

Joint Air Power Competence Centre



2008 ANNUAL REPORT





■ Introduction

In 2008, JAPCC built upon its hard-earned reputation as NATO's pre-eminent think tank for developing and enhancing Joint Air and Space Power today and into the future. We continue to maintain a close relationship with both Allied Command Transformation and our Sponsoring Nations, providing timely and relevant advice and products.

We are proud of our accomplishments this year, which you will see summarized within this report. I want to especially highlight our NATO Future Joint Air and Space Power (NFJASP) concept and the Space Operations Assessment for NATO. Both these important projects were completed in 2008 and are generating follow-on actions within NATO and our nations. The NFJASP lays out a coherent picture at how we might look at Command of Joint Air Power in an emerging network enabled future. We are working with the Bi-Strategic Command (Bi-SC) to incorporate aspects of NFJASP into Alliance Concepts. Aspects of this work were further developed in another paper, Air Power in Countering Irregular Warfare, which looks at modern contemporary operations, particularly the doctrinal changes Air faces in this challenging arena.

The Space Operations Assessment garnered general support for its overarching finding that NATO needs to move forward in developing Space policy and doctrine, but numerous considerations are continuing to slow Alliance progress. We continue to engage at the Strategic Command and National levels to find suitable ways to incorporate the Assessment findings into the NATO military and political process.

Throughout the period, we have enjoyed a reasonably stable manning situation, with our nations maintaining manning at around 85%, and all major leadership positions filled. Our reassessment and change in expertise required for some vacant positions has already borne fruit, with Italy committing to fill a new Future Space position this summer. Two other nations have also identified individuals to fill positions that have been vacant for a year or longer. The financial support provided through our Senior Resource Committee continued to provide full funding of our budget. We appreciate the emphasis by all the sponsoring nations to fully fund the travel requirements of their bid positions. Perhaps the best news of the year in the framework of the JAPCC was Hungary's reversal of their decision to leave the JAPCC and the announcement of their plans to re-fill their bid position this coming summer.



Our Annual Air and Space Power Conference continues to grow in attendance and impact. This year we hosted over 220 attendees, including 60 flag officers from across NATO and partner nations. The JAPCC Journal also continues to be a successful avenue to share our work, along with contributions of our industry, government, and academic colleagues, on the Air and Space innovations important to us all.

We look back to 2008 as another successful year in supporting NATO and our Nations, but more importantly look forward to 2009 with determination to raise the bar even higher.

Friedrich Wilhelm Ploeger
Lieutenant General, DEU AF
Executive Director JAPCC



Mission Priorities in 2008

- Provide high-quality and timely customer support with Joint Air and Space expertise to inform and enable decision-makers
- Contribute Joint Air and Space expertise to Alliance decision-making processes through active leadership and participation in NATO committees, working groups and forums
- Develop and champion innovative visions, concepts and solutions for the transformation of Joint Air and Space Power
- Promote and showcase the effectiveness and relevance of Joint Air and Space Power as the critical element in Air, Land and Maritime integrated operations
- Partner with relevant NATO entities and nations to synchronise work and products



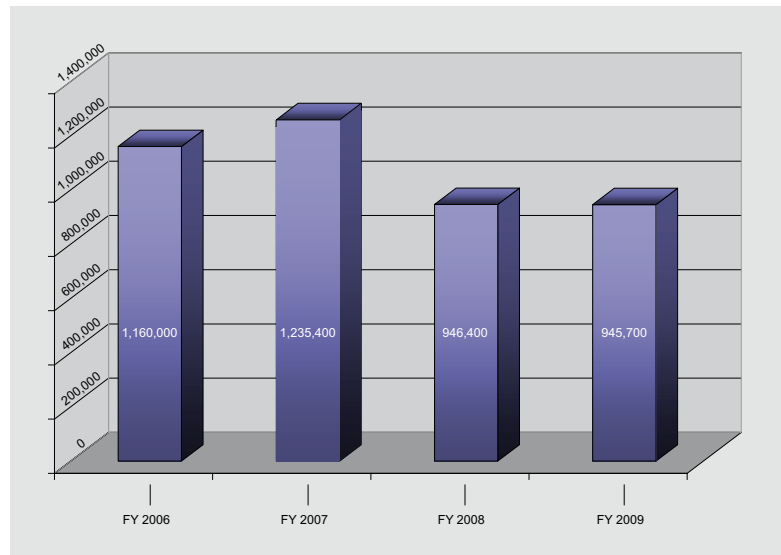


Who we are ...

