year's forum will be held at JAPCC Kalkar, returning home after two years of being hosted by HQ AIRCOM event. The forum will continue to bring together national and international entities, including Air Warfare Centres, HQs and staff, and A&S-related academic institutions. The event will be structured to allow participants to share their PoWs and engage in innovative syndicate work, focusing on key priorities and fostering strategic discourse, and for the first time will be combined with JAPCC JASPN meeting in November 2026.

**November 2026: Joint Air and Space Power Network (JASPN) Meeting.** In November, building on the successful work of previous events, the 2026 JASPN meeting aims to sustain and enhance the high level of collaboration and information sharing among participating organisations. This year's meeting will continue to foster strategic discourse and knowledge exchange, reinforcing JASPN's pivotal role within the Joint Air and Space Power community.

**The JAPCC Digital Edge: Meeting Technological Evolution Head-On.** In response to chronic personnel shortfalls that now represent a structural rather than cyclical challenge, the JAPCC launched the Digital Edge initiative in early 2026. The initiative is designed to minimise the operational impact of unfilled billets by enhancing the efficiency and reach of available subject matter expertise, not to substitute for it. Warfighting remains a human endeavour, and the

analytical rigour that defines JAPCC's output cannot be replicated by process or tool alone. What the Digital Edge initiative can do is ensure that the expertise JAPCC does have is applied with maximum effect: reducing administrative burden, accelerating research cycles, improving knowledge management, and enabling SMEs to concentrate on the high-value analytical work that nations and NATO commands depend on. Three lines of effort structure the programme: analytical workflow modernisation to reduce editorial bottlenecks; publications and communications to build organic digital production capacity; and digital dissemination to extend product reach and reduce print dependence. Progress will be reported to the Steering Committee at the Summer 2026 SC/SRC meeting, where nations will be invited to consider how the initiative complements, but does not replace, their obligation to fill flagged billets and explore sponsorship opportunities for unflagged ones.

## Conclusion

This report documents a year of substantive output across every pillar of CoE work. We remain committed to delivering the rigorous, independent analysis the Alliance requires – analysis that translates operational reality into the doctrine, concepts, and products that improve the Alliance's collective ability to deter and defend.

Should you require further information regarding the JAPCC or our work, please do not hesitate to contact us via email at [contact@japcc.org](mailto:contact@japcc.org) or visit our website at [www.japcc.org](http://www.japcc.org).







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