

# Alamo ACE to AOC Symposium

*By Matt Thompson*

Last week I had the opportunity to attend the AFCEA Alamo ACE in San Antonio, Texas. It was a welcome break from preparing for AOC's own international symposium in December. The theme of ACE was "Enabling the high-end Fight." True to its theme, ACE focused on the front end of the fight, or the enablement.

The role of Data Management and Security was one of the topics discussed. In the intricate realm of electromagnetic warfare (EW), the ability to make swift, informed decisions is paramount. This is where the insights of Lt Gen Robert J. Skinner, Director, Defense Information Systems Agency and Commander, Joint Force Headquarters-Department of Defense Information Network, particularly his emphasis on "Achieving Decision Superiority: Managing, Securing, and Leveraging Data," become crucial. His presentation, comprised of several data principles, underscores the importance of not only gathering and sharing data but also effectively managing and securing it to gain a tactical edge in EW.

Lt Gen Skinner's principles provided a comprehensive framework for handling data in the context of EW. These principles, while emphasizing data gathering and sharing, also delve into the critical steps that follow.

- **Data Acquisition and Quality:** The first step involves acquiring high-quality, reliable data. In EW, this means gathering accurate electromagnetic spectrum data, which is essential for understanding the battlefield environment.
- **Data Processing and Analysis:** Once data is acquired, the next step is processing and analyzing it to extract actionable insights. In EW, this could involve identifying enemy frequencies or detecting patterns in

electronic interference.

- **Real-Time Data Sharing:** Rapid sharing of processed data among allies and within various military units is vital. This ensures that all parties have timely access to the same situational awareness, which is critical in a fast-paced EW environment.
- **Data Security:** Protecting this data from enemy interception and tampering is crucial. Secure communication channels and encryption become key in preserving the integrity of EW operations.
- **Data Integration and Accessibility:** Integrating data from various sources and ensuring it is easily accessible to decision-makers is essential. This integration allows for a more comprehensive understanding of the EW landscape.
- **Advanced Analytics and AI:** Utilizing advanced analytics and artificial intelligence can significantly enhance the processing and interpretation of EW data, leading to quicker and more accurate decision-making.
- **Continuous Learning and Adaptation:** Finally, the system must learn from past experiences and adapt. This involves updating algorithms and tactics based on previous outcomes to improve future EW strategies.

### **Beyond Data Gathering and Sharing in EW**

While gathering and sharing data are foundational in EW, the steps that follow are what truly determine success. After data is collected and shared, it must be securely managed and leveraged to achieve decision superiority. This involves several key processes:

- **Data Security and Countermeasures:** In EW, the risk of data interception or manipulation by adversaries is high. Implementing robust security measures to protect data integrity is crucial. This includes encryption, secure communication protocols, and countermeasures against electronic espionage.

- Actionable Intelligence Generation: The ultimate goal of data management in EW is to generate actionable intelligence. This means converting raw data into a format that can be easily understood and acted upon by military decision-makers. It involves not just identifying threats but also predicting enemy actions and understanding the implications of various EW strategies.
- Rapid Decision-Making: In the dynamic environment of EW, the speed of decision-making can be as critical as the decision itself. The ability to quickly process and interpret data to make informed decisions is a key advantage. This requires not only advanced technology but also well-trained personnel who can interpret data under pressure.
- Feedback Loops and Continuous Improvement: Finally, a feedback loop is essential. This means analyzing the outcomes of decisions and using this information to refine data collection, analysis, and decision-making processes. Continuous improvement in these areas ensures that EW strategies remain effective against evolving threats.

Lt Gen Leah Lauderback, Deputy Chief of Staff for Intelligence, Surveillance, Reconnaissance and Cyber Effects Operations, Headquarters U.S. Air Force, the Pentagon also discussed data. Complementing Skinner's principles, Lt Gen Leah Lauderback's vision on "Data for the Next Fight" advocates for a forward-looking approach in data utilization. This approach encompasses anticipatory intelligence, adaptive technologies, cross-domain integration, training and readiness, and enhanced collaboration. Lauderback's perspective stresses using data not just for current operations but also for anticipating and preparing for future challenges in EW.

- Synergizing Principles for Enhanced EW Strategies

The integration of Lauderback's vision with Skinner's principles creates a robust framework for EW. From Skinner's emphasis on data acquisition, processing, and sharing, to Lauderback's focus on anticipatory intelligence and adaptive technologies, this combined approach ensures a comprehensive understanding of the EW environment. It underscores the importance of not only gathering and sharing data but also securing, processing, and effectively using this data to maintain strategic and tactical advantages.

- Key Focus Areas for Future EW Operations

**Data Security and Countermeasures:** Protecting data from enemy interception and manipulation is crucial. This includes employing encryption, secure communication protocols, and countermeasures against electronic espionage.

- **Actionable Intelligence and Rapid Decision-Making:** Converting raw data into actionable intelligence and making informed decisions swiftly is key in the dynamic environment of EW.
- **Cross-Domain Integration and Collaboration:** Integrating data across different warfare domains and enhancing collaboration with allies and civilian agencies enriches data analysis and leads to more robust EW strategies.
- **Training and Continuous Learning:** Ensuring personnel are trained in data literacy and decision-making based on real-time data analysis is vital. Continuous learning and adaptation of strategies and technologies based on past experiences are essential for staying ahead of adversaries.

While true to its theme, there were some questions then went noticeably unanswered from ACE. First and foremost, what are the next steps towards achieving the above priorities? How does this data get to operators in real time during the fight? What are the critical decision-making steps from collection to actionable intelligence and data to our warfighters? There was

a great deal of emphasis on getting, compiling and wading through data to enable "better decisions" but very little on how those better decisions are made, and what makes them better?

There are many instances in the corporate world where decisions are slowed or postponed while data is compiled and analyzed. It will be important to remember that "paralysis by analysis" can be devastating in the warfare environment. We use many acronyms or small sayings while flying to keep moving forward with action. Aviate, navigate, communicate was one that was driven into all aviators early on. Needless to say that, as it turns out, crashing while communicating and making decisions is a less than ideal approach. The same principles can be applied to modern warfare. We cannot fall into the trap where the next piece of data is the all-important one. While agreement that better, faster, more accurate data is imperative, it will not stop the forward progress of combat. These and many other topics can be investigated further at the AOC international Symposium in December, where the theme is Advancing EMS Superiority Through Strategic Alliances and Partnerships.