Established in 2005, the JAPCC is a Centre of Excellence (CoE) able to contribute to the transformation of NATO's Joint Air and Space (A&S) Power. Our primary customers are HQ Allied Command Transformation (ACT) and other NATO HQs along with sponsoring nations.

Director's Vision

Be NATO's recognised agent for visionary and independent Joint A&S Power expertise.



Our Mission

Be the Joint A&S Power CoE for the Alliance and its Participating Nations, providing innovative and timely advice and subject matter expertise, both proactively and responsively. As a CoE, with a strategic and operational level focus, we offer independent thought, analysis and solutions, with the emphasis on enabling NATO's effective and efficient use of Joint A&S Power.

Organisation Structure

JAPCC is headed by Gen Roger Brady (USAF) as our Director and Lt Gen Friedrich Ploeger (GAF) as our Executive Director. Our Assistant Director for Transformation (ADT) is Air Cdre Garfield Porter, (RAF) while our Assistant Director for Capabilities (ADC) is Air Cdre Jan van Hoof (RNLAf). In order to get the most out of available manpower and to remain flexible, JAPCC employs a matrix organisation structure. Although Subject Matter Experts (SMEs) are placed under specific branches, they may be aligned to one of several project groups directed by either ADT or ADC. Project Leaders are selected from our Branch Heads.

How we accomplish our mission

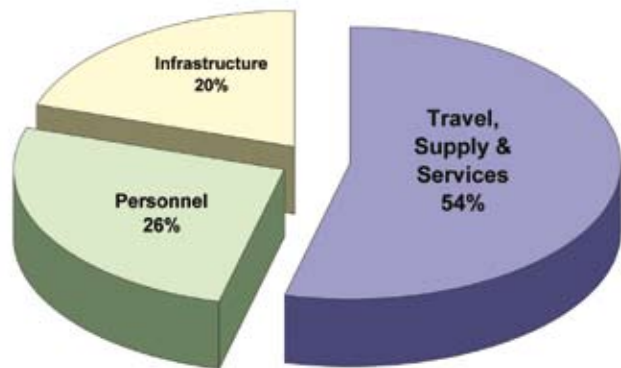
SME knowledge brought into the JAPCC organisation is funnelled through a strategic and operational focus. The resulting independent thought, analysis and solutions manifest in NATO forums, journals, industry days, seminars, panels and conferences in order to achieve the objective of "effective and efficient Joint A&S Power for NATO".

Budgeting and Finance

Based on the 3 year averages, the JAPCC yearly budget remains around 1 million Euros. However, due to the need for refurbishment of the JAPCC conference facilities, budget expenditures for 2006 and 2007 were higher than the average.

Sponsoring nations contribute to the budget according to the number of posts in their bid. The annual cost of each post in JAPCC is approximately 15.000 Euros.

For 2008, the JAPCC budget mainly consisted of travel, supplies & services (54%), personnel expenditures (26%) and investments for infrastructure (20%).





■ JAPCC 2008 Key Developments:

Mission Priority Supported:

Develop and champion innovative visions, concepts, and solutions for the transformation of Joint A&S Power

NATO's Future Joint A&S Power (NFJASP) Concept

NFJASP is a JAPCC capstone concept document, which guides future subordinate JAPCC conceptual work. This concept and its vision of network enabled, decentralized, mission command, intentionally pushed the boundaries of conventional thinking on Command and Control (C2). It is geared specifically to initiating an informed discussion on future possibilities for Command in the NATO A&S environment.

