



ASSOCIATION
OF OLD CROWS



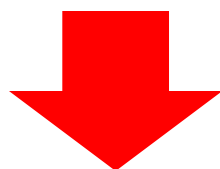
JOIN THE LEGACY,
SHAPE THE FUTURE



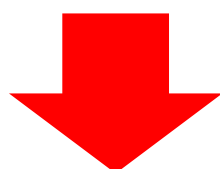
Region 1 report

- **September 2024**

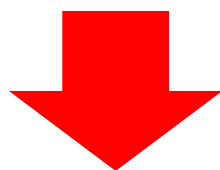
- Current knowledge and understanding



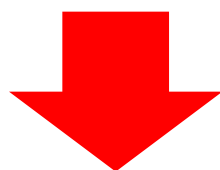
- Legislation, policy, doctrines & SOPs



- Capability development




- Capability development, procurement and fielding of capabilities




- Lack of ability to manouvre and fight in the electromagnetic spectrum

Enclosure to
PO(2019)0012

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NORTH ATLANTIC MILITARY COMMITTEE
COMITÉ MILITAIRE DE L'ATLANTIQUE NORD



28 November 2018 MCM-0206-2018

SECRETARY GENERAL, NORTH ATLANTIC TREATY ORGANIZATION

EROSION OF MILITARY SPECTRUM

References:

- A. MC 0188/2 (Final), NATO Policy on the Use and Management of the Radio-Frequency Spectrum, 16 Oct 17.
- B. AC/322-N(2011)0122-AS1, Capability Panel 3 Chairmanship and Terms of Reference, 29 Jun 11.
- C. AC/322-N(2018)0075, Erosion of Military Spectrum, 26 Jul 18.
- D. C-M(2015)0050-AS2, NATO Joint Civil and Military Frequency Agreement (NJFA) 2014, 11 May 18.

BACKGROUND

1. The Radio Frequency (RF) spectrum is a finite resource. Ensured access to sufficient harmonised RF spectrum is vital for NATO capabilities and the execution of Alliance operations.
2. As per Reference A, the NATO Consultation, Command and Control Board (C3B) Civil/Military Spectrum Capability Panel (CaP 3) is the sole competent source for advice and decisions on the management of the RF spectrum within the Alliance. CaP 3 responds directly to the MC on matters of an urgent operational nature falling within its Area of Responsibility, according to the Terms of Reference at Reference B.
3. CaP 3 identified increasing pressures on civil administrations that place RF spectrum resources in use by military users at further risk and submitted its concern to the C3B. The Military Session of CaP 3 has expressed its concern on eroding military spectrum at Annex 1 to Reference C. The document has been noted by the C3B and is enclosed for your convenience (Enclosure 1).

AIM

4. To convey to Council the concerns of increasing military spectrum erosion and the request for council advocacy, as raised by CaP 3.

CONSIDERATIONS

5. Failure to guard against the erosion of military RF spectrum poses a risk to the Alliance's ability to conduct efficient and effective operations.
6. Civil regulatory authorities of each NATO Nation regulate national RF spectrum. Defence ministries are not directly responsible for RF spectrum regulation.

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ELECTROMAGNETIC SPECTRUM STRATEGY



October 2019

3
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“All operations that **shape** or **exploit** the electromagnetic environment or use it for **attack** or **defence** including the use of the electromagnetic environment to **support operations** in all other operational environments.”

- *NATO EMS Strategy 2021*

Goal 1: Institutional Awareness and Advocacy.	Goal 2: Effective Joint Electromagnetic Operations.	Goal 3: Robust EMO Capabilities.
<p>Create strategic awareness and message the importance of the EMS and EMO to comprehensive Alliance operations and readiness.</p>	<p>Develop EMO policy, concepts, and doctrine to codify NATO's actions to integrate EM capabilities and Tactics, Techniques and Procedures (TTPs) within the Joint Effects structure, military operations, and across NATO forces.</p>	<p>Develop capabilities to dynamically plan, direct, monitor, and assess EMO and to increase EMS related intelligence and information sharing.</p>
<p>Establish a team to lead implementation of this strategy.</p>	<p>Create an EW or EMO NATO training Discipline in order to rigorously and coherently train EMO.</p>	<p>Ensure the NDPP increases NATO's EMS resilience and combat capability across the full range of future Alliance missions.</p>
<p>Optimise NATO's personnel capacity and organisational approach to conduct electromagnetic operations.</p>	<p>Integrate EMO into NATO and Allied live, virtual, and constructive training and exercises with realistic presentations of a congested and contested EME.</p>	<p>Generate robust EMS-related technical interoperability through agreed data and information standards, formats, and criteria.</p>

Expand and harmonise partnerships and sponsors to enable the Science and Technology Organisation to further explore the military implications of rapidly advancing EMS technology.

How does AOC fit into NATO's implementation of EMO?

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- For the 2024 annual report on progress in implementing the NATO EMS Strategy – the NATO session at AOC Europe in Oslo, and the work with AOC is specifically mentioned!
- NATO’s Bi-Strategic HQs are aware of AOC as a forum for advocating EW and EMO between military and industry, and between the EW and EMO community and government.

