The Secretary of Defense Performance-Based Logistics Awards Program
for
Excellence in Performance-Based Logistics
in
Life Cycle Product Support

Section 2
Summary of Criteria Accomplishments

Mission Success: The Consolidated Automated Support System (CASS) is the Navy's premier automatic test system for electronics and avionics. First fielded in 1994, CASS is used worldwide in support of U.S. Navy and Marine aircraft at the intermediate and depot levels and in nine allied foreign countries under the Foreign Military Sales (FMS) program. The current CASS PBL, awarded in November 2008 to Lockheed Martin Simulation and Training Systems (LMSTS), is the result of increasingly comprehensive and performance based requirements that have resulted in an extraordinarily high level of support while reducing overall costs. Initially, CASS was supported by five different contracts, experienced an average Supply Material Availability (SMA) of under 75 percent. Over time, a team representing NAVAIR, NAVICP, and LMSTS, the OEM, developed an innovative support strategy to provide all encompassing support, at multiple service levels, reducing cost 20 percent, while adding capabilities and increasing the number of items supported. Today's CASS PBL is a $410M seven year, firm-fixed price vehicle featuring four different levels of support for both Fleet, non-Fleet, and FMS stations, with a focus on availability and mitigating obsolescence issues. Current Fleet SMAmeasures are well over 90 percent, while non-Fleet are well over their goals of 70 percent station availability for basic service and 85 percent availability for full service PBL options.

Materiel Availability: During the early years of CASS deployment, SMA remained at approximately 70 percent. Through the evolution of CASS PBL support, SMA increased to over 90 percent. The CASS PBL currently supports 191 repairable items and 573 consumable items under the Fleet service level. Since contract award, the average SMA for has been 99 percent

repairable items and 98 percent for consumables. The primary metric driving the high availability numbers is the 24 hour broad arrow requisition response time and the 72 hour non-broad arrow response for CONUS shipments, both with a receipt time of 48 hours. A broad arrow requisition means a CASS station is down for the part ordered and unable to run required test programs. LMSTS is able to provide this superior level of support at reduced cost through use of the consolidated service pool of assets available to support all service levels of the contract. For OCONUS shipments, assets must be shipped within 48 hours. Continuous improvements have been made in the shipment of OCONUS material resulting in a receipt time within an average of four days. Availability metrics for other service levels include 85 percent station availability for full service and 70 percent for basic service. LMSTS has continuously far exceeded the contract metrics, averaging 98 percent.

Materiel Reliability: Since its introduction, CASS support has increased in complexity due to the introduction of additional configurations and operational test program sets to meet expanding test capability requirements. This continuous mission expansion of CASS has resulted in additional hours of usage loading. However, failure rates per station have consistently decreased over the life of the previous contract and into the current one. The previous contract, CASS Consolidated Service Pool (CSP), was an eight year agreement with many features of the current PBL contract. However, its pricing was renegotiated every year or two as a result of various fluctuations in usage and failures. This resulted in the contractor's disincentive to invest in long term solutions and relationships with suppliers. The current contract, a seven year firm fixed price vehicle, inherently incentivizes the contractor to improve reliability and reduce failures, thus preventing materiel returns. The failure rate per station has decreased from 15 in 2000 to a current rate of 7.5 in 2009.

Ownership Cost Reduction: The PBL Business Case Analysis (BCA) documents savings and cost avoidance of $2.9M over the course of the current contract. Through innovative management and constant improvement, the CASS support cost decreased over the eight years of the CSP contract while the number of stations and parts supported increased. As an example, the per station cost under Fleet service decreased 20 percent while the total number of parts supported increased from 95 to 707. By combining all requirements and service levels, costs are minimized as the contractor is able to spread fixed costs over a large population. Three major cost reductions occurred over the CSP period of performance and were integrated into the new PBL contract. The failure rate per station, logistics response time and average cost per repair has seen significant reductions. Additionally, the contract price is based on actual stations in operation annually so that the Navy pays only for required support.

Public-Private Partnering: As an end item of support equipment, CASS is exempt from the Core requirement of Title 10. As such, there are not opportunities for Lockheed to team with existing organic depots in performance of the contract. Throughout the CASS lifecycle, LMSTS has teamed with numerous DOD agencies to successfully support the program.