The paper also examines the likely impact of emerging technologies such as Space and Unmanned Aerial Systems (UAS) on future A&S Power.

The NFJASP paper was completed in 2008, approved by Gen Brady and presented to ACT for follow-on action.

NATO Space Operations Assessment

The aim of this project is to provide recommendations on the way ahead for NATO Space operations. C4ISTAR was the lead branch for the project and the project included development of a paper in response to issues raised by ACT.

As part of the project, a workshop on NATO Space Operations took place on 22 April 2008 at the JAPCC. This one day event was attended by 47 external participants from 31 NATO and National Organisations. The NATO Space Operations Assessment Report was issued and sent to ACT

on 26 May 2008 and the results of the Assessment have been briefed in various NATO, European and International Meetings and Conferences.

Battlespace Management

C4ISTAR led one of the Air Fora that JAPCC conducts every year. Air Forum 6 had the overall theme of Battlespace Management and took place at the JAPCC Conference Centre facility on the 12 June 2008. This one day event was attended by 25 external participants from 17 NATO and National Organisations. The output of the forum was a JAPCC paper, which was used as the primary read-ahead material for the 2008 JAPCC Conference.

Air Power in Countering Irregular Warfare

Following on from the 2007 JAPCC Conference and autumn 2007 Journal theme, the JAPCC produced a paper on the role of Air Power in Countering Irregular Activity. It incorporated aspects of the NFJASP and examined how Mission Command concepts and network enabled capabilities might help in addressing this difficult warfare area. The paper also highlighted the unique challenges for air in this type of operation and will be used to encourage and inform the development of NATO security and stability operations doctrine.

The Logistics Concept Study

A concept paper on the logistics support of NATO's expeditionary Joint Air Power was prepared. The paper provides a historical overview of military logistics doctrine and discusses the validity of those ideas in the future operations environment. It then lays out a new logistics concept, which introduces the NATO Maintenance and Supply Agency (NAMSA) as NATO's Logistics Lead Organisation for facilitating expeditionary contracts. The concept also suggests providing incentives for sharing logistics resources and capabilities on the battlefield. The study will shortly be distributed to the NATO logistics community.

UAS Flight Plan for NATO

This project has continued as a key piece of work within JAPCC. This is an area of importance for the Alliance and JAPCC published an updated version of the 2007 document in 2008. This edition was intended to make the document more useful to commanders in the field and provide an update regarding the 26 issues identified in the 2007 version. Several SMEs advised our team on operational





vignettes and potential scenarios where UAS could be employed. JAPCC hosted an Air Forum focusing on the UAS Concept of Employment (CONEMP), which brought in over 30 personnel from 10 nations to discuss the issues. We have received several positive comments about its value from various NATO organisations including ACT, stating that the Flight Plan “provides an excellent source of background information for anyone new to the subject and for operational ISR managers in the field.” They also stated “it is a good companion to the JAPCC Roadmap for Air C4ISR in NATO and helps to provide a comprehensive picture for a range of decision-makers.”

Close Air Support/Fratricide Prevention

The JAPCC finalized their inputs to STANAG 3797 Edition 4 which governs Close Air Support (CAS) and Forward Air Controller (FAC) training standards. Prior to its formal release there were many contested issues, in particular how best to set the standards for FAC training. Since the FAC has the operational authority to release weapons on a target under stressful combat situations, he must consider Rules of Engagement, Collateral Damage, and targeting effects, as well as friendly and neutral elements. It is critical to train the FAC to a specific standard. To this end, JAPCC helped the ACT IPT on Fratricide Prevention to develop the Mission Essential Task List (METL) for FAC training through various custodial and stakeholder meetings. STANAG 3797 Edition 4 was published and is now out for ratification. The combination of a significant rewrite of CAS procedures and inclusion of the METL for FAC training is rare for



NATO STANAGs. To our knowledge, this is only the second STANAG to include detailed METLs; the first was the standards set for the Euro-NATO Joint Jet Pilot Training. STANAG 3797 was briefed to the Air Operations Working Group (AOWG) in April 2008 for formal release to the Nations. This STANAG is a significant boost to Air-Land integration within NATO.

