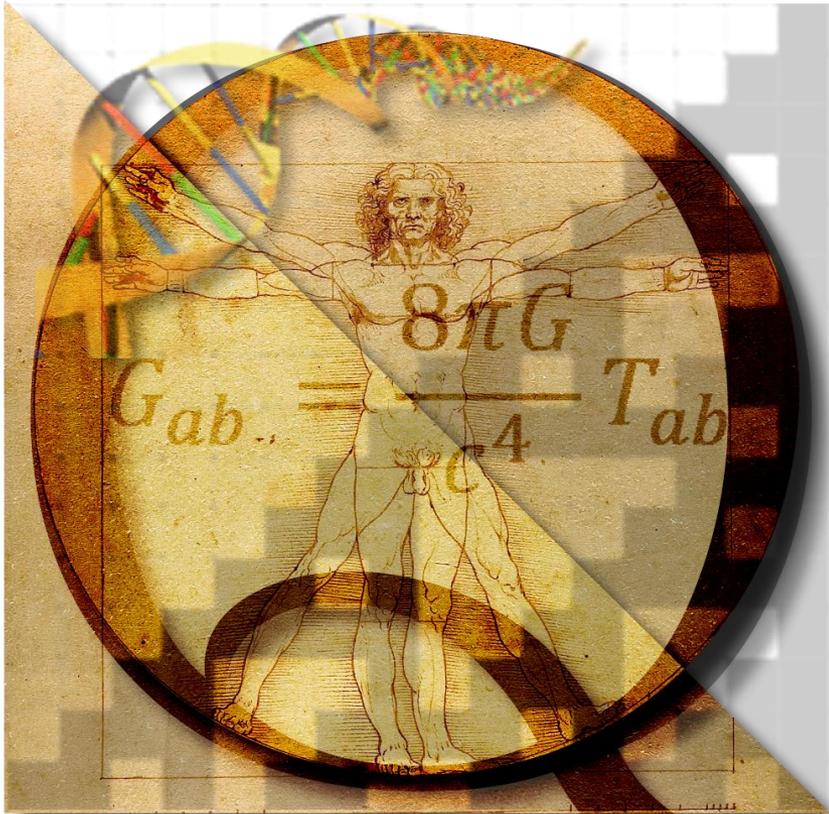


# USEUCOM Science & Technology



## Science and Technology Vision

An innovative team of experts pursuing technological solutions that sustain and further develop the forces that underpin enduring stability and peace in Europe and Eurasia

**“Leveraging technology to make us stronger together”**

James Wiltz  
Science Advisor  
ECJ8-C, S&T Branch



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**European Command**  
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# EUCOM J8-Q Science & Technology Team

Sourced by RDECOM and NAVSEA  
Funded by RDECOM, NAVSEA, and OSD

Fully integrated as EUCOM AOs



**James Wiltz**  
EUCOM Science Advisor



**Joe Fagan**  
TaCBRD OM  
Keystone OM



**Wayne Weishaar**  
Senior Naval  
Engineer



**Mike McGuinness**  
Deputy Science  
Advisor



**Steve Spehn**  
Deputy Science  
Advisor (Fwd)



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# European Security Environment

## Strategic Context

- NATO
- Russian Aggression
- Fragile/Failing States on the Periphery
- Political
- Economic
- Demographic
- Arctic

## Opportunities

- Credible Deterrence
- Enable NATO 4.0
- Defense Capability Development
- Comprehensive Security Partnerships
- Transatlantic Relationship
- Cross Command Coordination

## 3 - Threats

- Russia
- Terrorism
- Iran

## 5 - Unresolved Conflicts

- Ukraine
- Georgia (S. Ossetia and Abkhazia)
- Moldova (Transnistria)
- Azerbaijan-Armenia (Nagorno-Karabakh)
- Balkans (Kosovo, Bosnia)

## 6 - Challenges

- NATO Cohesion/Capability
- Foreign Terrorist Fighters
- Trans-Regional Threats
- Missile Defense Capacity
- Cyber
- Threats to Turkey

