The Future of Military Logistics

MCPIC 2025: Revolutionizing defense logistics

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As modern warfare grows more and more complex, defense logistics becomes increasingly challenging. Hundreds of thousands of assets, as small as microchips and as large as aircraft carriers, exist in thousands of locations around the world, in various stages of maintenance and repair and constantly in motion. Achieving Total Asset Visibility (TAV) is essential to managing these assets effectively.

The Marine Corps Platform Integration Center (MCPIC), supports inventory tracking through digital tagging of mission-critical equipment, allowing system users to access real-time data by leveraging automated identification technology and Internet of Things (IoT) sensors.

MCPIC now tracks over 1.1 million assets across the Navy-Marine Corps' operating areas. CGI has incrementally improved and enhanced the system, and has several new features and upgrades planned for 2025, enabling a complex ecosystem of interconnected virtual platforms for a unified defense logistics ontology.

Numbers: As mentioned above, MCPIC manages over 1 million assets across eight USMC multiple government locations including Navy and Marine Corps facilities and Defense Logistics Agency locations. Moreover, the Defense Property Accountability System, a Department of Defense-wide APSR, tracks facilities and Defense Logistics Agency locations. Moreover, the Defense Property Accountability System, a Department of Defense wide APSR, tracks 60 million assets for 50 DOD agencies and military organizations, giving a sense of the massive scope of defense logistics
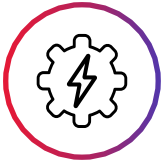
Distance and conditions: Military operations take place in remote locations, areas with little or no reliable network connectivity and in harsh weather conditions. Maintaining accurate information across such settings presents some very difficult technological puzzles.

Data quality and consistency: Tracking assets accurately requires high-quality, consistent data. However, most existing datasets have issues with quality or consistency. This challenge becomes even more complex when dealing with multiple asset tracking systems, as each may use its own data structure. As a result, reconciling information across these systems can be very difficult.

Security and efficiency: For effective management, data must flow freely, yet that can work against the imperative to maintain high security. Walking this tightrope is an essential capability for defense logistics.

Rapid changes: Things move quickly in technology. Capabilities can expand and take new shapes in weeks or months. On the darker side of the equation, adversaries can adapt the technology to create new threats and attack vectors with equal speed.

MCPIC: Pioneering the future of defense logistics

MCPIC supports inventory tracking through digital tagging of mission-critical equipment, allowing system users to access real-time data by leveraging automated identification technology and Internet of Things (IoT) sensors.

Keeping an inaccurate count, or shipping the wrong items to deployed warfighters, creates enormous logistical issues and added costs. Common original stock was mistakenly taken on mission or exercise, or deploying equipment that is about to go out of warranty, expire, or require maintenance—which can render it useless in the field. MCPIC leverages an advanced Internet of Things (IoT) infrastructure built on radio frequency identification (RFID) technology for comprehensive asset visibility and management. The system employs a suite of IoT end devices, robotics and sensors strategically placed on equipment and materiel for total asset assurance. An extensive network of fixed and mobile RFID readers continuously captures asset location and status data, transmitting it in real-time through secure WiFi networks to centralized command and control systems. The Marine Corps Logistics Command launched MCPIC in 2017, but the system's prototype at Blount Island Command near Jacksonville, Fla., had begun much earlier. MCPIC is at Tech Readiness Level 9—the highest—at the Marine Corps Enterprise Network.

MCPIC has evolved and expanded. It has become a well-rounded logistics solution, offering Total Asset Visibility, real-time tracking, predictive maintenance, and data accuracy. By integrating advanced technologies such as IoT, AI, RFID, and edge computing, MCPIC ensures that military operations are efficient, transparent, and fully accountable.

MCPIC's comprehensive service offering

As MCPIC has evolved and expanded, it has become a well-rounded logistics solution, offering:

• Requirements evaluation and gap analysis

• Customized training programs and change management

• Streamlined procurement processes

• ATO accreditation

• Business process re-engineering for optimal efficiency

• Custom applications and SaaS solutions

• Strategic operational planning and optimization

• Real-time asset tracking and location services

• Automated inventory management and reconciliation

• Movement validation and chain of custody tracking

• Environmental condition monitoring

• Integration with existing DOD logistics systems

• Advanced analytics and reporting

CGI has continually evaluated emerging technologies such as artificial intelligence for their potential utility in MCPIC, and incorporated them when useful functions have become apparent. Today MCPIC offers AI-driven data cleansing and normalization, and has evaluated a distributed ledger system for data integrity and traceability. We are continuing to explore augmented reality and virtual reality for training and maintenance support, along with AI and machine learning for predictive analytics and decision support. MCPIC will continue to become more powerful and innovative as these technologies.