Mission Priority Supported:

Promote and showcase the effectiveness and relevance of Joint A&S Power as the critical element in Air, Land and Maritime integrated operations

2008 JAPCC Conference

The purpose of the annual JAPCC Conference is to provide an opportunity to debate A&S issues and aims to focus on areas of specific and timely interest. Each year a different Capstone project is selected and studied. Papers, reports and articles prepared on that subject are then publicized.

The 2008 Conference, as General Brady explained in his opening remarks, was to discuss how Joint A&S Forces can attain and maintain Decision Superiority in the 21st Century, particularly in the context of ongoing and future NATO Operations.

More than 60 flag officers and over 220 total attendees participated in two days of panel discussions and informal gatherings. General Karl Heinz Lather, Chief of Staff Supreme Headquarters Allied Powers Europe, gave the keynote address and spoke openly about the strategic perspective on Decision Superiority.

Major General Koen Gijsbers, ACOS C4I – ACT, explained ACT’s views on Decision Superiority and Air Commodore Garfield Porter, JAPCC ADI, gave a presentation based on a JAPCC paper outlining A&S and Decision Superiority in the 21st Century.

The panel topics of “C2 and Shared Situational Awareness,” “Battlespace Management (BSM)”, “Space as a Critical Enabler of NATO’s Operations”, and “Gaining Intelligence and Information Superiority” provided lively interaction.



The 2009 Conference is scheduled for 13–15 October 2009 and will focus on NATO at 60 – Challenges for Future Joint A&S Power.

JAPCC A&S Power Journal

The JAPCC Journal continues to be the window through which the world sees the JAPCC. Edition 7 of the Journal focused on the theme of “The Contribution of A&S in Battlespace Management” whilst Edition 8 introduced an open theme aimed at promoting discussion from across the A&S domain. Both journals, along with the archived previous issues, are available for review or download at <http://www.japcc.org>.

Mission Priority Supported:

Partner with relevant NATO entities and nations to synchronise work and products

The JAPCC continued to expand its leadership in the UAS role, partnering with external organisations and presenting our data at such events as EUROCONTROL’s UAS Workshop which was aimed at furthering the discussion on the future of UAS in non-segregated airspace within the Single European Skies Air Traffic Management Research (SESAR) project. Our UAS team also worked closely with the U.S. Joint UAS CoE, coordinating a visit by the JAPCC Executive Director to their facilities in Nevada. JAPCC also supported the NATO RTA SCI-186 project on C2 of Manned and Unmanned Aircraft.

NATO Special Operations Forces Aviation (SOF AVN) Development

In addition to hosting this year’s SOF AVN Conference, the JAPCC is providing air expertise to the NATO Special Operations Coordination Cell (NSCC) in its role of developing doctrine, procedures, and training standards for NATO SOF AVN. Our fixed and rotary wing experts have also provided SOF AVN lectures to both the NATO School and the Special Forces University.



Supporting NATO Joint Personnel Recovery (JPR) Capabilities

In support of the European Air Group, we have been providing instructor and evaluator support for JPR training at the Tactical Leadership Programme and their VOLCANEX CSAR exercise series. Our experts, through our Chair of the NATO SAR Panel and other venues, are developing standards for an upcoming JPR Centre course supporting ongoing operations in Afghanistan and future operations.

Mission Priority Supported:

Provide high-quality and timely customer support with Joint A&S expertise to inform and enable decision-makers

Multiple Futures Project (MFP)

JAPCC has participated in the ACT MFP from an early stage and has offered comprehensive inputs to the Military Implications section based on our expertise and content from the studies and concepts we have developed and are currently considering. These include, but are not limited to: NFJASP, the Deployable Airbase Activation Wing Concept, Airpower in Countering Irregular Warfare, the Air C4ISR Roadmap, the Space Operations Assessment, and the UAS Flightplan. We remain engaged with the project as it is presented to the nations in 2009 and stand ready to support follow-on issues related to A&S Power.