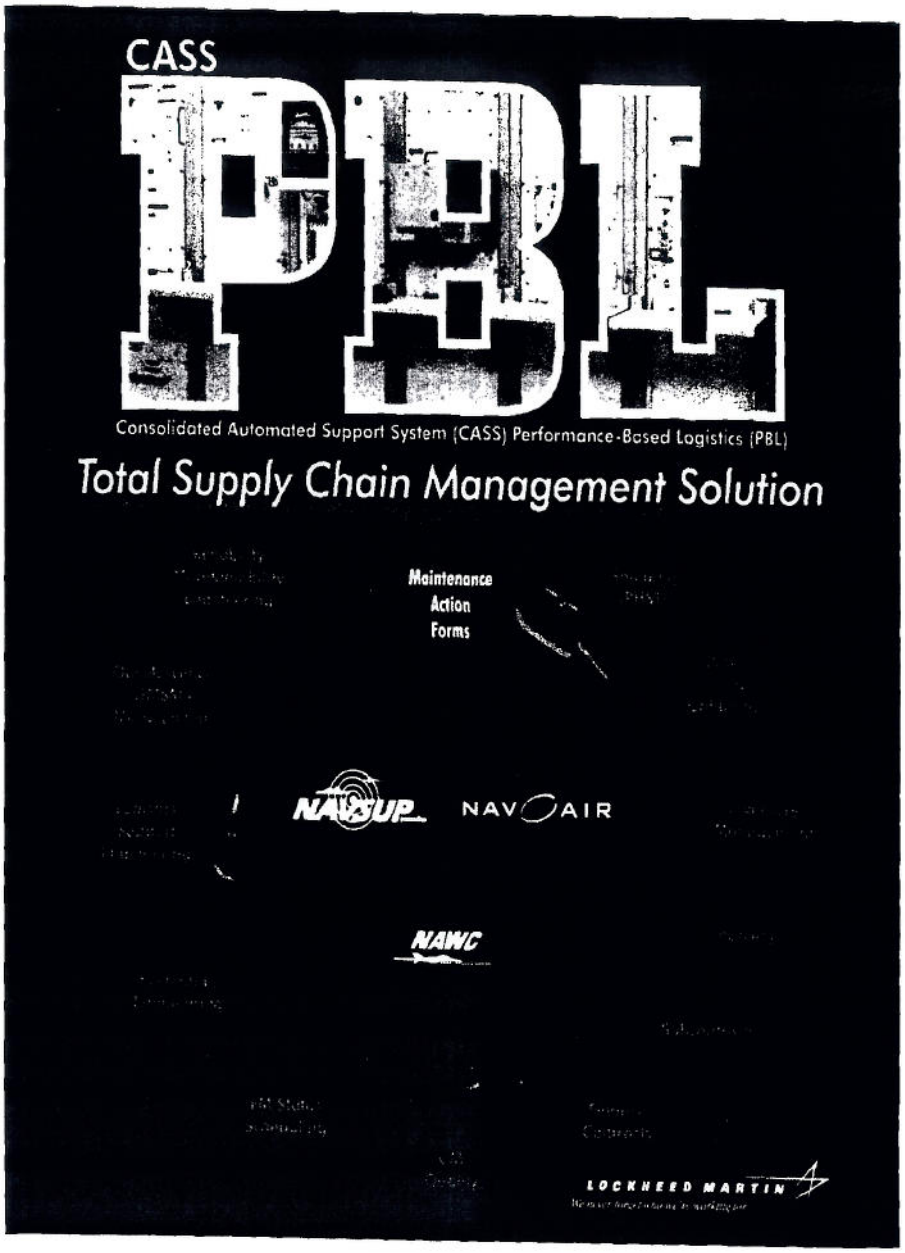
Systems Engineering Approach: The partnership developed between the U.S. Navy and LMSTS has generated optimized system level solutions, providing complete systems engineering for the CASS program. This is accomplished through the use of technology insertion, a comprehensive reliability and maintainability program, configuration and obsolescence management, and a logistics support management review process. Problem Identification Reports (PIR) are submitted by LMSTS to identify major issues affecting CASS support and contain proposed solutions to be considered. The team reviews, analyzes and determines the best solution to be implemented. In addition, by combining all CASS configurations and ancillary gear under one contract vehicle, LMSTS is able to address all aspects of the program.

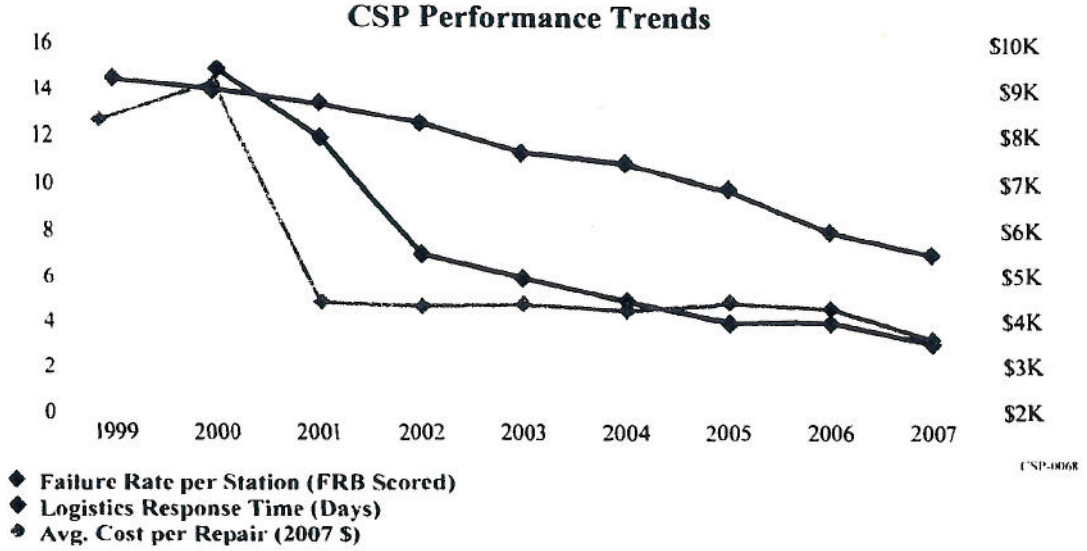
Footprint Reduction: CASS assets are centrally stocked at LMSTS and shipped worldwide using the fastest, most cost effective transportation available. This greatly reduces logistics cycle time while reducing the Government's inventory footprint. In addition, low station failure rates enable elevated local repair of aircraft WRA's, further reducing the required levels of all CASS supported WRA's within the wholesale pipeline. Electronic data interchange (EDI) and real-time interface with the Navy's asset tracking system enables total asset visibility throughout the supply chain. During the early days of the CASS program, LMSTS developed the Automated Depot Information System (ADIS) to monitor and track material and failure status for all assets received. This consolidated system, which interfaces directly with DOD IT systems via EDI, eliminated requirements for multiple software packages and databases that make monitoring material resources and repair processes extremely complex and labor intensive.

