

Prescriptive Logistics

Proactive, adaptive and mission-driven assets

The Department of Defense must adopt prescriptive logistics to transform supply chains into proactive, adaptive and mission-driven assets.

In the battlespace, prescriptive logistics empowers operational commanders with real-time, AI-driven recommendations that ensure the right supplies, ordnance and fuel are delivered to the right place at the right time under contested, disrupted and distributed conditions. At the enterprise level, it optimizes sourcing, routing and prioritization to reduce cost, strengthen resilience and ensure compliance with FIAR standards. By moving beyond forecasting to prescribing the best course of action, prescriptive logistics directly links strategic sustainment with operational readiness, giving the Joint Force a decisive advantage throughout the competition continuum.

The Department of Defense supply chain is among the largest and most complex in the world, yet it remains heavily reliant on reactive processes and predictive models that stop short of providing actionable solutions. Current logistics systems can identify shortages or forecast future demand, but they do not prescribe the best way to resolve disruptions across contested, global and multidomain environments. This creates critical vulnerabilities:

- Warfighters face delays in receiving mission-essential supplies and resupplies,
- Commanders lack decision-ready options under time pressure and
- The enterprise absorbs inefficiencies that waste resources and erode resilience.

Without transitioning to prescriptive logistics, where AI and advanced analytics recommend and enable optimal courses of action the DoD risks supply chains that cannot adapt at the speed of conflict or sustain the Joint Force in high-end operations. To close the gap between predictive forecasting and actionable sustainment, the Department of Defense must implement prescriptive logistics powered by AI&ML. Prescriptive logistics provides commanders and enterprise leaders with real-time, optimized recommendations for sourcing, routing and prioritization, ensuring that supplies flow effectively even in contested and rapidly changing environments. Achieving this transformation requires several deliberate actions:



- **Data Integration and Governance:** Establish authoritative, interoperable logistics data sources that feed AI/ML models, ensuring accuracy, timeliness and audit compliance.
- **AI/ML Model Development:** Build advanced algorithms capable of forecasting demand, simulating disruption scenarios and prescribing the best courses of action across the supply chain.
- **Operational Experimentation:** Pilot prescriptive logistics capabilities in wargames, exercises and live operations to validate decision recommendations and refine trust in AI outputs.
- **Automation and Decision Support Tools:** Deploy AI-enabled platforms that provide commanders and logisticians with clear, actionable options, while enabling automation of routine logistics tasks.
- **Training and Culture Shift:** Equip the logistics workforce with the skills and confidence to employ AI/ML tools, ensuring human-machine teaming is optimized rather than resisted.

Solution Outcomes

Deploying MANTECH developed Prescriptive Logistics, the most advanced stage of logistics evolution (beyond reactive, proactive and predictive) produces outcomes that transform operational efficiency, decision quality and mission readiness across defense, federal and commercial domains.

- **Optimized Decision-Making and Resource Allocation:** AI-driven recommendations identify the best possible logistics actions based on cost, risk and mission impact.
- **Increased Mission Readiness and Resilience:** Prescriptive analytics dynamically orchestrate supply, maintenance and distribution to prevent downtime.
- **Autonomous and Adaptive Logistics Operations:** Systems self-adjust to conditions (e.g., rerouting shipments, reallocating inventory, reprioritizing maintenance).
- **Reduced Cost and Waste:** Optimizes total lifecycle costs through demand forecasting tied to prescriptive maintenance and supply recommendations.
- **Seamless Integration Across the Enterprise:** Connects logistics, maintenance, operations and finance data into a single intelligent ecosystem.
- **Data-Driven Decision Dominance:** Transforms logistics data into prescriptive actions that enhance speed, precision and control. Provides leaders with “courses of action” rather than just situational awareness. Moves the enterprise from data-informed to decision-empowered.

MANTECH's Digital Edge

Our Digital Transformation HUB advances every mission and market we serve — from the tactical edge to the federal enterprise by delivering the digital advantage that connects people, platforms and data. We integrate Platforms, Automation, Analytics, Secure Cloud and Security & Identity Services to modernize how our customers operate, how decisions are made and how outcomes are achieved. Our Enterprise Application Services integrate finance, people, logistics and infrastructure operations driving enterprise-wide coordination and seamless collaboration across the Digital Hub and to our Sectors. Together, we turn digital innovation into mission acceleration — building a faster, smarter and more connected future for our DoD, Federal Civilian and Intelligence sectors.

Why MANTECH?

- **Mission and Functional Area Expertise:** We bring highly relevant experience that aligns directly with our clients' mission and operational needs, ensuring every solution supports their core goals.
- **Digital Transformation Technical Knowledge:** Our team's deep technical expertise and relentless commitment mean we're equipped to tackle complex challenges and see every project through to success.
- **Proactive Change Management:** We understand that true transformation requires more than technology—it demands a thoughtful approach to change. We help our clients navigate this process smoothly, refining business practices and increasing adoption for lasting results.

Let's Modernize Logistics Together

Connect with us to explore how MANTECH can enhance your agency's data strategy, governance, Logistics Systems and analytics capabilities.

In business more than 57 years, MANTECH excels in cognitive cyber, AI, data collection & analytics, enterprise IT, systems engineering and software application development solutions that support national and homeland security.