Afghan National Army Air Corps (ANAAC) C2 Development

The JAPCC was asked to review current and planned structures and processes within the ANAAC in order to enhance their operations and support future growth. The project primarily concentrates on Air Operations (G3 Air) within the ANAAC, but also touches upon other relevant functional areas such as, G2, G4, G5 and G7 where they contribute to planned G3 Air Missions. A first draft of the envisaged concept document was presented to and discussed with ACT and the Combined Air Power Transition Force (CAPTF), who mentor the ANAAC, and received overall agreement on structure, content and the planned way ahead. A visit to theatre provided a better understanding of the situation in Afghanistan. JAPCC has taken the numerous lessons identified from this trip, along with those from a one day seminar with C2 CoE, and written a comprehensive draft ANAAC CONEMP. It identified numerous areas in the near future that were missing from the initial planning and offered



guidelines for their mitigation. These, along with numerous constructive critiques of current and planned initiatives, have been sent to and were well received by CAPTF. Through diligence, the team has established a good rapport with theatre and is providing ongoing help by reviewing doctrine and practice. The primary follow-on to this work, as requested by CAPTF, is envisioned to be periodic “Op Assessment” visits to theatre in order to review their progress.

Conference and Exercise Support

In addition to hosting our annual conference, the JAPCC has been in high demand to present our views and products at numerous outside conferences and training venues throughout the year, some of the events where JAPCC speakers featured are listed below:

Support to NATO organisations:

- NATO School’s Space Operational Planning Course
- ACO Tactical Leadership Programme (TLP)
- NNEC 2008 Conference
- NATO Defence College
- ARRC Exercise Briefing
- Air Defence Panel Representatives of the International Staff
- CC-Air Izmir Air Symposium
- ARRC Air-Land Interface Conference

Support to National and External Agencies:

- RUSI Airpower Conference
- German Air Staff Seminar, Hamburg
- German Academy for Administration and Technology
- Kassel University
- D-A-CH Conference Berlin “Space power”
- Belgian Royale Military Academy (Staff College)
- SOF Course (Stuttgart)
- European Space Policy Institute (ESPI) Conference

- ILA, Space briefing to European Air Chiefs
- RUSI Conference on Space
- Spanish Air Force Alfredo Kindelan Chair Seminar
- Romanian “Carol I” National Defence University, Strategies XXI Seminar

General Project Information and Support:

- SOF Aviation Conference
- Battle Space Information Conference
- Space Warfare Symposium
- Intelligence, Surveillance and Reconnaissance Conference
- Conference on Future of UAVs
- Trans-Atlantic Space Cooperation Conference
- Air Surveillance and Reconnaissance Conference
- “NATO: The Road Ahead” Conference
- AUVSI 2008 Conference
- Network Centric Warfare Europe Conference
- Space Dual Use Conference
- Military Space and Satellite Systems Conference
- MILSPACE Conference
- Berlin Air Show
- UAS Conference 2008
- Avionics Conference 2008
- UCAS Conference 2008

Support to NATO and multi-national Exercises and Experiments:

- Trial Imperial Hammer 2008
- Common Shield 2008
- Steadfast Juncture 2008
- ARRCADe Fusion
- Steadfast Joiner 2008
- Coalition Warrior Interoperability Demonstration (CWID)

Mission Priority Supported:

Contribute Joint A&S expertise to Alliance decision-making processes through active leadership and participation in NATO committees, working groups and forums

SME Support for Defence Requirements Review 2011

The JAPCC has been contributing to the DRR 11 Aerospace Work Packages identified by both JAPCC and ACT’s Staff Element Europe (SEE) and has provided advice to ten of the Aerospace Working Packages. SMEs took part in the Aerospace Capability Area Group (ACAG) meetings as well as Planning Harmonisation Group meetings. Apart from traditional topics, some new topics such as NATO Space Capabilities were introduced where JAPCC can supply its unique expertise. In addition to the SME support, we are working with SEE for a more robust co-ordination role at Flag Officer level on A&S related packages.





