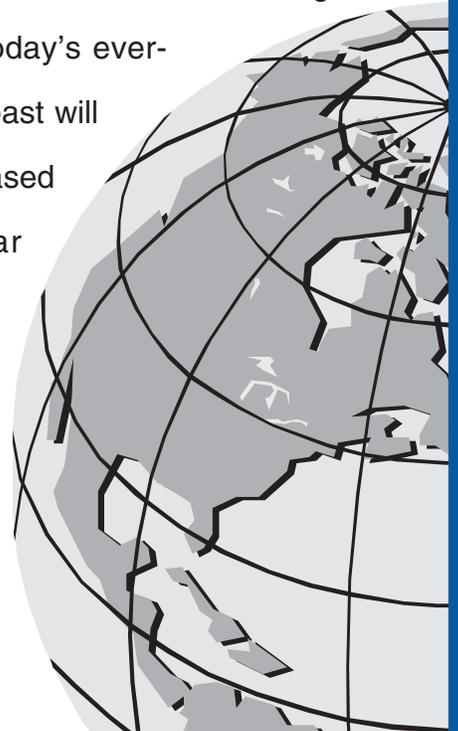




ECSS and Transformation

the way ahead

To effectively support the Expeditionary Air Force, an integrated logistics chain must establish better ways to respond to two critical warfighter questions: “Where is our part?” and “When will we get it?” Clearly, this is no small task in today’s ever-changing world. The solutions of the past will not work for the future. The garrison-based processes born out of the Cold War posture must be fundamentally rethought. Air Force logistics must also become more expeditionary—satisfy operational requirements, be rapid in its response, flexible in its structure, consistent in its delivery, reliable, and economical in its actions.





The Road to Success

Introduction

In order to meet the logistics challenges of today and tomorrow, the Air Force logistics chain (also called the logistics supply chain, logistics support chain, and at times just the supply chain) must be more efficient and effective in getting the right part, to the right place, at the right time. To do this, the Air Force must make the responsiveness of its logistics chain more rapid, while managing logistics at the enterprise level with a common operating picture in which processes and capabilities are predictive, streamlined, standardized, and provide added value. The ability to *sense* the capabilities and requirements of the entire Air Force logistics chain in near real time will allow the Air Force to move faster and lighter, which will ultimately provide better support to the warfighter.¹

Why We Need to Transform Air Force Logistics

Logistics operations and processes are becoming increasingly more critical as support requirements and locations change according to national security needs and objectives. To continue to meet these changing requirements, the logistics chain must be able to quickly adjust and respond, regardless of where the warfighter is located and support is needed.² However, today, the business of Air Force logistics is conducted in loosely integrated functional silos in which there are segmented and duplicative processes, competition for

resources without an enterprise view, reactive and limited real-time management, and no common measure of success.³ In addition, Air Force logistics does not possess a true capability to rapidly replan requirements or reallocate resources when operational goals and scenarios change.⁴ Furthermore, there are slow distribution, multiple plans, various standards, wasted resources, excess material, massive deployment seams, multiple customer touch-points, and loss of accountability. Figure 1 depicts how logistics processes are presently duplicated at all Air Force levels.

Clearly, Air Force logistics needs to encompass business intelligence, provide dynamic command and control, be network-centric and predictive, and execute strategic collaborative planning and distribution. To do this, logistics must be transformed.

How We Will Transform

Expeditionary Logistics for the 21st Century (eLog21) is the Air Force-wide transformation campaign that will dramatically change the way the Air





Force provides logistics support. It is a comprehensive effort to change all Air Force logistics business processes as well as the enabling information technology. eLog21 targets the entire Air Force logistics enterprise, to include business process redesign, performance metrics, training, systems, supply chain management, maintenance, and change management. It has two primary objectives—first, increase equipment availability by 20 percent, and second, reduce annual operation and sustainment costs by 10 percent or \$2.75B.⁶

Guiding eLog21 is the *eLog21 Campaign Plan*. It is designed to transition Air Force logistics processes from the current reactionary, functionally stove-piped processes, to an anticipatory, cross-functional, integrated, enterprise-wide set of processes. Individual elements of eLog21 will be deployed in a phased approach to allow time for process development, integration, and training.