CCDR Focus: Indications & Warning • Resourcing • Forces



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# USEUCOM Challenges

## Eastern Flank

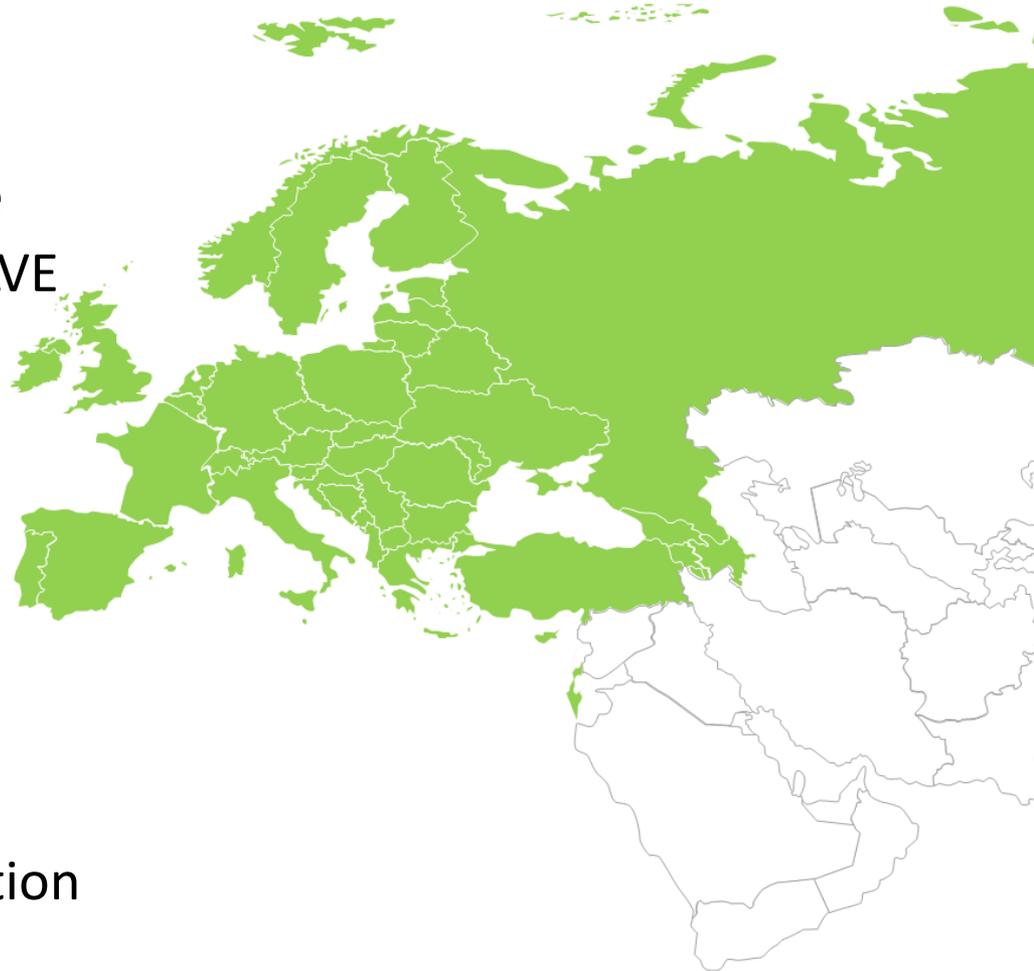
- Revanchist Russia
- Russian invasion of Ukraine
- Operation ATLANTIC RESOLVE

## Southern Flank

- ISIL, Foreign Fighter Flow
- Illicit trafficking/migration

## Northern Flank

- Arctic expansion/militarization



# USEUCOM Challenges

## Eastern Flank

- Revanchist Russia
- Russian invasion of Ukraine
- Operation ATLANTIC RESOLVE



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# USEUCOM Challenges

## Southern Flank

- ISIL, Foreign Fighter Flow
- Illicit trafficking/migration



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# USEUCOM Challenges

## Northern Flank

- Arctic expansion/militarization

### Oil and gas in the Arctic

Area north of the Arctic Circle has an estimated 90 billion barrels of undiscovered oil.