NATO Panels and Working Groups:

JAPCC personnel fill chairmanship, co-chair and panel positions on numerous NATO steering bodies. We also serve as custodians of the NATO Air Transport and Air to Air Refuelling Doctrine, NATO Aerial Refuelling Procedures Manual (ATP 56B), the Air Logistics Doctrine, and the Force Protection Doctrine. In addition, we maintain active membership in the following NATO bodies, inter alia:

JAPCC Chair

- Air Operations Working Group
- Air to Air Refuelling Panel
- Force Protection Working Group
- Interoperability Panel Aerial Refuelling Systems Advisory Group (ARSAG)
- Joint ISR Panel
- Joint UAV Panel
- Search and Rescue Panel

JAPCC Co-Chair

- JTST steering group and the JTST O&T working group
- Lighting, Formation and Markings Panel for ARSAG
- Maritime Air Coordination Cell

Panel Member / Working Group

- Active Layered Tactical Ballistic Missile Defence Projects-Operational User Group (ALTBMD)
- AirC2IS Operational Users Group
- Air Command and Control System (ACCS) Communications Workshop
- Air Transport Panel (ATP)
- NATO Architecture Framework Management Syndicate (NMS)
- Bi-SC AIS Working Group
- Deployable Forces CIS Working Group
- DRR 11 Planning Harmonization Group (PHG)
- Helicopter Interservice Wing (HISWG)
- Info Ops Harmonization
- Information Knowledge Management (IKM) Workshop
- Innovative Operational UAS Integration (INOUI) Workshop
- Interconnection of Networks Workshop
- Imagery Management Group (IMG)
- JISR Integrated Capability Development Team (JISR ICDT)
- JISR Planning Harmonization Group
- Joint Capability Group on UAV (JCGUAV)
- Joint Intelligence, Surveillance, and Reconnaissance Capability Group (JCGISR)
- Movement and Transportation Forum (M&T)
- NATO Air Defence Committee (NADC)
- NC3B C3 Capability Coherence Sub Committee

- NC3B SC/7 Mode 5/Mode S Working Group in support of ACT
- NADC Panel of Air Defence
- Panel of Air Defence Drafting Groups 1 & 2
- RTA's Task Group SCI 186 on C2 for manned and unmanned Aircraft Ops
- RTO's Space Exploratory Teams

■ Ongoing Projects and 2009 Outlook:

UAS NATO Info Ops Harmonisation CONEMP in NATO

The JAPCC will continue to maintain the UAS database of information on systems and sensors and blend our hard-won expertise in this field into the CONEMP for UAS in NATO work that is currently underway. This CONEMP is one of the key issues identified in the UAS Flight Plan and the current working draft outlines UAS missions across the spectrum of conflict and along joint lines of operations such as air-land integration and air-maritime integration. We expect a final document later in 2009 and this will be submitted to the NNAD's Joint Capability Group for UAVs (JCGUAV). The CONEMP is a key document outlining the strategic missions and potential scenarios where UAS will be employed by NATO forces in the future and a concept for how UAS may contribute to NATO joint operations in the future.

A&S Power Training and Exercise Roadmap

A major project is to explore NATO A&S Power Training and Exercises. The study will explore the current training and exercise situation for A&S power, propose future training and exercising concepts and build a roadmap between the two. From this roadmap, the study will draw out gaps, shortfalls, implications and make recommendations. This project will focus at the operational and strategic levels looking out 10–15 years. We expect this project to compliment the Bi-SC study on NATO Education, Training, Exercises, and Evaluation (ETEE) review currently underway. The JAPCC plans to use information and lessons learned from this study to create a panel discussion at the 2009 JAPCC Conference.