LogEA: Transformation Roadmap

The Logistics Enterprise Architecture (LogEA) is the strategic map guiding the Air Force's logistics

Article Acronyms

ALC – Air Logistics Center
 BOM – Bill of Materials
 BRAC – Base Realignment and Closure
 C2 – Command and Control
 CAM – Centralized Asset Management
 CIRF – Centralized Intermediate Repair Facility
 CLS – Contract Logistics Support
 COCOM – Combatant Command
 CSC – Computer Sciences Corporation
 CY – Calendar Year
 COTS – Commercial Off-the-Shelf
 ECSS – Expeditionary Combat Support System
 eLog21 – Expeditionary Logistics for the 21st Century
 ERP – Enterprise Resource Planning
 GLSC – Global Logistics Support Center
 GSD – General Support Division
 IPT – Integrated Process Team
 IT – Information Technology
 LogEA – Logistics Enterprise Architecture
 LRS – Logistics Readiness Squadron
 LSC – Logistics Support Center
 LTO – Logistics Transformation Office
 MAJCOM – Major Command
 MSD – Material Support Division
 MICAP – Mission Capable
 PMO – Program Management Office
 RE21 – Repair Enterprise for the 21st Century
 RSP – Readiness Spares Package
 SCOR – Supply Chain Operations Reference
 SI – Systems Integrator

transformation effort. Simply put, it is compilation of operational architecture, systems architecture, and a transition plan that provides the overall future direction for Air Force logistics. It employs the Department of Defense Architecture Framework, linkages to the Design Chain Operations Reference model, and the Supply Chain Operations Reference (SCOR) model.⁷ SCOR describes the business activities associated with all stages of satisfying customer demand and serves as a basis for:

- Improving collaboration and supply chain performance
- Understanding and measuring the flow of information or goods through the supply chain
- Understanding stakeholders in the supply chain

SCOR breaks down each of the three entities of the supply chain (supplier, enterprise, and customer) into five primary management processes (Plan, Source, Make, Deliver, and Return) as depicted in Figure 2. This model provides common definitions that can be used to describe and link supply chains of various types and sizes.⁸

LogEA will define and align organizational vision, mission, goals, and objectives with logistic business processes and information technology initiatives. It will provide the foundation for achieving the Air Force's vision for logistics and ensure that all eLog21 initiatives are aligned with the goals of eLog21.⁹

Enterprise Resource Planning: Information Technology Transformation

The Expeditionary Combat Support System (ECSS) is the information technology (IT) modernization component for the entire transformation effort and it will enable the vision of eLog21.

Two major organizations—the ECSS Program Management Office (PMO) and the Logistics Transformation Office (LTO) are involved with defining and managing ECSS requirements. The primary focus of the PMO is to ensure that logistics community requirements are met on time and within budget, while the LTO's primary role is gathering requirements and acting as an advocate for the logistics community.

At the core of ECSS is a proven commercial enterprise resource planning (ERP) system. An ERP is a set of applications software that integrates functions across an enterprise into a single computing system. The

software runs off a common database and enables better communication and information sharing.¹¹ ECSS will replace more than 420 logistics and evaluation systems with a commercial off-the-shelf (COTS) product suite. The suite, to be deployed by the systems integrator (SI)—Computer Sciences Corporation (CSC), will improve logistics operational processes and will include separate but integrated modules as depicted in Figure 3. CSC will configure, integrate, and implement the COTS suite and provide support to help the Air Force achieve its logistics business performance objectives.¹²

ECSS Capabilities

Basic ECSS capabilities are depicted in Figure 4 and briefly outlined below:

- **Advanced Planning and Scheduling:** demand forecasting and collaborate plans development.
- **Material Management, Contracting, and Logistics Finance:** procurement and purchasing, contract management, repair and maintenance support, and finance transactions.
- **Configuration and Bill of Materials (BOM):** primary, alternate, common, and phantom planning and configuration BOMs.