Obsolescence Management: Projected end of life for CASS was originally 2015 but now has been extended to 2020. Continuity through the CASS program's development, production, and support phases has been key to obsolescence mitigation. Through the effective use of Diminishing Manufacturing Sources and Material Shortages (DMSMS) meetings, supplier symposiums, and reliability improvement initiatives, LMSTS has maintained long-term relationships with the majority of the original CASS OEM suppliers. Through continual interface, annual supplier surveys and long-term subcontracts, LMSTS works closely with the various CASS suppliers to mitigate obsolescence issues. All CASS suppliers, including COTS suppliers, are formally surveyed annually and directly to ensure that they will be willing to continue long term support. To mitigate DMSMS issues where OEMs have elected to discontinue support, LMSTS has taken over organic support of assets or transitioned repairs to third party suppliers. They have also initiated life time buys to be held in reserve. As part of their proactive monitoring for obsolescence, LMSTS developed the Megaboard database whose

output is referred to as the Red-Yellow-Green chart. This method tracks the status of every CASS asset through 2020 and produces a projected stock depletion date which drives further logistics decisions. This process has resulted in an exceptionally successful obsolescence identification and mitigation program.

Reliability, Maintainability and Supportability Improvements: Improvements to reliability, maintainability, and supportability of CASS are considered inherent features of the CASS PBL. LMSTS captures CASS component failure data for use in failure and trend analyses, corrective action development and verification of corrective action effectiveness. This data is made available to the Navy, and semi-annually the Government and contractor meet as the Readiness Reliability Team (RRT). During the RRT, items identified as having reliability and supportability issues are analyzed then solutions are developed and implemented by LMSTS. One example of success is the reduction of induced failures on the DTU backplane. Removal of the backplane for maintenance is extremely difficult, requiring many maintenance man-hours. As a result of investigation by the RRT, a job performance aid (JPA) was developed to demonstrate removal step by step. In the two years since the JPA was issued, there have been zero induced failures on the DTU backplane and demand has decreased from twelve to four per quarter.


CASS
PBL
Consolidated Automated Support System (CASS) Performance-Based Logistics (PBL)
Total Supply Chain Management Solution
Maintenance
Action
Forms
NAVSUP
NAVAIR
NAWC
LOCKHEED MARTIN



	Full	Basic	Limited	Fleet
(Before PBL) MSP/DVD (1999)	**$206,995**	**$118,758**	**$65,868**	**$65,584**
CSP I (2000)	$140,800	$105,508	$66,669	$54,360
CSPII (2001)	$140,432	$87,856	$45,382	$31,583
CSP III (2001-03)	$116,970	$60,551	$36,727	$35,230
CSP IV (2003-05)	$133,474	$53,521	$41,119	$42,213
CSP V (2005-07)	$148,591	$63,706	$51,734	$46,593
CSP VI (2007-08)	**$121,939**	**$60,472**	**$53,679**	**$53,141**

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Section 4
Achievements

The CASS PBL, awarded in November 2008 to Lockheed Martin Simulation and Training Systems (LMSTS), is a comprehensive, performance based arrangement that provides an extraordinarily high level of support while reducing overall costs. The Consolidated Automated Support System (CASS) is the Navy's premier automatic test system for electronics and avionics. CASS is used worldwide in support of U.S. Navy and Marine aircraft at the intermediate and depot levels and in nine allied foreign countries under the Foreign Military Sales (FMS) program. The CASS PBL is a $410M seven year, firm-fixed price vehicle featuring four different levels of support for both Fleet, non-Fleet, and FMS stations, with a focus on mitigating availability and obsolescence issues. Current Fleet availability is well over 90 percent. Failure rates per CASS station and costs per station have consistently decreased. The PBL includes an exceptionally successful obsolescence identification and mitigation program. The program uses technology insertion, a comprehensive reliability and maintainability program, configuration and obsolescence management, and a logistics support management review process to generate optimized system level solutions providing complete systems engineering for the CASS program. The PBL provides optimized system level support to both Fleet and non-Fleet customers in a cost-controlled and cost-wise environment.