Simulator Accreditation Standards and Process

As a part of the work already done on STANAG 3797 governing CAS procedures and FAC training, the JAPCC is co-hosting a conference to develop the procedures and standards for accreditation of simulators to be used for a portion of live controls in FAC training. STANAG 3797 allows for simulators to be used since the cost and number of required live controls is prohibitive, but the simulator must be



accredited specifically for this use. Currently NATO does not have any organisation or process to accredit simulators for FAC training. JAPCC took the lead in 2008 and will work with USJFCOM and ACT to bring together the stakeholders and develop the process, accreditation criteria, methods of assessment and recommendations for implementation within NATO. We expect this work to be completed by the end of 2009.

NATO Airborne Early Warning & Control (NAEW&C) CONEMP

As part of the JAPCC programme of work 2008, the C4ISTAR Branch worked on an initiative to develop a CONEMP for NAEW&C including the Mid-Term Upgrade programme. Since this effort is to be taken in cooperation with NAEW&C Force Command, through the standing Letter of Agreement, there was a delay until that organisation was able to commit manpower against the project. Initial meetings have been held at Geilenkirchen and Mons to determine the scope work needed and the JAPCC facilitated a workshop in mid-January 2009 to draft the NATO Mid-Term CONEMP which included input from the ACCs, FC, SHAPE and E3A Component personnel. A draft version is expected to be briefed at the Multinational AEW&C Commanders Conference in March 2009.



Special Operations TAC Support

At the request of the NSCC, JAPCC will support an effort to formalize the standards for a Special Operation Tactical Air Controller (SOTAC) within the current work on FAC standards and training. As a result of our work on STANAG 3797, the NSCC approached the JAPCC to help them navigate the doctrinal paths to creating this important capability within NATO Special Operations missions.

Mission Command in the Air Environment

Designed to examine the implications of the NFJASP Mission Command model across the potential levels of A&S command, this project will consider NATO's

current Command/Control hierarchy (OPCOM/OPCON/TACOM/TACON) against the demands of modern expeditionary, effects based and network enabled operations, before exploring whether more optimal arrangements could emerge. The study should provide an evaluation of the NFJASP model for Mission Command in A&S and will recommend how the Concept could be put to experimentation.

Leveraging NATO's Common (A&S) Assets in Non-Article V Operations

This project explores the C2 arrangements for NATO's common A&S assets and the degree to which they appear to vary. This may result in inefficiencies when such assets are needed to participate in operations. Moreover, there may be advantages in developing a standardised command template, adjustable to context, in order to improve Commanders' access. The project will consider present and future A&S assets, including, but not limited to, NAEW&C, Air Command and Control System (ACCS), NATO Air Ground Surveillance (AGS), and Interim Deployable Combined Air Operations Centres (IDCAOCs), as well as a number of air mobility initiatives.

Programme of Work 2009	
Air/Flying Training Concepts	<ul style="list-style-type: none"> • NATO Joint A&S Training and Exercising Roadmap
Air Interoperability	<ul style="list-style-type: none"> • UAS Concept of Employment • Air to Ground Operations Improvement • Force Protection Doctrine for Air Operations • ANAAC C2 Architecture
Air Access and Control	<ul style="list-style-type: none"> • Enhancing NATO Air Policing Mission • Integrating Missile Defense in NATO IADS • A&S Contribution to Special Operations Forces
Access to Space Domain	<ul style="list-style-type: none"> • Developing Combined Space Operations • Support to NATO Command Structure
Joint Air Power Competence Centre Römerstraße 140 · D-47546 Kalkar · Germany Tel.: +49 (0) 28 24/90 22 09 Fax: +49 (0) 28 24/90 22 74 NU mail: dos@japcc.de/ Nu web: www.japcc.org NS mail: JAPCC DIR DOS NS web: nww.rfas.nato.int/JAPCC	

Joint Air & Space Power Conference

NATO

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***Challenges for
Future Joint Air & Space Power
Kleve 13th - 15th October 2009***



Registration form available online early 2009 at www.japcc.org

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Joint Air Power Competence Centre

Römerstraße 140
D-47546 Kalkar
Germany

www.japcc.org