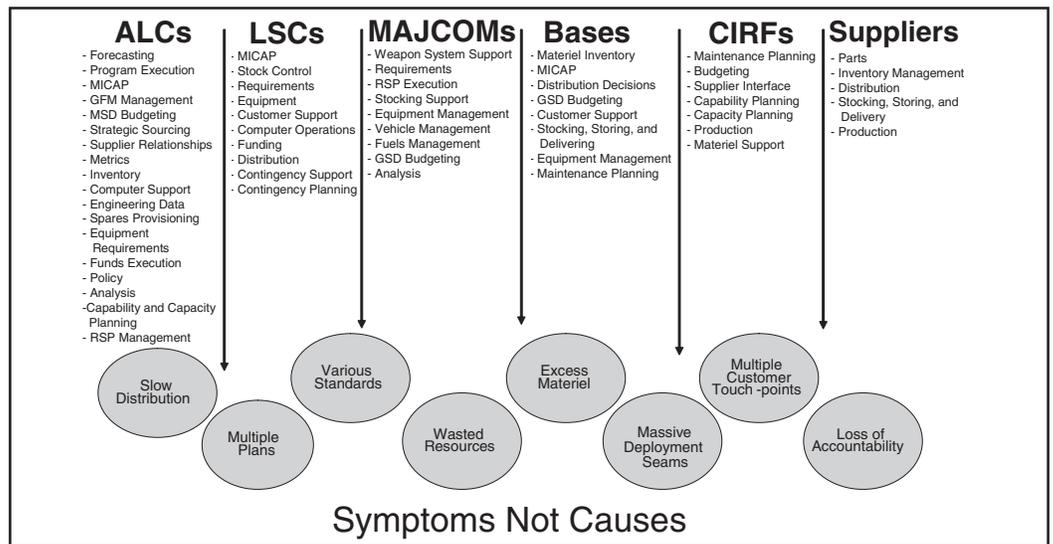


Figure 1. Current Weaknesses in Air Force Supply Chain Management⁸

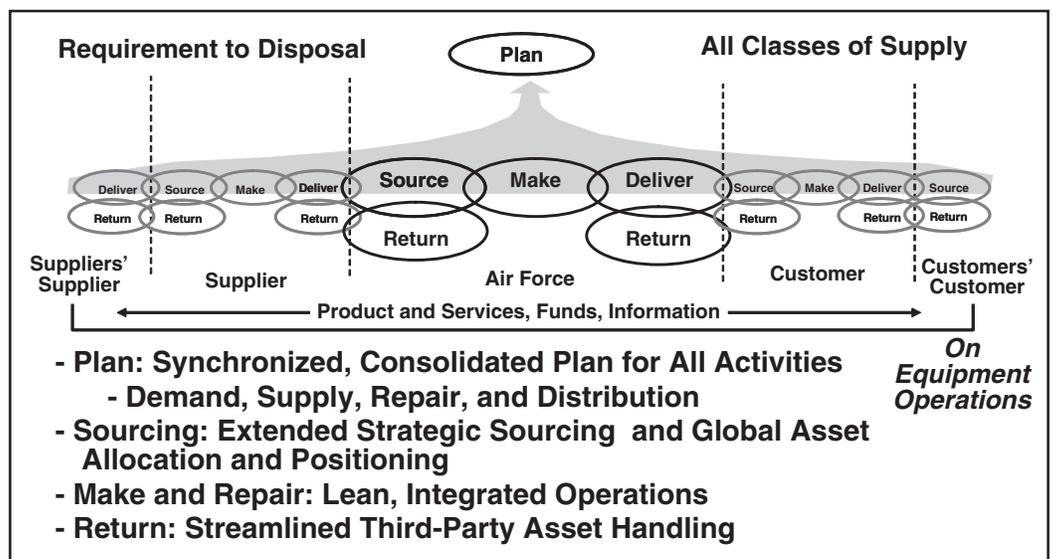


Figure 2. Logistics Enterprise Architecture and SCOR¹⁰

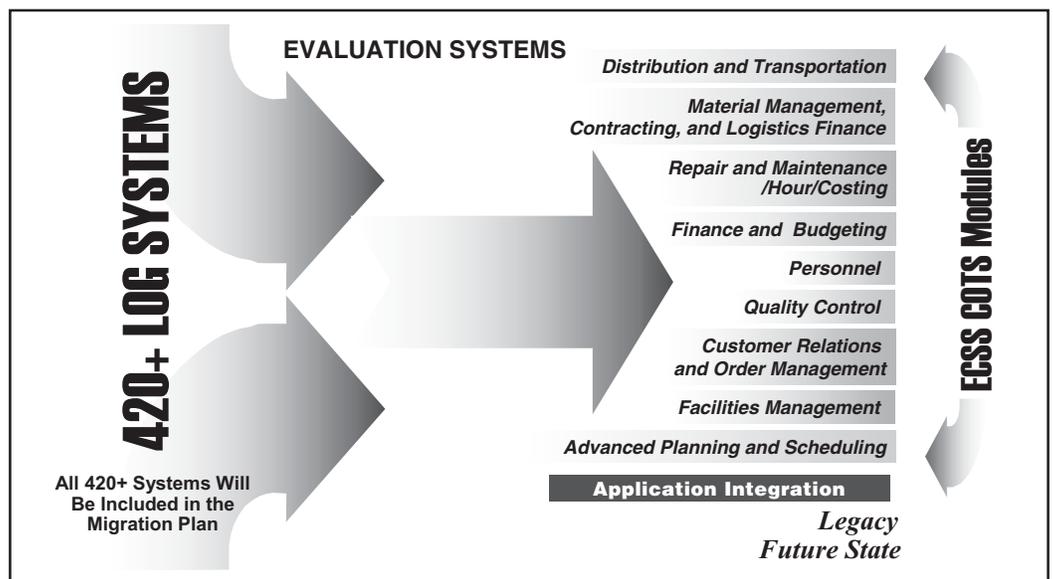


Figure 3. Notional Future Logistics State¹³

- **Repair and Maintenance:** repair and maintenance planning and operations; visibility into maintenance costs, equipment history, and maintainability and reliability data.
- **Product Life-Cycle Management:** integrated engineering and execution functions; life-cycle view of assets to include repair history, cost, engineering changes, and relationships to other assets.
- **Customer Relationship Management and Order Management:** order fulfillment processes and tracking from material requests to fulfillment of the order.
- **Distribution and Transportation:** physical control of material to include cycle counting, storage, shipping, transporting, and tracking.
- **Decision Support:** integrated information across process and functional areas; can include legacy system data.
- **Facilities Management:** track and maintain equipment; provide asset visibility.¹⁴
- **Quality Control:** data collection; reporting with traceability back to the transaction; trend analysis.
- **Document Management:** identify and maintain documents used in current and future state processes; data cleansing standardizes formats and methods used to link data.¹⁵
- **Budgeting:** develop budget proposals; monitor expenditures; assess variances and causes of variances; develop revised budgets based on changes in assumptions.¹⁶

Implementation Benefits and Strategy

Implementing ECSS will add value by reducing inventories while increasing availability, reducing maintenance cycles, reducing clerical efforts for financials, and will result in more timely decisionmaking, better allocation of resources to demand, improved financial management, and improved product and data quality.¹⁸ ECSS will also merge retail and wholesale logistics systems, provide near real-time worldwide visibility of assets, and provide seamless transition from peace to wartime operations. There will also be greater combat support capability provided to Joint and Air Force commanders.¹⁹