Goal 1: Institutional Awareness and Advocacy

a. Objective (G101 | Leadership): **Create strategic awareness of the critical importance of the EME and EMO to Alliance operations and readiness.** It is critical to communicate broadly and clearly the importance of the EME and EMO to all Alliance activities and missions.

(1) **What:** Conduct public and industry engagements, and publish articles in NATO, national, and military periodicals; sponsor research and development studies, support transformational activities, and disseminate intelligence products focused on EMO.

(a) Done: The NATO Civil/Military Spectrum Capability Panel (CaP3) is preparing to advocate for spectrum resource allocations in support of NATO military requirements at the 2023 World Radiocommunication Conference (WRC-23) to be held in Dubai, United Arab Emirates (UAE).

(b) Done: NATO Special Session to The Association of Old Crows (AOC) “Future Challenges Associated with Delivering NATO Joint Electromagnetic Warfare” coordinated and executed by NATO Air Force Armaments Group (NAFAG) and Sub-Group 2 on EW Protection Measures for Joint Services Airborne Assets.



International Advisory Committee Report

**Thank you to the AOC Staff and the IAC
members for their support!**



POST EVENT REPORT

ALLIANCES AND COLLABORATION IN SUPPORTING MULTI-DOMAIN ELECTROMAGNETIC WARFARE OPERATIONS

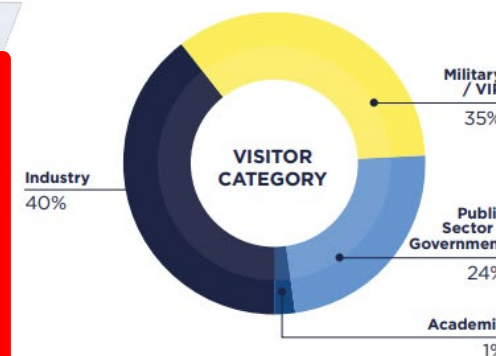
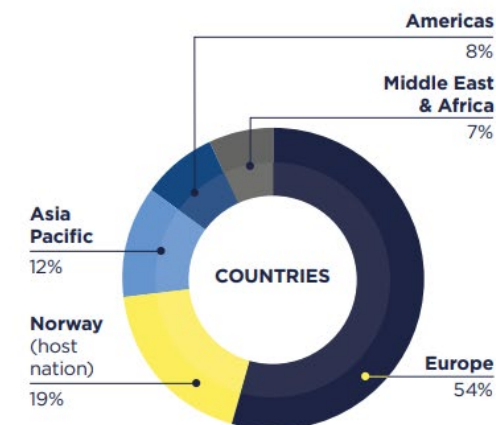
The event continues to see the highest visitor growth in its history, marked by a significant milestone of a **20%** increase in total attendance.

AOC EUROPE 2024 13-15 MAY 2024, OSLO, NORWAY

Event Attendees

The event continues to see the highest visitor growth in its history, marked by a significant milestone of a **20%** increase in total attendance.

International presence also saw an increase, with delegates from **46 countries** marking their attendance, further establishing the need in our community for discussions around electronic warfare and continuing to establish that AOC Europe is the leading European event for electromagnetic spectrum operations.



Exhibitor Results

Exhibitors highlighted the importance of the event to their organisations, with over **95%** in agreement that AOC Europe is Europe's leading event for electromagnetic spectrum operations. Furthermore, our exhibitors consistently highlight the importance of returning to AOC Europe, with **90%** indicating their likelihood to return.



92%

were able to meet prospects likely to become clients.



82%

consider AOC Europe the ideal platform to meet their key prospects.



95%

of exhibitors were able to achieve their primary objective of meeting customers whilst attending.



97%

of exhibitors were able to achieve their secondary objective of networking with colleagues and peers.

Visitor Highlights

Our visitors continue to emphasise the significance of the event, as well as the want and need to stay informed on the latest industry trends and innovations. In addition, the community consistently shows their support for the event, with over **85%** voicing their overall satisfaction with AOC Europe 2024.



94%

of visitors consider AOC Europe the leading event for Electronic Warfare.



Over 80%

consider AOC Europe to be important to their business.



98%

were able to achieve their primary objective of keeping their selves up to date on industry topics.



89%

valued the multiple opportunities to network whilst at AOC Europe 2024.

\$729,306

AOC Korea 2024

- **See separate report by Dr. Haruko Kawahigashi.**
- **Can this event be extrapolated into an initial (mini) EW Asia?**
 - **Dr. Bob Andrews` recommendation is to not proceed with an EW Asia at present.**
- **The IAC view is that we should move on with an AOC Asia for next year (2025).**

Future: AOC Europe

- **2025 Rome, Italy**
 - **The conference theme is already being looked at**
 - **Booth sales and sponsors looks like it will exceed 2024**
- **2026 Poland, Warsaw**
 - **Bob will look at possible venue in Warsaw on Oct 31st**