Probability of finding oil, gas

50-100%



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# USEUCOM Commander's Priorities

- **Enable the NATO Alliance** to assure, deter, and defend itself against emergent threats.
- **Deter aggression** and malign influence towards Allies and partners across USEUCOM AOR.
- **Ensure** postured and ready forces and strategic access to execute USEUCOM's high priority contingency plans and to support other combatant commands.
- **Preserve** our strategic **partnerships** by:
  - Sustaining relationships with highly capable Allies
  - **Strengthening** recently developed **partner capacity, capability, and interoperability**.
  - Maintaining regional stability and security.
- **Counter Transnational threats** by working with and through allies, partners, the interagency, other combatant command and public-private partnerships.
- Focus on key relationships by:
  - Enhancing security on Europe's **Eastern Flank**.
  - Preparing forward, in, and for the **Levant and Mediterranean**.
  - Strengthening ties with emerging Alliance leaders.
  - Seeking greater cooperation for military support to civil authorities that enable the peaceful opening of the Arctic.



# USEUCOM S&T Challenges (1/7)

**Integrated Air and Missile Defense:** Improve the ability to defend against Large-Scale Attacks, Dense Raid Sizes, and Structured Attacks

- **Sensors:** Improve sensing capability of indications and warning of BMD attack, left of launch detection.
- **Trackers:** The ability to track exponentially greater number of targets with increased precision.
- **Defeat:** The ability to engage a greater number of targets at lower cost.



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# USEUCOM S&T Challenges (2/7)

**Anti-Access / Area-Denial (A2/AD):** Anti-access (A2) strategies aim to prevent U.S. forces entry into a theater of operations. Area-denial (AD) operations aim to prevent their freedom of action in the more narrow confines of the area under an enemy's direct control.

- Enhance capability to conduct “standard” operations in an A2/AD environment
- Positioning, Navigation, & Timing (PNT)
- Command and Control (C2)
- A2/AD Defeat



# USEUCOM S&T Challenges (3/7)

**Intelligence, Surveillance, & Reconnaissance:** Improve the ability to detect, locate and monitor transnational threats and increase the availability of persistent ISR assets

- Improve tagging, tracking, locating sensors to allow them to be maintained and deployed at a CCMD level
- Improve availability of persistent ISR assets

**Cyber:** Provide a Cyberspace Common Operational Picture (CyberCOP) to ensure freedom of action to support power projection, protect C2, execute networking and engagement activities, defend transactional information



# USEUCOM S&T Challenges (4/7)

**Electromagnetic Spectrum Management:** Provide capability to continue normal military operations in a electromagnetically contested environment

**Command and Control Interoperability:** Improve capability to leverage partner and allied capabilities to support common goals



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# USEUCOM S&T Challenges (5/7)

**Space Resiliency:** Improve the ability for CCMDs to use space in a contested environment against transnational threats.

- Develop low cost, rapid response space launch capability
- Develop modular bus with size, carrying capacity, power, and maneuverability to enable mission oriented “capability sets” (communications, data relay, optical or electronic ISR sensor) to be plugged in as operational requirements are generated.



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# USEUCOM S&T Challenges (6/7)

## Counter-Unmanned Aerial Systems

- Improve capability to detect and track all classes of UAVs.
- Improve capability to engage, kinetically and non-kinetically, UAVs which are deemed a threat to U.S. or allied interests.
- Improve capability to prevent adversary capability to, kinetically and non-kinetically, counter U.S. or allied UAVs.



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# USEUCOM S&T Challenges (7/7)

**Maritime Surface and Subsurface Operations:** Increased capabilities to perform surface and subsurface operations within contested maritime environments.

- Unmanned Undersea Vehicle technologies
- Communication technologies
- Intelligence, surveillance, target acquisition, and reconnaissance
- Improved detection and tracking of submarines and undersea vehicles



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# Example of Desired Effect

U.S. Army Europe (USAREUR) went from 300,000 troops during the Cold War, to 30,000 today

- We need the technology to:
  - Give 30,000 the strategic deterrence of 300,000;
  - Give 30,000 the tactical impact of 300,000; and
  - Enable our allies with the same force multipliers



# Questions?

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