ECSS development will continue until final implementation in late calendar year 2013 (CY13). Initial ECSS tasks included selecting the ERP software, defining current processes (pre-blueprinting), and selecting the SI to implement the ERP software solution.

Subsequent tasks include constructing the future functional and technical design, configuring the system, deployment, and training.²⁰ In addition to the LTO, subject matter experts (SME) from the major commands (MAJCOM) will participate in ECSS blueprinting efforts. According to Mr Grover Dunn, Director of Transformation, SMEs from the various MAJCOMs are still needed to participate in short term temporary duty assignments during the 18-24 month blueprinting phase for the software product.²¹

Identifying the gaps between what the COTS suite provides and the requirements needed will be determined during the blueprinting phase. A formal gap analysis will be conducted, allowing decisions based on what is best for the Air Force. Integrated process teams (IPT) will determine what processes, systems, and procedures should be used in the future Air Force supply chain. The LTO, in conjunction with the SI, will coordinate and facilitate IT related IPTs. Headquarters Air Force Materiel Command A4I will coordinate and facilitate financial and customer relations related IPTs.²²

Transformation Challenges

Successful implementation of ECSS will require a considerable amount of change management. As a result, a change management plan is being developed which will help achieve a higher probability of success, ensure leadership commitment and accountability, address organizational and human resource change issues, make certain the right people with the right skills are confident and ready to perform at implementation, and communicate the need for change to all the stakeholders.²³ As with the inception of all new initiatives, there is *ramp-up* time that entails ensuring people across the Air Force logistics enterprise are aware of the need to transform logistics.

Road-show briefings, describing ECSS and future courses of action, have been conducted for the MAJCOMs as well as leadership at the Air Staff. Other training and education efforts will follow. The goal is to ensure that every member of the Air Force logistics enterprise understands the importance and scope of the changes that will take place.