Financial management

Tracking physical assets is only one aspect of defense logistics. Financial management is a key part of the undertaking. As assets move from point to point, their financial information must move with them – whether that entails actually moving data from one system to another, or updating financial records to accurately capture the assets' current locations. Financial data is a key aspect of compliance audits, and MCPIC plays a role in ensuring that data is accurate and correctly correlated to assets. The USMC achieved its first unmodified audit opinion—the highest audit result possible—in FY23. Tagging assets that feed data into ERP systems is foundational to managing both physical and financial asset data. The financial data provides the accountability that military organizations demand. With all of the assets tagged, the data associated with that asset updates automatically—whether the data remains in the same system or moves.

CGI understands accurate logistics information and real time asset visibility is critical to modern military operations. MCPIC is constantly improving the functionality of MCPIC interfaces with the client's APSR to automate data analysis to improve efficiency, data quality and location accuracy of enterprise logistics material. One key innovation is the API between MCPIC and DPAS which uses sensor data to automate container and item move transactions between the two systems for the Marine Corps Consolidated Storage Programs Class II Inventory.

CGI's acquisition of Aeyon in 2024 significantly expanded its defense sector capabilities. Aeyon brought extensive experience in USMC operations, with proven expertise in help desk support, enterprise interface management, data cleansing operations and audit compliance support. This strategic integration enhances CGI's overall defense portfolio, bringing together Aeyon's specialized defense expertise with CGI's enterprise-scale digital services. The combined strengths of both organizations position CGI to deliver increasingly sophisticated solutions across the defense logistics and asset management landscape.

Modernization

System modernization is the key to both physical asset management and financial accountability. One of the significant challenges is identifying and valuing assets, especially in large-scale operations like those of the Navy and Marine Corps. Legacy systems often fail to communicate effectively, which hinders accurate asset tracking and financial reporting.

Modernization also provides a path to improve cybersecurity, which takes on critical importance with military operations. Keeping information out of the hands of enemies can be a matter of life and death in times of war—or even in peacetime when international tensions are high. Modernized systems provide security features and capabilities that older systems simply cannot.

Systems modernization isn't a one-and-done proposition, however. Ongoing efforts to modernize systems, cleanse data and support audits are crucial to maintaining and replicating successful audit opinions. Staying on top of evolving complexities in defense logistics and financial management is essential for continuous improvement.

Looking ahead: MCPIC's vision for 2025 and beyond

At CGI, we are continuously innovating and enhancing our solutions and services. While MCPIC has already achieved significant milestones, our roadmap for the future is even more ambitious. We are expanding MCPIC's capabilities through cutting-edge technologies that complement our robust IoT ecosystem:

- Advanced AI and machine learning integration for predictive analytics and autonomous decision support
- Edge computing solutions to enhance real-time processing and reduce latency
- Digital twin technology for improved simulation and testing
- Quantum computing applications for complex optimization problems
- Extended Reality (XR) interfaces for enhanced visualization and training
- 5G and future network technologies for ultra-reliable, low-latency communications

A crucial driver of our future innovation comes from our strategic partnership with George Mason University. Our recent sponsorship of GMU student research in artificial intelligence, distributed ledgers and Internet of Things management is already yielding promising results. This research will help shape the next generation of MCPIC features, including:

- Enhanced secure decentralized data management
- More sophisticated real-time asset tracking capabilities
- AI-powered user support systems
- Advanced sensor fusion and data analytics
- Blockchain-based security and authentication protocols

Recognition and marketplace presence CGI's commitment to innovation in defense logistics has been recognized by key Department of Defense initiatives. MCPIC has been assessed as "Awardable" by the Tradewinds Solutions Marketplace (TSM), the Department of Defense's premier platform for artificial intelligence, machine learning, data, and analytics capabilities. This designation signifies that MCPIC meets the rigorous standards required for government procurement and has been evaluated through complex scoring rubrics and competitive procedures.

The Tradewinds Solutions Marketplace, housed in the DOD's Chief Digital Artificial Intelligence Office, serves as a digital repository of post-competition, readily awardable solutions that address the Department of Defense's most significant challenges. Government customers can access detailed information about MCPIC's capabilities through the TSM platform at www.tradewindai.com.

This recognition reinforces MCPIC's position as a leading solution for defense logistics challenges, particularly in its innovative use of AI/ML capabilities for asset tracking, financial management, and predictive analytics. The Tradewinds assessment process specifically highlighted MCPIC's:

- Innovation in IoT integration and real-time asset tracking

- Scalability across multiple defense organizations

- Potential impact on critical DOD missions

- Advanced AI/ML capabilities for data cleansing and normalization

- Integration capabilities with existing DOD logistics systems

Get in touch

Take the next step in transforming your asset management capabilities with MCPIC. Our team is ready to demonstrate how this revolutionary platform can enhance your organization's efficiency and decision-making power.

Request a personalized demonstration

Experience MCPIC's capabilities firsthand through a tailored demonstration focused on your specific needs and challenges. Our expert team will:

- Walk you through MCPIC's core functionalities

- Showcase relevant use cases and success stories

- Provide hands-on exploration of the platform

- Answer your technical and operational questions

Connect With Our Team

Ready to learn more: www.cgifederal.com/defense

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