



U.S. ARMY

THE IMPORTANCE OF SENSING AND COUNTER-SENSING:

In the future operating environment, the ability to sense and deny sensing will determine who prevails.

The Army must enable decision advantage for our Soldiers, Joint and coalition partners.

KEY TAKEAWAYS:

- Deep Sensing: Enables situational awareness and decision-making at extreme distances.
- Counter-Sensing: Protects the force and denies enemy decision advantage.
- Human-Machine Integration: Combines AI and human expertise to enhance intelligence operations.
- Army Initiatives: Focus on AI, quantum sensing, and resilient networks.

Vendor Opportunities:

- AI-Enabled Sensors: Autonomous sensors processing data at the edge.
- Quantum Sensing: Precision detection in denied environments.
- Resilient Networks: Self-healing networks for DDIL conditions.
- Electronic Warfare Tools: Systems to locate and disrupt adversary sensors.
- Attributable Platforms: Low-cost, reusable platforms for high-risk missions.
- Advanced Analysis Tools: AI tools for operational visualization and predictive analysis.

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CENTRAL IDEA & SOLUTION

Army intelligence leverages robust and adaptive human-machine integrated formations to collect, manage and analyze information. Supported by Joint, inter-agency and multinational partners, Army intelligence provides the right knowledge at the right time and place to inform decisions necessary to prevail across the continuum of competition and conflict.

Components of the Solution

1. Collect and ingest data
 - Employ AI-enabled, resilient, adaptive, autonomous and redundant meshed sensor networks
 - Leverage sensors hosted on non-intelligence platforms
 - Use AI tools to ingest relevant data from partners and open sources
2. Manage, analyze and share information
 - Operate distributed, adaptive and flexible analysis nodes capable of analysis on-the-move
 - Leverage AI tools to assist with operational environment visualization and predictive analysis
3. Enable targeting and decisions through understanding
 - Model the threat's warfighting systems to identify vulnerabilities
 - Provide intelligence support to counter-C2, counter-sensing, trans-discipline counter-intelligence, multi-domain targeting, sustainment and protection
 - Inform friendly and disrupt adversary

FUTURE SENSING AND COUNTER-SENSING

The Army is modernizing its Intelligence Warfighting System to address the challenges of the Future Operating Environment. The Army will enhance friendly sensing capabilities while disrupting adversary sensing and decision-making.

Key Initiatives

- Deep Sensing: Collecting and accessing sensor data across all domains with precision and range
- Assured Sensing: Overcoming adversary deception, counter-sensing and DDIL conditions
- Smart Sensing: Dynamically tasking the best sensors to mitigate gaps and seize opportunities
- Human-Machine Integration: Leveraging AI to reduce cognitive burden and enhance analysis
- Counter-C2 and Counter-Sensing: Denying adversary C2 and collection capabilities
- Advanced Threat Models: Developing detailed models of adversary warfighting systems

Impact:

These initiatives ensure that Army intelligence can operate effectively in contested environments, maintain decision dominance and deny adversaries the ability to sense and target friendly forces.



OPERATIONAL CONTEXT

The Future Operating Environment will be shaped by:

- DDIL Conditions: Denied, degraded, intermittent and limited communications
- Threat Counter-Sensing: Adversaries will target friendly sensors and networks
- Deception Across Domains: Adversaries will use masking and false narratives
- Massive Data Volume: Data validity will be uncertain and variable
- Advances in AI and Autonomy: AI will enable faster decisions and autonomous sensors
- Compressed Decision Timelines: Decisions must be made at machine speed
- Distributed Operations: Forces will operate over vast distances
- Increased Battlefield Depth: Intelligence must penetrate deeper Military Problem
- How does Army intelligence enable Army, Joint and multinational forces to deter and, if necessary, defeat adversaries in the future operational environment?