Understanding that ECSS is not just another temporary improvement initiative is critical to its success. Members of the Air Force logistics enterprise must have confidence and believe in the credibility of the initiative so that they become personally invested and committed to the changes that will occur as ECSS is implemented.²⁴ It is expected that there will be a

learning and training curve, as well as some deficiencies; however, much planning is going into how to train and develop the force to ensure people understand the ECSS vision, the benefits of ECSS, and the need to change.

Another major challenge will be to ensure a standard set of business processes and policies are deployed and maintained across the entire logistics enterprise.

Lastly, the impact of redefined job roles within the logistics enterprise workforce, as a result of ECSS implementation, may prove challenging and must be evaluated.

What Do We Do While ECSS Is Being Developed? The Global Logistics Support Center (GLSC)

An interim enterprise management capability is needed until ECSS is implemented. While ECSS is being developed, the Air Force will leverage existing IT tools and initiatives to help understand new processes and identify temporary work-arounds. It will implement a GLSC, as depicted in Figure 5. The GLSC will provide better levels of common resource sharing and greater asset visibility. Enterprise planning and execution and total asset visibility will be achieved by CY13.

The GLSC will be the command and control (C2) center for the supply chain and maintenance, repair, and overhaul capability for the Air Force.²⁶ The GLSC will consolidate the planning functions being accomplished at the air logistics centers with the operationally focused planning being accomplished

in the combat air forces and mobility air forces logistics support centers.²⁷ The logistics supply chain will be managed using supply chain planning, supply chain operations, and supply chain strategy and integration as illustrated in Figure 6. A discussion of the major elements within the GLSC follows.

GLSC Supply Chain Planning

The planning cell will look at ways to expand and increase current operational planning capabilities of

