

At a Glance

Information Technology

- Logistics Information Technology (LogIT) is focused on hardware and software systems for shipment planning, asset tagging, tracking, location, monitoring, data aggregation, analysis and display.
- Near term
 - ◆ Real-time tracking, delivery estimates and condition/status information anywhere in the supply chain
 - ◆ Small, inexpensive fuel and water quality monitoring systems for small unit operations
 - ◆ Log data visibility across multiple domains, available stores and available lifts
- Mid term
 - ◆ Ad-hoc secure interactive video systems to report, aggregate and display individual asset location, environment and condition from the individual to installation scale
 - ◆ Fuel quality-monitoring systems integrated with high-value vehicle assets
 - ◆ Recommended courses of action for transportation system optimization
- Far term
 - ◆ Zero infrastructure asset monitoring built directly into assets, requiring no user interaction
 - ◆ Fully autonomous logistics system, capable of proactively ordering and delivering based on evolving battlefield conditions

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Marines of the future will benefit from a precisely tailored level of logistic sustainment from sea-based platforms to rapidly maneuvering forces ashore. Logistic delivery systems of the future will be more responsive and flexible, enabling Marines to outpace rapidly changing operational scenarios.

Lift visibility—rapid booking and delivery



Cost-effective worldwide delivery

Likewise, delivered logistic commodities will provide more operational value per unit weight, enhancing combat unit self-sufficiency, energy efficiency and maneuverability. Finally, units will benefit from technologies that maximize awareness of equipment location and state of readiness.

The upcoming austere budget environment and our renewed focus on expeditionary warfare from the seabase demands cost-efficient sustainment solutions that can keep pace with the rapidly changing environment and respond proactively to demand signals from deployed forces. LogIT focuses on the science and technology to address those gaps.

All logistics information systems must be able to operate in the Department of Defense cloud and across classified and unclassified domains. Expeditionary warfare is unique from traditional in-transit visibility applications in that demands, destinations and available transportation capacity is constantly changing and disrupted by hostile actions.

The flagship LogIT effort, the Transportation Exploitation Tool, will provide a Secret Internet Protocol Router Network/Unclassified but Sensitive Internet Protocol Router Network bridge via a cross-domain function to cost-effectively plan worldwide shipments while avoiding more than \$20 million per year in transportation costs. Using prototypes, the Naval Supply Systems Command Global Logistics Support (NAVSUP GLS) has already realized more than \$28 million in cost avoidance, enabled via visibility into existing missions and lifts of opportunity.

Expeditionary asset visibility cannot depend on infrastructure. LogIT will focus on an in-transit visibility capability without a fixed (or deployed) infrastructure that operates invisibly to the forces without sacrificing fidelity. Near-real-time knowledge of location, condition and delivery times will enable just-in-time delivery without over-burdening intermediate stocking points or operating Marines.

Novel load planning tools driven by real-time demand signals will facilitate materiel stowage at the seabase and selective and timely offload.

NAVSUP GLS is the primary transition sponsor for LogIT technology solutions.

Research Challenges and Opportunities:

- Cloud architectures and cooperating intelligent agents
- Low-cost/low-power tags capable of operating without infrastructure for shelf life of supplies while transparently and securely feeding logistics information infrastructure
- Semantic Web interfaces to diverse, mature and sometimes unknown authoritative data sources
- Reduce weight, cost and fragility of monitoring systems while maintaining tactically effective accuracy