MODERN COMBAT MEANS OF WARFARE SUMMARY

EUMACS 2025

29th MAY 2025

DĘBLIN

PAFU

LTC. Daniel Michalski

EXPERTS

Brig. Gen. PhD Mariusz CHMIELEWSKI – Deputy Commander of the Cyberspace Defense Forces Component

Brig. Gen. Marcin GÓRKA – Director of the Innovation Department of the Ministry of National Defense

Col. Pil. Jacek JANOWSKI – Commander of 12th Unmanned Aerial Vehicle Base in Mirosławiec

Col. Przemysław JAWORSKI – Chief of the Integrated Air and Missile Defense Division of the Armament Agency

Strategic Threats

Space Militarization

Growing vulnerabilities in satellite infrastructure pose new strategic concerns. **i.e. nuclear space-based weapons**

Cyber Threats

European forces face sophisticated cyber intrusions targeting critical systems.
Cyber pre-kinetic effects

Air Threats

Hypersonic missiles
and Combat drone swarms present an evolving threat requiring new countermeasures.

Drones

AI-driven autonomous swarms
Camouflage and stealth drone tactics
Kamikaze drones with facial-recognition targeting
Electronic warfare drones (jamming/GPS denial)
Solar-powered HALE drones with ultra-long endurance

Technological and Operational Challenges

Space Conflict Lessons

Recent conflicts reveal vulnerabilities in satellite-dependent operations.

Offensive Cyber Readiness

Europe's capability for „active” cyber operations requires assessment.

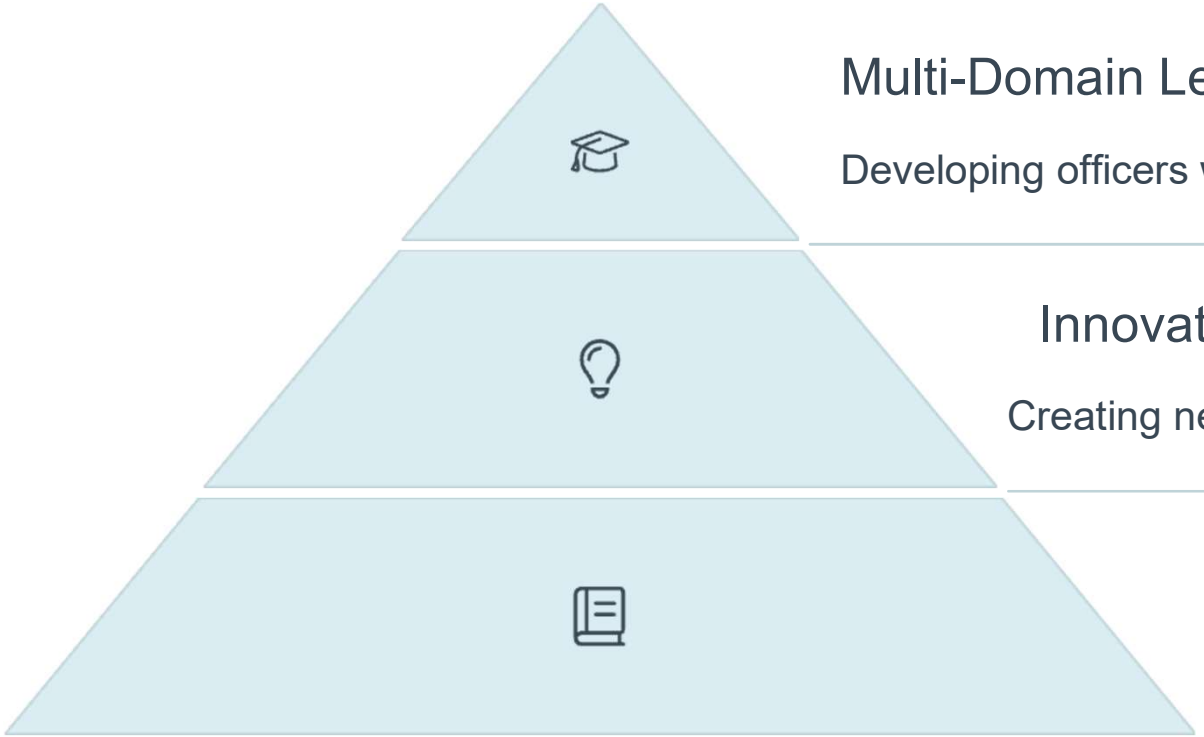
Building a unified, layered IAMD architecture in Europe

high cost, technological fragmentation, and asymmetry of threats

Integration Hurdles

Combining drone and manned systems presents complex challenges.

The Role of Military Academies



Multi-Domain Leaders

Developing officers who understand integrated warfare

Innovation Hubs

Creating new capabilities through research and development

Foundational Education

Building expertise in emerging warfare domains

Recommendation 1

Specialized Domain Education and Innovation Networks

Domain-Specific Programs

Establish dedicated tracks for space operations, cyber warfare, and autonomous systems. These programs will create specialized officer expertise.

European Innovation Network

Link academies with defense R&D institutions and industry partners. Student-led projects will drive technological advancement.

Practical Innovation

Focus on tangible projects like solar-powered UAVs and cyber-defense sandboxes. Hands-on experience accelerates learning outcomes.

Recommendation 2

Multinational Exchange

Expand programs like **International Air Defence Semester** across domains. Rotational semesters build interoperability skills.

Joint Tactical Simulations

Collaborative exercises involving cadets from multiple EU nations. Focus on joint staff integration capabilities.

Resilience Operations

Train officers for degraded environments without GPS, communications, or AI systems. Adaptive leadership under constraints.

Joint Operations and Resilience Training


POLISH AIR FORCE UNIVERSITY
Q & A
Thank you
Dziękuję!