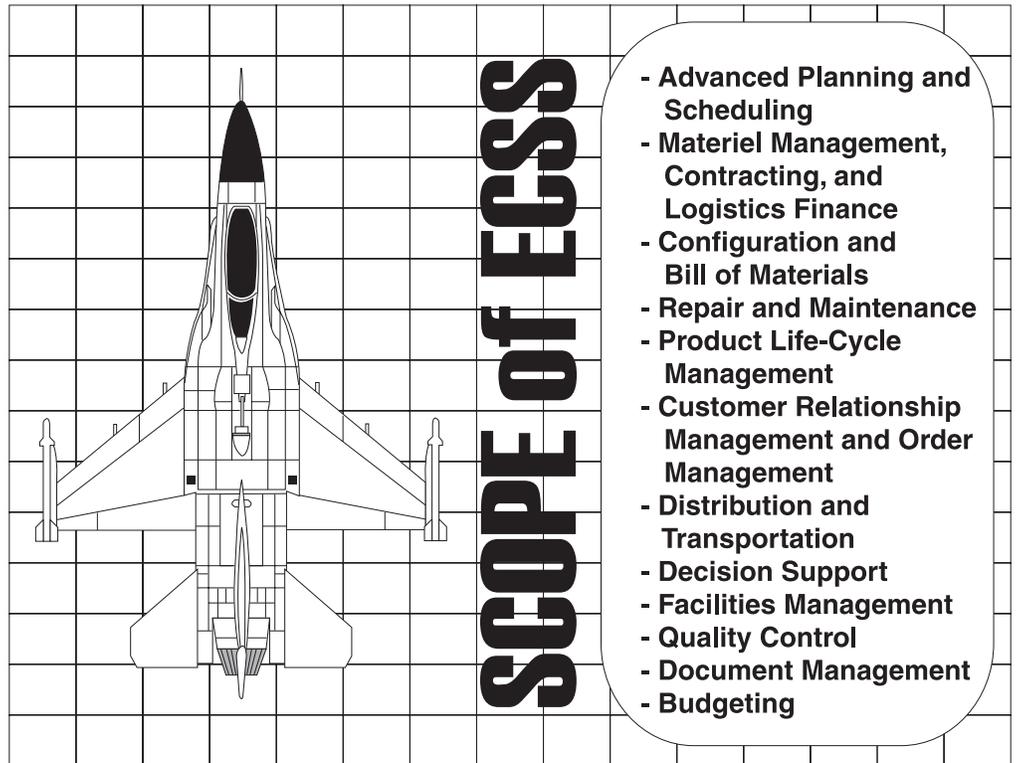


Figure 4. ECSS Capabilities¹⁷

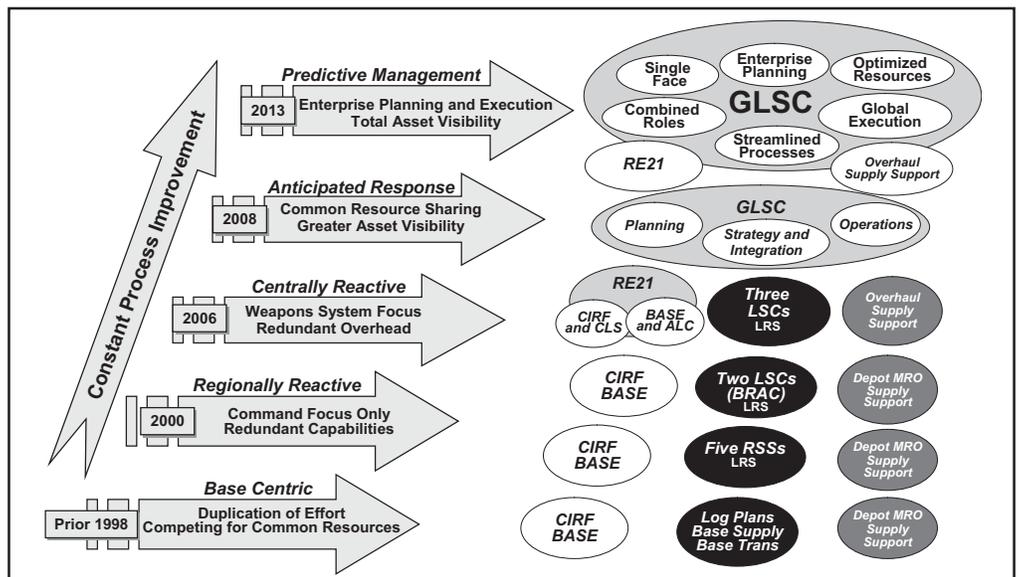


Figure 5. GLSC, the Next Evolution of Supply Chain Management²⁵

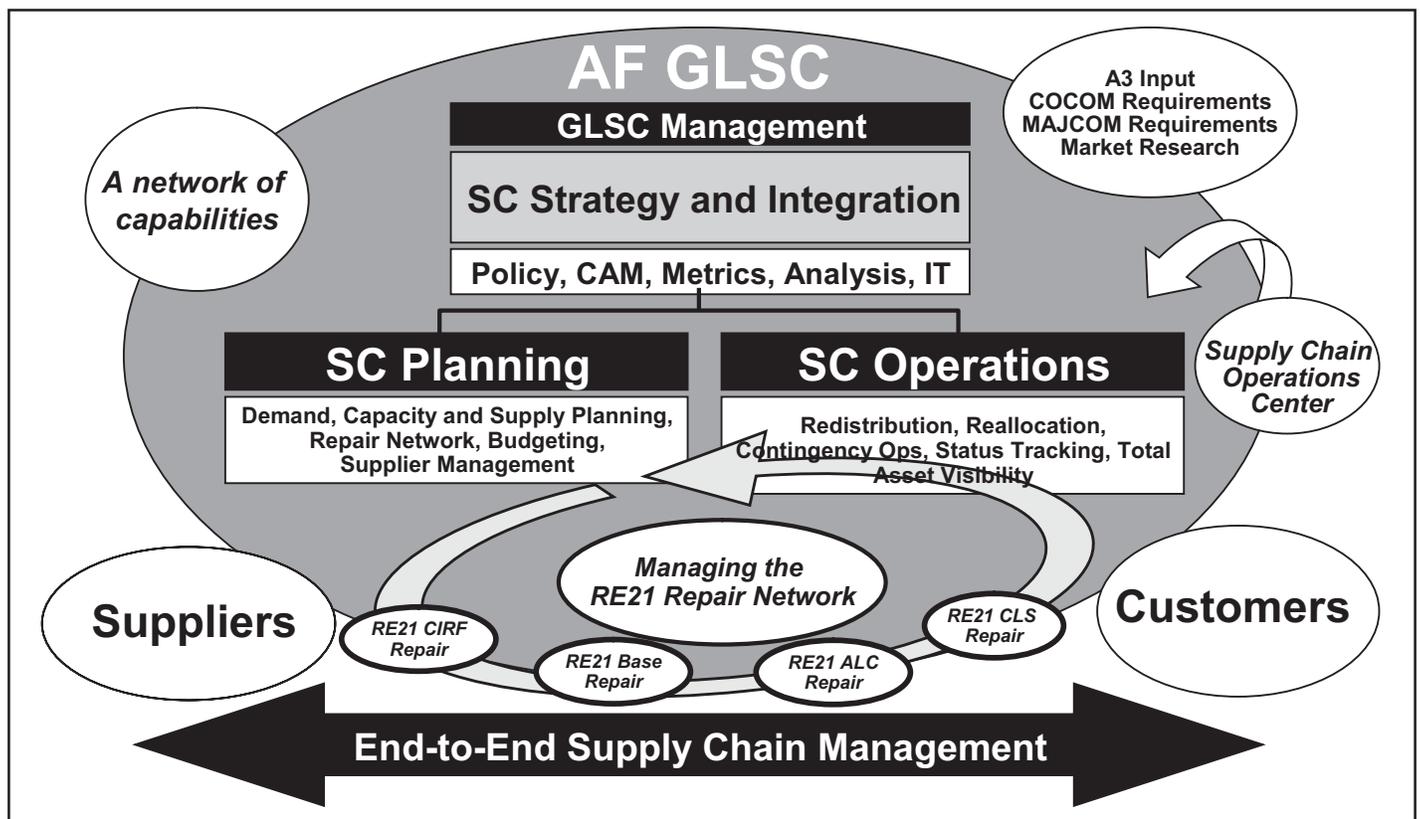


Figure 6. GLSC - AOC for the Air Force Supply Chain²⁸

D200 to include planning for material, repair, distribution, transportation, and infrastructure.²⁹ The planning responsibilities of this cell will include developing a demand plan for all weapon systems and commodities as a result of collaborative forecasting. A material sourcing strategy will also be developed with the Defense Logistics Agency and other suppliers. Other responsibilities will include setting and allocating inventory levels and buffers across the enterprise, developing gross capacity and allocation and management, life-cycle commodity engineering, surge capacity planning for production, repair, stocking, distribution, and financial planning and execution.³⁰

GLSC Supply Chain Operations

Once there is a demand plan, the operations cell will control the execution of the plan. The execution cell will be the single unified command and control node for execution of commodity management. Other responsibilities include managing distribution based on operational priorities and managing equipment and stock control, to include reallocation, repair prioritization, demand prioritization, contingency operations (reach back), surge execution, and data management.³¹ For example, if there is a hurricane and the centralized intermediate repair facility in New

Orleans cannot meet the engine repair (CIRF) need, the C2 will shift those engines to other repair locations, determine the changes in needed stocks and kits, and direct redistribution of engines to proper customers and maintenance locations.³² The cell will also provide a single point of contact for logistics customers to resolve issues.³³

GLSC Supply Chain Strategy and Integration

The strategy and integration cell will analyze how well the plan is working. The metrics that will enable measurement and analysis of the logistics chain are yet to be determined. Automated and standardized balanced scorecards are needed to provide a common source of truth. Standard procedures and policy will be used to ensure the logistics chain is standard, flexible, and lean.³⁴ The strategy and integration cell will also ensure focus remains on the ability to support the warfighter and that funds are properly utilized in supporting operational requirements.³⁵

Conclusion

There will be bumps and tough times ahead while implementing ECSS, but the results will be well worth the challenges that lie ahead. ECSS will increase

enterprise-wide asset visibility, improve weapon system availability, reduce inventory footprint, and reduce costs. Without question, successfully deploying and implementing ECSS requires focused and strong leadership, a strong change management program, and buy-in and collaboration from everyone involved in the Air Force logistics enterprise. In the words of Vice Admiral Arthur Cebrowski, US Navy (Retired), "... You have a choice: you can either create your own future, or you can become the victim of the future that someone creates for you."³⁶

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Sound logistics forms the foundation for the development of strategic flexibility and mobility. If such flexibility is to be exercised and exploited, military command must have adequate control of its logistic support.

—Adm Henry E. Eccles, USN

He who will not apply new remedies must expect new evils; for time is the greatest innovator.

—Viscount Francis Bacon

Logistics comprises the means and arrangements which work out the plans of strategy and tactics. Strategy decides where to act, logistics brings the troops to that point.

—Gen Antoine Henri Jomini